eHealth-monitor

eHealth at different speeds

A brief outline eHealth-monitor 2018

Nictiz
Better health through
better information

NIVEL
Research for better care

A brief outline of the eHealth-monitor 2018

Transformation of healthcare

Delivering healthcare in a digital era provides us with more and more possibilities. In healthcare, the use of the internet and technology (i.e. eHealth, see box 1) supports healthcare providers in improving the care process. More and more, applications support healthcare users[I] in the field of prevention and in leading a healthy lifestyle.

Increasingly, eHealth offers possibilities for dealing with chronic health disorders and the possibility to co-decide with the healthcare provider regarding care or treatment. Modern technology enables remote care and can promote self-management[1,2].

The rise of healthcare demands (see box 2) requires a different way of working, and this is where the use of eHealth can provide essential solutions. These develop-ments, however, often come with challenges. Sometimes there are concerns that technology will replace the human side of care provision[3]. In addition, there is convincing evidence that eHealth applications do not have the desired effects on health and healthcare, so it is with good reason that some new eHealth applications emerge and disappear. Successful implementation and use of eHealth is therefore not self-evident[2,4,5]. In previous editions of the eHealth-monitor, we concluded that this requires a change process that goes beyond merely implementing new technologies[2,6]. We can now state that effective and efficient use of eHealth requires a transformation within healthcare.

This chapter describes and addresses the most important results and findings and concludes with some recommendations. Box 3 reflects on a number of policy developments in relation to the eHealth monitor.

I   In this report, 'healthcare users' refers to every citizen residing in the Netherlands with access to healthcare. Not all healthcare users are patients. In this report, 'patients' refers to people receiving treatment from a healthcare professional.

Box 1 eHealth and the eHealth-monitor

- eHealth is the use of information and communication technologies, internet technology in particular, to support or improve health and healthcare.
- The eHealth-monitor is a research method, where annually Nictiz and Nivel map the availability and use of eHealth in the Netherlands. In addition, incentives, obstacles, effects and developments are studied. With this, the eHealth-monitor aims to contribute to a sustainable and purposeful deployment of eHealth.
- The results of this monitor are based on questionnaires filled out by 774 members of the Consumenten Panel Gezondheidszorg, 580 medical doctors and 660 nurses.

The quality and accessibility of healthcare in the Netherlands is good. Nevertheless, there are several developments that necessitate a different organisation of the healthcare system[7]. Due to an ageing population, the demand for healthcare and costs have risen. Coincidentally, by 2022, a shortage of 100 to 125 thousand healthcare employees is expected. Total healthcare costs, which are already high, will continue to increase in the coming years[7,9]. Policy is being developed to tackle these issues, for example in the area of personalised healthcare[10], outcome-based care[11] and support of self-management[12]. The use of eHealth is also seen as a solution for these issues[12].

eHealth at different speeds

Based on the results of the eHealth-monitor 2018, we conclude that the transformation process, which seems closely connected to the digitalisation of care, has different speeds. We observe the most progress in applications that are used for and by healthcare providers, such as the use of electronic patient records and the exchange of medical data between healthcare providers. We also observe progress in the use of eHealth by healthcare users when there is no direct relationship with the care provider. We observe less progress in applications where the healthcare professional and the healthcare user both have a task or role to fulfill, when the added value is unclear, when there is no sense of urgency or when the existing process becomes more complex or needs to change, for example because the application requires an adaptation of the care process.

Increasing use of applications for and by healthcare providers

eHealth applications that are used within the professional domain, such as electronic health records, essentiallly support the existing care process and are often used in the declaration process with health insurers. Therefore their use is considered useful, important and/or even necessary. In today's society, electronic patient records are largely commonplace. Doctors, and nurses working in general practices and hospital care regulalry exchange electronic patient data and increasingly in a standardised way. Here, the urgency is clear because healthcare providers need correct, reliable, timely, and efficient information. In turn, this contributes to patient safety[2].

An important consideration is that, even though the exchange of patient data at a local level increases, the rate of exchange remains low. It is important to focus on increasing data exchange on a local level because healthcare is increasingly localised, i.e. closer to the patient.

Progress in the use of applications for healthcare users without interference from the care provider

In many cases, the number of applications used by healthcare users with no involvement from a healthcare provider, is higher than previous years. This is especially true for applications that are easy to fit into daily activities. The internet, for example is regularly used to search for information about illness and treatment or to check whether the general practitioner (GP) needs to be consulted for a specific problem. In addition, more and more healthcare users indicated that they digitally keep track of their physical activity. Of course, nowadays this is simple as many smartphones offer this function. Applications that require more effort from healthcare users are generally used less often, examples include measuring and keeping track of health data for yourself. Other factors also play a role such as the efficiency of the application. In particular, measuring and keeping track of health data can provide insight into health or health conditions. Sometimes healthcare users require explanation and guidance to obtain this insight depending on their digital health literacy. Also, it strongly depends on a person's desire to understand what happens to them and the need for action.

Slow progress when healthcare providers and healthcare users are required to work together

Change happens at a slower rate for eHealth applications that are used in the professional domain and where the healthcare user needs to take an(inter) active role. We observe, for example that GPs and medical specialists more often provide services for a patients convenience, such as digitally requesting a repeat prescription. This is relatively easy to offer because the suppliers of the information systems usually incorporate this in the system. Moreover, a number of these services have little impact on the current care process or they offer added value for care providers, including a more efficient process. However, when we focus on the use of these services by healthcare users, this year we observed only a small increase in the use of the services offered by medical specialists. Predominantly, this is due to unfamiliarity with the available options amongst healthcare users. A further step is remote monitoring of patient data, such as self-measurements, by care providers. This requires a new role from both the healthcare user (i.e. proactive care consumer) and the healthcare provider (i.e. coach) and it is therefore not surprising that usage in this specific area remains low.

In summary, eHealth applications that require an interactive collaboration in the healthcare process between the healthcare provider and the healthcare user have a slower take-up even when the use of the application is desired by either party. We do not observe, for example, an increase in the use of medicine dispensers and telemonitoring, despite the fact that many care givers see this as desirable. Where there is little sense of urgency or desirability for one or both parties, and when a change in the care process is required, we observe that applications are rarely used, as is the case regarding medical video conferencing for elderly care and GP care.

In 2014, the Minister of VWS, Edith Schippers, formulated three objectives - to be achieved over five years[13]. These objectives relate to 1. online access to medical data, 2. the measurement of health values (in combination with remote (data) monitoring), 3. video calling, and home automation. The 2014 objectives are not stand-alone targets: since they have been introduced, there have been new developments.

In 2016, the National Health Information Council - an administrative collaboration between participants from the healthcare sector and the Ministry of Health, Welfare and Sport set four outcome objectives[14], namely, medication safety, patient-centricity, standardised information exchange and clinical documentation at the point of care. The outcome objectives give direction to programs, projects and activities within the healthcare sector.

In 2018, eHealth was mentioned in several Letters to Parliament[12,15]. In addition, the report entitled 'De juiste zorg op de juiste plek' (The right care in the right place) was published by a Task force consisting of independent experts from the healthcare sector. The essence of 'The right care in the right place' is, according to the Task force, the prevention of more expensive healthcare, relocating healthcare (closer to people at home) and replacing healthcare (by other forms of healthcare such as eHealth)[7].

The Task force's vision and foundations are explicitly included in the new Stakeholder Agreements with specialist bodies or expert parties and the Ministry of Health, Welfare and Sport[15].

The eHealth-monitor versus government policy

The last few years, Nictiz and Nivel have monitored the progress of the VWS objectives (as above). In the 2018 eHealth-monitor, the emphasis was on conducting additional research into online access and the preconditions that contribute to successful implementation of eHealth. As a result, this year we haven't explicitly investigated the extent to which the 2014 eHealth objectives have been achieved. Based on this year's research results we can elaborate, to some extent, on the progress of these objectives.

The online access objective is discussed at the end of chapter 3. We will elaborate on the objective of measuring health values at the end of chapter 5. At the end of chapter 6, we discuss the objectives of remote (data) monitoring, video calling and home automation.In various places in this report we refer to the outcome objectives, the Letters to Parliament, the Task force report of and the Stakeholder Agreements.

A brief outline

Bringing together these two worlds, i.e. that of the healthcare user and that of the healthcare provider requires time and change. And possibly, a disruption to existing relationships. To achieve this, a sense of urgency is needed. We observe, for example that the current problems on the labour market (see box 2) necessitate a need for change in the care process. It is important to highlight that there is an increase in the field of supervisory techniques, and if this sense of urgency is felt in more areas, for example, in the field of information provision for the patient, this will have a positive developmental effect. In a changing world, we need to facilitate both healthcare users and healthcare providers so that they make optimal use of all the opportunities, and we need to help them cope with the challenges.

Online access to medical data

The goal of Online access to medical data is to provide patients with a better overview of the status of their health, to ultimately give them (more) control over their health. More insight into their health data should also encourage people to take more responsibility for their health[16]. A personal health environment (PHE) takes this one step further, this tool allows people to control their personal health data. Online access and PHEs are developments that demand a new role from both the healthcare user and the care provider. Change therefore, will need time and investment. How much time depends on different factors, such as the level of desirability, expected effects and actual use. As far as PHEs are concerned, we are still on the verge of change. The MedMij program[II] is still ongoing, there are not many PHEs available at this moment and communication with the general public hasn't started yet, thus providing opportunities.

Discussions about patient access have been ongoing for some time. Concerns, unfamiliarity, and lack of trust from both doctors and healthcare users has resulted in only a modest growth in the use of online access. We do observe, however, that the supply of patient portals in hospitals is growing substantially[17]. This is fuelled by the objectives of the Ministry of Health, Welfare and Sport, the outcome objectives of the National Health Information Council and the Acceleration Program for the exchange of information between patient and professional (known in the Netherlands as VIPP[III])[13,14,18]. In the area of GPs, we observe hardly any increase in the supply of patient portals, but as a result of the OPEN[IV] program (Unlocking Patient Data from Primary Care in the Netherlands), this could start.

The first experiences with online access have been positive[1], though in order to grant patient access and give PHEs a valuable position in healthcare, changes have to be made. It requires gaining trust, more clarity about responsibilities and possibilities, a different role for care providers and care users and changes in the care process. In order to be able to realise this, it is important to listen to the concerns of all parties[20] and to start a continuous and constructive dialogue. Patient access should be addressed as a collaboration with healthcare providers, healthcare users, IT suppliers, and researchers. This will ensure a patient portal or PHE that is of added value for everyone taking into account various interests, opinions, and experiences. Ultimately, the end-goal is self-management for the healthcare user.

Prerequisites

As stated, the different speeds of implementing eHealth applications is linked to the process of transformation. This not only involves digitalising the care process, but also, to a lesser or greater extent, the change of the care process itself. It requires clarity of purpose and target groups: why, what and for whom?2. In addition, there are other prerequisites. This year, we examined a few: vision and objectives (as parts of policy), digital skills, and trust.

Our research shows that the vision on the use and deployment of digital healthcare applications is not always known by healthcare providers. This is true, particularly for hospital and elderly care. In all sectors, a minority of healthcare providers indicated that specific objectives had been formulated regarding the use and deployment of eHealth in their own organisation, which is a point of concern because a lack of knowledge and information about the possibilities and goals can result in a lack of support for the use of digital care applications. In addition, it can foster feelings of insecurity amongst employees regarding the use of eHealth. For similar reasons, it is important to involve healthcare users from the beginning when implementing eHealth. Their wishes and needs with regards to the care process should be the starting point for development. In around a third to half of the surveyed sectors, healthcare users are involved in the deployment of eHealth. Involvement of stakeholders in the implementation of eHealth increases the likelihood that the application or service matches their needs and is therefore used more often [21].

When we look at digital skills and digital health literacy, we see that healthcare users with a higher education level are more likely to make use of eHealth applications than healthcare users with a lower education level or lower IT skills. Unfortunately, the latter group is often less healthy and therefore would benefit from extra healthcare applications[22]. In addition, two thirds of people with chronic health conditions struggle to determine the reliability of health information. In line with the recent recommendation from the Wetenschappelijke Raad voor het Regeringsbeleid (WRR - Scientific Council for Government Policy), it is important to concentrate on the group with high health inequalities and to focus on health potential[23].

Care givers generally feel digitally skilled. However, there is room for improvement when it comes to knowledge about the availability of eHealth applications and the extent to which these are suitable for healthcare users. The eHealth-monitor 2017 showed that nurses, particularly those working with the elderly and in general practitioner care, consider themselves responsible for informing and supporting healthcare users when applying eHealth[2]. But to do so, they need sufficient knowledge about the possibilities and the target group. Therefore, it is important to inform nurses, but also other healthcare providers, about the possibilities of eHealth and to support them using it.

The last examined prerequisite is trust. A majority of healthcare providers say they have confidence in (new) technology. When it comes to online access, we see that trust in safe usage, and in the skills, and the understanding of healthcare users often falls short. As already mentioned, concerns of all parties need to be taken seriously and that knowledge about (new) technology is necessary. In addition, it is vital to raise awareness and trust by, amongst other things, gaining experience, as only then can the adoption of useful eHealth become the accepted norm.

Key results 2018

Prerequisites for eHealth: policy, skills and trust (chapter 2)

Hospital healthcare providers and healthcare providers for the elderly are often unaware of their organisation's vision and objectives
Almost half of the nurses in elderly and hospital care and four in ten medical specialists do not know whether their organisation has a vision about the use and deployment of digital healthcare applications. Between two and three fifths of the healthcare

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Vision and Objectives: key results

- For 55% of the GPs and 44% of the medical specialists, a vision about the use and deployment of digital healthcare applications in their organisation is well-known. Furthermore, 35%-39% of the nurses in elderly and hospital care are familiar with the organisations' vision on eHealth.
- 54% of nurses in elderly care and 61% of nurses in hospital care do not know whether objectives have been formulated about the use of eHealth, compared with 38% amongst nurses in general practices'.
- According to 48% of medcal specialists, 30% of GPs and 31% of elderly care nurses, patients are involved during the deployment of new eHealth applications.

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providers indicated that they do not know whether concrete objectives regarding usage and deployment of eHealth have been formulated within their organisation. In primary care[v], the results are different: more than half of the GPs and nurses working in general practices are aware of the organisation's vision on eHealth.

Most care givers that are aware of their organisation's vision indicated that their organisation is willing to invest time and money in new developments and that they are open to new eHealth applications. In all sectors, a minority of healthcare providers indicated that patients are involved in the deployment of new eHealth applications.

Healthcare users are able to locate health information on the internet, but they often find it difficult to estimate its reliability
Most healthcare users indicated that they know their way around the internet and can easily retrieve information. A small majority of the healthcare users indicated that health related information is (relatively) easy to find. More than half of the healthcare users found it (quite) difficult to determine the reliability of the retrieved information. This number is even higher amongst people with a chronic condition: more than two thirds said that they have difficulties in determining the reliability of health related information. More than half of the chronically ill stated that it is difficult to determine whether the digital health information they found applies to them and if they can use the information in daily life.

Digital health literacy and knowledge:
key results

- 63% of healthcare users find it quite or very difficult to determine the reliability of health information.
- 33%-35% of the physicians can match the right technology to the patients demand for care. Amongst nurses this varies between 41% and 57%.

Healthcare providers feel digitally skilled, but technical possibilities are not always known
Generally, most healthcare providers feel digitally skilled. Most doctors try to solve system or software problems themselves first and feel that they quickly master the use of new apps, programs or systems. Half of the doctors have faith in (new) technology. Most nurses shared that they learn how to use unfamiliair apps, programs or systems quickly and that they have faith in (new) technology. One third of GPs and medical specialists and about half of the nurses think they can choose the right technology for a patient's healthcare need. More than half (50%-63%) of the nurses are familiar with the technological possibilities within their organisation.

Online access (chapter 3)
Half of the healthcare users would like to access medical records online
Increasingly, it is possible for healthcare users to digitally access their medical data. Although hardly anyone does so, healthcare users and people with a chronic condition prefer the ability to view important medical data digitally. Many healthcare users expect that online access contributes to a better overview of care and better information about their health and treatment. One in eight healthcare users expect that online access increases anxiety. Three out of ten healthcare users are concerned that it will violate their privacy. Healthcare users that had online access found it important and felt that it gave them a lot of insight into their health.

More healthcare providers are positive about online access, but doctors are often concerned about its effects
When we look at healthcare providers, we observe that medical specialists facilitated patient access more than in 2017. In general, nurses also have a positive attitude towards patient access: the vast majority of nurses find it desirable to have a patient portal. With regards to general practitioners, we've observed a fluctuating picture over the past few years.

Nurses feel the most responsible when it comes to guiding the healthcare user to accessing their medical

Online access:
key results

- 52% of the healthcare users and 43% of the people with a chronic condition would like to have online access to their medical data from their GP. 46% of the healthcare users and 39% of the people with a chronic condition also want to access the data from a medical specialist.
- 2% of the healthcare users had online access to the patient records their GP keeps, and 8% for medical specialists. Amongst people with a chronic condition these percentages are, respectively, 4% and 7%.
- In 2018, 63% of the medical specialists and 35% of the GPs see patient access as desirable. In 2017, this was 53% and 34%. Most nurses (82%-88%) see patient portals as desirable.
- 26% of the GPs and 38% of the medical specialists are experiencing or expecting positive effects from online access. 65%-68% of the doctors experience or expect negative effects.

Responsibilities:
key results

- A large number of medical specialists and GPs see the patient as responsible for starting to use (62% and 60%, respectively) and continuing to use (70% and 64%, respectively) online access. Numerous nurses have the same opinion (the percentage varies from 53% to 67%).
- 53% to 67% of people with a chronic condition feel responsible for starting and continuing to use online access.

data online. Approximately half of the nurses are confident that their organisation provides sufficient help and support to healthcare users regarding use of a patient portal.

There are concerns about patient access both amongst GPs and medical specialists. Many doctors fear that, for example, it will raise unnecessary patient concerns and lead to discussions about the contents of the medical

record. Seemingly, little trust exists amongst doctors regarding the positive effects of online access and in a patient's capacity to interpret results and to estimate privacy risks. Some doctors are concerned that patients will share information with those who can abuse it. A large proportion of doctors have moderate confidence that the safety of medical data will be guaranteed when providing access online.

Healthcare providers consider patients to be responsible when starting to use and continuing the use of online access
Both medical specialists and GPs designated the patient as responsible at the start and for continued use of online access. Most nurses share this view. More than half of the people with a chronic condition feel responsible for starting and continuing to use online access. Some of the people with a chronic condition feel that the doctor, the physician's supporter(s), and sometimes also health insurers or the government are (partially) responsible.

Ease and service for healthcare users (chapter 4)
Options for online contact with the healthcare provider are increasing but remain relatively unknown
This year, we see that the availability of online contact options is rising, especially amongst GPs. Furthermore, there is an increase in the group of healthcare users and people with a chronic condition who are aware of the online contact options with their doctor. Although

Ease and service for healthcare users:
key results

- 88% of GPs and 50% of the medical specialists offer various options for online contact between the care giver and the patient in 2018.
- 55% of GPs offer the possibility to ask medical related questions via secure e-mail and/or a secure portal. Amongst medical specialists, this is 30%.
- In 2018, 22% of people with a chronic condition requested repeat prescriptions via the internet.

usage itself hasn't increased, a large group of users is interested in the possibilities for online contact. Nevertheless, the percentage of people, including people with a chronic condition, who aren' t aware of the options for online contact remains relatively high, to be precise, half to three-quarters are not aware of the different options of online contact with their care provider, although this particular group (chronically ill) generally take medication and visit a care giver regularly.

Self-management and personal health environments (chapter 5)

One third of people with a chronic condition have an interest in personal health environments

The number of healthcare users that digitally track physical activity has increased in recent years. In 2018, one in ten with a chronic condition digitally recorded their health data. More than one third didn't want to use such an application. Three-quarters of those with a chronic condition had not previously heard of a personal health environment (PHE). Based on the explanation of PHEs in the questionnaire, just over one third indicated that they would like to use it.

Nearly half of the general practitioners and four out of ten medical specialists say that they have heard of a PHE and have a basic understanding of what it is. A much smaller percental knew exactly what it is. Often nurses have heard less about or have less knowledge of PHEs than doctors.

Self-management and personal health environments: key results

- In 2018, 34% of the healthcare users digitally measured physical activity, in 2014 this was 12%.
- 61%-71% of the nurses and 76% of the people with a chronic condition had not previously heard of a PHE.

Remote guidance and support (chapter 6)

Opportunities for remote care are increasing

With regards to nursing care, we specifically observed progress in digital guidance and digital support for the elderly care. More and more nurses in this sector, for example, indicated that they, or their colleagues, work with digital applications. Remarkably, since 2016, the use of supervisory techniques has really taken off. Also in other fields, such as medication verification or robotics, most nurses in elderly care shared that they work more frequently with digital support tools than they previously did.

Electronic communication between healthcare providers (chapter 7)

Digital data exchange increases at a local community level or in local communities

For doctors and nurses in general practice and hospital care, we observed an increase in the electronic exchange of patient data in a standardised manner. In elderly care, we did not detect a change in the use of standardised electronic data exchange. For a number of years, the possiblity for digital information exchange at a local community level has been increasing, but the percentages are still relatively low.

Remote guidance and support: key results

- The use of supervisory techniques in elderly care increased from 53% in 2014 to 81% in 2018.
- In 2018, 33% of elderly care nurses stated that digital applications for double medication checks are being used, compared to 23% in 2017.

Electronic communication between healthcare providers: key results

- In 2018, 22% of GPs could digitally exchange standardised medical information between home care organisations, and for 14% of GPs, this was possible via the municipalitiy's social support department. In 2017, this was 18% and 7%, respectively. Of the nurses working in general practice care, 94% indicated that digital exhange of information does take place. In elderly care, this is 56%.

Recommendations for policymakers and interest groups

Transformation is a process that isn't clearly defined or linear. Change is being fuelled by reflection, sharing and learning. Our recommendations for policymakers, (representatives of) directors, (representatives of) healthcare providers, patient organisations and market parties are based on the current state of affairs and the findings of this study, they are neither linear nor exhaustive. Our recommendations need to be considered holistically.

1. Positioning of EHealth - have a clear vision and policy, and ensure that these are known

Who: Board and management of care organisations, umbrella organisations for care providers (such as Advisory Council for Nurses and Carers (VAR), CMIOs and CNIOs[VI]), and healthcare users (such as client counselling).

What: Develop a future-proof vision on eHealth, in consultation with stakeholders. This vision should form the basis of a learning cycle. Subsequently, to continuously work on quality improvement. Scientific models, such as Deming's quality circle[24] can support this cycle. This circle describes four activities (plan-do-study-act) that apply to improvements in organisations. In addition, it is important to involve stakeholders, including healthcare users, in formulating the vision and objectives. Equally, stakeholders should be informed about the progress with regards to the vision, objectives and the achievement of goals. For the VAR and CNIO, an important task lies in expressing the interests of the nurses, so that they can increase their influence on the policy. The same applies to the CMIO regarding the representation of medical specialists, because healthcare often extends beyond the boundaries of a healthcare organisation, it helps when discussions about the future vision and objectives also go beyond the typical boundaries.

Why: Our research shows that vision and objectives are not always known, especially within elderly and hospital care. Care innovation requires a change of attitude from all stakeholders. A clear long-term vision translated into policy and objectives that align with the policy of a healthcare organisation or general practice, forms the basis for well-founded and targeted use of eHealth. This policy and its familiarity is important for stability, support and trust amongst stakeholders.

2. Facilitate healthcare providers in offering and using eHealth

Who: Government, interest groups of healthcare providers (KNMG, LHV, NHG, V&VN, Actiz), board/ management of care organisations, nurses, and education institutes.

What: Work on raising awareness and sharing experiences amongst healthcare providers regarding patient access and PHEs.

Why: Ambiguity about obligations and responsibilities can lead to a wait-and-see attitude, or even a rejective attitude towards the deployment and use of patient access and PHEs. Targeted information about rights, obligations and added value brings certainty and support and can promote a proactive attitude. In addition, concerns and criticism from all parties must be openly discussed. There are real doubts and problems, and these deserve attention. Finally, it is beneficial to share experience inside and outside an organisation. Experience with patient access is still limited and take-up is low. Sharing positive and negative experiences about patient access provides insight and knowledge, needed for further development and upscaling.

Who: Government, interest groups of healthcare providers (KNMG, LHV, NHG, V&VN, Actiz), board/ management of care organisations, nurses, and education institutes.

What: Facilitate healthcare providers in the acquisition of knowledge regarding the availability and applicability of eHealth applications. Inspired by, for example, the National eHealth Living Lab (NeLL)[25], the GGD appstore[26], the Thuisleefgids[27], the DigitaleZorg-Kompas[28], the Digitale Zorggids[29], 'EHealth zorg van nu'[30], the Hulpmiddelenwijzer[31], the Inspirationbox Technologie in de langdurende zorg[32] or the Health Tools by the British NHS[33].

Why: Healthcare providers should be aware of the eHealth applications that are available inside or outside

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VI The Chief Medical Information Officer (CMIO) and Chief Nursing Information Officer (CNIO) act as a link between ICT, medical staff and the Board of Directors (RvB) of a hospital.

their organisation and they should know whether these applications are suitable for their patient's needs. In this year's eHealth-monitor, we clearly see that many healthcare providers have insufficient knowledge.

Who: Board/management of nurses
What: Facilitate nurses to guide healthcare users and support them in making the right choice for eHealth and how to use it.
Why: If we want the healthcare user to meet the expectations for self-management and self-reliance, it is important that he or she is supported. Nurses regard themselves as the most responsible for this, i.e. see it as their task to inform and guide healthcare users when using eHealth. They have to be given the responsibility and the time and the space to fulfill this role.

3 Facilitate healthcare users to use eHealth to their advantage

Who: Government, healthcare providers and interest groups for healthcare consumers, and patients (e.g. Pharos, Patiëntenfederatie Nederland).
What: Provide awareness amongst and support for healthcare users to use online access and PHEs to their advantage.
Why: Healthcare users are often unaware of their legal rights concerning (online) access of their patient records. This is also true regarding the options for self-management and self-reliance, the added value of eHealth applications such as patient access, and in the long term, PHEs. To ensure the safe handling of medical data, an important task for government, interest groups, and healthcare providers, is to make healthcare users aware of the risks of sharing records with third parties. When learning to use online access, many healthcare users need help and support. Nurses can play an important role in this (see recommendation 2).

Who: Healthcare providers, in consultation with ICT suppliers
What: Provide healthcare users with comprehensive information in their medical records.
Why: If we want patient access to contribute to self-reliance of the healthcare user, it is important that users have sufficient reliable and comprehensive information and tools at their disposal. The results from

the eHealth-monitor show that healthcare users often have difficulty in assessing the reliability of information found on the internet. Healthcare providers could support healthcare users by providing reliable information in the medical record, or by providing a link to related patient-oriented information, such as Thuisarts.nl, the Kijksluiter or Kijkwijzer.

Who: Government, interest groups for healthcare consumers, and patients (e.g. Pharos, Patiëntenfederatie Nederland)
What: Work on digital skills and digital health literacy.
Why: People with low digital skills will experience greater difficulty when using eHealth and they will be less inclined to start using eHealth applications. For this reason, it is important to offer people with low digital skills and their informal care givers the opportunity to call for help or to receive assistance at home. Furthermore, courses could be organised for this group in the community, for example aimed at the use of patient access or a PHE. In line with the recent recommendation of the Wetenschappelijke Raad voor het Regeringsbeleid (WRR - Scientific Council for Government Policy), inside the group of people with low health, extra attention needs to be paid to those with the greatest health [need] and focus on the health potential.

4 Develop a research agenda

Who: Research organisations and faculties, in consultation with ZonMw and the government.
What: Develop a research agenda with an overview of required knowledge and of topics needed to be studied.
Why: The eHealth-monitor shows that there is still a lack of clarity about the beneficial use of eHealth, and because of this, discussions on the use and finance of eHealth applications can not always be conducted properly. More insight into, for example, the effectiveness of an application, successful implementation processes, or how healthcare users deal with information is necessary to move towards the right care in the right place. A research agenda helps to address and prioritise the relevant themes.

References

1. Damschroder, L.J., Aron, D.C., Keith, R.E., Kirsh, S.R., Alexander, J.A., Lowery, J.C. (2009). Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Science,* 4, 50, https://doi.org/10.1186/1748-5908-4-50.
2. Wouters, M., Swinkels, I., Sinnige, J., de Jong, J., Brabers, A., van Lettow, B., Friele, R., van Gennip, L. (2017). *Kies bewust voor eHealth – eHealth-monitor 2017*. Den Haag & Utrecht: Nictiz & NIVEL.
3. Huygens, M.W., Swinkels, I.C.S., Verheij, R.A., Friele, R.D., van Schayck, O.C.P., de Witte, L.P. (2018). Understanding the use of email consultation in primary care using a retrospective observational study with data of Dutch electronic health records. *BMJ Open*, 8, e019233.
4. Fleuren, M.A.H., Paulussen, T.G.W.M., Van Dommelen, P., Van Buuren, S. (2014). Towards a measurement instrument for determinants of innovations. *International Journal for Quality in Health Care,* 26(5), 501–510 https://doi.org/10.1093/intqhc/mzu060.
5. Raalte, B. van. (2015). *Adoptie van professionele eHealth (achtergrondstudie)*. Den Haag: De Raad voor Volksgezondheid en Samenleving.
6. Krijgsman, J., Swinkels, I., van Lettow, B., de Jong, J., Out, K., Friele, R., van Gennip, L. (2016). *Meer dan techniek - eHealth-monitor 2016*. Den Haag & Utrecht: Nictiz & NIVEL.
7. Taskforce Zorg op de Juiste Plek. (2018). *De juiste zorg op de juiste plek. Who durft.* Den Haag: Ministerie van Volksgezondheid, Welzijn en Sport.
8. LHV, InEen, Patiëntenfederatie Nederland, ZN, ministerie van VWS. (2018). *Onderhandelaarsakkoord general practicionerszorg 2019 t/m 2022.* 27 juni 2018.
9. RIVM. (2018). Aandoeningen. *Welke aandoeningen hebben we in de toekomst? Trendscenario VTV 2018.* Retrieved from https://www.vtv2018.nl/aandoeningen on September 6, 2018.
10. Ministerie van Volksgezondheid, Welzijn en Sport. (2018). *Ontwikkeling Uitkomstgerichte zorg 2018-2022.* Den Haag: Ministerie van Volksgezondheid, Welzijn en Sport.
11. Zorg voor beter (2018). *What is persoonsgerichte zorg?* Retrieved from https://www.zorgvoorbeter.nl/persoonsgerichte-zorg/What-is-het on September 28, 2018.
12. Ministers en staatssecretaris van Volksgezondheid, Welzijn en Sport. (2018). *Kamerbrief over voortgang eHealth en zorgvernieuwing.* Den Haag: Ministerie van Volksgezondheid, Welzijn en Sport.
13. Minister en staatssecretaris van Volksgezondheid Welzijn en Sport. (2014). *Brief aan de Voorzitter van de Tweede Kamer betreffende eHealth en zorgverbetering.* Den Haag: Ministerie van Volksgezondheid, Welzijn en Sport.
14. Informatieberaad. (2018). *Outcome-doelen Informatieberaad.* Retrieved from https://www.informatieberaadzorg.nl/publicaties/publicaties/2017/3/24/generieke-outcome-doelen-informatieberaad on July 17, 2018.
15. Minister en staatssecretaris van Volksgezondheid, Welzijn en Sport. (2018). *Kamerbrief over rapport De juiste zorg op de juiste plek.* Den Haag: Ministerie van Volksgezondheid, Welzijn en Sport.
16. Niezen, M.G.H., Verhoef, P. (2018). *Digitale gezondheidsregie – Meer gegevens, meer grip?* Den Haag: Rathenau Instituut.
17. Nictiz. (2018). *Hoe online is jouw ziekenhuis?* Retrieved from https://www.hoeonlineisjouwziekenhuis.nl/ on September 24, 2018.
18. VIPP. (2018). *Versnellingsprogramma Informatie-uitwisseling Patiënt en Professional: de patiënt meer inzicht in zijn eigen zorg.* Retrieved from https://www.vipp-programma.nl/ on August 8, 2018
19. Hoogenbosch, B., Postma, J., de Man-van Ginkel, J.M., Tiemessen, N.A.M., van Delden, J.J.M., van Os-Medendorp, H. (2018). Use and the users of a patient portal: cross-sectional study. *Journal of Medical Internet Research,* 20(9), e262.
20. Schreuder, C., Pluut, B. (2018). *Handboek Patient access. Hoe regelen we dat?!* Den Haag: Nictiz. Retrieved from https://www.nictiz.nl/boeken/handboek-online-inzage-hoe-regelen-we-dat/ on September 25, 2018.
21. Van Alebeek, P., van Duijvendijk, I., Heldoor, M., ter Horst, L., Klijn, F., Sluis–Thiescheffer, W., Visser, F. (2012). *Hoe betrek ik patiënten bij de ontwikkeling van eHealth diensten?* Den Haag: Nictiz.
22. Latulippe, K., Hamel C., Giroux, D. (2017). Social health inequalities and eHealth: a literature review with qualitative synthesis of theoretical and empirical studies. *Journal of Medical Internet Research.* 19(4), e136.
23. Broeders, D.W.J., Das, H.D., Jennissen, R.P.W., Tiemeijer, W.L., de Visser, M. (2018). *Van verschil naar potentieel Een realistisch perspectief op de sociaaleconomische gezondheidsverschillen.* In WRR-Policy Brief 7. Den Haag: WRR.
24. The W. Edwards Deming Institute (2018). *PDSA Cycle.* Retrieved from https://deming.org/explore/p-d-s-a on October 1, 2018.
25. NeLL (2018). *National eHealth Living Lab.* Retrieved from https://www.nell.eu/ on 1 oktober 2018.
26. GGD appstore (2018). *De beste apps voor jouw gezondheid.* Retrieved https://www.ggdappstore.nl on October 1, 2018
27. Thuisleefgids (2018). *Thuisleefgids; alles voor langer zelfstandig thuis wonen.* Retrieved from https://thuisleefgids.nl/ on October 1, 2018.
28. DigitaleZorgKompas (2018). *Vind e-mental health aanbieders.* Retrieved from http://www.digitalezorgkompas.nl/on October 1, 2018.
29. De Digitale Zorggids. (2018). *What is digitale zorg? Ontdek de mogelijkheden.* Retrieved from https://www.digitalezorggids.nl/ on October 1, 2018.
30. Minister en staatssecretaris van Volksgezondheid, Welzijn en Sport. (2018). *EHealth zorg van nu.* Den Haag: Ministerie van Volksgezondheid, Welzijn en Sport.
31. Hulpmiddelenwijzer. (2018). *Vind informatie over hulpmiddelen.* Retrieved from https://www.hulpmiddelenwijzer.nl/ on October 1, 2018.
32. Vilans (2018). *Inspiratiebox Technologie in de langdurende zorg.* Retrieved from https://www.vilans.nl/vilans/media/documents/producten/inspiratiebox-technologie-in-de-langdurende-zorg.pdf on October 1, 2018.
33. NHS (2018). *Health tools.* Retrieved from https://www.nhs.uk/tools/pages/toolslibrary.aspx on October 1, 2018.

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