National Health Care Institute

Moving towards new health care and new health care professions: **the contours**

| Van goede zorg verzekerd |

Colophon

Authors
Dr. Marian Kaljouw and Dr. Katja van Vliet

Edited by
The Committee Innovation Health Care Professions & Education

Final editing
Dr. Katja van Vliet, Dr. Ans Grotendorst, Drs. Astrid Koeter and Paulien Spieker

Layout
Marjolein Brink and Rogier van der Haak

Illustrations
Marissa Delbressine

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Contact
Dr. Katja van Vliet

Department
The National Health care Institute, April 2015

The Committee Innovation Health Care Professions & Education
Dr. Marian Kaljouw (chair)
Dr. Ben Bottema, GP and former director of primary care education, Radboud UMC
Dr. Thea Heeren, psychiatrist, chair of the Executive Board, Centraal GGZ
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Mr. drs. Kete Kervezee, former inspector general, Education and Social Affairs
Dr. Paetrick Netten, internist, Jeroen Bosch Hospital
Prof. dr. Dirk Ruwaard, Professor in Public Health and Health Care Innovation, University of Maastricht
Prof. dr. Marieke Schuurmans, Professor in Nursing Sciences, University of Utrecht
Drs. Peter Holland, former chair of the KNMG, listener on behalf of the Quality Advisory Committee

Secretary: Dr. Katja van Vliet, programme manager Innovation Health Care Professions & Education

The Team Innovation Health Care Professions & Education
Dr. Marian Kaljouw
Dr. Katja van Vliet
Drs. Marielle Jambroes
Mary van der Linde

Project leaders breeding grounds
Drs. Klaus Boonstra (Friesland)
Drs. Saskia Schalkwijk (Amsterdam-Amstelveen)
Drs. Marco van Alderwegen (Rotterdam)
Dr. Erik van Rossum (Heerlen)

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Presentation Letter

Dear Minister Schippers,

In its meeting on 16 February 2015, the Executive Board of Zorginstituut Nederland (the National Health Care Institute) discussed and approved the advice 'Moving towards new health care and care professions: the contours'.
In 2012 you asked for advice on a future-oriented classification of professions and a continuum of educational in health care in the Netherlands. To this end, on 3 May 2012, the College voor Zorgverzekeringen (Health Care Insurance Board) as it was then known set up a temporary committee. On 1 April 2014 the permanent committee was created at the same time that Zorginstituut Nederland came into being.

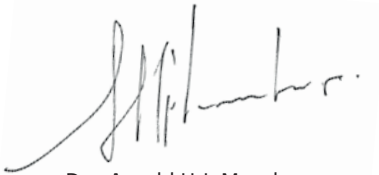
This advice is an invitation to join in a societal discussion. It presents a continuum of skills for health care in 2030. The advice relating to education will be published at the end of 2015. That advice will provide direction for 'a life-long education' and reply to the question of how to shape the continuum of skills via educational paths.

The committee focussed on the year 2030 and asked the question about what care will be needed then based on local and regional demographic developments. The point of departure is how our citizens function and a new concept of health care. The committee distanced itself from the former WHO definition of health (WHO, 1948).
This advice is a step in the direction of the change process that has been initiated. Predictions involve risks, after all, we cannot know what we do not know. The advice focuses on the year 2030. It seems far away, but it is not. Care professionals of the year 2030 are currently attending primary school.

The committee does not present a classification of professions, but advises a dynamic continuum of skills that focus on health care demands. This requires continual adjustment and harmonisation and more flexibility than the current system provides.
This advice is an invitation to join in a societal discussion. The future demands different health care and thus – also – different health care professionals. Citizens must participate in this discussion.

Key to this advice is how the citizens of this country function. It is not only diseases or complaints that are important, but also the disabilities these involve. Most people have no disability whatsoever, and are entirely capable of managing their own disorder(s). Supportive technology will play an increasingly large and increasingly important role here.
During the past three years, the committee held discussions with more than 1000 of those who are involved and experts. Many think-tanks, experts and focus groups were consulted. More than 100 presentations were held.

This advice is advice from, by and for the world of health care.



Dr. Marian J. Kaljouw
Chair Committee
Innovation Health Care Professions & Education

Drs. Arnold H.J. Moerkamp
Chair of Zorginstituut Nederland

Word of thanks

The Committee Innovation Health Care Professions & Education was appointed in April 2012. Three years later, its advice, 'Moving towards new health care and health care professions' is ready. A large number of people were involved in realising this advice. The promise made at the health care professions debate in December 2013, 'advice on, by and for health care', has been realised.

I would like to take this opportunity to thank the breeding grounds in Friesland, Amsterdam & Amstelveen, Rotterdam, and recently also Heerlen, on behalf of the Committee Innovation Health Care Professions & Education, for the confidence they placed in us. I would like to thank project leaders, Klaus Boonstra, Saskia Schalkwijk, Marco van Alderwegen and Erik van Rossum, and the ambassadors Diana Monissen, Huib de Jong, Anton Westerlaken and Luc de Witte for their efforts, which we will continue to use to our advantage during the next few months, for implementing good examples and for developing new education.

Two series of focus groups that were accountable to the Verwey-Jonker Institute, with a total of 647 participants, assisted us by joining in our discussion of points of departure and the ABCD model. The 'Terschelling team' that spent three days working with us on the ABCD model. The technology expert team that made a 'tour of the Netherlands' and analysed the current state of affairs in health care in the field of technology. The National Think-Tank 2013 that spent many long months working on smart solutions for us.

Various Think-tanks were involved, in addition to the focus groups and the breeding grounds. Not only citizens and professionals but also policy-makers helped determine the direction of this advice.
In December 2014 Marcel Geurts, Marianne Stadlander and Ans Grotendorst worked with us on the final draft of this advice. After the Christmas break, a group of readers provided us with more feedback in order to improve the advice even further.

The team working for the Committee Innovation Professions & Education is small, but we felt immense because of our collaboration with the TNO team and the Verwey-Jonker Institute.

Unfortunately, we had to cope with the death of Yvonne van Gilse in 2014. Losing Yvonne meant the committee had lost an important member. Els Borst, who advised the committee and who was to have travelled to Terschelling with us, also died in 2014. Gert Jan Gelderblom, who was part of the expert technology team, also died suddenly in 2014.

I would like to end these words of thank by mentioning two friends who were of critical importance. The first is Katja Mur, and the second is Ans Grotendorst.

On behalf of the Committee Innovation Health Care Professions & Education

Marian Kaljouw

Summarising

In the advice, *Moving towards new health care and new health care professions: the contours* [1], the Committee Innovation Health Care Professions & Education presents a dynamic continuum of skills, customised to care that will enable people to continue to live independently as far as possible and to be able to function in their own environment. This demands a turnabout in health care. The key aspect is not the diseases or disorders of our citizens, but how they function, their resilience and self-management. The point of departure is not the existing supply of care, professions and education, but the future demand for health care, whereby the focus is on what is necessary and not on what is possible. A future-oriented continuum of skills is dynamic and demands regular updating in order to be able to anticipate changes in the care required.

The Committee's strategy is a design trajectory, with the expected demand for care in 2030 as point of departure and with a number of building blocks for elaborating upon and substantiating the above-described vision. The approach is characterised by intensive interaction with the field and is an iterative process: step-by-step progress, using progressive insight in each new phase. The wager here is that this advice can count on a broad basis of support and that proposed innovations in health care, professions and education are already being initiated in practice. The advice, Moving towards new health care and new health care professions: the contours, is a step in the direction of that process of change. As a follow-up to this advice, at the end of 2015 advice will be presented on a continuum of education that is tailored to meet health care demands in 2030.

Based on the Committee's vision and points of departure and the broad basis of support by citizens, professionals, administrators, educators and local councils, the Committee is introducing the ABCD model (see figure 1). This model presents an integral and dynamic approach to Dutch health care in 2030 and the professional activities this requires within the most relevant context.

Pre-care (A)

Pre-care is about the entire Dutch population and it focuses on promoting healthy life. Pre-care is a social matter that involves many domains, including health care. This is only possible with an integral approach and attention being paid to health skills in teaching, work, the neighbourhood and health care. Pre-care focuses on developing resilience and on health risks by means of health promotion, health protection and disease prevention, both individually and collectively.

Community Care (B)

People who need care want to organise it – as far as possible – themselves, together and in their neighbourhood. This involves a lot of facilities, e.g. the design of homes. Technology also plays a major role. Digital information is put to a lot of use. A 'snapshot' of the neighbourhood, updated regularly, shows what the neighbourhood needs. Professional support or treatment is available whenever needed. A contact point is available and accessible, and there is a professional safety net.

Low-complex to more complex care (C)

Low-complex to more complex forms of care is basic care and specialised care, for both acute and planned situations, with a high level of predictability regarding the required deployment and the course (of diseases/disorders). Assessment and grounds are determined in advance of treatment. Functioning is the point of departure. What must always be examined is what is necessary and not what is possible. Technology also plays a major role in C, not only during treatment, but also with regard to communication and information.

High-complex care (D)

High-complex care covers extremely complex treatment with a low degree of predictability regarding the required quantitative and qualitative deployment and the course (of diseases/disorders), whereby

1 *The advice Moving towards new care and health care professions: the contours was published and presented to the Minister of VWS on 10 April 2015.*

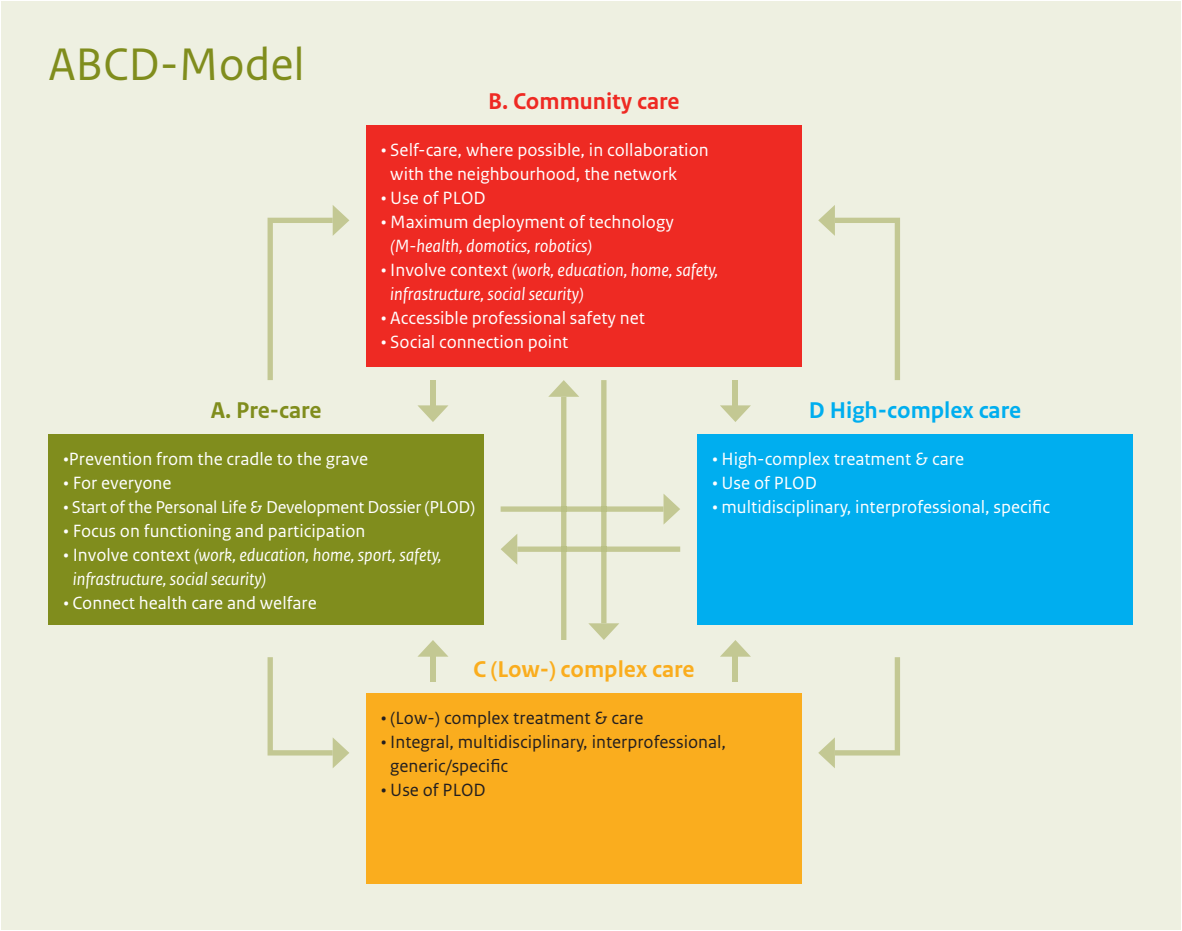


Figure 1: ABCD model, Committee Innovation Health Care Professions & Education, 2015.
N.B. PLOD is an acronym of the Dutch name for Personal Life and Development Dossier.

interventions will continually be adjusted based on diagnostics and observation, and enormous health risks are involved. This point of departure will result in a concentration of more complex forms of care. Here also, the point of departure remains: 'functioning'.

Care arrangements carried out by collaborative multidisciplinary teams

Based on the most important trends in the expected demand for care, the Committee came up with 23 citizen profiles. These were categorised, per profile, over the ABCDE care domains and subsequently gathered into 6 clusters based on similarities[2]. This made it apparent that in 2030 a large proportion of the population will have several problems and/or disorders and will be involved in several health care domains. Context-complexity and patient-complexity determine what is needed in the various care domains in order to recover or promote functioning.

To realise this, the Committee has introduced *care arrangements* that will be carried out by *collaborative multidisciplinary teams*. These collaborative multidisciplinary teams are made up of care professionals who have the skills that are needed to ensure the recovery or promotion of functioning. A citizen is a part of this team and, where possible, even takes charge. A citizen who is unable to do this will be supported by a 'captain' (strategist) who may change depending on the situation. Teams are formed based on the demand for care, which means their composition and/or location can change. Most care professionals are generalists and will move between A, B, C and D. A smaller group of care professionals will focus primarily on high-complex care in D.

2 See chapter 3 for an explanation of the 23 citizen profiles and 6 clusters.

Skills

All care professionals act based on the question 'What is needed in order to recover or promote functioning?' In addition, every care professional has a number of general skills: networking skills, technological skills and social and contextual skills. It is important that all professionals are able to de-escalate: professional care always focuses on the independent functioning – as far as possible – of citizens in their own home environment. After treatment, surgery or the temporary takeover of functioning, care focuses on returning home. In addition, teams have the skills necessary for caring for people with, e.g. chronic disorders, multi-morbidities, functional problems, mental disorders.

Continuum of skills for health care

The future of professional care lies in a dynamic continuum of skills that focuses on the demand for care and which contributes to how citizens function. The model, *Continuum of skills for health care* (see figure 2), illustrates the populations involved in the various care domains which overlap one another. The model also shows how care professionals from various teams could work in various care domains. By starting with demand and the care arrangements this requires, the Committee hopes to bring an end to the current fragmented supply. This requires a *new way of working* and *different skills*. These skills will be elaborated upon in the advice on education. The Committee provides an outline of these skills in Chapter 3 of this advice.

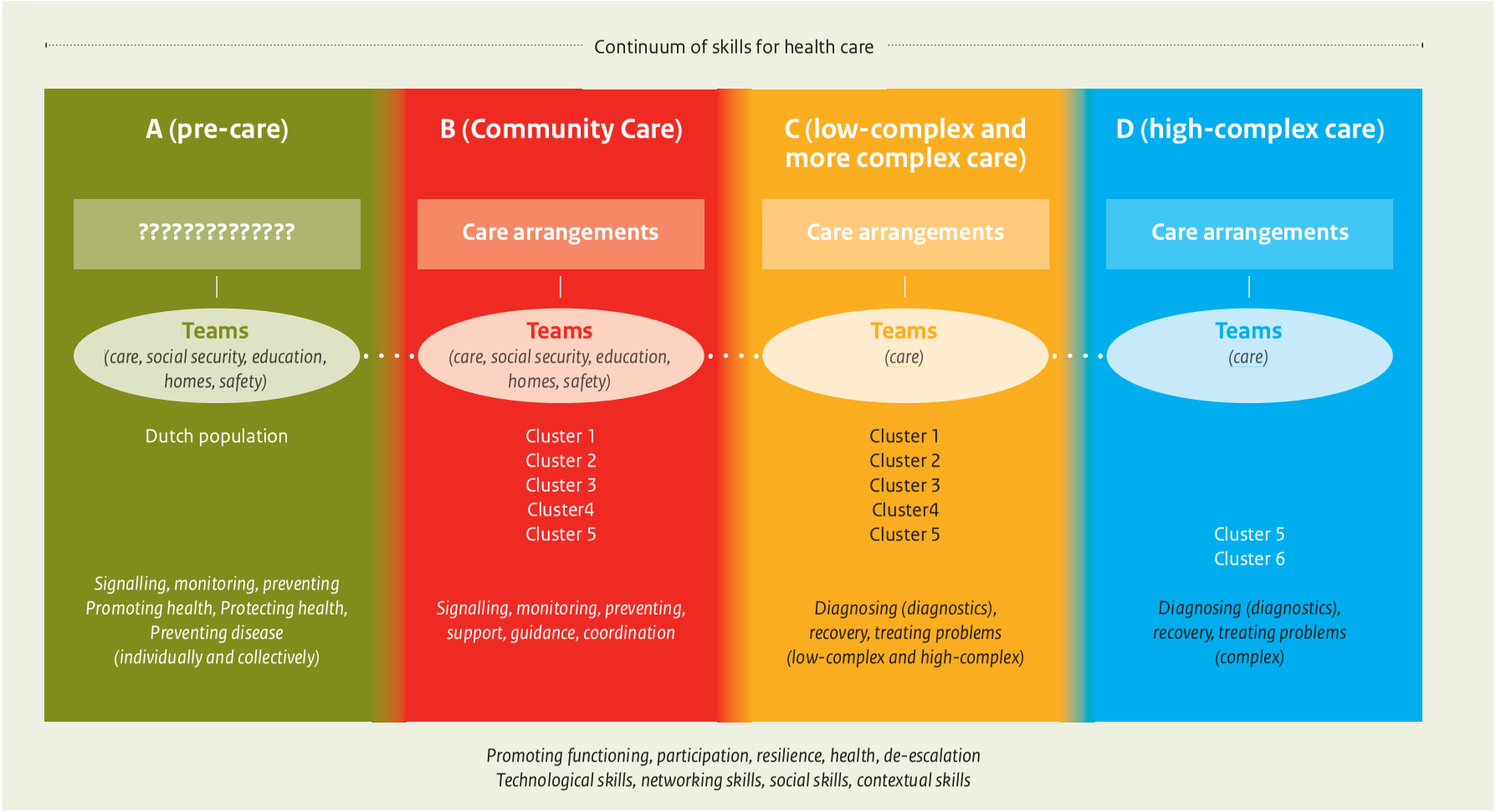


Figure 3.5: Continuum of skills for health care 2030, Committee Innovation Health Care Professions & Education, 2015.

1 Mission, vision and strategy

The demand for care is changing. We are living longer and often have numerous chronic disorders. At the same time we want more say and we increasingly want to retain control over our own health and care. Care and treatment are shifting in the direction of encouraging, recovering or at least retaining as far as possible opportunities that permit functioning and participation. The society in which we live is changing rapidly and becoming increasingly complex. The changing demand for health care, in combination with social and technological developments, as well as transitions in health care that have already been initiated, make new demands on how professionals work. This requires different tools and different behaviour on the part of both professionals and citizens.

1.1 Mission

The Committee's mission is to develop a continuum of skills for health care and a suitably customised continuum of education [3], customised towards health care that allows people to live as independently as possible and to function within their own home environment. This demands a turnabout in health care. The key aspect is not our citizens' diseases or disorders, but how they function, their resilience and self-management. The point of departure is not the existing supply of care, professions and education, but the future demand for health care, whereby the focus is on what is necessary and not on what is possible. A future-oriented continuum of skills is dynamic and demands regular updating in order to be able to anticipate changes in care requirements.

1.2 Vision

The Committee has formulated three points of departure.

Three points of departure
1. Functioning is the key
2. A new definition of health
3. The demand for care in 2030

Functioning is the key

Central to the Committee's vision is the way people function and health care contributes to its promotion. How people function is about people being capable of living the life they want to lead. It encompasses physical, mental and social functioning. The WHO's (2001) International Classification of Functioning, Disability and Health (ICF) describes functioning in terms of functions (physiological and mental characteristics of the human organism), activities (parts of a person's actions) and participation (participation in social life). Physical and psychological problems can lead to serious hinder and a reduction in daily activities.

Functioning problems are determined not only by a person's state of health. Apart from the process of aging and chronic disorders, personal and external factors also play a role, such as a person's current life-phase and their home environment (home, work, physical and social environment). In fact, functioning is an individual matter, though it also has contextual and collective dimensions. Health care should be in keeping with what people feel is important to be able to continue to function in their daily life, but it also involves interventions on a collective level, for instance, those that focus on people's living environment.

A new definition of health: resilience and self-management

Giving functioning a central role requires a new dynamic definition of health (Huber et al., 2011): 'Health is the ability to adapt and to self-manage in the face of social, physical and emotional challenges'. Within this concept healthy means being able to adjust to disruptions, having resilience, the ability to maintain or regain balance from a physical, mental and social point of view.

3 See appendix 1 for definitions of the concepts.

The new concept of health has been formulated as a response to criticism of the WHO's definition that is still used and which dates from 1948. That definition describes health as a state of full physical, mental and social well-being. Almost no-one is healthy according to this definition. According to critics, the ideal of complete well-being contributes to medicalisation. What's more, the static definition says nothing about the dynamic ability of people to (learn to) cope adequately with disease or handicaps.

Based on the demand for care: what is needed in 2030?
If we focus on the functioning of our citizens, then the central question is: what will this require? What care contributes to retaining or recovering the ability to function? Insight into the future demand for care provides substantiation for what forms of care, professions and education will shortly be required. The year 2030 was chosen as a speck on the horizon: sufficiently far away to be able to realise the necessary changes, but close enough to describe future realities. This insight will also enable us to determine which innovations will and will not meet the future demand for care.

Placing how people function at the centre means, in the first place, that the expected functional problems have to be mapped out. Up till now, prognoses always related to diseases and disorders. An important addition will be how the elderly function, based on functioning profiles developed by the TNO (Chorus et al., 2014a-d; see Chapter 2).

1.3 Strategy

The Committee's strategy is a design trajectory, with the expected demand for care in 2030 as point of departure and with a number of building blocks for elaborating upon and substantiating the above-described vision. The prognosis for the demand for care indicates what will be necessary in 2030, with the focus on how citizens function, their resilience and self-management. The next matter to be discussed is what this means for health care in the future, how it will be given, who (citizens and professionals) will be giving it and where. Designing health care in 2030 forms the basis for a new continuum of skills for health care and a continuum of appropriate education. The next chapter elaborates upon the approach.

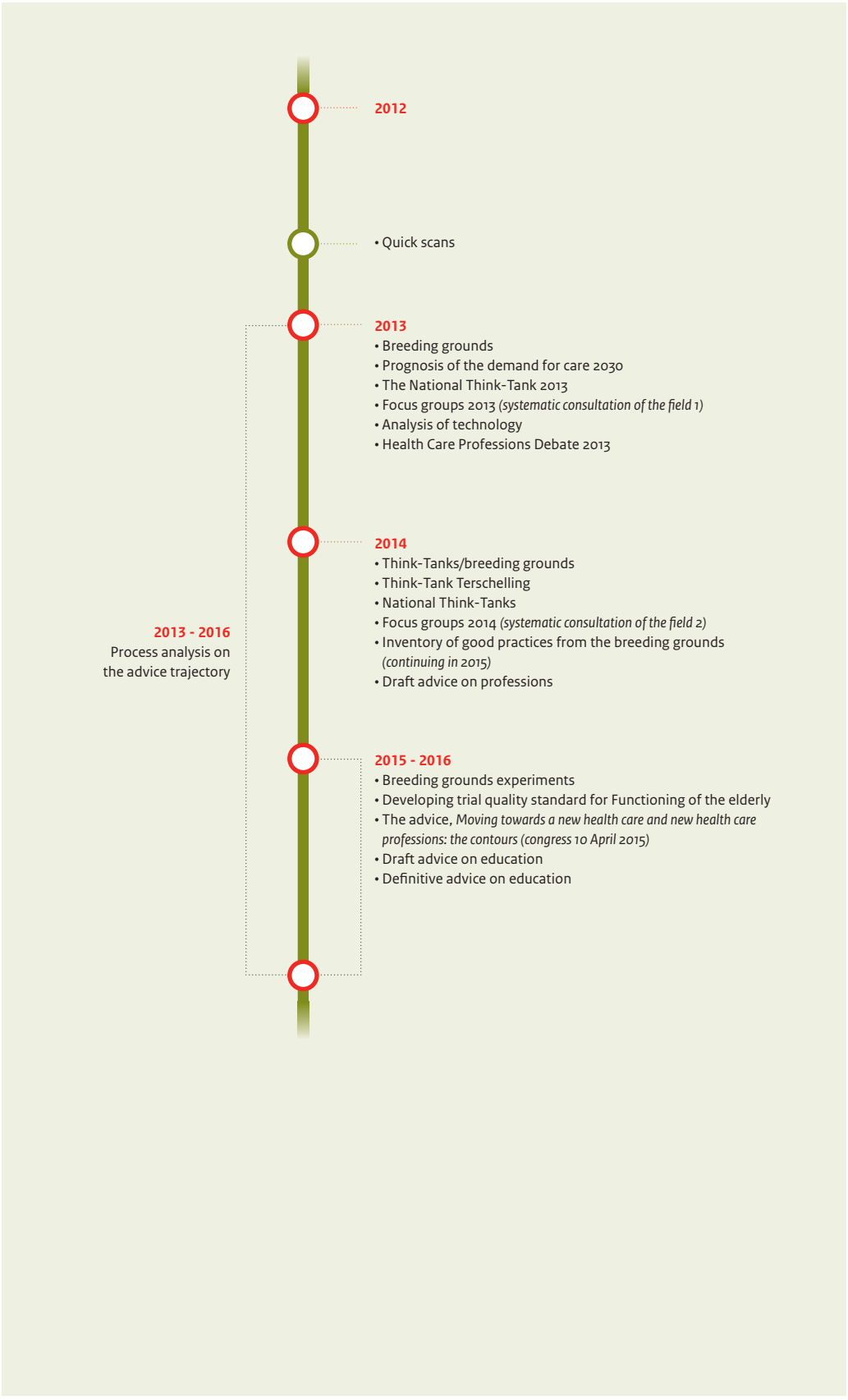


Figure 2.1: vertical timeline with building bricks on the left-hand page

2 Approach and results

In this chapter we describe the main outlines of the advice trajectory and the results. Figure 2.1 is a diagrammatic representation of the approach. Appendix 2 includes a summary of the results of the various building bricks.

2.1 Approach

The advice is about all health care: hospital care, mental health care, care of the handicapped, care of the elderly, public health care, primary health care, juvenile health care and social support. The point of departure is the demand for care, or in other words: what will be needed in 2030? The prognosis for the demand for care in 2030 has resulted in a proposal for health care in 2030 that will form the basis for a new continuum of professions and a continuum of appropriate education.

The approach is characterised by intensive interaction with the field and it is an iterative process: step-by-step progress, making progressive use of insight in each new phase. The wager is that the advice issued is broadly supported and the proposed innovations in health care, professions and education have already started in practice. A great many care-related innovations are already in progress and it is important to latch on to these and to examine them in the light of what is needed.

2.2 Building bricks

The advice trajectory started during the course of 2012 by replying to four major questions by means of *Quick scans*:

- Demographic and epidemiological developments (Van der Kwartel et al., 2012).
- Current health care professions and education (Van der Velden et al., 2012).
- Innovations in health care professions and education (Spieker, 2012, 2013).
- Observed developments and the direction of solutions from recent reports and advice (Van Vliet; Spieker and Kaljouw, 2013).

In addition to national consultations, the Committee opted for a regional focus with so-called *breeding grounds*. There were two reasons for this. The first: regional differences in developments in the demand for care (Van der Kwartel et al., 2012) and in health care professions and education (Van der Velden et al., 2012). The second: the Committee wants to continue along the lines of what is already taking place. Both locally and regionally, innovations in health care and in professions and education increasingly involve cooperation. In 2013 and 2014 four breeding grounds started with participants from health care parties in the region or city concerned. The first breeding ground to start was in the province of Friesland, followed by that of Amsterdam and Amstelveen. This was followed, in 2014, by Rotterdam. The last breeding ground is Heerlen. This focuses in particular on the deployment of technology for the elderly so that they can continue to function and participate independently.

There are three sequential phases to activities in the breeding grounds: the analysis phase, the breeding ground phase and the experimental phase. Based on three breeding grounds in the analysis phase – Friesland, Amsterdam & Amstelveen, Rotterdam – the TNO has estimated *the future demand for care* by making prognoses, based on demographic developments (2012-2030), of functioning problems, chronic disorders, mental disorders, psychosocial problems and mental handicaps (Chorus et al., 2014a-d). To do this the TNO make use of the available local or regional sources of data. If no local or regional data were available, national data were used. For prognoses of functioning problems of the 65+ age group, the TNO developed an empirically based method: Functioning profiles (see appendix 2).

In 2013 the Committee acted as topic-partner of the *National Think-Tank* which was deliberating on the future demand for health care. Discussions were held with 574 experts, various care-providers were accompanied during their work and an extensive literature search was carried out. The results are described in the final report 'An end to doctoring. 10 solutions for Resilient Health Care' (The National Think-Tank, 2013).

Starting with an *initial systematic consultation of the field with 28 focus groups*, 277 care-seekers, professionals, administrators, policy-makers, researchers and educators (see appendix 3) gave their vision on taking care of health in 2030 (De Gruijter et al., 2014; Verwey-Jonker Institute, 2014). Similarly to the National Think-Tank, the objective was to think about what form health care should take in 2030. Their point of departure was the new definition of health (Huber et al., 2011): 'Health is the ability to adapt and to self-manage in the face of social, physical and emotional challenges'.

A team of experts also started work in 2013 on an *analysis of technology*. Supplementary to this, in 2014 a number of experts were interviewed (see appendix 4). The initial results of the advice trajectory to date were presented at the Health Care Professions debate on 13 December 2013.

The prognosis of the demand for care in 2030 in the three regions formed the point of departure for the *Think-Tanks* for examining in depth, *in the breeding grounds*, what care will shortly be required. The Think-Tanks included participants from parties who participated in the breeding ground (care-consumers, care organisations, health insurers, educational institutions, municipalities, province). Independently of one another, the Think-Tanks designed the health care landscape in 2030 based on prognoses of the demand for care in their province or city. Central questions were: what can people do for themselves, what possibilities are provided by technology and e-health, what contribution can the social network make, what professional care will be necessary and where can this be organised? There are many similarities in the outcomes of the Think-Tanks in the breeding grounds and they are in line with the outcomes of the 2013 focus groups. Based on these, the Committee developed the ABCD model that describes care in 2030 in four care domains: pre-care (A), community care (B), low-complex to more complex care (C) and high-complex care (D).

The outcomes of the Think-Tanks in the breeding grounds have been elaborated upon and fine-tuned in a *Terschelling Think-Tank* that lasted several days, formed by participants of various backgrounds and ages (aged 20+ up to and including a group aged 60+; see appendix 3). The outcomes of the Think-Tank in Terschelling were subsequently examined, in *11 national Think-Tanks*, with interested parties and people from the field, such as nurses, GPs, medical specialists, administrators, executive boards, freelancers and elderly citizens (see appendix 6).

In the autumn of 2014 there was a *second systematic consultation of the field with 34 focus groups*, in which about 370 care-seekers, professionals, administrators, policy-makers, municipalities, researchers and trainers (see appendix 3) reflected on the four care domains: pre-care, community care, low-complex care and high-complex care, and the role of care professionals in these domains.

The results formed the basis for developing the current advice, *Moving towards a new health care and health care professions: the contours*. In line with this, *advice on education* will be formulated during the coming period.

In addition we are working together with Zorginstituut Nederland's Quality Institute and the TNO on a *trial quality standard for Functioning of the elderly*, based on the functioning profiles developed by the TNO. The purpose of the trial quality standard is to improve the quality of care for the elderly by contributing to maintaining and re-establishing the daily functioning of the elderly where possible and offering them support where it is required.

Researchers at the Verwey-Jonker Institute are following the entire advice trajectory via a process analysis. The aim is to be able to describe the working method of the advice trajectory and its results, and to ensure these are transferrable. Part of this is the inventory of good practices. The key aspect of this is identifying effective elements in care practices in the breeding grounds. In addition, researchers are following effective elements in the field of developing a vision, method of work, context, developing a basis of support and the actual transferability of aspects of this advice trajectory (see appendix 5).

2.3 Need for innovation

The quick scans illustrated considerable fragmentation in health care, professions and education. There are more than 2400 different professions and functions in health care and related to health care and 1700 different health care training courses (Van der Velden et al., 2012). Innovations are taking place, but these are taking placed based on the existing range of professions and within the borders of each individual discipline. Innovations in professions and education are determined primarily by subsidies, the market, far-reaching specialisation, task-redistribution, upwards pressure, individual identity and technology (Spieker, 2012, 2013).

It is obvious that increased aging will lead to an increase in the number of people with several chronic disorders (Van der Kwartel et al., 2012) and will therefore place a lot of pressure on health care. However, the focus on disease and care provides insufficient points of departure for substantiating what is needed in the way of health care and, consequently, in the way of professions and education. Focussing on disorders does not provide insight into how individuals and populations function in everyday life and the problems they encounter. Citizens feel a growing need to be able to take control of their own life. This is not really possible within the present health care system.

The Committee places how citizens function central as an indicator of public health. This implies an approach based on the possibilities of individuals and the best way of supporting these, not only via health care, but also via other domains. In other words, the Committee is in favour of shifting the focus from disease and care to health and behaviour (RVZ, 2010). Care should therefore focus on the promotion, maintenance or recovery of functioning. Health care is there to serve how people function and enables them to function independently as best they can and for as long as possible in their own home environment.

The results of the quick scans emphasize the need of a new continuum of professions and of developing a continuum of appropriate education. Technological developments are taking place rapidly, while their application in practice and education is lagging behind. The rapid developments and the increasing complexity of health care are no longer in line with current methods of teaching and carrying out research. Lastly, the way in which care is organised and funded hampers the development – and in particular the introduction – of (proven) innovations. Removing obstacles and creating positive stimuli is an important condition to innovation.

2.4. Shared vision of health care

The objective of the first consultation of the field was to think about what health care should look like in 2030. The point of departure of the discussion during the first consultation in the field was the new concept of health (Huber et al., 2011): ‘Health is the ability to adapt and to self-manage, in the face of social, physical and emotional challenges’.

In general, attitudes towards the new concept of health are positive and people accept the importance of shifting the focus from disease and care to health and behaviour (De Gruijter et al., 2014). Participants did make a number of serious comments about the new concept. The most important comment is that not all citizens will be able to manage their own health. Furthermore, the new concept could affect the principle of solidarity in health care, because responsible citizens with a healthy life-style may no longer be willing to co-fund care that is needed due to the unhealthy choices of other citizens. Another important point demanding attention is that other parties must give citizens leeway to claim ownership of their own health.

Both the National Think-Tank 2013 and participants in the focus groups during the first consultation of the field share the vision that a lot more must be done to promote healthy behaviour and that this encouragement should take place everywhere: in health care, in schools, at work and in the neighbourhood. The broadly shared expectation is that citizens – with the exception of those who are vulnerable – will accept more responsibility for their health and will voluntarily help others, even if when faced with their own health problems. This makes investing in one’s own (digital and physical) networks even more important.

Increasing mutual dependency is unavoidable. This requires citizens being able to ask for help. This is a skill that does not come automatically in our society, with its focus on independence. For instance, children's upbringing and education should prepare them to cope and to take proper care of themselves. Continued education is important for adults and the elderly, particularly as we will be working for longer. Participants recommend working towards networks that are also accessible for people with severe chronic handicaps, e.g. GGZ clients and people with a mental handicap, as up till now these people have few opportunities for remaining active.

2.5 Prognosis of the demand for care in 2030

Based on demographic developments (2012-2030), and using local and regional data, the TNO has made prognoses of the demand for care for the breeding grounds Friesland, Amsterdam-Amstelveen and Rotterdam (Chorus et al., 2014a-d). The TNO has developed nine functioning profiles (see table 2.1) for how the elderly function. In addition prognoses were made of chronic disorders, psychosocial problems, psychological disorders and mental handicaps for various age groups, e.g. the elderly, those who are older than 19 years and young people[4]. Due to its specific focus on technology, the breeding ground Heerlen only made use of the prognoses for how the elderly function[5].

Because of the available data files, the functioning profiles apply only to the elderly (65+) and to their physical functioning, whether or not in combination with dementia. Furthermore, the current data files do not permit a combination with disorders and psychosocial problems.

Functioning profiles of the elderly (65+)		
no noticeable physical problems	without dementia	1
	with mild/moderate dementia	2
mobility problems	without dementia	3
	with mild/moderate dementia	4
mobility problems and problems in self-care	without dementia	5
	with mild/moderate dementia	6
excessive (severe) physical problems including incontinence	without dementia	7
	with mild/moderate dementia	8
severe dementia, requiring care at the level of intramural care		9

Table 2.1: Functioning profiles of people aged 65+ (TNO).

The functioning profiles were developed based on representative data on how people aged 65 years and older function. A statistical analysis revealed that 12 indicators lead to 4 physical functioning profiles (see figure 2.2). These indicators relate to perceived health, incontinence, activities of daily living (ADLs) and self-care activities. How the elderly function is also affected by mental factors. An important mental factor is dementia. Severe dementia leads to a rapid decline in general functioning and was therefore included as a separate profile. Mild/moderate dementia also affects how people function. For this reason the 'physical profiles' distinguish between the presence or absence of mild to moderate dementia.

The prognoses are summarised in appendix 2. The overviews per breeding ground, with the prognoses for 2030, are included in appendix 6. The following is a summary of the most significant trends.

Most significant trends

Demographic developments: rapid increase in the number of (very old) elderly people, but not evenly distributed
The number of elderly persons (65+) is growing rapidly: in Amsterdam by more than half and in Friesland by almost half. Rotterdam is lagging behind due to the dip in population growth in 1945 as a consequence of the Hunger Winter. This resulted in hardly any children being born. In Friesland the number of people

4 *Differences exist in how data are collected per region or per municipality, e.g., on age groups and (risk of) problems and disorders (see the TNO reports for the data files used). In 2012 a start was made in harmonising national and local Monitors for Public Health for adults and the elderly. The monitor for young people will start later (GGD Nederland, 2012).*

5 *De prognosis of Heerlen were not yet available for this report. The report will be available on the website (Chorus et al, 2014e).*

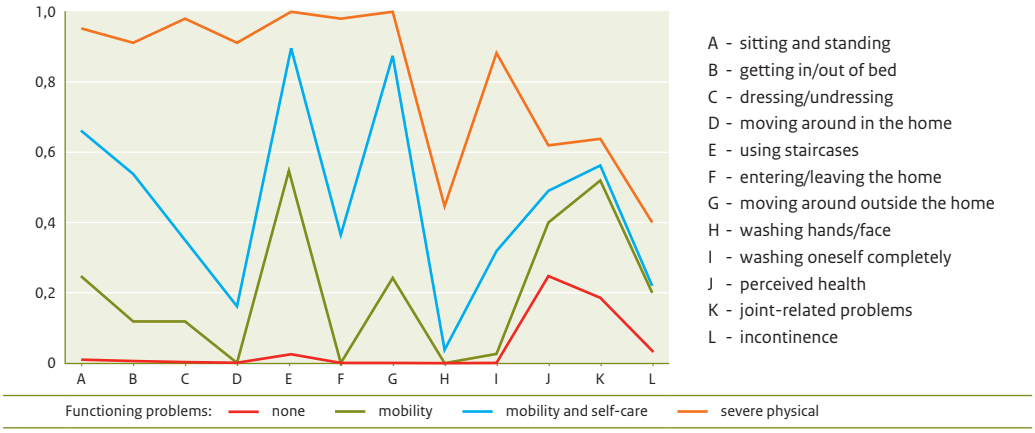


Figure 2.2: Chance of functioning problems, per profile (TNO, Perenboom et al., in preparation).

aged 75+ is increasing fastest. In Amsterdam there are districts (Amsterdam Centre and Amsterdam East) where the number of (very old) elderly persons has almost doubled or more than doubled. In Friesland, moreover, the number of young people and adults aged 19 to 64 years has fallen. Demographic developments, in combination with the home situation of many elderly persons, e.g. in the centre and east of Amsterdam and in rural districts of Friesland, present enormous challenges for policy on enabling people to continue living at home.

More than half the adult population in the breeding grounds have one or more chronic (somatic) disorders, although this says nothing about how they function

Due to demographic shifts alone, the number of people with one or more chronic disorders is increasing in all breeding grounds. The number of adult persons with several chronic disorders is larger than the number of people with a single disorder. The most prevalent by far are locomotor disorders followed by asthma/COPD and incontinence in Friesland and Amsterdam, and by asthma and diabetes in Rotterdam. Dementia is the fastest climber, although its prevalence is relatively small in comparison with the other chronic disorders. Chronic disorders may involve limitations in how people function, although this is not automatically the case.

The number of elderly persons (65+) with physical functioning problems (whether or not in combination with dementia) is growing by almost fifty per cent in the breeding grounds

As a result of demographic shifts, both the number of elderly persons with functioning problems and the number of elderly persons without functioning problems is growing by almost fifty per cent in the breeding grounds. Most prevalent functioning problems are problems relating to mobility, with or without mild to moderate dementia. Mobility problems also exist in the age group 20-64 years. Functioning problems, which depend not only on the medical situation, could threaten the ability of the elderly to cope. In addition to the aging process and chronic disorders, personal factors and environmental factors also play a role. This demands measures aimed at preventing functioning problems, reinforcing opportunities to maintain and promote the ability to cope and influencing the non-disease-related factors that threaten this.

Socio-economic status in de breeding grounds is rising, but differences persist

Socio-economic status (SES) is related to health problems. Elderly persons (65+) with a low socio-economic status have more functioning problems and (multi-) morbidity in all breeding grounds. SES is expected to rise in all breeding grounds. This will cause a shift in the number of elderly persons with (multi-) morbidity and functioning problems with a low, moderate and high SES, but differences will persist.

Number of people with psychosocial problems and psychological disorders is considerable and increasing

The number of people with psychosocial problems (loneliness, anxiety, depression) in the breeding grounds is considerable and rising. For instance, in Amsterdam and Rotterdam 14% of people aged 19

years and older run the risk of loneliness.[6] The number of people with psychological disorders is also considerable and rising. In 2030, on average 11% of the adult population of Amsterdam and Rotterdam run the risk of a psychological disorder. In Friesland as many as 19% of the population aged 18-64 years will have a psychological disorder in 2030[7].

Even young people already have chronic symptoms/disorders and psychosocial problems
Among young people too, one can already speak of chronic symptoms/disorders and psychosocial problems, although due to demographic developments these numbers are barely increasing (in Amsterdam and Rotterdam) or even falling (in Friesland). In 2030 the most prevalent chronic problems in the group aged 12 years and older (Amsterdam and Friesland) are headache, asthma and allergies or eczema. In the group aged 4-12 years (Rotterdam) these are eczema, allergies and asthma/bronchitis.

2.6 The role of technology

Both the focus groups (1st and 2nd rounds) and the Think-Tanks emphasised that technology has an important role to play in health care innovation (see appendix 3). Technology could empower care-seekers and ensure that people can continue to live at home for longer. The experts consulted also believe that technology, in particular e/m-Health (mobile health), will contribute to the emancipation of care-seekers. For instance, e-Health can provide a simple assessment. For instance, e/m-Health can be used for people with mild psychological problems, whether or not in combination with face-to-face contacts. The experts also commented that self-management with the aid of e/m-Health will not be available to everyone, excluding, for instance, vulnerable groups with a low socio-economic status.

Due to developments in computer technology, biotechnology, nanotechnology, robotics, AI (Artificial Intelligence) and 3D/4D-printing, according to the experts, technology will have a dominant place in prevention, diagnostics, support and treatment and also in self-management. In 2030 citizens will be able to organise a lot themselves, at home or in the neighbourhood, with care from a distance. This will enable care professionals to fulfil a more implementing, guiding and coordinating role. This could lead to a reduction in the number of specialisations and professional groups.

The experts also have certain doubts regarding the possibilities and the role of technology. Expectations for the next 15 years are that developments will grow incrementally, i.e.: a growth in numbers. Robotics will increase accuracy in surgery, but it seems that a robot that thinks for itself and carries out operations independently is still a long way off. Homes are being robotised and robots will even be used to carry out relatively simple activities in health care. Although a lot is possible with technology, there is a lack of orchestration. As a result developments are small-scale and fragmented and not taking place as fast as they could.

2.7 Care in 2030: the ABCD model

Based on the Committee's vision and points of departure, and the broad basis of support among care-seekers, professionals, administrators, educators and local government (De Gruijter et al., 2014, 2015, see appendix 2), the Committee is introducing the ABCD model. This model presents an integral and dynamic approach to Dutch health care in 2030 and professional interventions that are relevant within this context.

6 *For mental disorders and psychosocial problems and disorders among young people, it was not really possible to compare and collate the data from the breeding grounds. This is due to differences in how data are collected per region or municipality, e.g. over age groups and risk of problems and disorders (see the TNO reports for the data files used). In 2012 a start was made on harmonising the national and local Monitors for Public Health for adults and the elderly. The monitor for young people will start later (GGD Nederland, 2012).*

7 *In Amsterdam and Rotterdam data collection focuses on the risk of loneliness and mental disorders.*

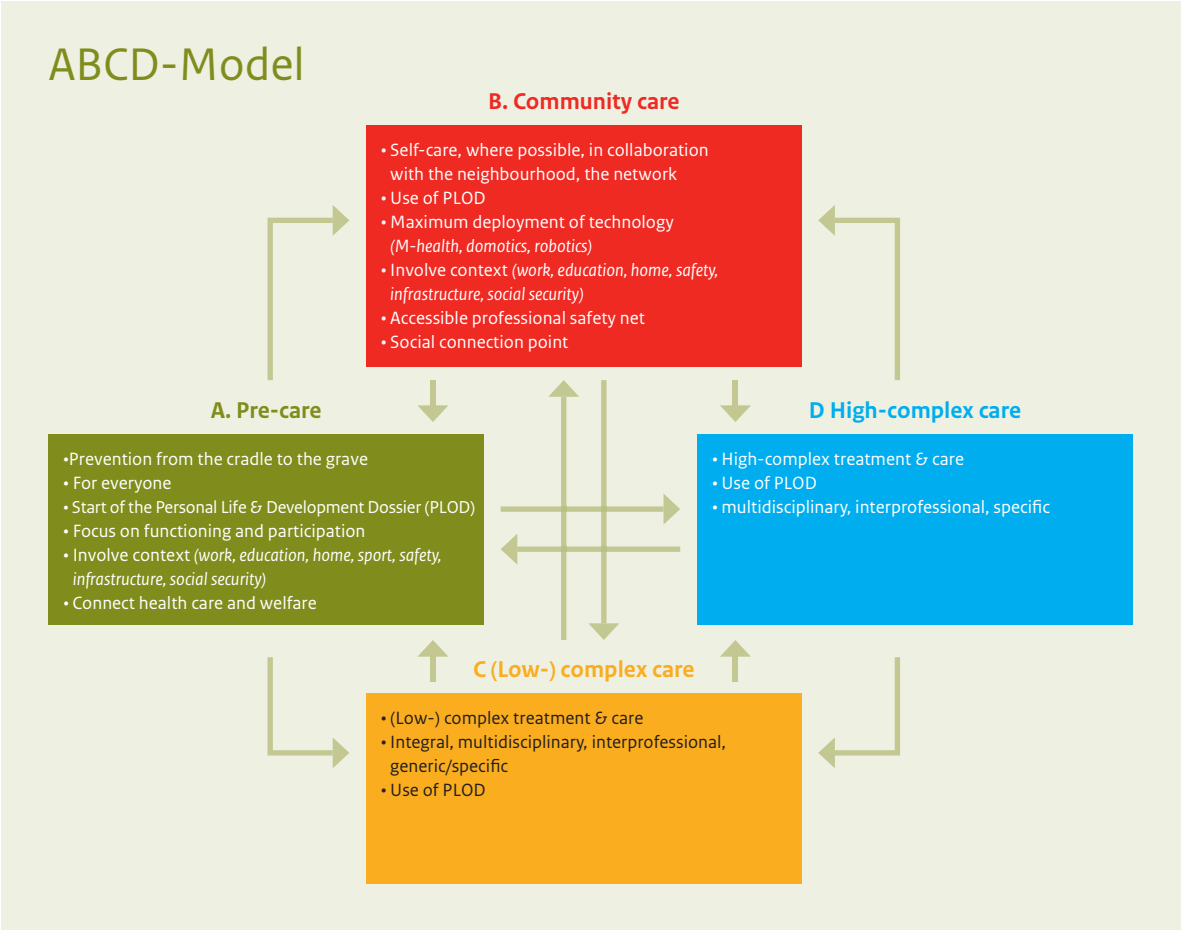


Figure 2.3: ABCD model, Committee Innovation Health Care Professions & Education, 2015.

Pre-care (A)
Pre-care involves the entire Dutch population, it belongs to all or us and is there for all of us. Pre-care is only marginally related to health care, as it is more about social involvement and personal responsibility. Pre-care is in particular care for citizens, by citizens, and it focuses on the prevention of problems and disorders, i.e., on a healthy life from the cradle to the grave. Everyone has a personal life & development dossier (PLOD [acronym based on the Dutch name).

Pre-care is only possible with an integral approach and attention being paid to health skills in teaching, work, the neighbourhood and health care. Integral also refers to removing the barriers that exist in health care (zero, 1st, 2nd, 3rd line). Various integral forms of organisation will come into being. Care and welfare are inextricably linked to one another. This is about not only how people function in their home environment but also about target groups or populations such as young people, the working population, the elderly, people with an increased risk of certain problems, people in vulnerable situations. Pre-care focuses on developing skills to be able to cope with setbacks in a range of fields (psychological, social, physical) and resilience. Pre-care also focuses on recognising signs, monitoring health care risks and influencing them by protecting health, promoting health (influencing behaviour) and preventing disease. This is important not only to us as individuals but also collectively. Examples of health risks are excessive alcohol abuse, experimental drugs, unsafe sex or travelling to high-risk locations. An example of health protection is road safety. Examples of disease prevention are vaccination and screening.

Community Care (B)
People who need care want to organise it, as far as possible, themselves, together and in their neighbourhood. This involves a lot of facilities, including home-building. Homes and neighbourhoods must

offer opportunities for preventing functioning problems and also be suited to people with functioning problems. For instance, efficient street lighting so that people feel safe at nights and wide footpaths that provide room for walking with a rollator. Technology plays a major role in promoting continued independent functioning in one's own home environment. People are making a lot of use of digital information. A 'snapshot of the neighbourhood', updated regularly, shows what is needed in a neighbourhood. People organise as much as they can independently and together, but where necessary, professional support or treatment is available. There will be a single contact who can easily be reached. There will be a professional safety net for people who avoid health care. On a local level, there will be coordination points (for instance within the municipality or some other social point of reference) where A, B and C come together. Anything that can be done at home will be done at home; where they can't, consultation or a referral will take place. This requires an expert assessment and an indication.

Low-complex to more complex forms of care (C)
Low-complex to more complex forms of care is basic care and specialised care, both for acute and for planned care, with a high level of predictability regarding the necessary quantitative and qualitative deployment and the course of a disease. The assessment that preceded treatment is of major importance here. In principle, C will be available to everyone, but not as a matter or course. Functioning is the point of departure. What constantly has to be examined is what is necessary and not what is possible. Technology also plays a major role in C, not only during treatment, as technology is also an important resource for communication and information. Functioning as point of departure also means that people are able to regain their independence as quickly as possible. Low-complex and complex care can be provided in various organised forms, depending on the scale involved.

High-complex care (D)
High-complex care includes extremely complex treatment with a low degree of predictability of the necessary quantitative and qualitative deployment and the course of a disease, whereby interventions will continually be adjusted based on diagnostics and observation, and enormous health risks are involved. This point of departure will result in a concentration of high-complex care. Here also, functioning is still the point of departure. In many cases, after treatment people will again be more or less capable of functioning (independently). High-complex treatment will be designed within a multidisciplinary and high-tech environment. High-complex care for people with severe mental and/or psychological disorders, elderly people with severe dementia and people in a terminal phase will as far as possible be organised in small-scale care institutions (homes) or at home.

Summarising
The ABCD model illustrates a dynamic care process, the main aim of which is to ensure that our citizens function independently. The central focus is not supply (what is possible) but demand (what is necessary). This implies a professional integrated approach to health care in its entirety (ABCD) and has enormous consequences for the health care professions. Chapter 3 discusses this in detail.

3 Advice

The ABCD model described in chapter 2 forms the foundation of a new continuum of skills for professional health care in 2030. This chapter elaborates upon this basis to arrive at a dynamic continuum of skills whereby professional interventions focus on promoting functioning.

3.1 Approach

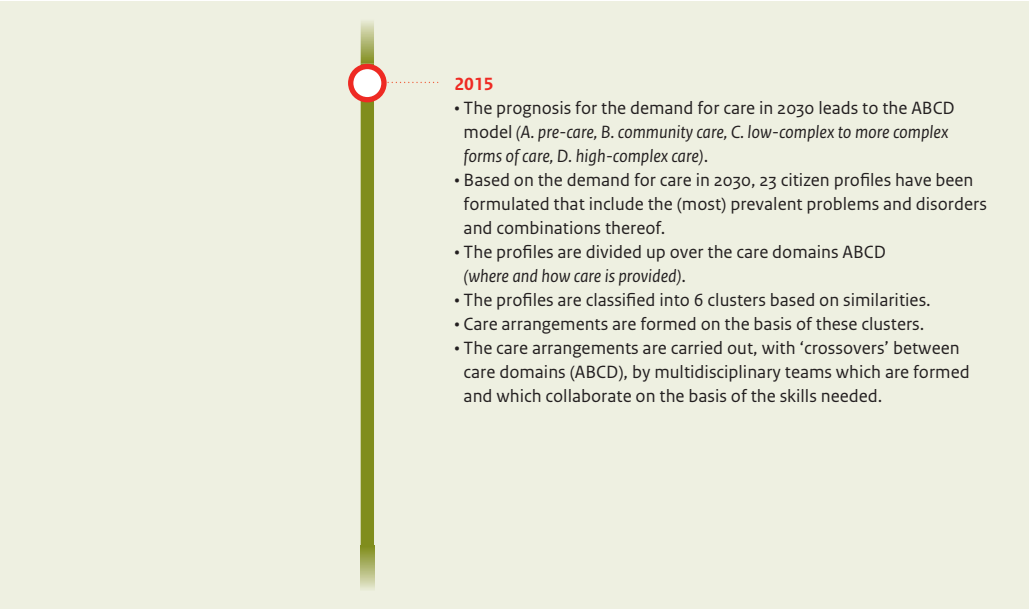


Figure 3.1 describes the design process.

The prognosis of the demand for care in 2030 in the three regions formed the point of departure for the Think-Tanks to examine in depth what care will soon be required in the breeding grounds. Based on this, the Committee developed the ABCD model, which defines care in 2030 in four care domains: pre-care (A), community care (B), low-complex to more complex care (C) and high-complex care (D). Subsequently, based on the TNO prognoses (Chorus et al., 2014), the Committee formulated 23 profiles that describe the 17 million citizens in 2030 (see 3.2). The profiles were then put before a design team. The design team divided the 23 citizen profiles over the ABCD care domains by allocating the domains, per profile, with percentages up to a total of 100% (see 3.3). The design team then clustered the citizen profiles based on similarities (3.4). Based on these clusters, care arrangements will be compiled that will be carried out by multidisciplinary teams that have the necessary skills.

3.2 Citizen profiles

An important addition to the existing prognoses is how the elderly (65+) function, using functioning profiles that were developed by the TNO (Chorus et al., 2014). Limited by the available data files, the functioning profiles relate only to the elderly (65+) and to physical functioning, with or without dementia. Furthermore, the current data files do not facilitate their combination with, e.g., chronic disorders and psychosocial problems.

Based on a number of considerations, as a follow-up the choice was made to adopt a more qualitative approach by formulating 23 citizen profiles that are made up of the (most) prevalent problems and disorders and combinations of these.

Firstly, combinations of disorders and problems will become more prevalent due to increased ageing, as can be seen from the chronic disorders (multimorbidity). Secondly, there will be a large group of citizens

without problems and disorders, particularly if a lot of effort goes into pre-care. Thirdly, there will also be a large group of citizens with disorders that are not associated with limits in how they function, for whom, due to self-management, little or no professional care will be required. A demand for care will only arise when chronic disorders lead to (considerable) limits in how a person functions on a daily basis. The degree and severity of disorders and problems, as well as personal and external factors, determine the intensity of the demand for care. Fourthly, in addition to chronic disorders and problems, there will also be temporary problems, acute or otherwise. These may also vary in severity and complexity (low-complex to high-complex problems). Combinations with other disorders and problems influence the demand for care and the care required. An example is pneumonia in an elderly person with several chronic disorders, physical functioning problems and increasing dementia.

The following is a description of the 23 citizen profiles. The first profile is of citizens without a problem or disorder. The other 22 profiles are made up of the (most) prevalent problems and disorders and combinations of these. The profiles are not 100% exhaustive, but do account for most of the demand for care in 2030.

Citizen profiles

1. No problem
2. Low-complex problem
3. One or more chronic disorders[8]
4. Functioning problems[9] and chronic disorder(s)
5. Psychological disorder
6. Psychological disorders and chronic disorder(s)
7. Functioning problems, chronic disorder(s), psychosocial problems
8. Psychosocial problems
9. Psychological disorder, psychosocial problems and chronic disorder(s)
10. Psychological, functioning problems, chronic disorder(s)
11. Low-complex problem, chronic disorder(s)
12. Low-complex problem, functioning problems, chronic disorder(s)
13. Low-complex problem, functioning problems, psychosocial problems
14. Low-complex problem, mental disorder, chronic disorder(s)
15. Low-complex problem, psychosocial problems, chronic disorder(s)
16. Low-complex problem, psychological disorder, functioning problem, chronic disorder(s)
17. High-complex problem
18. High-complex problem, chronic disorder(s)
19. High-complex problem, functioning problems, chronic disorder(s)
20. High-complex problem, functioning problems, psychosocial problems
21. High-complex problem, psychological disorder, chronic disorder(s)
22. High-complex problem, psychosocial problems, chronic disorder(s)
23. High-complex problem, psychological disorder, functioning problems, chronic disorders

3.3 Distribution of citizen profiles over the health care domains (ABCD)

The design team divided the 23 citizen profiles over the ABCD health care domains by allocating percentages to the domains, per profile, up to a total of 100%. The following questions were asked: 'Does the profile result in a limit to functioning? What is needed? What can the citizen do and what can their network do? What can be done in A, what in B, what has to be done in C and what has to be done in D?' The per profile distribution over the health care domains is an estimate. This picture may alter. The distribution will alter according to individual situation, the context (patient-related and context-complexity).

8 Chronic somatic disorders including dementia.

9 Physical functioning problems, whether or not in combination with mild to moderate dementia (see TNO Functioning profiles).

After this the total Dutch population in 2030 (17 million) was divided up, based on an estimate [10], into the number of citizens without problems or disorders (profile 1) and the number of citizens with problems or disorders (profiles 2-23).

Figure 3.2 indicates the distribution of the 23 citizen profiles over the health care domains for the total Dutch population (17 million) in 2030. This clearly shows that the dominant area (green) is pre-care. This is where the greatest health gains can be achieved, although its share in health care is small compared to the input from other social domains.

TOTAL DUTCH POPULATION (17,000,000)

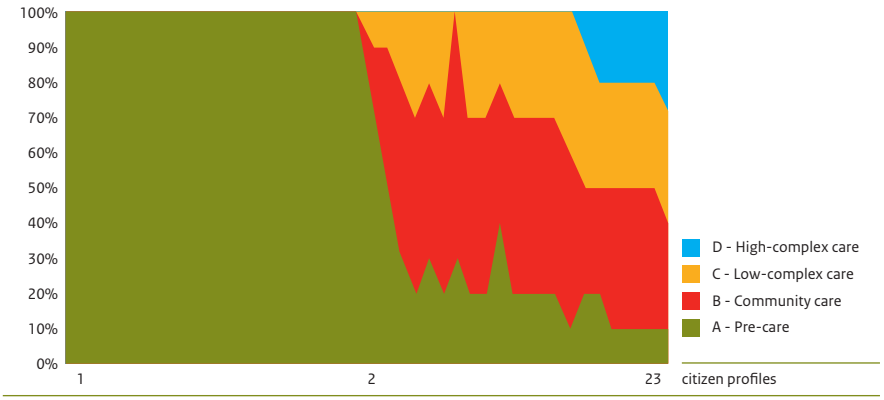


Figure 3.3: Distribution of the 23 citizen profiles over the health care domains (in percentages)

Afterwards the profiles were divided over the health care domains whereby profile 1 (no problems or disorders) was left out of the equation. Figure 3.3 shows the division of the 22 citizen profiles (10 million) with problems and/or disorders over the health care domains.

DUTCH POPULATION WITH PROBLEMS AND/OR DISORDERS (10 MILLION)

Figure 3.3: Distribution of the citizen profiles with problems/disorders (2-23) over the health care domains (in percentages)

What is noticeable is that all citizen profiles (x-axis) appear simultaneously in several health care domains. Most in A, B and C, a smaller group in A, B, C and D. Our citizens spend most time in their own environment (community care), and least time in high-complex care.

10 *The estimated 7 million without problems and/or disorders and 10 million with problems and/or disorders in 2030 is based on demographic development based on the TNO's local prognoses, the number of hospital admissions per year) and the number of visits to GPs per year.*

3.4 Clustering of the citizen profiles

A follow-up step was carried out by clustering the citizen profiles based on similarities. This creates opportunities to develop care arrangements, where necessary, without prejudice to customised solutions. There are various reasons why profiles and clusters may alter. The Committee advises carrying out a detailed investigation into the profiles and the clusters and assessing these over time, and where necessary adjusting them according to developments that take place in the next few years. In general, taking the way our citizens function as the basis demands a different method of data collection than the current one, e.g., to make it possible to combine data into profiles. It also demands different indicators such as self-reliance and social ties. Only then will it be possible to make 'a snapshot of the neighbourhood' and to establish which care arrangements and skills are needed. The Committee recommends carrying out in-depth research into profiles and indicators and designing data collection accordingly.

Clusters of citizen profiles

1. Only low-complex problems.
2. Chronic disorders without or with functioning problems and/or psychosocial problems.
3. Chronic disorders without or with chronic disorders, functioning problems and/or psychosocial problems.
4. Low-complex problems with (combinations of) chronic disorders, psychological disorders, functioning problems and/or psychosocial problems.
5. High-complex problems with (combinations of) chronic disorders, psychological disorders, functioning problems and/or psychosocial problems.
6. Only high-complex problems.

An important aspect is that the formulation of citizen profiles, and dividing them over the ABCD health care domains, clearly shows how the similarities between profiles are larger than the differences. In 2030 large groups of citizens will have functioning problems that are predominantly due to complaints relating to the locomotor apparatus. As this is the group of people who are older than 65 years, there is probably an overlap with numerous chronic disorders and psychosocial problems. This overlap also exists for people with a physical and/or mental handicap and people with a psychological disorder.

3.5 What will this mean for health care professionals?

In first instance, all actions of care professionals are based on the question 'What is needed in order to recover or promote functioning?' This is the basis to professional actions. The motor is not the supply of care, but the demand for care.

In 2030 the demand for care will require setting up four fields of care: pre-care (A), community care (B), low-complex to more complex care (C) and high-complex care (D). The development of profiles and clusters based on the TNO prognoses will clearly show that not only are the similarities between the profiles larger than the differences, but in particular that people are involved in several fields of care (A, B, C, D), and as a result, in continually changing settings. Sometimes this will be temporary, and sometimes long-term.

Another observation is that in 2030 there will hardly be any simple problems. Most people suffer from numerous problems. Context-complexity and patient-complexity determine what is needed in the various care domains in order to recover or promote functioning. To realise this, the Committee has introduced *care arrangements* that will be carried out by creating *collaborative multidisciplinary teams*.

This means that the in the future care professionals will have to fulfil *different requirements*. They will have to be capable of determining a citizen's care needs based on the perspective of how that citizen functions. The necessary care must contribute to how the citizen functions. These new care professionals will operate in various fields of care and in varying settings and a large part of their work will be generalist.

The Committee sees this as an enormous challenge for the professionals. Care professionals will not

only focus – in dialogue with our citizens – on the demand for care, but they will also jointly focus on similarities (the total) and not only on differences (the symptoms or disorder). This demands a completely different approach to the present one. Similarities lead to a generalist approach, differences demand customised solutions. Both are important and both will be expected of professional teams of care-providers.
Care professionals will be part of a dynamically formed team whose work is multidisciplinary. The citizen is a part of this team and, where possible, will even take charge. A citizen who is unable to do this is supported by the team manager (arbitrator), who may change, depending on the situation. Teams are formed based on the demand for care, which means their composition and/or location can change. Naturally, such teams will also supply customised work. Figure 3.4 illustrates care arrangements by multidisciplinary teams for clusters of citizen profiles.

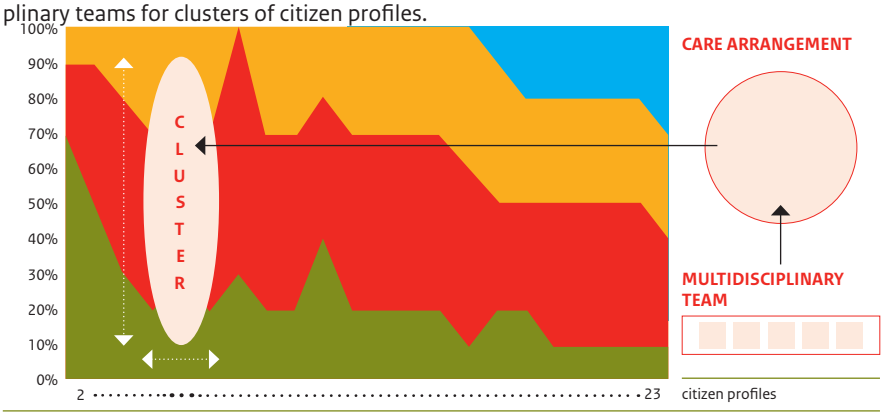


Figure 3.4: Care arrangements by multidisciplinary teams for clusters of citizen profiles.

The work of most care professionals is generalist and they move between A, B, C and D. They collaborate, inter-professionally, in multidisciplinary teams. Where possible, citizens and their families will be part of the team. Choices and decisions will be made in consultation with citizens (shared decision-making). The teams focus on recovering and promoting how people function. A citizen is the owner of his or her personal life and development file. A smaller group of care professionals will focus primarily on complex care in D.

The teams provide care arrangements that are customised to cater for the demand from clusters of profiles.
These are formed from care professionals who jointly have the total number of skills needed to fulfil the demand.

Every care professional has a number of generalist skills that are applicable to all profiles and clusters. These are networking skills, technological skills and social and contextual skills. The most important of these is the ability to de-escalate, in other words: professional care always focuses on the – as far as possible – independent functioning of citizens in their own home environment. This means that, after treatment, surgery or the temporary takeover of functioning, care will focus on returning home. In addition, teams will have the skills needed to provide care for people who have, for instance, chronic disorders, multi-morbidities, functioning problems, mental disorders.

3.6 Continuum of skills for health care

The Committee's points of departure – the citizen's own control and resilience, and the central role of functioning and demand for care – demand a new direction in which health care professions could develop in 2030. The model Continuum of skills for health care (see figure 3.5) reflects the Committee's advice.

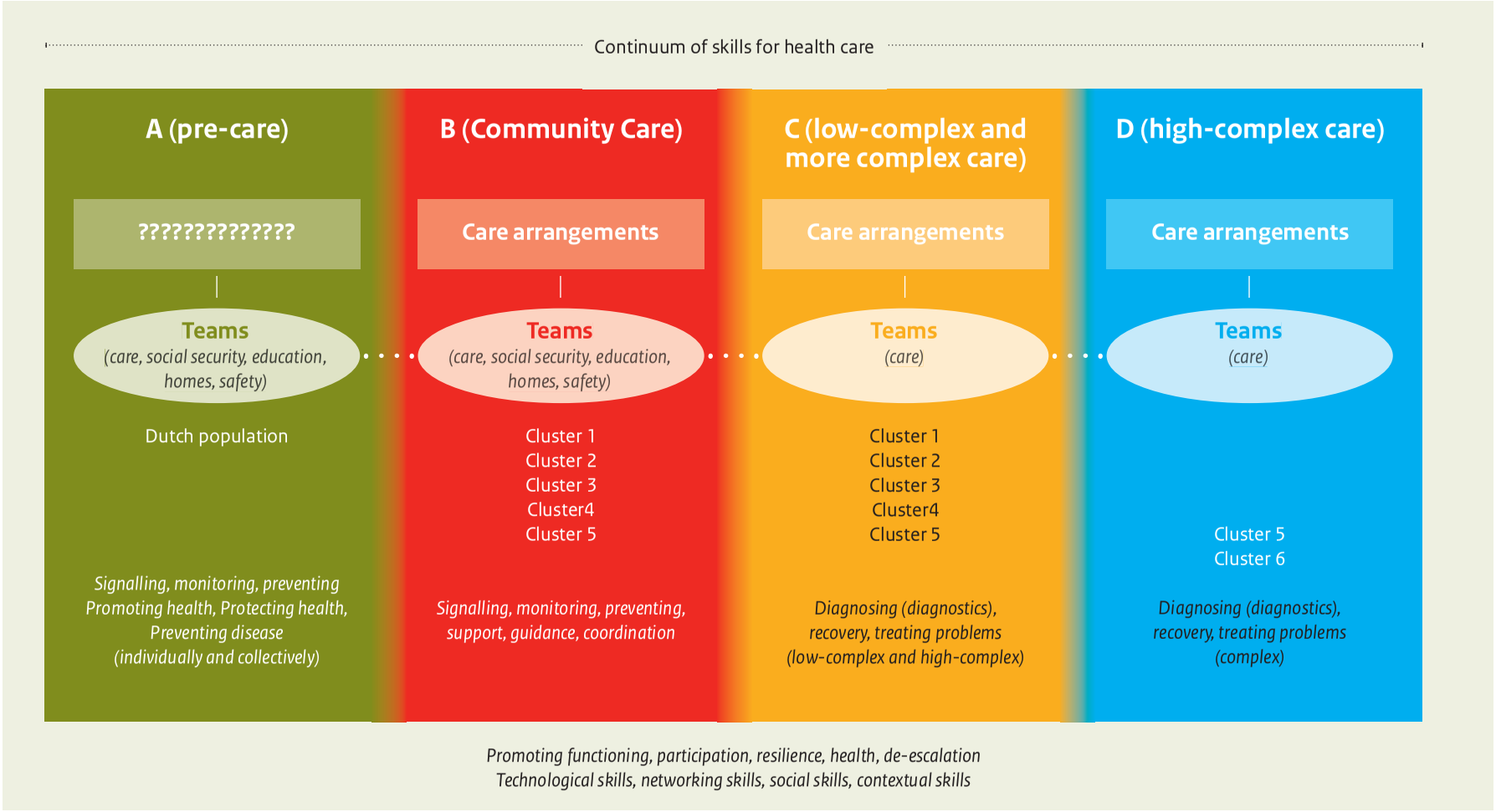


Figure 3.5: Continuum of skills for health care 2030, Committee Innovation Health Care Professions & Education, 2015.

The future of professional care lies in a dynamic continuum of skills that focuses on the demand for care and contributes to how citizens function. Clusters could arise in different, overlapping fields of care, and care professionals in the various teams could work in various health care domains.

By starting with demand and the care arrangements this requires, the Committee hopes to change the current fragmented supply. This requires a *new way of working*. In addition to a new way of working, *different skills* will actually be needed. The following is an outline of these skills.

A new, *generalistic ability is to promote functioning*. The central focus here is not on the disorder or symptoms, but on the limited functioning that these cause. In fact, treatment focuses on recovering functioning or preventing exacerbation. This also means "do not treat if it does not contribute to functioning".

A second generalistic skill is *de-escalation*. Professional actions focus on independence or the ability to function as independently as possible in one's own environment. People who undergo treatment in C or D return to their own environment as quickly as possible, where necessary with help from their own network.

A third generalist skill is the use and *application of technology*. This is about e-/mHealth, technology at home (domotics) and robotics.

Other generalist skills are *networking skills, social skills and knowledge of the context* in which functioning problems arise. In particular it is often in the context that solutions can be found that are currently not being deploy or hardly at all (education, home-building, safety, sports facilities, infrastructure).

The similarities between citizen profiles offer an opportunity for a new generalist clustering of skills. An example of a possibility is *chronic disorders and multimorbidity combined with psychosocial problems* within the populations concerned. We are shifting from professionals with expertise per chronic disorder to generalists whose knowledge covers a much broader field. Our citizens will appreciate this because the central focus is on demand, and also because it will bring an end to the enormous fragmentation that exists in health care.

The similarities between the citizen profiles will bring to an end the current barriers between various groups of patients. People with a mental disorder are getting older and are also suffering from chronic disorders and/or multimorbidity. The distinction between disorder-oriented clusters will disappear. It is about promoting functioning in a physical, a psychological and a social sense.

Naturally, *specialist knowledge and skills* will still be necessary. Serious and/or complex disorders require this.

3.7 Example

The following example has been elaborated upon in order to get an impression of this advice in practice. Other examples are included in appendix 7.

Example: *A 71-year-old woman with a hip fracture after a fall. She has two chronic disorders: arthritis and chronic heart failure and she has a mild form of dementia.*

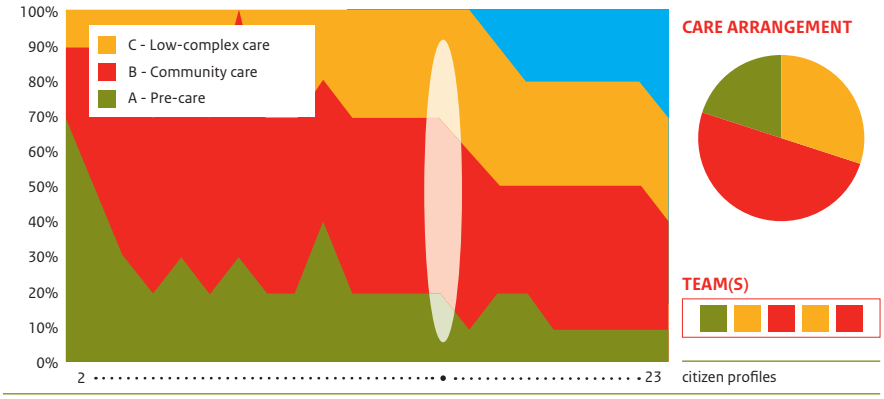


Figure 3.6: Care arrangement example 1

In first instance this woman will be treated in C for a hip prosthesis. It is extremely important that she is able to walk again as quickly as possible. Depending on her home situation and her network, further treatment can take place in B (at home). The care arrangement will comprise of low-complex care, home care and care that is carried out via her network. This is an example in which the members of a team will change. In the first phase, when the operation takes place, the team includes care professionals who will no longer be needed in the next phase. This is when the team will focus on the prevention of problems and on encouraging functioning, in this case: rehabilitation and recovery. Attention will focus primarily on the patient's home environment and network. The person in charge will be, for instance, a team member from home-care. Figure 3.8 provides an overview of the skills in this arrangement: as they are currently and as they should be in 2030.

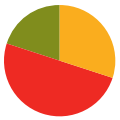
Hip fracture, two chronic disorders, mild dementia		
 C - Low-complex care B - Community care A - Pre-care	**Professionals 2015**	**Professionals 2030**
Placing hip prosthesis	Prof. 1,2,3	C Prof. 1,2,3
Promoting functioning (rehabilitation)	Prof. 4	B
Supporting functioning (activating network)	Prof. 5	
Identifying and monitoring dementia	Prof. 6	
Identifying and monitoring arthritis	Prof. 7	Prof. 3,4,5
Identifying and monitoring chronic heart failure	Prof. 8	
De-escalating		
Preventing repeat	Prof. 5	
Deploying technology e-health	Prof. 9	
Deploying technology domotics		A Prof. 5,6
Home adaptations	Prof. 10	

Figure 3.7: Skills and professionals now and in the near future (the numbers refers to professions and/or positions).

4 Reflection

4.1 Transformation

The objective of this advice is to transform the current system (see table 4.1). This can only be realised once people are able to transcend their own frame of reference and look ahead from the perspective of general interests and not only personal interests. We are on the threshold of a new period in which we will be questioning vested interests and positions. This is something we must do for the sake of the quality and continuity of health care and in particular in the interests of all Dutch citizens.

From	To
Supply	Demand
Disease	Functioning
Care for	Taking care that
Professional autonomy	Co-creation
Fragmentation	Care arrangement
Hierarchy	Control
Vertical	Horizontal
Involving citizens	Consulting professionals
Personal interest	General interest
Entitlement to	Responsible for
Power	Strength
Classification of professions	Continuum of skills

Table 4.1: Paradigm shift

4.2 Not everything is health care

One of the Committee's points of departure is the new concept of health in which resilience and personal control play a central role (Huber et al., 2011). This is a broad concept, the implication of which is that promoting health is not only a task for health care. Many determinants of health are beyond the realm of health care. Numerous societal factors contribute to health, such as accommodation, the environment, education, work. It is important to define what is involved in (professional) health care and what is the responsibility of citizens themselves or other domains.

We have to 'demedicalise'. Many demands currently end up, unsolicited, in the domain of health care. These relate more to problems at work or at school, in a relationship, in a person's social network or in their living environment, but they cannot be addressed properly, except by giving them a medical label or by means of a medical intervention (for instance, medication against pain, stress, stomach-complaints). A lot of what is currently being offered in health care could be transferred to the social domain and/or to a person's own network or be dealt with in the neighbourhood. A great deal can be achieved by promoting cohesion between the various domains and including health as an inherent aspect in all domains.

Health care policy is not just about providing good and accessible care and preventing disease. It is also about promoting a healthy lifestyle by providing societal contexts within which people are resilient and able to adjust to threats to their health, e.g. by vaccination, providing proper information about a healthy lifestyle and offering everyone opportunities to participate in society. The decentralisation of the domains health care, juveniles and employment in the direction of municipalities creates opportunities for realising integration with other fields of policy on that level.

4.3 Accountability for health care

Health care that focuses on promoting how our citizens function and that does what is necessary demands reorientation and behavioural change, not only among our citizens, but also among care professionals and everyone else who is involved in health care. The point of departure is accepting responsibility and taking charge of one's own health and care (and looking after and caring for one another's health).

Though this requires discussion in society, this will not be sufficient to effect change. Behavioural change takes time and it must lead to results, provide a perspective or promise a solution. We place a high value on our health. In the Netherlands everyone can count on high quality health care. Independence is even more important. Being able to decide on matters that we feel are important, being able to do what we want, is what adds value to our life.

We can encourage people to take charge of their own health and health care by creating the conditions that make this possible. Developing resilience and learning to take charge is something that starts early in life, initially within the nuclear family and during education. Later in life it remains important to be able to adjust and cope with physical, mental and social changes, problems and challenges in the various phases of life. At the same time there will always be vulnerable people who are (temporarily) unable or less able to take control of their own life and who will need support in doing this.

4.4 Access to professional health care

The Committee describes in chapter 3 how care domains C and D are accessible for everyone, but not as a matter of course. This means that people who are able to solve problems themselves or within their network must actually do this. Professional health care is intended for (functioning) problems that people are unable to solve themselves.

Citizens must be able to count on a professional care safety net when it is needed. They will be encouraged and facilitated as long as possible to continue to function independently in their own familiar environment. If this is endangered, then there is care. Preferably from their own network, and professional if necessary.

4.5 Technology

Technology is expected to make an enormous contribution (domotics, robotics, e-/mHealth) to how people function and continue to manage their own health and care.
Technology will not only support functioning, but can also be deployed to promote, recover or maintain functioning and play an important role in people taking responsibility for their own health, remaining in charge of the care and support they need from their own network and from professionals. A personal life and development file (PLOD) could play an important function in this. Many possibilities already exist and certainly will in the near future. The challenge will be to develop applications that have added value and which will also actually be used.[11]

An important condition to this is having more control on the (continued) development and application of technology so that the various applications are combined and integrated, which will make scaling-up and acceleration possible. A second important condition is that, as far as the organisation and content of care is concerned, technological applications become an automatic part of professional activities.

Apart from care, other domains are important in the deployment of technology, particularly home-building and designing the environment in which people live. New homes can already take technological applications into account. It will be an enormous challenge to adapt existing homes and districts. The first step will be to determine what is needed in a given neighbourhood or district, and then to draw up, together with everyone who is involved (citizens, government authorities, housing corporations, care organisations, etc.), a programme of requirements for adapting homes in the neighbourhood.

4.6 Conditions

We shall examine three important conditions that must be fulfilled in order to realise the proposed changes. The first is the *planning capacity* method used for the medical, paramedical and nursing and caring professions. Examined from the perspective of care arrangements, the deployment of desired skills is just

11 *The Council for Public Health and Health Care (nowadays the Council for Public Health and Society) is preparing advice about the question of how to optimise the content, application, dissemination and use of eHealth, taking into account current – and future expectations of - needs and possibilities of various categories of patients and demand (for care).*

as important as the number of professionals. It is no longer about a quantitative estimation, but rather about a qualitative estimation. It is also about the total number of required skills, not just in professions, but also those of our citizens.

The second condition relates to the funding of health care. The Committee advises care based on demand and with the focus on promoting how people function. This demands a flexible funding model that permits customisation. It should no longer focus on the treatment of complaints and disorders, on a 'one size fits all' model, but instead on the results on functioning.

The third condition involves *laws and legislation*. Laws and rules will have to be examined in the light of the advice. Obstacles should be replaced by encouragement and motivation. We must be brave and let go of suffocating regulations. This advice also involves trust. Trust in the power of our citizens, but also confidence in the professionals and in the system. Conditions are important, as is expertise. But we also have to want to believe in it and be brave enough to trust. This means letting go of the current system and re-designing health care, based on our own strength, to allow our citizens to function independently for as long as possible.

4.7. From transition to transformation

2015 will go down in history as the year of transition(s). The year in which structural changes will affect the next 30 years. This advice goes further, it envisages transformation in health care. This is not so much a revolution, but rather evolution at an accelerated pace. Within a short space of time our citizens will have to be prepared for being able to cope and for solidarity. There will be a lot of pressure on certainties such as pensions and rights to allowances. Many things will not necessarily be a matter of course and not everything will automatically be available. Citizens will have to do a lot more themselves, others will have to help and accept positions within a network. People are resilient, do their best to develop healthy behaviour and accept their own responsibility, take charge and find out what they can do themselves and with one another before consulting others.

The question is how we can get things moving in the right direction, without detracting from the many initiatives that are already being taken. The Committee's thoughts go out to two methods.
The first is actual practice itself. The above-mentioned breeding grounds are already taking initiatives that focus on the new health care (ABCD). Preparations are also currently in full swing for taking maximum advantage of technological support, focusing on the functioning profiles developed by TNO.

The second way is via (health care) education. If, together with MBO, HBO and WO, we develop new education profiles that focus on demand (care arrangements), the newly trained professionals will work differently. Involving present care professionals in this will make sure the change gradually gets off the ground.

4.8 Training for 2030

The advice on the education continuum for health care in 2030 will be ready by the end of 2015. That advice will be the logical follow-up to the current advice.

A multidisciplinary way of working also means multidisciplinary and inter-professional methods of learning and teaching. This is about obtaining new skills and the ways in which we work and learn will no longer be bound by location and time. In the future care professionals will move around, just as will our citizens, between the various care domains.

The *advice 'New health care courses'* will take shape in collaboration with parties in the field. The *leitmotiv* throughout the advice will be a lifetime's learning.

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Appendix 1: List of concepts

Chronic disorders
Disorders with no hope of full recovery and with a relatively long progression.

Complexity, context
- The disease: degree of complexity of medical problems.
- The person with the disease: patients who are more or less complex.
- The population requiring care: degree of complexity of health care systems.

Complexity, patient
- Simultaneous occurrence of problems in different domains: physical, functional, psychological, social.
- Problems affect one another so that cause and effect become intertwined, complicating the medical picture.
- Disrupted or disturbed balance, vulnerability.
- Unpredictability, uncertainty.
- Tempo in which changes occur is high.
- Routines and guidelines do not 'fit'.
- Enormous demand for care which is supplied by many different care-providers
- Low (health) knowledge/awareness.

Continuum of skills
A cohesive and continuous gamut of skills that focus on the demand for care.

Functioning
The ability to carry out all daily activities that are needed to run a household, care for oneself and participate in society.

Community Care
Care that people organise themselves in their neighbourhood, receiving – where necessary – support from the municipality or professional care.

High-complex care
Extremely complex treatment with a low degree of predictability of the amount and quality of care needed, and of the course, whereby interventions are continually adjusted based on further diagnostics and observation, and large health risks are involved.

Integral
Comprehensive or complete. An integral approach places the person at the centre, in relation to his immediate surroundings.

Low-complex to more complex care
Both basic care and specialised care, for both acute care and care that can be planned, with a high degree of predictability of the amount and quality needed and the clinical course.

Multidisciplinary collaboration
Collaboration between professionals with different skills in a team in which a common vision and a targeted approach are developed, in consultation and with shared responsibility.

Multimorbidity
The occurrence of more than one (chronic) disorder in one person during a given period.

Educative continuum
A uninterrupted continuum of education for health care that is harmonised with the continuum of professions.

Participation
Capable of participating in society.

Psychological disorders
A limited ability to function or participate as a consequence of a disorder involving thoughts, feelings, incentive, opinions and/or targeted actions.

Psychosocial problems
Psychological problems related to daily functioning; loneliness, anxiety and melancholy.

Mental handicaps
A handicap in intellectual functioning that was either congenital or developed later in life.

Preventive health care
Promoting healthy life from birth right up to the end of our life. Pre-care is a social concern involving many domains, including health care.

Demand for care
An indication of the demand for care as operationalised by the TNO in prognoses of functioning problems and chronic disorders, based on demographic and epidemiological developments.
The care that is needed in order to be able to function (independently) and participate.

Appendix 2: Results building bricks for the advice

Building bricks

1. Quick scans
2. Breeding grounds
3. Prognosis demand for care 2030
4. The National Think-Tank 2013
5. Focus groups 2013 (systematic consultation of the field 1)
6. Technology analysis
7. Health Care Professions Debate 2013
8. Think-Tanks breeding grounds
9. Think-Tank Terschelling
10. National Think-Tanks
11. Focus groups 2014 (systematic consultation of the field 2)

1. Quick scans

The advice trajectory started during the course of 2012 by dealing with four large issues by means of Quick scans:

- Demographic and epidemiological developments.
- Current professions and education in health care.
- Innovations in health care professions and education.
- Developments and solution directions identified from recent reports and advice.

Demographic and epidemiological developments

Between 2012 and 2030 there will be a rise in the number of (very) old people and a reduction in the population aged between 20 and 64 years (Van der Kwartel et al., 2012). The number of people with a chronic disease will increase, as will the number of people suffering from severe disorders (multimorbidity). Very old people will increasingly suffer from a number of disorders. Expectations are that in 2030 38% of the population who are older than 75 years will suffer from more than three disorders. At the same time there will be large regional differences in how the population develops and the prevalence of disorders.

Current professions and education in health care

The range of professions, positions and education in health care is enormous: respectively 2410 care and care-related professions/positions and 1700 courses (Van der Velden et al., 2012). About 1.2 million people are employed in a health care profession. 2.3 million people have completed a care-related training course (as their highest form of education). Some of these people who work in health care have not followed any relevant training course. The match between education and profession is greatest among those employed in a (para-)medical or nursing profession at a research or secondary level. Significant differences exist between regions regarding the division of health care professions and education. In central-western regions, more people are employed in paramedical or social professions at a research level, while in the northern and eastern regions more people are employed in caring (para)medical professions at a secondary level.

Innovations in health care professions and education

Many innovations exist in health care professions and education but often these are not introduced on a structural basis (Spieker, 2012; 2013). Innovations in professions and education are mainly determined by subsidies, 'market gaps', far-reaching fragmentation, specialisation, task-redistribution, upwards pressure, personal identity, techniques and technology. New courses are developed for professions or positions that do not yet exist, while it is not clear whether there is a demand for them in professional practice or whether they are in keeping with the expected demand for care. For there rest, large differences exist between the sectors. In juvenile care and social support, one cannot speak of new professions and education as such, but a lot of charges are taking place in existing professions and education (Spieker, 2013). Fragmentation in professions, positions and education has resulted in a need of more generalists and better coordination.

Developments and solution directions identified from recent reports and advice

Recent reports and advice all point in the same direction (Van Vliet, Spieker en Kaljouw, 2013). Developments identified:

- More people (particularly the elderly) need care and more people have one or more chronic disorders.
- Health deficits exist among ethnic minorities, well-educated people are getting older than the less well-educated and one can speak of increasing differences in health care consumption between groups of the population.
- Regional differences in the level of provisions are increasing.
- Medicalisation and care consumption are increasing, as also are contributions to health care costs. Expenditure on care is rising and health care is becoming more expensive.
- Solidarity is under pressure; health care results are often not visible.
- Fewer voluntary carers are available and the professional population is shrinking. At the same time people are staying healthy for longer, they are deciding over their own lifestyle, choosing their own form of care and they are receiving better care.
- More attention is being given to the environment in which we live and to lifestyle and behaviour.

Solution directions mentioned are:

- Increasing resilience, focusing on health targets.
- Providing more people with greater access to knowledge about the costs and the quality of health care.
- Extramuralisation, care at home and in the neighbourhood.
- Multidisciplinary integral treatment and out-patient centres.
- Task-redistribution
- Technology, ICT, robotics, domotics, distance health.
- Social participation, which is not necessarily hindered by differences in health.

The results of the Quick scans show that existing knowledge provides insufficient points of departure for substantiating what is needed in the way of modernising health care, and – in line with this –professions and education. The focus on disease and disorders provides no insight into how individuals and populations function on a daily basis and what problems they encounter. Making the way in which our citizens function central to measuring public health implies an approach based on the possibilities of individuals and how best to support them, not only via health care, but also via other domains. This demands shifting the focus from disease and care to health and behaviour. This means that care should focus on promoting, retaining or recovering the ability to function. Care is there to serve how people function and to allow them to function independently for as long as possible in their own living environment.

The results of the quick scans emphasise the need to develop a new continuum of professions and a corresponding continuum of education. Technical and technological developments are taking place rapidly, while their use in practice and in education is lagging behind. Rapid developments in health care and its increasing complexity are no longer in keeping with current methods of treatment and carrying out examinations. Lastly, the way in which health care is organised and funded hinders the development of (proven) innovations and in particular their introduction. Removing obstacles and providing positive stimuli is an important condition for innovation.

2. Breeding grounds

In addition to national consultations, the Committee also opted for a regional focus with so-called breeding grounds. There are two reasons for this. Firstly: the regional differences in developments in the demand for care (Van der Kwartel, et al., 2012) and in health care professions and education (Van der Velden, et al., 2012). Secondly: the Committee wants to work along the same lines as what is already going on. Increasing local and regional cooperation is taking place in innovations in health care and in professions and education. In 2013 and 2014 four breeding grounds started with participants from care parties involved in the particular regions and cities. The first breeding ground started in the province of Friesland, followed by Amsterdam and Amstelveen. After this, in 2014, came Rotterdam. The last breeding ground is Heerlen. This focused in particular on the deployment of technology for the elderly so they can continue to function and participate.

There are three successive phases to activities in the breeding grounds: the analysis phase, the 'breeding' phase and the experimental phase. During the analysis phase, the TNO estimated the future demand for care in the year 2030. During the breeding phase, based on the prognoses, Think-Tanks examined the future demand for care and suitable forms of dealing with it. At the same time the Verwey-Jonker Institute drew up – and assessed – an inventory of good examples. During the experimental phase, per breeding ground, a few experiments will start along the lines of this advice. Preparations for these are currently in progress.

3. Prognosis of the demand for care in 2030

The TNO estimated for three breeding grounds – Friesland, Amsterdam & Amstelveen, Rotterdam – the future demand for care by giving prognoses based on demographic developments (2012-2030) of functioning problems, chronic disorders, mental disorders, psychosocial problems and mental handicaps (Chorus et al., 2014a-d). The TNO also made use of available local and regional sources of data. For the prognoses of functioning problems of those who are aged 65+, the TNO developed an empirically based method: *Functioning profiles*.

Functioning profiles of the elderly (65+)		
no noticeable physical problems	without dementia	1
	with mild/moderate dementia	2
mobility problems	without dementia	3
	with mild/moderate dementia	4
mobility problems and problems in self-care	without dementia	5
	with mild/moderate dementia	6
excessive (severe) physical problems including incontinence	without dementia	7
	with mild/moderate dementia	8
severe dementia, requiring care at the level of intramural care		9

Table 3.1 Functioning profiles of people aged 65+(TNO).

The profiles were developed based on representative data on the functioning of people aged 65 years and older. A statistical analysis showed that 12 indicators lead to 4 physical functioning profiles (see figure 3.1). These indicators relate to perceived health, incontinence, general daily life activities and self-care activities. How elderly people function is partly influenced by mental factors. An important mental factor is dementia. Severe dementia leads to rapid deterioration in general functioning and was therefore included as a separate profile. Mild/moderate dementia also affects how people function. For this reason the 'physical profiles' distinguish between the presence or absence of mild to moderate dementia.

Other psychological and psychosocial factors, such as loneliness and depression, can also influence how people function. Due to the lack of specific data about this for the complete group of elderly persons, this could not be involved in this analysis. Separate data on this have been collected.[12]
In addition prognoses have been made for the elderly, for the population aged 19 years and older and for young people regarding chronic disorders, psychosocial problems, psychological disorders and mental handicaps. Only the prognoses on how the elderly function were used for the breeding ground Heerlen due to the specific focus on technology.

12 *Due to the available data files, the functioning profiles relate only to elderly persons and to physical functioning whether or not in combination with dementia. Furthermore, the current data files do not permit a combination with psychosocial problems.*

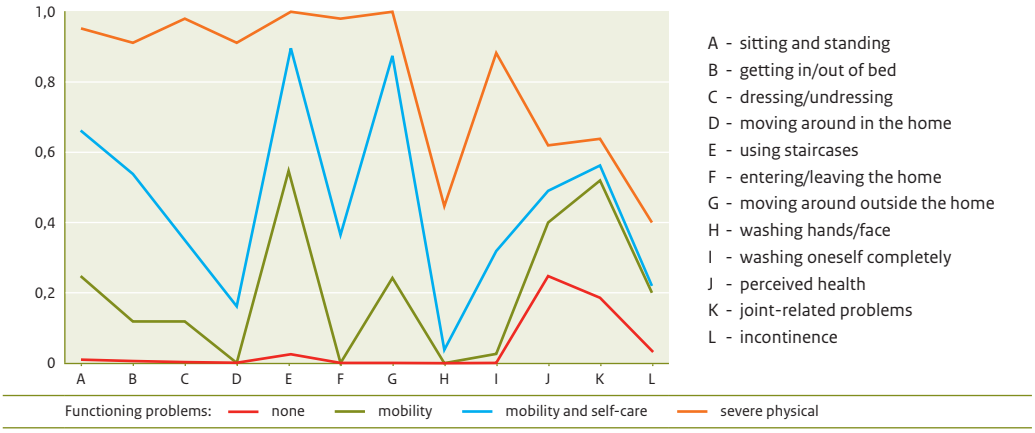


Figure 3.1 Chance of problems with functioning per profile (TNO, Perenboom et al., in preparation).

Trends 2012-2030

- The prognoses for the breeding grounds are largely similar in respect of the nature of problems and disorders, but there are differences in size due to regional demographic developments.
- The number of *elderly persons* is growing rapidly in all breeding grounds: a 54% increase in Amsterdam and 49% in Friesland. Rotterdam is lagging slightly behind with a 32% increase due to the dip in population increase during the Hunger Winter. In Friesland the number of people aged 75+ is increasing fastest, by 74%.
- In parts of Amsterdam the number of elderly persons almost doubles or more than doubles: in Amsterdam's city-centre the number of people aged 75+ increases by 124%; in Amsterdam East the number of people aged 65-74 years increases by 89% and the number aged 75+ by 104%.
- The number of elderly persons both with and without *functioning problems* is growing substantially in all breeding grounds. In 2030 more than half of those aged 65+ have functioning problems: 70,000 (42%) in Friesland, 71,000 (50%) in Amsterdam and 58,000 (50%) in Rotterdam. The most prevalent functioning problems are mobility problems whether or not with a mild to moderate form of dementia.
- *Mobility problems* are also present in the age group 20-64 years, more in Amsterdam and Rotterdam than in Friesland. In 2030 there are 50,000 Amsterdammers, 35,000 Rotterdammers and 18,000 Frisians aged 20-64 years with mobility problems.
- In the breeding grounds, in 2030, almost half of the population have one or more *chronic disorders*. By far the most prevalent are disorders of the locomotor apparatus, followed by asthma/COPD and incontinence in Friesland and Amsterdam, and by asthma and diabetes in Rotterdam. Dementia is the fastest climber, but its prevalence is relatively limited in comparison to other chronic disorders.
- The prognoses could also be influenced by other factors such as excessive weight and obesity, which have a significant effect on the development of diseases. Prognoses based on epidemiological developments show, in comparison to 2012, an estimated 11,500 more cases of diabetes and about 10,000 more cases of CVA than based solely on demographic developments.
- Socio-economic status (SES) is related to health problems. In all breeding grounds there will be more *functioning problems and (multi)morbidity* among the elderly with a low *socio-economic status*. Expectations are that the SES will rise in all breeding grounds. This leads to a shift in the number of elderly persons with (multi)morbidity and functioning problems with a low, average and high SES, but differences will continue to exist.
- The number of people with *psychosocial problems (loneliness, anxiety, depression)* in the breeding grounds is considerable and rising. In 2030 Friesland will have 44,000 people aged 55-85 years with psychosocial problems. Amsterdam and Rotterdam will have respectively 81,000 and 73,000 people aged 19 years and older with a risk of loneliness (14% of the adult population).[13]

13 *For mental disorders and psychosocial problems and disorders among young people, it was not really possible to compare and collate the data from the breeding grounds. This is due to differences in how data are collected per region or municipality, e.g. over age groups and risk of problems and disorders (see the TNO reports for the data files used). In 2012 a start was made on harmonising the national and local Monitors for Public Health for adults and the elderly. The monitor for young people will start later (GGD Nederland, 2012).*

- The number of people with psychological disorders is also considerable and rising. In 2030 Amsterdam and Rotterdam respectively will have 56,000 and 49,000 people aged 19 years and older with a risk of psychological disorders (average 11% of the adult population). Friesland will have 64,000 people aged 18-64 year with psychological disorders (19% of the Frisian population aged 18-64 years).
- Even among juveniles one can speak of a considerable increase in *chronic disorders and psychosocial problems*, although numbers are increasing slowly due to demographic developments (in Amsterdam and Rotterdam) or even falling (in Friesland). In 2030 there will be 21,000 Frisian juveniles aged 12-18 years, 16,000 young people in Amsterdam aged 13-17 years and 18,000 in Rotterdam aged 4-12 years with one or more *chronic complaints/disorders*. The most prevalent chronic problems in the group aged 12 years and older (Amsterdam and Friesland) are headache, asthma and allergy or eczema. In the group aged 4-12 years (Rotterdam) these are eczema, allergy and asthma/bronchitis.
- In 2030 there will be 5,000 Frisian juveniles aged 12-16 years, 6,800 juveniles in Amsterdam aged 13-17 years and 7,600 juveniles in Rotterdam aged 12-17 years with (a risk of) *psychosocial problems*.

The overviews per breeding ground with the prognoses for 2030 are included in appendix 6.

4. De National Think-Tank 2013
In 2013 the Committee was topic-partner for the National Think-Tank. This Think-Tank has a different topic and a different composition every year. These are young, talented people from various disciplines who get together to discuss a societal problem and to think up practical solutions. The annual topic of the National Think-Tank in 2013 was 'Caring for health'. Discussions were held with 574 experts, various care-providers were accompanied during their work and an extensive literature search was carried out. The results are described in the final report, *An end to doctoring. 10 solution for Resilience Care* (The National Think-Tank, 2013). The report describes a vision of the future with a plea for shifting the focus in health care from disease to health: 'from limitations to opportunities' and 'in 2030 everyone chronically healthy'.

The National Think-Tank formulated four points of departure to make the new vision of health more concrete: healthy behaviour, participation, self-management and outcome funding. Based on these four points of departure, the National Think-Tank came up with 10 solutions for 'resilience care' (see: http://www.nationale-denktank.nl/wat-doen-wij/denktank/resultaten/denktank-2013/).

According to the Think-Tank, a lot more effort should be put into promoting healthy behaviour which should be encouraged everywhere: in health care, at schools, at work and in local neighbourhoods. The same applies to participation. Participation contributes to improved health and a lower demand for care. This is the reason why the participation of, e.g. psychiatric patients and the elderly must be encouraged as much as possible. In addition, the Think-Tank wants people to be given more say about their health, to accept responsibility for their demand for care and to exercise control over the care they receive. A condition to this is that citizens are supplied with the right information and that, where necessary, their social environment is involved. Lastly, the Think-Tank believes that the funding of health care should be based on added value instead of the number of interventions. This would raise quality, combat superfluous care and encourage innovation.

5. Focus groups 2013 (systematic consultation of the field 1)
In the autumn of 2013 the Verwey-Jonker Institute organised, in collaboration with national (umbrella) organisations, 28 focus groups with care-users, professionals, administrators, policy-makers, researchers and educators (De Gruijter et al., 2014, Verwey-Jonker Institute, 2014). Similarly to the National Think-Tank, the objective was to think in depth about the form health care should take in 2030. Their point of departure was the new concept of health (Huber et al., 2011): 'Health is the ability to adapt and to self-manage in the face of social, physical and emotional challenges'.

Each focus group spoke about the future of health care based on three questions:
- What does the perspective of the new concept of health care mean to citizens and their networks?
- What activities are needed to support citizens in this and what form should these activities take?
- How can we realise this?

A new concept of health
Participants in the focus groups responded positively to the new concept of health care and recognise the importance of switching the focus from disease and care to health and behaviour. According to participants from the GGZ, primary care and the adjacent social and juvenile domain, their sector already works based on this line of thought. The participants do have a number of serious comments about the new concept. The most important comment is that not all citizens are capable of managing their own health. Furthermore, the new concept could affect the principle of solidarity in health care, because responsible citizens with a healthy life-style may no longer be willing to co-fund care that is needed due to the unhealthy choices of other citizens.

Citizens and their networks
Many participants expect that citizens – with the exception of those who are vulnerable – will accept more responsibility for their health and voluntarily help others, even when faced with their own health problems. This makes investing in one's own (digital and physical) networks even more important. Increasing mutual dependency is unavoidable and is inextricably linked to citizens being able to ask for help. This is a skill that does not come automatically in our society, with its focus on independence. For instance, children's upbringing and education should prepare them to cope and to take good care of themselves. Continued education is important for adults and the elderly, particularly as we will continue to work for longer. Participants recommend working towards networks that are also accessible for people with severe chronic handicaps, such as GGZ clients and people with a mental handicap, as up till now these people have few opportunities for remaining active.

Need for changes in the health care system
The participants claim that, in the near future, first of all there will be a greater need of horizontal, equal relationships between care-users and care-providers. Citizens bear responsibility for their health and care professionals will have a supportive role. A different health care system demands less hierarchy, making serious use of expertise, empowering care-users, taking into account citizens who are less empowered and transparency in the provision of information.
The second change that is needed is that professionals must risk making demands of the informal network much sooner. For professionals this demands a flexible and facilitating attitude that focuses on the possibilities and needs of the care-user. In fact, professionals have a connecting role for a care-user who needs many different forms of support.
Thirdly, the participants expect the development of a broad network that encompasses care, support and services, that is recognisable by its diversity, small scale and low-threshold care in the neighbourhood and an integral approach to the demand for care. Indispensable to this is a central point of contact for citizens in their neighbourhood, problem-oriented collaboration between professionals that is not institutionalised, and living together in small communities. This also demands a different way of designing buildings in the neighbourhood. Furthermore, a lot of work will go into pre-care and prevention by promoting a healthy lifestyle.
Lastly, municipalities will play a facilitating role: they can bring parties together, reduce red tape, support voluntary carers and encourage small-scale initiatives.

Conditions
Almost all focus groups cited the existing health care funding structure as a bottleneck: we have to move in the direction of a system that funds health gains and not simply the activities of doctors and hospitals. There is also a need of more room for experiments, as current legislation hampers attempts to try out new forms of care and support. Many participants felt that more gains could be realised from further technological developments. Technology can help to empower care-users and ensure that people can remain at home for longer.

6. Analysis of technology
In order to analyse technology six experts were consulted during two meetings, followed by an additional round of interviews (see appendix 4). The central question during the meetings was what can technology contribute to the described demand for care in the future (the TNO prognoses).

In addition there was a work visit to the Expertise Centre for Innovative Care and Technology (EIZT) in Heerlen. This resulted in starting the breeding ground in Heerlen in collaboration with the EIZT. The following questions were put to the experts: What will your field look like in 2030? Which technological developments will have been implemented by then? And will this have consequences for the professions in 2030? Experts who are involved in technology and innovation on a daily basis are more optimistic about technological developments and their possibilities than those who work in patient care.

What technology (eHealth, robotics, domotics) can contribute, according to the panel of experts

- Knowledge and insight into one's own health and chronic disorders because of registration and feedback via self-management devices.
- Contributions to behavioural change by means of lifestyle coaching via eHealth en mHealth applications).
- Support and encouragement in daily functioning and movement in and around the house, e.g., with a rollator robot, fall-detection, alarms.
- Contribution to social binding and combating loneliness. Example: 'mixed reality' solutions: cycling together or shopping together over distance.
- Enormous increase in treatment possibilities: in 2030 almost everything can be treated, either non-invasively or less invasively. Will surgical professions still exist in the near future? A lot of possibilities will soon exist such as printing and replacing organs and bones. Mass production will make it all affordable.
- Technology, together with lifestyle and prevention, will be the leitmotiv in health care professions and education.

Comments and question marks

- Technology will never be the only solution. Apparatus can break or become erratic. Technology cannot solve all problems, but will give people greater autonomy. An example of this is the rollator robot 'Lea'. Simple solutions must be found for the homes in which many elderly persons currently live.
- Can technology reduce the demand for care? Calculations indicate that soon 2 hours a day of a nurse/carer's time will be saved due to activities taken over by a rollator robot, but care remains the work of people. EHealth can reduce excessive care consumption, e.g. by people who currently often go to their GP due to loneliness.
- Technology will only lead to economies once the entire organisation is designed accordingly. Technology does not always make everything easier or better. The increased use of technology can also have negative consequences: we start doing what is possible instead of what is necessary. And why should we live healthy lives if everything can be treated?
- What will we do with the enormous quantity of data about everyone that will soon be available to us? What protocols will we use and what about the use of equipment in a home situation?

Trends according to the experts interviewed

- Technology, in particular eHealth and mHealth, will emancipate care-users. For instance, eHealth can provide a simple assessment. For instance, e/mHealth can be used for people with mild psychological problems, whether or not in combination with face-to-face contacts.
- Self-management with the aid of e/mHealth is not suitable for everyone, excluding, for instance, vulnerable groups with a low socio-economic status.
- More and better diagnostics due to early detection. An example is the new development for tracing cancer in blood by means of DNA-sequence analysis.
- Targeted medicines that work more accurately and have fewer side effects, such as personalised medicine and targeted therapy.
- Surgery will change from replacement to repair. Catheter surgery will increasingly take place. For instance, improved imaging techniques in cancer surgery will make it possible to treat a tumour externally, instead of by resection. Another example is the development of a substance for the treatment of unhealthy excess weight which is administered via a slow-release implant and which will make present-day gross treatment (stomach reduction) obsolete.
- There have been rapid technological developments during the past 15 years. Expectations for the next 15 years are that developments will mainly grow incrementally, i.e.: a growth in numbers. Robotics will increase accuracy in surgery, but a robot that thinks for itself and carries out operations independently

still seems a long way off. Homes are being robotised and it will also be possible to use robots for relatively simple activities in health care.
- Due to developments in computer technology, biotechnology, nanotechnology, robotics, AI (Artificial Intelligence) and 3D/4D-printing, technology will have a dominant place in prevention, diagnostics, support and treatment and also in self-management. In 2030 citizens will be able to organise a lot themselves, at home or in the neighbourhood, with care from a distance. This will enable care professionals to fulfil a more implementing, guiding and coordinating role. This could lead to a reduction in the number of specialisations and professional groups.
- Although a lot can be done with technology, there is a lack of orchestration. As a result developments are small-scale and fragmented and not taking place as fast as they could.

7. Health Care Professions Debate 2013
The programme of the Health Care Professions Debate focused on the results that the Committee collected in 2012 and 2013 for its advice. Presentations were held by the TNO, TU Delft, the National Think-Tank and the Verwey-Jonker Institute. These were followed by a debate with representatives from the breeding grounds and there were opportunities for asking questions. The introductory film, a written report and a photographic report of the health care professions debate are available on the website of Zorginstitut Nederland (http://www.zorginstituutnederland.nl/beroepen+en+opleidingen/zorgberoependebat).

8. Breeding grounds' Think-Tanks
The prognosis of the demand for care in 2030 in the three regions formed the point of departure for the Think-Tanks to examine in depth in the breeding grounds what care will soon be required. Central questions were: what can people do for themselves, what possibilities are provided by technology and e-health, what contribution can the social network make, what professional care will be necessary and where can it be organised?
The Think-Tanks included participants from the parties involved in the breeding ground (care-consumers, care organisations, health insurers, educational institutions, municipalities, province). Depending on the number of participants, the Think-Tanks were made up of two or three groups with a diverse composition. Independently of one another, the local Think-Tanks designed the health care landscape in 2030 based on the prognoses of the demand for care in their province or city. The outcomes of the local Think-Tanks show many similarities and are also in keeping with the outcomes of the focus groups. Below is a summary of the main points of the outcomes of these Think-Tanks.

Pre-care and prevention
Participants from all three breeding grounds agree that we must try to influence demand; a lot more attention should be paid to prevention, and pre-care. This demands an integral approach from a broad perspective. Pre-care and prevention should not be limited to the care domain, but should involve other domains of life, such as homes, work, education, leisure activities, etc. For instance, the participants claim that children in primary schools could already learn about resilience and caring for one another, and they could be taught about, e.g., healthy food choices and the need to exercise.
Municipalities can play a supporting role in encouraging healthy behaviour among their residents. It is important that prevention seeks connection with the district and neighbourhood. Districts and neighbourhoods differ and will not all have the same needs.

Care by the community
In all breeding grounds the participants gave the immediate environment of citizens (the district and the neighbourhood) a central position in health care. Active citizens and their networks play a key role in the new health care landscape. This means it is important to strengthen social cohesion in districts and to have a good picture of neighbourhood networks. The point of departure should be that citizens first try to solve their problems themselves and with help from their network. A second point of departure is that people receive care at home as long as possible. This is why the power of networks forms the basis of health care in the future. Where necessary, professional care can latch onto this. The distinction between health care and welfare should disappear in this care by the community.

Multifunctional multidisciplinary care in the neighbourhood
Professional care for less complex care demands could also be organised at district level. A scale of 10,000-15,000 residents is being considered. Participants prefer a multifunctional, multidisciplinary care centre. This centre would house not only medical provisions, but also other functions such as participation, welfare, debt relief, social support. It should be a social hub: people have to take a 'short walk' to get there and meet other people there. Care will not always have to be provided at the centre, but can also be given at home or via mobile units. Technological support plays an important role here.

Highly specialised care
Participants agree that highly specialised care such as heart surgery or an operation on a child with cancer cannot take place at home. This requires highly specialised centres with in-house specialised knowledge or special technological support. That care should be concentrated in a number of locations in the country. Participants do not regard the fact that this involves travelling as a problem.

The outcomes of the Think-Tanks in the breeding grounds were elaborated upon and developed during a Think-Tank on the island of Terschelling that lasted several days and which was comprised of participants with various backgrounds and ages (ranging from 20+ years up to and including 60+ years).

During the Think-Tank in Terschelling extensive attention was paid to elaborating on the new health concept (Huber et al.). Unanimity existed about the need of a broad definition of promoting health and of creating social contexts in which people are best able to take care of themselves. According to the participants, cohesion between the various domains is also needed, e.g. between health and education. Most time was spent thinking about an initial sketch of the new health care landscape that had been elaborated upon in the breeding grounds. The participants felt that the point of departure is that we must move towards establishing the demand for care and the treatment that is needed in consultation with patients. In practice it is currently complicated to avoid inappropriate care being provided, because doctors – based on their own professionalism – want to treat. A separate topic was the use of technology. The innovation behind technology is that citizens/patients can play a much more central role in health care. Most money should not go to highly specialised care, because specialists are becoming increasingly specialised, but to where demand is greatest. A concrete proposal was subsequently made, based on cases, about changes in health care in 2030. A number of noteworthy conclusions of the participants are:
- A lot can be removed from the medical domain, in particular support that can be provided via people's own network or in the neighbourhood.
- It makes sense to distinguish between common care demands and more complicated, but less common care demands.
- Citizens are leading the way and they are ready for initiatives that involve taking care of one another. The government must facilitate these initiatives. Discussions should take place about outcome measures of the quality of care, in view of the goals of citizens capable of taking care of themselves.
- For people with serious functioning problems, work should be 'out-reaching'.
- Quality of life should be the standard and citizens must be really encouraged to play their own part in caring for their health.

10. National Think-Tanks
The outcomes of the Think-Tank in Terschelling were subsequently examined in eleven national Think-Tanks with interested parties and parties involved in the field, such as nurses, GPs, medical specialists, administrators, self-employed people and the elderly. The Think-Tanks were organised together with relevant (umbrella) organisations (see appendix 3). The national Think-Tanks subscribe on the whole to the outcomes of the local Think-Tanks and supplemented them from their own perspective. This mainly involved additions about domains that need to be distinguished in the new health care landscape.

The participants were unanimous in their agreement on the Advisory Committee's points of departure: central are the new concept of health, the demand for care and how our citizens function. They also agreed, though with a few marginal comments, to the four care domains described by the breeding grounds. The marginal comments are about the impression that the model suggests separate domains,

while the participants emphasise that the barriers between the fields of care should actually disappear. In particular, pre-care and prevention can be found throughout all fields. Furthermore, the participants found that a number of the terms used and the definitions for explaining the model were still not clear, such as low-complex and high-complex, generalistic and de-escalation. The participants also emphasised that vulnerable citizens or citizens with a low socioeconomic status were less able to manage their own health care. A safety net must be there for them.

The focus in the Think-Tanks was mainly on pre-care and prevention. According to the participants, the switch to pre-care is crucial, and this is much more than just prevention. Care professionals should soon be paid for preventing diseases and disorders and not for treating them. This form of prevention must become an aspect of every profession. In addition knowledge about healthy behaviour should be on the curriculum as early as at primary school. The care fields Pre-care and Community Care go beyond health care. This is where social sectors such as homes, work, school, safety, the infrastructure etc, have to create the conditions for positive health. This is in keeping with pre-care and a preventive integral approach. An example of this is building flats for the elderly where they share provisions, but where students also live who could lend a helping hand whenever necessary.

Carrying out these changes will also require changes in the preconditions. The participants referred in particular to the financial framework. They also mentioned the link with education: a start should be made now in training today's students for the future. These students should be given a more generalist training, instead of separate specialist training. A demand already exists for nurses who can work on a generic basis in a district or neighbourhood.

11. Focus groups 2014 (systematic consultation of the field 2)
In the autumn of 2014, together with more than 30 national (umbrella) organisations, the Verwey-Jonker Institute organised another systematic consultation of the field (see appendix 3). In 34 focus groups, about 370 care-users, professionals, administrators, policy-makers, municipalities, researchers and educators reflected on the outcomes of the Think-Tanks: the four care domains: pre-care, community care, low-complex care and high-complex care, and the role of care professionals in those territories.
Most of the participants recognise the care domains described and the intended task redistribution and feel that this is in keeping with how health care should be designed in the future. One marginal comment is that the care domain model – due to its design – gives the (unintended) impression of being rather static. The participants emphasise that this is a continuum, in which citizens are central, and which does more justice to the points of departure of the Advisory Committee. The unintended hierarchy of the care domain model may also give the impression that specialisation or complexity is more important.

Pre-care
Many participants feel that pre-care currently has nothing to do with *health care*: it relates to society as a whole and it relates to a situation in which people do not (as yet) have any need of care. Prevention: preventing (more) care needs, according to most of the participants, is a part of every care domain and is not exclusive to pre-care. Three lines were distinguished regarding the role of care professionals:

- Pre-care is definitely not only a task for health professionals, but for the broader context in which it takes place: education, upbringing, homes, welfare, the municipality, etc. Healthy behaviour and resilience must be learned at an early age, for instance, during primary education.
- Care professionals do have an important task in providing information, for instance about healthy behaviour. Early recognition also remains the task of care professionals. It is in particular specialised knowledge that needs to be transferred, as this is currently 'stuck' with the specialists.
- Pre-care and prevention form the basis of the concept of keeping people healthy. Present day professionals are currently insufficiently equipped to deal with this. This means that even pre-care requires a different type of care professionals. And in practice, it will also involve new tasks (e.g. making use of ICT in order to carry out pre-care and prevention).

Community Care

The majority of the participants believe that care professionals have a small role to play within community care. A number of groups were even quite explicit: this is about welfare and not health care. Turn things around: start with welfare/social support, and only call in health care when it is necessary. A professional is needed to connect, coordinate, coach, etc., but this does not necessarily have to be a health care professional. For the work of care professionals this means:

- Connect with citizens' network, but also with volunteers and the broader network, provide volunteers with guidance, coordinate volunteers (task for welfare).
- Identifying, assessing whether intervention is necessary or not and transferring wherever necessary, a safety net function for those who are most vulnerable.
- Education/information for citizens, caring relatives, volunteers, support with articulation of wants and self-management, transferring knowledge (also about technological possibilities) and ability to cope whereby citizens have their own responsibility.
- Coordination when referrals come back and de-medicalising (bringing back to the network) between professionals in the district and during transitions between care domains.

Low-complex and high-complex care

The role of care professionals in low-complex and high-complex care were discussed jointly during most meetings, whereby in general no distinction was drawn between what belongs to low-complex and what to high-complex care. Most participants regarded the complexity as a continuum: the more complex the intervention or the care chain, the more (medical) specialisations will be required.

- In the future, as of 2030, care professionals in low-complex and high-complex care must be able to switch rapidly between the four care domains, i.e. between low-complex and high-complex care, but also between high-complex care and community care and pre-care. They will be mainly busy diagnosing, repairing and treating (highly complex) problems in the field of functioning, with a strong orientation towards pre-care and community care and making use of the newest supportive technology. Care professionals in high-complex care will share their knowledge and skills with other professionals in teams. In low-complex care professionals will have to be able to encourage clients to manage themselves and be able to sketch the various (care) scenarios. Care professionals in low-complex care will make sure that a care-user can continue to function and will monitor all steps if the care-user is unable to do this himself.
- Care professionals in high-complex care are capable of de-escalation. In addition they will provide care in low-complex facilities. This does require care professionals to have specific skills and it means, for instance, that they work in clearly defined, multidisciplinary teams, share knowledge with other care domains and have supra-domain networks.
- The work of care professionals will increasingly become integral and multidisciplinary. In low-complex and high-complex care, it is important that people work together with care professionals who provide support. After all, they are able to make the connection with community care. Professionals are there to guarantee the continuity of care. This is a joint responsibility that nevertheless must be clearly defined.
- In the future there will be more generalists and fewer specialists in low-complex and high-complex care. On the one hand many participants envisage in the near future a generalist care professional with a broad training and deployability, and sufficient knowledge to be able to recognise all sorts of care needs and health matters in order to call in specialist care in good time. On the other hand, they feel that in 2030 specialists should be better at forming a 'helicopter view', while still retaining their specific knowledge. They focus on expert interventions after which they work within teams towards the return of patients as soon as possible to low-complex or community care.

Appendix 3: Meetings of breeding grounds, think-tanks and focus groups, presentations

Breeding grounds

Friesland
Start of meeting, *30 September 2013*
Local Think-Tank, *12 March 2014*
Local Think-Tank Revisited, *19 November 2014*

Amsterdam
Start of meeting, *16 September 2013*
Local Think-Tank, *31 March 2014*
Local Think-Tank Revisited, *3 November 2014*

Rotterdam
Start of meeting, *13 May 2014*
Local Think-Tank, *26 June 2014*
Local Think-Tank Revisited, *27 November 2014*

National Think-Tanks

Dutch Association of Young Specialists and Nurses and Carers, *21 May 2014*
NPHF Health Federation, *26 May 2014*
Branch organisations in care, *1 July 2014*
ZZP Nederland, *2 July 2014*
The Elderly, *21 August 2014*
National Association of General Practitioners, *27 August 2014*
Art, *8 September 2014*
Order of Medical Specialists, *11 September 2014*
Hospital Landscape (Radboud UMC), *2 October 2014*
GGZ Centraal (Mental health care organisation), *17 November 2014*
Educators from the breeding grounds, *21 November 2014*

Focus groups consultation of the field 1 (autumn 2013)

Education
UMCs/hospitals (2x)
A life-long learning *(refresher course)*
Supervision
Pharmacy
Municipal Health Services
Care entrepreneurs
GGZ professionals (Mental health care organisation)
Social work
Physiotherapy
Nursing/caring
Obstetrics
Primary health care
Medical specialists
Knowledge and research
Oral health care
Patients *(3 meetings)*
Organisations of professionals

Ministry of Public Health, Welfare and Sport
Dutch Voluntary Work Organisations
Breeding ground Amsterdam
Breeding ground Friesland
Care of the Handicapped
GGZ Mental healthcare institutions
Social Services

Focus groups consultation of the field 2 (2014)

Association of GGD's (Community Health Services) and GHOR (Regional Medical Emergency Preparations and Planning)
V&VN, Working Group Health Care 2025; The Young Specialist
NVMW, Dutch Association of Social Workers
Association of universities of applied sciences; MBO council; VSNU; Association of Universities
KNGF, Royal Dutch Association for Physiotherapy
KNMP, Royal Dutch Association for the Advancement of Pharmacy
Nurses & Carers in the Netherlands (V&VN)
NFU, Dutch Federation of University Medical Centres; NVZ, Dutch Association of Hospitals
CGS, Board of Medical Specialisms
NPHF, Health Federation
NIP, Dutch Institute of Psychologists, including
NVGZP, Dutch Association for health care psychology; NVvP, Dutch Association for Psychiatry; GGZ-North Holland
Actiz, Branch organisation for Care Entrepreneurs
CSO, Umbrella of organisations for the elderly
GGZ Nederland, Dutch association of metal health and addiction, Education Sounding Board Group
Knowledge institutes: Movisie, Nivel, Netherlands Youth Institute,
RIVM, Verwey-Jonker Institute, Vilans,
ZonMw
KNOV, Royal Dutch Association of Obstetricians
MOgroep, Branch organisation for Welfare & Social Services
Citizens Friesland
NOV, Dutch Voluntary Organisations LOVZ
Occupational Therapy (the Netherlands)
KNMT, Royal Dutch Association for the Advancement of Dentistry; NVM, Professional Organisation for Oral Hygienists; NVMKA, Dutch Association for Oral Diseases, Maxillo-facial Surgery
OMS, Order of Medical Specialists
Primary care, Ineen; LHV, National Association of General Practitioners
Regioplus, Employers in Health Care and Welfare
ZZP Nederland;
VvOCM, Association of Remedial Therapists in Cesar and Mensendieck techniques;
PPN, Pharmacovigilance Platform (the Netherlands)
Citizens Amsterdam
Youths and Health (care), including Juvenile Care (the Netherlands), Vitras, Timon Foundation
IGZ, Inspectorate of health care
Sport, including NOC-NSF, Dutch Institute for Sport and Movement, HAN Institute for Sport and Movement studies, Mullier Institute
VGN, Dutch Association of Care of the Handicapped
G-32 municipalities

Presentations at congresses in 2014

LVO Congress, Ede, *14 March 2014*
Grand Round, St. Radboud, Nijmegen, *17 March 2014*
NCVGZ, Rotterdam, *11 April 2014*

TNO Congress Vitaal Verbinden [Vital Connection], Amersfoort, *18 June 2014*
Learning environment 3.0, Utrecht *4 November 2014*
Nurse Academy, Amersfoort, *17 November 2014*
Symposium Palliative Care, Lunteren, *26 November 2014*
KAMG Annual Congress, Nieuwegein, *28 November 2014*
EIZT Congress, Den Bosch, *10 December 2014*
MMV Congress Continual Movement, Nieuwegein *10 December 2014*

Other presentations in 2014

Presentations in the breeding grounds and at all Think-Tanks
Zonnehuis group, Amstelveen, *15 January 2014*
Vilans Dinner Pensant, Naarden, *20 February 2014*
ZonMW Committee Quality for Health Care, The Hague, *6 March 2014*
VWS DGVs and MT, The Hague, *22 September 2014*
Administrators' consultation Amsterdam, *30 September 2014*
VBG, Utrecht, *13 October 2014*
VitaValley, Ede, *27 October 2014*
VWS/OCW administrators' consultation, The Hague, *29 October 2014*
Zonnehuis group, Amstelveen, *10 November 2014*
VWS/MEVA Executive Board, The Hague, *13 November 2014*
Sectoral Advice Board on Higher Health Care Education, Utrecht, *12 December 2014*

Appendix 4: Expert team Technology, Technological Experts, Terschelling Think-tank, Design team and Readers

Expert team Technology

Prof. dr. Ir. H. Hermens, TU Twente
Dr. ing. F. Wieringa, TNO
Drs. S. Kalisingh, TNO
Dr. G. Tuijthof, TU Delft
Prof. dr. ir. P. Jonker, TU Delft
Dr. I. Valstar, ZonMw
Dr. G.J. Gelderblom, Hogeschool Zuyd

Experts consulted (round of interviews)

Prof. dr. R. Bernards, Antoni van Leeuwenhoek Hospital
Prof. dr. I. Broeders, University of Twente/Meander MC, Amersfoort.
L. Engelen, REshape and Innovation Center, Radboud UMC.
Prof. dr. L. de Witte, University of Maastricht /Expertise centre Innovative Care and Technology
Dr. H. Ossebaard, Zorginstituut Nederland/TU Twente
Prof. dr. J. van Os, University of Maastricht

Think-Tank Terschelling

A. Baartmans
Drs. D. Berndsen
Drs. M. Geurts
Mr. dr. T. Hooghiemstra
Dr. M. Huber
Drs. M. Jambroes
Mr. drs. C. Kervezee
Prof. dr. J. Klein
Ir. A. Rol
Mr. W. Sorgdrager
Drs. J. Tummers
Prof dr. G. van der Wal

Design team

Drs. M. Geurts
Drs. A. Grotendorst
Drs. M. Jambroes
Dr. M. Kaljouw
Dr. M. Stadlander
Dr. K. van Vliet

Readers

Drs. A. Grotendorst
Drs. J. Ferdinandus, Erasmus MC
Dr. K. Rosmalen, LHV
Prof. Dr. R.J. van der Gaag, KNMG
Dr. B. Lahuis, Karakter Expertisecentrum voor kinder- en jeugdpsychiatrie
Prof. dr. ir. P. Jonker, TU Delft
Dr. W. Scholte-op-Reimer, HvA
Drs. G. van den Brink, Radboud UMC
T. Jacobs, St. Antonius Hospital Nieuwegein
H. Agelink, St. Antonius Hospital Nieuwegein

Appendix 5: Process analysis and inventory of good practices

Process analysis

Researchers at the Verwey-Jonker Institute are following the entire advice trajectory via a process analysis. The aim is to be able to describe the working method of the advice trajectory and its results, and to ensure these are transferrable. Central to the inventory of good practices described below is identifying effective elements in care practices in the breeding grounds. In addition, researchers are following effective elements in the field of developing a vision, methods of work, context, developing a basis of support and the actual transferability of aspects of this advice trajectory. In this way all the Think-Tanks that took place became part of the process of arriving at advice. Attending, reporting on and analysing these Think-Tank meetings is part of the process analysis. Other parts of the process analysis are the discussions between the breeding grounds, communication to the outside world, meetings of the Advisory Committee itself, and the way in which the team at Zorginstituut Nederland worked.

The working methods of the breeding grounds Amsterdam/Amstelveen, Friesland, Rotterdam and Heerlen around realising the breeding grounds and collaboration between the care organisations involved are the next important part of the process analysis. These could encompass important elements that have a realistic chance of being adopted and implemented in other locations in the Netherlands.
The results of the process analysis are insights regarding health care innovation obtained during the course of the trajectory. They provide points of departure for experiments and recommendations for implementing innovations that could have already started in the breeding grounds and in other innovative fields during the last phase of the advice trajectory. These insights have been available on the website since April www.zorgin2030.nl]

Inventory of good practices

The Verwey-Jonker Institute formed a picture of which elements of the advice on the health care landscape in 2030 can already be found in current care practice. This required first that the project leaders of the breeding grounds drew up a list of good health care practices. After this, six innovative projects were chosen based on the following three criteria:

- Personal control by citizens is concretely supported and strengthened.
- Work is done based on an integral approach to citizens and their surroundings.
- A concrete approach is involved in which new concepts of health care and working methods are being implemented based on the principle of ‘control in the hands of citizens’.

Six innovative care practices were selected, based on these criteria, in the breeding grounds Friesland, Amsterdam/Amstelveen and Rotterdam.

Researchers from the Verwey-Jonker Institute carried out discussions in these 18 care practices with both the project leader and the implementing person, and the practices were analysed based on knowledge developed during the first year of the advice trajectory. This is particularly about the accessibility of care, the effective provision of information, so that citizens can choose the care that best suits them and their situation, and the control citizens exert on it, the involvement of their network, and the content of the new professionalism and the integral approach. The aim of analysing these discussions is to identify and elaborate on effective elements of these health care innovations. The research also focuses on formulating opportunities for implementing effective elements in other locations in the Netherlands. These results will be available on the website as of April 2015 www.zorgin2030.nl. The following is a summary of the selected practices.

Breeding ground Friesland

1. The school as workplace
A team of care-providers work at school, employing an integral approach and with a central role for pupils and their needs. This approach not only avoids pupils dropping out of school, but ensures de-escalation of care, welfare, home problems by early detection and by means of informal discussions with pupils and advice for the pupils.

2. TinZ (Dementia Network Friesland)
A case manager provides a patient and his voluntary carer with support in making choices, or in solving practical problems in various fields of life. The approach strengthens self-management and the ability of residents to cope for themselves.

3. Mienskipssoarch
A Meitinker (someone who helps think about matters, an advisor) supports residents in small municipalities with their welfare, home and health care demands where necessary, and at their own request. The Advisor looks for solutions and makes connections, provides information and expands the range of choices for residents. The point of departure is thinking about possibilities and not about limitations.

4. Domain-oriented care
The aim of this project is to guarantee the resident's perspective and develop the care provided. Group discussions take place in a resident's own living environment, based on a special working method for drawing up an inventory of the needs and requirements of residents.

5. GEEF Platform
This is a network organisation of municipalities, health insurers, care-providers, educative institutions and housing corporations. The aim is to introduce domotics and eHealth applications to residents in Friesland and to promote their use.

6. GP hospital Drachten
This initiative aims at avoiding people in acute need of care ending up in hospital. These people can be admitted to the hospital for a short period of time. GPs are again carrying out more interventions and nursing care is guaranteed 24 hours a day.

Breeding ground Amsterdam/Amstelveen

1. Transmural care bridge
The aim of this project is to maintain the functioning of elderly patients after a stay in hospital by deploying a transition coach. The transition coach guides elderly patients and their voluntary carers after discharge from hospital, and connects the two worlds: the hospital and the home situation.

2. Brave Doctors [Dappere Dokters]
Brave doctors have discussions with patients about choosing optimum care instead of maximum care: more care does not always mean better care. This is based on patient involvement and personal responsibility. They also take care of intensive collaboration between GPs, specialists and other care-providers in order to realise optimum care.

3. Coordinated palliative care in the chain
For the treatment and support of people during the last phase of their life, Onze Lieve Vrouwen Gasthuis in Amsterdam has a palliative team. This includes the patient's GP. Central to the care provided by this team are the wants of the patient and his/her loved ones.

4. Better together in North Amsterdam [Beter samen in Noord]
Ten providers of care and welfare have joined forces in the Krijtmolen alliance (KMA), the objective of which is to improve assistance given to patients in North Amsterdam. The point of departure is to solve as much as possible in their own environment, followed by primary care and, where necessary, secondary care. This is subsequently followed by a return to primary care as soon as possible.

5. Visible connection [Zichtbare schakel]
The objective is to re-establish the function of the district nurse. What makes this project innovative is that the separate domains of welfare, care, primary and GP care are intertwined. The work of the district nurse is out-reaching, she walks and cycles throughout the district.

6. BigMove
The idea behind this project is to focus on health and behaviour. Interventions focus on people with mental disorders in combination with somatic and/or psychosocial problems. During weekly group sessions they are 'tempted' to come into action to improve their health.

Breeding ground Rotterdam

1. Together as one in Feijenoord
This is a neighbourhood network involving more than 30 organisations in the former sub-municipality Feijenoord that are active in the sectors housing, welfare, health care and participation. The work of these professionals is based on a broad perspective. Residents/patients are central and not the individual (compartmentalised) professions. Professionals are therefore expected to be familiar with the various living environments.

2. Healthy Weight Centre
A centre of expertise for patients, both children and adults, who suffer from (morbid) obesity. Methods involve an integral package of treatment possibilities. The idea is to allow treatments to take place using digital and technological resources, preferably in patients' own living environments.

3. Integral approach to asthma/COPD
The out-patients' clinic for lung diseases at the Sint Franciscus Gasthuis has developed a care trajectory for people with asthma and COPD that emphasises the patient adapting to his disorder. This leaves room for behavioural change, under the motto 'How can we get a patient to feel healthy again, despite having a chronic disease?'

4. Rijndam revalidation
Central to treatment at Rijndam is self-management by people with severe handicaps, with the objective of: optimum functioning and participation, based on self-management, with handicaps and despite the handicaps. Self-management involves making use of modern technology (domotics, robotics, movement registration and tele-medicine), with plenty of room for new innovative techniques and methods.

5. Neighbourhood men and women
Men and women in the neighbourhood offer practical support to people with a background of addiction, psychiatric problems or who live in social isolation. This initiative focuses entirely in the further recovery of people's ability to cope in their own home within the social context of the neighbourhood.

6. Other hands
The Other Hands community is a meeting place for care-workers and stakeholders such as Wehelpen.nl and the National Assistance Guide. Members of the community share knowledge and can learn from one another, irrespective of their backgrounds, positions or level of education. The objective is to provide tomorrow's clients with better guidance and support. Technology facilitates this low-threshold way of allowing them to digitally "meet" one another.

Appendix 6: Prognoses 2030 breeding grounds

Prognosis demand for care **Friesland** 2030

Estimates based on demographic developments[1]

87.000
(+75%)[2]
≥ 75 years

> 65 years

71,000 Functioning Problems	(+60%)

Functioning problems 65 years and older

mild/moderate dementia	4,900
mobility -/+ mild/moderate dementia	35,000
mobility and self-care -/+ mild/moderate dementia	19,000
severe physical -/+ mild/moderate dementia	6,300
severe dementia	5,300

55-85 years

44,000 Psychosocial Problems	(+29%)

Psychosocial Problems 55-85 years

Loneliness	25,000
Depression	21,000
Anxiety	16,000

84.000
(+29%)
65-74 years

18-64 years

64,000 Mental Disorders	(-10%)

Mental Disorders 18-64 years

Anxiety Disorders	35,000
Mood Disorders	22,000
Drug/Alcohol-related disorders	20,000
ADHD rest symptoms *(18-44 years)*	4,200

19-64 years

18,000 Mobility Problems	(-10%)

Chronic Disorders 19 years and older

Locomotor system disorders	171,000
Asthma/COPD	47,000
Incontinence	44,000
Diabetes Mellitus	37,000
Cancer	21,000
Dementia	18,000
CVA	13,000
Myocardial infarction	10,500
Heart failure (treatment by specialist)	6,600
Rheumatic arthritis (treatment by specialist)	4,000

341.000
(-10%)
20-64 years

> 19 years

307,000 Chronic Disorders	**(+10%)**
128,000 1 chronic disorder	*(+1%)*
179,000 > 1 chronic disorder	*(+16%)*

12-18 years

21.000 Chronic Disorders	**(-15%)**
12.000 1 chronic disorder	*(-15%)*
9.000 > 1 chronic disorder	*(-15%)*
3.500 Mobility Problems	(-12%)

Chronic Disorders 12-18 years

Allergy	7,800
Headache	5,700
Asthma	5,500
Eczema	4,000
ADHD	3,100
Tiredness	2,700
Stomach Problems	2,700
Hearing Problems	1,600
Diabetes Mellitus	550
Heart disease	800
Anorexia/Boulimia	700
Cancer	400

138.000
(-11%)
0-19 years

12-16 years

5.000 Psychosocial Problems	**(-17%)**

650.000 (+1%) = WHOLE POPULATION FRIESLAND

[1] *Based on Population Studies, unless indicated otherwise* | [2] *Percentage increase or decrease compared to 2012*

TNO, CHORUS ET AL., 2014

Prognosis demand for care **Rotterdam** 2030

Estimates based on demographic developments[1]

56.000
(+30%)[2]
≥ 75 years

65 years en ouder
58,000 Functioning problems (+29%)

61.000
(+33%)
65-74 years

20-64 years
35,000 Mobility Problems (+ 5%)

400.000
(+2%)
20-64 years

17 years en ouder

73.000 risk of Loneliness	(+7%)
49.000 risk of Mental Disorders	(+7%)
304.000 Chronic Disorders	**(+11%)**
140.000 chronic disorder	(+7%)
164.000 > 1 chronic disorder	(+11%)

143.000
(5%)
0-19 years

12-17 years

7.600 risk of Psychosocial Problems	(+7%)
4.500 chronic pain complaints	**(+3%)**
6.600 risk of Psychosocial Problems	(+7%)

4-12 years

18.000 chronic complaints/disorders	**(+7%)**
12.800 1 chronic complaint/disorder	(+7%)
5.200 > 1 chronic complaint/disorder	(+7%)

Functioning problems 65 years and older	
mild/moderate dementia	3,100
mobility -/+ mild/moderate dementia	32,000
mobility and self-care -/+ mild/moderate dementia	16,000
severe physical -/+ mild/moderate dementia	3,000
severe dementia	3,500

Mental Disorders (All ages, huisartsregistratie)	
Mood Disorders	11,000
Anxiety Disorders	4,600
Schizophrenia	1,200

Chronic Disorders 17 years and older	
Locomotor system disorders	123,000
Asthma/COPD	54,000
Diabetes Mellitus	44,000
Incontinence	41,000
Cancer	36,000
Myocardial infarction	21,000
CVA	19,000
Dementia	12,000

Chronic complaints/disorders 4-12 years	
Eczema	8,600
Allergy	5,100
Asthma/bronchitis	4,800
Stomach Problems	2,700
ADHD	1,800
Headache	1,400
Chronic Tiredness	750
Diabetes Mellitus	250
Cancer	<50

660.000 (+7%) = WHOLE POPULATION ROTTERDAM

[1] *Based on Population Studies, unless indicated otherwise* | [2] *Percentage increase or decrease compared to 2012*

TNO, CHORUS ET AL., 2014

Prognosis demand for care **Amstelveen** 2030

Estimates based on demographic developments[1]

12.000
(+43%)[2]
≥ 75 years

> 65 years

8.700 Functioning problems	(+40%)

55-85 years

5.600 Psychosocial Problems	(+29%)
3.200 Loneliness	(+29%)
2.700 Depression	(+29%)
2.100 Anxiet	(+29%)

10.000
(+40%)
65-74 years

20-64 years

850 Mobility Problems	(+ 0%)

18-64 years

9.800 Psychosocial Problems	(+10%)

52.000
(+7%)
20-64 years

> 19 years

46.000 Chronic Disorders	(+18%)
19.000 chronic disorder	(+14%)
27.000 > 1 chronic disorder	(+22%)

24.000
(+26%)
0-19 years

12-18 years

1.700 chronic complaints/disorders	(+37%)
1.300 1 chronic complaint/disorder	(+38%)
400 > 1 chronic complaint/disorder	(+37%)

12-16 years

900 risk of Psychosocial Problems	(+29%)

Functioning problems 65 years and older

mild/moderate dementia	1,000
mobility -/+ mild/moderate dementia	5,200
mobility and self-care -/+ mild/moderate dementia	1,500
severe physical -/+ mild/moderate dementia	300
severe dementia	750

Mental Disorders (All ages)

Mood Disorders (treated by GP)	1,700
Anxiety Disorders (treated by GP)	700
Schizophrenia (treated by GP)	200

Chronic Disorders 19 years and older

Locomotor system disorders	21,000
Cancer	9,800
Asthma/COPD	7,500
Incontinence	5,500
Diabetes Mellitus	3,900
CVA	2,500
Dementia	2,400
Myocardial infarction	1,600

Chronic complaints/disorders 12-18 years

Headache	1,000
Asthma/bronchitis	650
Motorische problemen	400
Eczema	400
Incontinence	100
Diabetes Mellitus	100
CVA	<50

98.000 (+18%) = WHOLE POPULATION AMSTELVEEN

[1] *Based on Population Studies, unless indicated otherwise* | [2] *Percentage increase or decrease compared to 2012*

TNO, CHORUS ET AL., 2014

Prognosis demand for care **Amsterdam** 2030

Estimates based on demographic developments[1]

61.000 (+56%)[2] ≥ 75 years

> 65 years

70.000 Functioning problems (+60%)

78.000 (+54%) 65-74 years

19-64 years

50.000 Mobility Problems (+19%)

> 19 years

56.000 risk of Mental Disorders (+27%)

81.000 risk of Loneliness (+29%)

560.000 (+4%) 20-64 years

405.000 chronische aandoeningen (+16%)
171.000 1 chronische aandoening (+9%)
234.000 > 1 chronische aandoening (+20%)

170.000 (+5%) 0-19 years

13-17 years

16.100 chronic complaints/disorders (+8%)
10.400 1 chronic complaint/disorder (+8%)
5.700 > 1 chronic complaint/disorder (+8%)

6.800 risk of Psychosocial Problems (+10%)
3.700 moderate risk (+10%)
3.100 high risk (+10%)

870.000 (+10%) = WHOLE POPULATION AMSTERDAM

Functioning problems 65 years and older	
mild/moderate dementia	3,500
mobility -/+ mild/moderate dementia	35,000
mobility and self-care -/+ mild/moderate dementia	21,000
severe physica -/+ mild/moderate dementia	7,100
severe dementia	3,600

Mental Disorders (All ages)	
Mood Disorders (treated by GP)	15,000
Anxiety Disorders (treated by GP)	6,200
Schizophrenia (treated by GP)	1,700

Chronic Disorders 19 years and older	
Locomotor system disorders	202,000
Asthma/COPD	62,000
Incontinence	56,000
Diabetes Mellitus	56,000
Cancer	41,000
Myocardial infarction	22,000
CVA	19,000
Dementia	12,000

Chronic complaints/disorders 13-17 years	
Headache	6,300
Asthma/bronchitis	4,900
Eczema	4,000
Chronic Tiredness	3,800
Stomach Problems	2,400
ADHD	1,800
Heart disease	450
diabetes mellitus	300
Anorexia/Boulimia	300
Cancer	50

NETHERLANDS	(-2%)	383.000
OTHER WESTERN	(+33%)	164.000
OTHER NON-WESTERN	(+47%)	122.000
MOROCCO	(+15%)	83.000
SURINAM	(-13%)	60.000
TURKEY	(+10%)	46.000
DUTCH ANTILLES	(-2%)	12.000

[1] *Based on Population Studies, unless indicated otherwise* | [2] *Percentage increase or decrease compared to 2012*

TNO, CHORUS ET AL., 2014

Prognosis demand for care **Amsterdam Centrum** 2030
Estimates based on demographic developments[1]

6.800
(+124%)[2]
≥ 75 years

> 65 years

7.600 Functioning problems	(+89%)

9.700
(+55%)
65-74 years

19-64 years

Mobility Problems	(%)

58.100
(-10%)
20-64 years

> 19 years

4.500 risk of Mental Disorders	(+12%)
7.300 risk of Loneliness	(+13%)

42.000 Chronic Disorders

19.000 1 chronic disorder	(-1%)
23.000 > 1 chronic disorder	(+13%)

9.700
(-11%)
0-19 years

13-17 years

chronic complaints/disorders	-
1 chronic complaint/disorder	-
> 1 chronic complaint/disorder	-
risk of Psychosocial Problems	
moderate risk	-
high risk	-

84.300 (-1%) = WHOLE POPULATION AMSTERDAM CENTRUM

Functioning problems 65 years and older

mild/moderate dementia	405
mobility -/+ mild/moderate dementia	4,203
mobility and self-care -/+ mild/moderate dementia	2,135
severe physical -/+ mild/moderate dementia	489
severe dementia	388

Mental Disorders (All ages)

Mood Disorders (treated by GP)	-
Anxiety Disorders (treated by GP)	-
Schizophrenia (treated by GP)	-

Chronic Disorders 19 years and older

Locomotor system disorders	19,834
Asthma/COPD	6,383
Incontinence	5,305
Diabetes Mellitus	4,959
Cancer	4,969
Myocardial infarction	2,109
CVA	1,982
Dementia	1,292

Chronic complaints/disorders 13-17 years

Headache	-
Asthma/bronchitis	-
Eczema	-
Chronic Tiredness	-
Stomach Problems	-
ADHD	-
Heart disease	-
diabetes mellitus	-
Anorexia/Boulimia	-
Cancer	-

NETHERLANDS	46.000
OTHER WESTERN	23.000
OTHER NON-WESTERN	9.900
MOROCCO	1.500
SURINAM	2.600
TURKEY	900
DUTCH ANTILLES	700

[1] *Based on Population Studies, unless indicated otherwise* | [2] *Percentage increase or decrease compared to 2012*

TNO, CHORUS ET AL., 2014

Prognosis demand for care **Amsterdam Noord** 2030
Estimates based on demographic developments[1]

8.700
(+35%)[2]
≥ 75 years

> 65 years

9.600 Functioning problems	(+47%)

10.200
(+45%)
65-74 years

19-64 years

Mobility Problems	(%)

62.400
(+19%)
20-64 years

> 19 years

7.300 risk of Mental Disorders	(+58%)
10.300 risk of Loneliness	(+41%)
49.000 Chronic Disorders	
19.000 1 chronic disorder	(+18%)
30.000 > 1 chronic disorder	(+35%)

24.900
(+17%)
0-19 years

13-17 years

chronic complaints/disorders	-
1 chronic complaint/disorder	-
> 1 chronic complaint/disorder	-
risk of Psychosocial Problems	
moderate risk	-
high risk	

106.200 (+22%) = WHOLE POPULATION AMSTERDAM NOORD

Functioning problems 65 years and older	
mild/moderate dementia	516
mobility -/+ mild/moderate dementia	4,824
mobility and self-care -/+ mild/moderate dementia	2,855
severe physical -/+ mild/moderate dementia	875
severe dementia	521
Mental Disorders (All ages)	
Mood Disorders (treated by GP)	-
Anxiety Disorders (treated by GP)	-
Schizophrenia (treated by GP)	-
Chronic Disorders 19 years and older	
Locomotor system disorders	26,326
Asthma/COPD	7,840
Incontinence	7,484
Diabetes Mellitus	7,528
Cancer	5,432
Myocardial infarction	3,075
CVA	2,548
Dementia	1,735
Chronic complaints/disorders 13-17 years	
Headache	-
Asthma/bronchitis	-
Eczema	-
Chronic Tiredness	-
Stomach Problems	-
ADHD	-
Heart disease	-
diabetes mellitus	-
Anorexia/Boulimia	-
Cancer	-

NETHERLANDS	(-2%)	45.000
OTHER WESTERN	(+63%)	14.000
OTHER NON-WESTERN	(+80%)	18.000
MOROCCO	(+43%)	12.000
SURINAM	(-1%)	7.100
TURKEY	(+55%)	8.500
DUTCH ANTILLES	(+17%)	1.400

[1] *Based on Population Studies, unless indicated otherwise* | [2] *Percentage increase or decrease compared to 2012*

TNO, CHORUS ET AL., 2014

Prognosis demand for care **Amsterdam Oost** 2030
Estimates based on demographic developments[1]

7.900
(+104%)[2]
≥ 75 years

> 65 years
10.000 Functioning problems (+98%)

11.700
(+89%)
65-74 years

19-64 years
Mobility Problems (%)

96.300
(+14%)
20-64 years

> 19 years
8.700 risk of Mental Disorders (+28%)

12.500 risk of Loneliness (+27%)

66.000 Chronic Disorders
29.000 1 chronic disorder (+20%)
37.000 > 1 chronic disorder (+31%)

31.400
(+12%)
0-19 years

13-17 years
chronic complaints/disorders -
1 chronic complaint/disorder -
> 1 chronic complaint/disorder -

risk of Psychosocial Problems
moderate risk -
high risk

147.200 (+20%)= WHOLE POPULATION AMSTERDAM OOST

Functioning problems 65 years and older

mild/moderate dementia	438
mobility -/+ mild/moderate dementia	4,877
mobility and self-care -/+ mild/moderate dementia	3,061
severe physical -/+ mild/moderate dementia	1,124
severe dementia	456

Mental Disorders (All ages)

Mood Disorders (treated by GP)	-
Anxiety Disorders (treated by GP)	-
Schizophrenia (treated by GP)	-

Chronic Disorders 19 years and older

Locomotor system disorders	31,866
Asthma/COPD	9,707
Incontinence	8,587
Diabetes Mellitus	8,628
Cancer	6,380
Myocardial infarction	3,162
CVA	2,835
Dementia	1,518

Chronic complaints/disorders 13-17 years

Headache	-
Asthma/bronchitis	-
Eczema	-
Chronic Tiredness	
Stomach Problems	-
ADHD	-
Heart disease	-
diabetes mellitus	-
Anorexia/Boulimia	-
Cancer	-

NETHERLANDS	73.000
OTHER WESTERN	28.000
OTHER NON-WESTERN	17.000
MOROCCO	13.000
SURINAM	9.000
TURKEY	5.200
DUTCH ANTILLES	1.500

[1] *Based on Population Studies, unless indicated otherwise* | [2] *Percentage increase or decrease compared to 2012*

TNO, CHORUS ET AL., 2014

Prognosis demand for care **Amsterdam Zuid** 2030
Estimates based on demographic developments[1]

12.700
(+41%)[2]
≥ 75 years

> 65 years

13.000 Functioning problems	(+41%)

14.000
(+33%)
65-74 years

19-64 years

Mobility Problems (%)	

95.400
(-1%)
20-64 years

> 19 years

7.800 risk of Mental Disorders	(+19%)
12.100 risk of Loneliness	(+18%)

69.000 Chronic Disorders

31.000 1 chronic disorder	*(+4%)*
38.000 > 1 chronic disorder	*(+13%)*

22.700
(+3%)
0-19 years

13-17 years

chronic complaints/disorders	-
1 chronic complaint/disorder	-
> 1 chronic complaint/disorder	-
risk of Psychosocial Problems	
moderate risk	-
high risk	-

144.700 (+5%) = WHOLE POPULATION AMSTERDAM ZUID

Functioning problems 65 years and older

mild/moderate dementia	778
mobility -/+ mild/moderate dementia	6,812
mobility and self-care -/+ mild/moderate dementia	3,881
severe physical -/+ mild/moderate dementia	1,050
severe dementia	768

Mental Disorders (All ages)

Mood Disorders (treated by GP)	-
Anxiety Disorders (treated by GP)	-
Schizophrenia (treated by GP)	-

Chronic Disorders 19 years and older

Locomotor system disorders	32,886
Asthma/COPD	10,346
Incontinence	8,996
Diabetes Mellitus	8,383
Cancer	7,697
Myocardial infarction	3,573
CVA	3,234
Dementia	2,561

Chronic complaints/disorders 13-17 years

Headache	-
Asthma/bronchitis	-
Eczema	-
Chronic Tiredness	
Stomach Problems	-
ADHD	-
Heart disease	-
diabetes mellitus	-
Anorexia/Boulimia	-
Cancer	-

NETHERLANDS	80.000
OTHER WESTERN	33.000
OTHER NON-WESTERN	17.000
MOROCCO	5.300
SURINAM	5.100
TURKEY	2.600
DUTCH ANTILLES	1.600

[1] *Based on Population Studies, unless indicated otherwise* | [2] *Percentage increase or decrease compared to 2012*

TNO, CHORUS ET AL., 2014

Prognosis demand for care **Amsterdam Zuidoost** 2030
Estimates based on demographic developments[1]

5.700
(+77%)[2]
≥ 75 years

> 65 years
7.200 Functioning problems (+85%)

8.400
(+80%)
65-74 years

19-64 years
Mobility Problems (%)

56.600
(+5%)
20-64 years

> 19 years
5.900 risk of Mental Disorders (+27%)

9.800 risk of Loneliness (+23%)

42.000 Chronic Disorders
17.000 1 chronic disorder (+11%)
25.000 > 1 chronic disorder (+23%)

22.300
(+7%)
0-19 years

13-17 years
chronic complaints/disorders -
1 chronic complaint/disorder -
> 1 chronic complaint/disorder -

risk of Psychosocial Problems
moderate risk -
high risk

93.000 (+12%) = WHOLE POPULATION AMSTERDAM ZUIDOOST

Functioning problems 65 years and older

mild/moderate dementia	299
mobility -/+ mild/moderate dementia	3,588
mobility and self-care -/+ mild/moderate dementia	2,268
severe physical -/+ mild/moderate dementia	740
severe dementia	325

Mental Disorders (All ages)

Mood Disorders (treated by GP)	-
Anxiety Disorders (treated by GP)	-
Schizophrenia (treated by GP)	-

Chronic Disorders 19 years and older

Locomotor system disorders	21,698
Asthma/COPD	7,237
Incontinence	5,829
Diabetes Mellitus	6,822
Cancer	3,881
Myocardial infarction	2,347
CVA	2,245
Dementia	1,083

Chronic complaints/disorders 13-17 years

Headache	-
Asthma/bronchitis	-
Eczema	-
Chronic Tiredness	
Stomach Problems	-
ADHD	-
Heart disease	-
diabetes mellitus	-
Anorexia/Boulimia	-
Cancer	-

NETHERLANDS	23.000
OTHER WESTERN	12.000
OTHER NON-WESTERN	27.000
MOROCCO	2.600
SURINAM	23.000
TURKEY	1.400
DUTCH ANTILLES	3.600

[1] *Based on Population Studies, unless indicated otherwise* | [2] *Percentage increase or decrease compared to 2012*

TNO, CHORUS ET AL., 2014

Prognosis demand for care **Amsterdam West** 2030

Estimates based on demographic developments[1]

7.900
(+88%)[2]
≥ 75 years

> 65 years

9.500 Functioning problems (+74%)

10.800
(+58%)
65-74 years

19-64 years

Mobility Problems (%)

101.600
(+1%)
20-64 years

> 19 years

8.700 risk of Mental Disorders (+9%)

12.500 risk of Loneliness (+11%)

66.000 Chronic Disorders

30.000 1 chronic disorder (+7%)

36.000 > 1 chronic disorder (+14%)

23.900
(+1%)
0-19 years

13-17 years

chronic complaints/disorders -

1 chronic complaint/disorder -

> 1 chronic complaint/disorder -

risk of Psychosocial Problems

moderate risk -

high risk

144.200 (+6%) = AMSTERDAM WEST

Functioning problems 65 years and older

mild/moderate dementia	441
mobility -/+ mild/moderate dementia	4,677
mobility and self-care -/+ mild/moderate dementia	2,911
severe physical -/+ mild/moderate dementia	1,055
severe dementia	455

Mental Disorders (All ages)

Mood Disorders (treated by GP)	-
Anxiety Disorders (treated by GP)	-
Schizophrenia (treated by GP)	-

Chronic Disorders 19 years and older

Locomotor system disorders	31,154
Asthma/COPD	9,597
Incontinence	8,330
Diabetes Mellitus	7,908
Cancer	6,061
Myocardial infarction	2,947
CVA	2,596
Dementia	1,518

Chronische klachten/aandoeningen 13-17 years

Hoofdpijn	-
Astma/bronchitis	-
Eczeem	-
Chronische vermoeidheid	-
Buikklachten	-
ADHD	-
Hartaandoening	-
Diabetes mellitus	-
Anorexia/Boulimia	-
Kanker	-

NETHERLANDS	74.000
OTHER WESTERN	31.000
OTHER NON-WESTERN	15.000
MOROCCO	12.000
SURINAM	5.300
TURKEY	6.300
DUTCH ANTILLES	1.600

[1] *Based on Population Studies, unless indicated otherwise* | [2] *Percentage increase or decrease compared to 2012*

TNO, CHORUS ET AL., 2014

Prognosis demand for care **Amsterdam Nieuw West** 2030
Estimates based on demographic developments[1]

11.300
(+21%)[2]
≥ 75 years

> 65 years
13.000 Functioning problems (+41%)

12.800
(+43%)
65-74 years

19-64 years
Mobility Problems (%)

89.900
(+4%)
20-64 years

> 19 years
13.200 risk of Mental Disorders (+37%)

16.300 risk of Loneliness (+20%)

71.000 Chronic Disorders
26.000 1 chronic disorder (+3%)
45.000 > 1 chronic disorder (+22%)

35.400
(+1%)
0-19 years

13-17 years
chronic complaints/disorders -
1 chronic complaint/disorder -
> 1 chronic complaint/disorder -

risk of Psychosocial Problems
moderate risk -
high risk

149.300 (+7%) = AMSTERDAM NIEUW WEST

Functioning problems 65 years and older

mild/moderate dementia	638
mobility -/+ mild/moderate dementia	5,959
mobility and self-care -/+ mild/moderate dementia	4,299
severe physical -/+ mild/moderate dementia	1,784
severe dementia	677

Mental Disorders (All ages)

Mood Disorders (treated by GP)	-
Anxiety Disorders (treated by GP)	-
Schizophrenia (treated by GP)	-

Chronic Disorders 19 years and older

Locomotor system disorders	37,973
Asthma/COPD	10,825
Incontinence	11,163
Diabetes Mellitus	11,711
Cancer	6,412
Myocardial infarction	4,454
CVA	3,336
Dementia	2,256

Chronische klachten/aandoeningen 13-17 years

Hoofdpijn	-
Astma/bronchitis	-
Eczeem	-
Chronische vermoeidheid	-
Buikklachten	-
ADHD	-
Hartaandoening	-
Diabetes mellitus	-
Anorexia/Boulimia	-
Kanker	-

NETHERLANDS	42.000
OTHER WESTERN	23.000
OTHER NON-WESTERN	18.000
MOROCCO	36.000
SURINAM	8.000
TURKEY	21.000
DUTCH ANTILLES	1.400

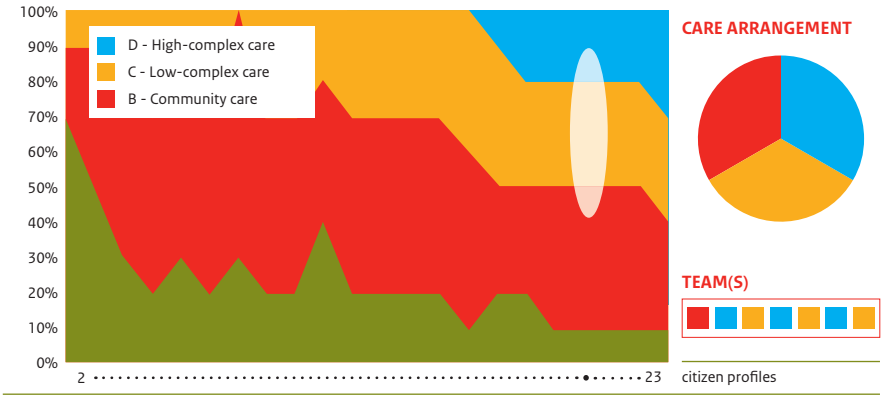
[1] *Based on Population Studies, unless indicated otherwise* | [2] *Percentage increase or decrease compared to 2012*

TNO, CHORUS ET AL., 2014

Appendix 7: Examples

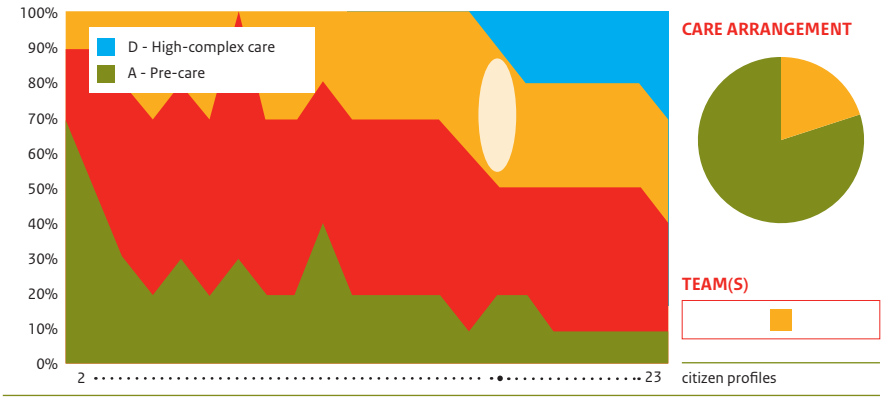
In order to give an impression of this advice in practice, Chapter 3 elaborated upon a practical example of a 71-year-old woman with a hip fracture caused by a fall, two chronic disorders (arthritis and chronic heart failure) and a mild form of dementia.

Example 1: *a two-year-old toddler who has been diagnosed with neuroblastoma cancer.*

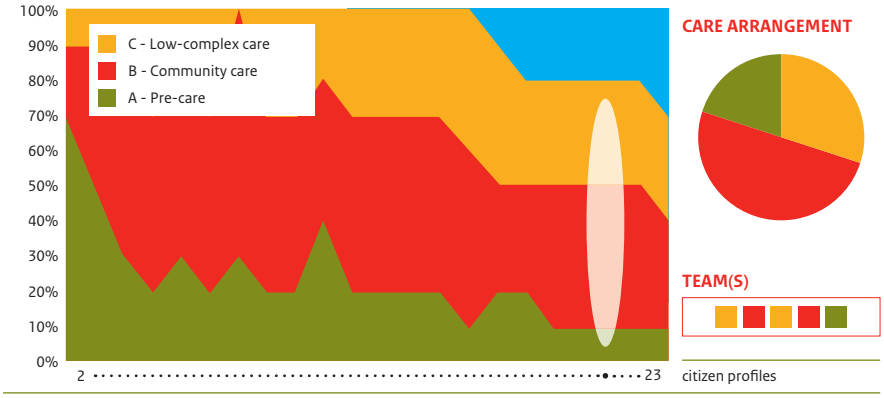


Initially this toddler will be treated in D (high-complex care). Once the diagnostic phase and initial treatment(s) has/have been completed, where possible, there will be a shared care phase in C, supervised by D. It will be increasingly possible for parts of treatment to take place at home (B). This is a toddler, who is completely dependent upon his parents. The entire treatment process will take place in collaboration with the parents.
This care arrangement is thus comprised of high-complex care, less complex care, home care and care that can be carried out by the patient's network. The team (one or several) is made up of professionals who have the necessary skills to carry out the care arrangement. One team-member has the role of coordinator and seeks alignment with the parents and the other participants in the team.

Example 2: *a young man, 20 years of age, with a simple fracture. This man undergoes short-term treatment in C (low-complex care). No professional care is required after treatment. He takes care of his own rehabilitation at the gym.*

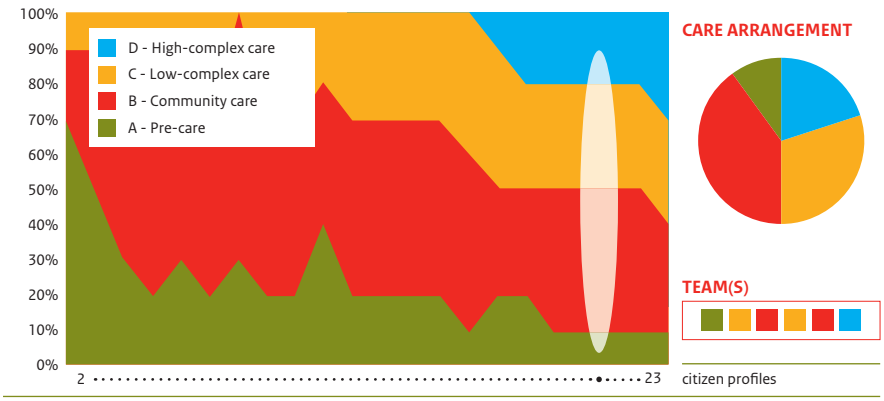


Example 3: *an autistic man, aged 55 years, living in a sheltered home, who regularly harms himself.*



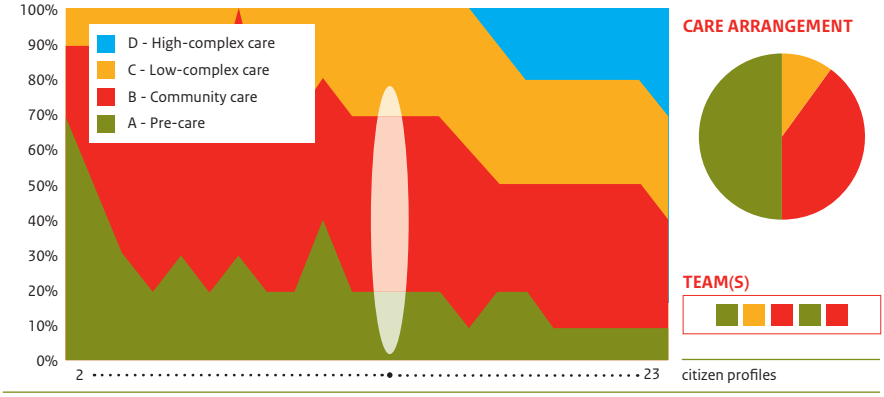
Sheltered residence takes place in B (community care). Depending on the severity of the self-mutilation inflicted by the man, his wounds will sometimes be treated in C (though generally in B). More important is treatment of his behaviour. This treatment will take place either in C (ambulant) or by a professional from C in B. The care arrangement will focus on treating his autistic behaviour and preventing self-mutilation. This is long-term care and a long-term relationship between the team and the autistic man. The team will involve the context and his network and will focus on allowing the man to function and participate as independently as possible. It is important, where possible, to make maximum use of his network. Control will be in the hands of a member of the team, whereby continuity and trust are immensely important.

Example 4: *a severely mentally and physically handicapped woman aged 60 years. She suffers from obesity, type 2 diabetes and has a behavioural disorder: she bites. She has second-degree burns all over her body.*



This woman will first be treated in D. Once the burns have been treated she can return to C where she lives in a sheltered environment. The care arrangement is temporarily extended to include care professionals skilled in dealing with burns and the risk of infection. Once this has been dealt with, the team will again focus on the existing long-term care arrangement, focussing on comfort and welfare, but also on her obesity, diabetes and behavioural disorder. The team will include people from professional care, welfare and her network. Control could be in the hands of a relative or a professional.

Example 5: *a 14-year-old girl who misses a lot of school (intermediate vocational) due to stomach pains. She lives with her mother and younger brother; her parents are divorced. She has little contact with her father. The mother works four days a week and worries about losing her job. They have financial problems. The girl finds it difficult to get up on time, has difficulty concentrating in class, her marks are poor because she often misses lessons. She has older boys as friends and her appearance means a lot to her.*



If necessary, a professional from C will treat the stomach pains in B, possibly in C. The main problems relate to the entire family and will be dealt with integrally in A and B. The arrangement will mainly be a community arrangement. This involves financial problems, upbringing problems and – possibly – a physical problem. The functioning problem relates not only to the girl, but to the entire family. It is important that here too their network is called in and that the network and community arrangement harmonise seamlessly with one another.