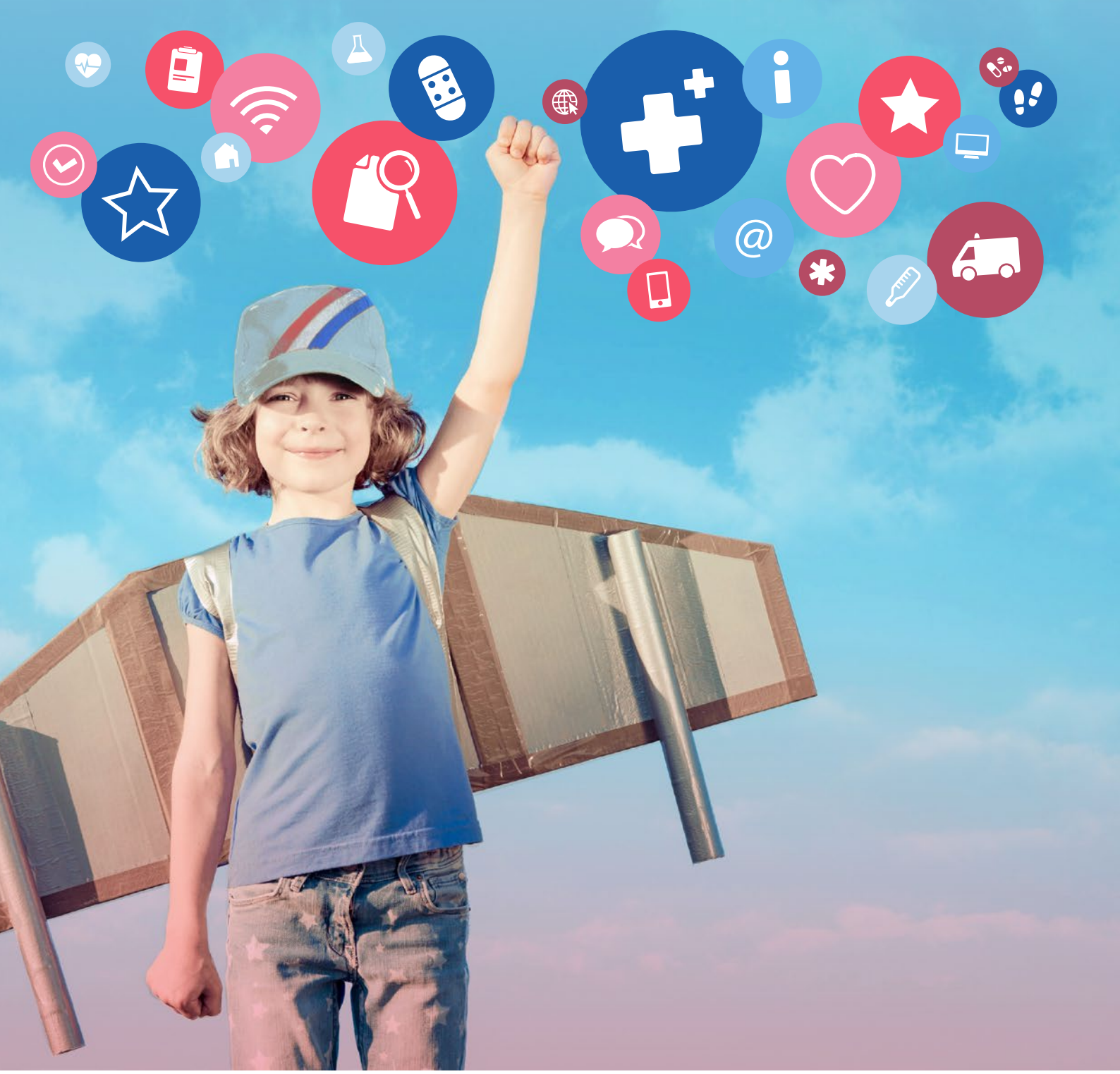

More than technology

eHealth-monitor 2016

Better health
through better IT

Nictiz

nivel

More than technology

eHealth-monitor 2016

This is a partial translation of the 2016 edition of the Dutch yearly national report on eHealth, the 'eHealth monitor'. It is a translation of the Management Summary. The full report is available in the Dutch language.

Summary: a brief outline of the 2016 eHealth monitor

Results, conclusions, and recommendations

Nurse: *"When used properly, it's a major step in the right direction."*

Nurse: *"Human contact is still the most important. I see electronic aids as an extra resource, not as a replacement."*

There is simply no avoiding the development of eHealth. Electronic record keeping and electronic information exchange have become an integral part of healthcare, though healthcare professionals still say there is a lot of room for improvement. Online convenience services such as e-consults or ordering repeat prescriptions online are slowly but surely finding their way to healthcare users.[1] They do see the advantages of eHealth, but are not sufficiently updated on the changes. There are also other applications, such as video consults with general practitioners, of which we cannot yet foresee whether they will be used on a large scale.

What is important is that eHealth is more than just technology. We need more awareness of the societal innovation that the implementation of this technology entails. From the healthcare professionals and healthcare managers working on this monitor, we have learned which issues are essential in implementing eHealth to improve healthcare. Those include collaboration, sharing knowledge, focus on education and support, and making collective decisions on standards and best practices.

In this summary, we provide a brief outline of the research we have conducted for the eHealth-monitor this year. First, we will cover preconditions for the successful use of eHealth innovations. Then we will discuss the extent of availability and the actual use of the various areas of application of eHealth. We conclude with recommendations for governmental policy and healthcare in practice.

Preconditions for the successful use of eHealth

This year, we focused on the question of what would help healthcare professionals and healthcare center managers to make eHealth better or easier to apply, the obstacles they have encountered and the effects they have seen resulting from the use of eHealth. The main points they listed are displayed in Table 1. These are divided among five focus areas (A - E). Each focus area is briefly discussed below (see Chapter 3 for further background information).[2]

A. There is room for improvement of eHealth applications – we need to establish links and collective standards

The first focus area for better or easier application of eHealth is the quality of the eHealth application itself. Many comments from healthcare professionals show that they perceive the applications to be developed without an understanding for their work

1 In this report, 'healthcare users' refers to every Dutch citizen with access to healthcare. Not all healthcare users are patients. In this report, 'patients' refers to people receiving treatment from a healthcare professional or people who are registered at a healthcare professional or healthcare center.

2 The five focus areas are derived from an existing framework for implementation research, the 'Consolidated Framework for Implementation Research'. See Damschroder, L.J., Aron, D.C., Keith, R.E., Kirsch, 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).

method and that use of these applications can therefore cause problems. Healthcare professionals want systems that work better, are easier to use, and, above all, systems that can be better linked to other systems. In addition, healthcare professionals (and managers) are often overwhelmed by the wide range of offered services. Therefore, they need standards. In that, they not only refer to information and exchange protocols, but also opting to use the same systems in different organizations that (have to) collaborate on a frequent basis. At the same time, they however want enough space to adapt systems and modules according to the needs of their patients and the organization.

B. We need to keep the end users in mind: both patients and healthcare professionals

Healthcare managers indicate that the implementations are more successful when colleagues and employees really want to use the application. The same holds for patients. This research shows large discrepancies in the attitudes of the end users (healthcare professional and/or healthcare user). While mental health nurse practitioners have a positive attitude towards eHealth and nurses are also generally optimistic (but often still trying to figure out the best way to use it), healthcare managers experience resistance among employees as a main obstacle in expanding the use of eHealth.

C. Organization requires time, schooling and gaining experience

Some of the listed points of attention have to do with increasing knowledge on eHealth among organizations and healthcare professionals. More schooling and education is needed, along with more time to look into what eHealth is, and more opportunity to practice and gain experience with these applications. Instructions for patients must not be forgotten in that process.

D. The implementation process calls for ambassadors and visible results

In the implementation process, it is important to involve employees and to find ambassadors. Furthermore, we need to focus on motivating other people involved that may promote the success of the innovation (such as the general practitioner when regarding the work of mental health nurse practitioners). Research participants

eHealth and the eHealth monitor

eHealth is the use of modern information and communication technologies, internet technology in particular, to support or improve health and healthcare.

The eHealth monitor is a form of continued research in which Nictiz and NIVEL annually map the availability and use of eHealth in Netherlands. In doing so, they also look at incentives, obstacles, effects, and developments through time.

The results of this monitor are based on questionnaire research conducted among 591 healthcare users, 590 doctors, 671 nurses, 125 mental health nurse practitioners, 1357 members of the Panel Psychisch Gezien (a national panel for people with psychiatric conditions) and 68 managers in healthcare.

Table 1
Focus points for better or easier application of eHealth, according to doctors[3] (A), nurses (V), mental health nurse practitioners (P) and healthcare managers (M). See Chapter 3.

Theme	Listed focus points
A. The eHealth application itself	• Better interoperability/integration of applications (A, P, M) • Improvement of the technology/properly functioning systems (A, V) • More ease of use (A, P) • Less diversity/sprawl (A) • Standards/uniform systems (A, M) • Option to change modules according to the needs of the patient and of the organization (M, P) • Affordable systems, acceptable start-up costs (M, A)
B. Prospective end users	• Taking stock of the wish to use the eHealth application (M) • Addressing any resistance among employees (M)
C. Organization	• Commitment from management (M, V) • Increasing knowledge in organization/being able to use more expertise (M) • Healthcare provider's instructions/schooling/education (A, P, V) • Instructions to the patient (A, V) • Better support (A, V) • More time for employees to look into and learn about eHealth (A, V, P) • More opportunity to practice and gain experience (P) • Adapting the work processes to make more time for eHealth-related tasks (P)
D. Implementation process	• Involving employees (V) • Availability of ambassadors (M) • Motivating other people involved who are necessary for success (such as the general practitioner when regarding the work of mental health nurse practitioners, or colleagues) (P, V) • Reiterating the importance of eHealth (M) • Making well-founded decisions (V) • Displaying the results (M)
E. Environmental factors	• Better and/or clearer financing opportunities/compensation (A, M, P) • More information on the range of offered services and effects (P) • Sharing good examples and best practices (M) • More research and evidence of effectivity (P, M) • Securing the information security of systems and protective measures for privacy (A, V)

indicate that results should be shown, but that that is not always the case.

E. There is room for improvement in the environmental factors: financing, best practices, evidence of effectivity

The call for better financing opportunities and/or compensation continues among both managers and healthcare professionals (general practitioners in particular). In many cases, it is apparently still difficult to reach a conclusive business case despite existing regulations. Furthermore, there is a demand for more certainty on the effectivity beforehand; that is shown from the demand for more research and for the collection of evidence.

That also entails learning from the experiences of others. We need to share good examples and best

3 By doctors, we mean general practitioners and medical specialists.

practices, also because of the large variety of choices. Healthcare users have to be better informed on the options.

Conclusion: we have to look further than technology, to societal innovation

The results show that the use of eHealth is more than implementing new technology. It calls for a societal innovation in which human, organizational and environmental aspects are of major importance. Collaboration between multiple parties is almost always essential. Societal innovation goes beyond changing a process or organization. It is also about the interaction between the healthcare professional and the healthcare user. In that process, both will have to take on new habits. Not only the processes have to change; people will have to start thinking differently and even feeling differently (more independent, for example). The focus points listed by the participants offer starting points for eHealth-facilitating measures, both for healthcare organizations and for other parties involved. From application suppliers to policy makers and educational institutes. The resulting recommendations are listed at the end of this chapter.

Results per category of eHealth applications

Every year, we monitor the availability and use of various types of eHealth applications. Table 2 provides a general overview of seven areas of application. Table 3 lists the most important results per area of application and trends over the past years and illustrates this information with examples. The most striking findings are discussed briefly below.

eHealth offering is substantial, but healthcare users do not use it a lot

Among general practitioners in particular, there is already a substantial range of offered online services for patients, such as e-consults or requesting repeat prescriptions online. And yet, to Dutch healthcare users, digital contact with healthcare professionals is not self-evident. Most Dutch people still do not know the online services offered by their own general practitioners or medical specialists. They stick to old habits. Most say that their healthcare professionals never refer to their digital options. A positive development is that the group of healthcare users, who are familiar with the online services offered by their general practitioners, is growing. The use of these services, however, has yet to increase.

When it comes to keeping track of information on medical care, Dutch healthcare users are not very digital as of yet. Those who keep their healthcare information all in one central place, such as results of laboratory research and doctor's letters, usually keep that all on paper. Only 5% keeps their information on the computer and only 1% used a personal online health record (also known as a personal health environment) in the past year. Most people have never looked into it or have never heard of it.

The unfamiliarity with and the relatively limited use of eHealth services conflict with our finding

that an important part of healthcare users (almost half) is keen to use online services, such as requesting repeat prescriptions online. This contrast between the indicated interest on the one hand and the lack of use on the other is persistent.

Online access is slowly but surely on the rise

A big part of eHealth policy is providing patients with access to their online health records, so that they can be better informed. There is a gradual increase in the options doctors offer for this, including online access to medication details. So far, it is not yet common practice for patients to add information to their own record. But there are more services than most healthcare users realise. The same unfamiliarity with the services is shown from previous measurements among chronically ill patients.[4]

Mental health nurse practitioners are progressive when it comes to eHealth

Mental health nurse practitioners are very positive about the opportunities that eHealth offers. Over the past year, 92% have used some form of eMental Health, for example psycho-education or self-help with anxiety symptoms, worry or other mood-related symptoms. Mental health nurse practitioners hold the opinion that eMental Health offers added value to certain patients and they have observed positive effects. In particular, they feel eHealth can enrich health-care by providing extra tools for patient therapy.

This could be partially due to the position of mental health nurse practitioner being created during the time in which the range of offered eHealth services was rapidly developing.

At the same time, nurse practitioners do indicate that there is room for improvement. The most frequently mentioned problems are that patients prematurely give up on eHealth, that the product range does not meet the needs of some patients and that patients prefer face-to-face conversations. We can possibly reach even more patients.Of the healthcare users that went to see a mental healthcare provider in the past year, a relatively small group (9%) received (partial) online treatment. We estimate that taken over the entire country, this concerns at least 40,000 patients.

Though healthcare finds innovation important, the use of eHealth is barely increasing

There are a great many eHealth applications focused on supporting the elderly in their home situations, to allow them to live at home longer. Some of this technology has been fairly widely implemented in healthcare, particularly supervision techniques, such as movement sensors, fall detection, audio monitoring, and personal alarms. However, there has not been much of an increase; not in video screen healthcare either, of which nurses say its use in healthcare institutes was still on the rise last year. Only the use of medicine dispensers is currently on the rise.

Healthcare managers generally have a positive attitude towards innovation, but encounter obstacles in the process.

4 Krijgsman, J., Peeters, J., Waverijn, G., Lettow, B. van, Hoek, L. van der, Jong, J. de, Friele R., Gennip, L. van. (2016). 'Because taking good care of myself is important to me' - 2016 Report on eHealth Objectives. The Hague & Utrecht: Nictiz & NIVEL.

Table 2
Availability and use of various eHealth applications (illustrative examples) in the Netherlands, based on figures from this monitor.

eHealth: area of application	Experimental and/or small-scale use (<10%)	Average use (10-50%)	Widely used (>50%)
I. Self-management (Chapter 6)	• Personal health records • Patients keeping information online on doctor's visits and treatments • Use of website/app to combat stress, sleeping problems, worrying	• Physical exercise • Keeping health information online or with an app • Patients measuring and updating health values	• Looking up information online
eHealth: area of application	**Experimental and/or small-scale availability (<10%)**	**Average availability (10-50%)**	**Wide availability (>50%)**
II. Ease and service for healthcare users (Chapter 4)	• Video consults with doctors	• Online doctor appointments • e-consults with medical specialists	• Requesting repeat prescriptions from general practitioners online • e-consults with general practitioners • e-consults with mental health nurse practitioners
III. Online access to the patient record (Chapter 5)	• Patients who add values to the healthcare provider's record	• Online access to medication details for doctors • Patient healthcare portal	
IV. Online treatment (Chapter 6)			• Online (self-help) programmes for mental health nurse practitioners
V. Remote monitoring (Chapter 7)	• Healthcare robots • Remote patient monitoring (different from diabetes) by general practitioner	• Supervisory technology • Video screen healthcare • Medicine dispenser • Remote diabetes patient monitoring by general practitioner	
VI. Electronic patient records (Chapter 8)		• Electronic patient records for nurses in healthcare	• Electronic patient records for doctors and nurses in the cure
VII. Electronic information exchange between healthcare providers (Chapter 9)	• Information exchange between general practitioner and the city's social support services	• Information exchange between medical specialists and other hospitals, nursing homes and pharmacies • Telecardiology, tele-mental healthcare	• Information exchange between general practitioners and pharmacies and medical centers; • Information exchange between medical specialists and the lab • Teledermatology

Explanation: In the category 'self-management', the applications are categorized according to *use* by healthcare users. *Availability* is leading for the other categories. In the categories 'Ease and service', 'Online access', 'Online treatment' and 'Remote monitoring', availability is based on the question whether healthcare professionals offer their patients an application. Here, we have indicated with a ◔ or a ◑ to what extent healthcare users said they use the application ◔ = less than 10% use it; ◑ = 10-50% use it. If an application is only targeted toward healthcare professionals, the distribution in the table indicates to what extent healthcare professionals have access to it.

Table 3
Most important results and trends per area of application, based on figures from this monitor.

eHealth: area of application	**Most important** results and trends	**Examples of results and trends**
I. Self-management (Chapter 6)	• Interest in keeping information on lifestyle and health online has increased. • Patients keeping information on receiving medical care happens mainly on paper.	• The percentage of healthcare users that keeps track of their own exercise with a pedometer or a mobile app went from 12% in 2014 to 22% in 2016. (Table 6-3) • Of the healthcare users, 1% used a personal online health record in the past year. (Table 6-8)
II. Ease and service for healthcare users (Chapter 4)	• General practitioners in particular already offer a substantial range of online services and the range of certain services is increasing. • Healthcare users are still poorly informed of the range of online services offered by healthcare providers, though familiarity is increasing. • The use of online services by healthcare users is still low.	• Online appointments with general practitioners went from 14% in 2013 to 37% in 2016. (Table 4-2) • Of those who went to see a medical specialist in the past year, 63% did not know that they could have made their appointment online. (Table 4-18) • The percentage of healthcare users who know that their general practitioner offers the option to request repeat prescriptions online went from 21% in 2013 to 33% in 2016. For e-consults, this percentage went from 10% in 2013 to 15% in 2015. (Table 4-11) • The highest use percentage is 17% for e-mail or text message reminders for appointments with their healthcare provider. (Table 4-19)
III. Online access to the patient record (Chapter 5)	• Online access options for patients is steadily increasing. • Among healthcare users, the percentage that knows that their medical specialist offers the option of online access is on the rise.	• The option offered by general practitioners to patients of online access to medication information went from 12% in 2014 to 22% in 2016; the same option offered by medical specialists went from 6% in 2014 to 16% in 2016. (Table 5-1, Table 5-2) • Of all healthcare users, 6% know that their medical specialist offers online access to their records, compared to only 5% knowing that of their general practitioner. (Table 5-7)
IV. Online treatment (Chapter 6)	• Nurse practitioners are positive about eMental Health. • There was no increase in the use of online treatments among visitors of mental healthcare providers.	• Of the mental health nurse practitioners, 92% have used a form of eMental Health in the past year. (Table 6-23) • Of the healthcare users that went to see a mental healthcare provider in the past year, 9% received a partial online treatment. (Table 6-19)

Table 3 cont.
Most important results and trends per area of application, based on figures from this monitor.

eHealth: area of application	**Most important** results and trends	**Examples of results and trends**
V. Remote monitoring (Chapter 7)	• Supervisory technology is widely used among nurses. • Video care used in the healthcare sector did not increase from 2015 to 2016. • The use of medicine dispensers did increase.	• Of the nurses working in the healthcare sector, 23% said their healthcare center used medicine dispensers in 2016. That was only 11% back in 2014. (Table 7-12) • Of the nurses working in the healthcare sector, 20% said their healthcare centre used video care in 2016.That was 12% back in 2014 and 22% in 2015. (Table 7-9)
VI. Electronic patient records (Chapter 8)	• Medical specialists are catching up on the use of electronic records.	• The percentage of specialists that mainly or only uses electronic records went from 66% in 2013 to 86% in 2016. (Table 8-1).
VII. Electronic information exchange between healthcare providers (Chapter 9)	• Doctors say there are very few changes in the way doctors are able to exchange patient information (in a standardised manner) with healthcare providers outside their own healthcare center.	• Over 90% of general practitioners are able to electronically share information with medical centers, pharmacies, laboratories and hospitals. (Table 9-1) • Medical specialists are much less able to electronically share information with other parties. There has been no progress since 2014. (Table 9-5)

To make eHealth better and/or easier to apply, they believe we especially need better compensation plans and/or stimulus budgets, good examples and shared best practices, collective decisions and standards, better integrated systems and more opportunity to increase expertise in this field in the organization.

Electronic patient records: room for improvement; information exchange is stagnating

Medical specialists are catching up on the use of electronic records. By now, 86% keeps electronic records. They are however not yet fully satisfied with the electronic records. Nearly half of medical specialists state that the time they spend registering information in the records is not in line with what they gain by using it. Proper electronic record-keeping is a first (but not the only) precondition for electronic information exchange.

General practitioners can exchange information with other parties, such as pharmacies and laboratories, electronically. However, they have barely succeeded in doing so with home care organizations, nursing homes, the district nurses or with

services for social support to municipalities. Medical specialists are not able to share all electronic information with other hospitals, pharmacies and laboratories.

Over half of doctors encounter obstacles in this process. They mainly see that systems are poorly linked or cannot be linked at all. Since 2014, this has been the most frequently listed obstacle and doctors say that in the past years, they have seen little improvement in this area.

Recommendations for policy makers and interest groups

Based on the current state of affairs and the comments given by the healthcare professionals and managers who participated in this study, we have provided a number of recommendations for policy makers, (representatives of) healthcare professionals and market parties.

1. **Actively encourage the use of eHealth among healthcare users.**

Healthcare providers, supported by their trade associations, can make their range of offered online services known to their patients, and structurally include that in the regular healthcare process. Clear, understandable information can help with that. This can be offered via multiple channels, such as during a consult, on the phone, or through the website. Healthcare providers can also more actively monitor how patients experience the offered services and how the user's experience can be improved. Patient organizations can tell their members about the online services and provide information on the options.

2. **Improve the options for electronic information exchange between individual healthcare professionals and between healthcare professionals and patients.**

The persistent obstacles call for active government direction, in consultation with (representatives of) healthcare providers and suppliers of IT systems. This can be done in the form of a collective, binding, multiple-year agenda focused on improving the unity of the language and interoperability of IT systems. Parts of that can be: agreements to develop and set standards, and agreements to ensure that the use of those set standards is no longer non-committal. This requires development of certification (so that software meeting those standards is distinctive), procurement conditions, enforcement, agreements on interfaces, and agreements on the use of information for e.g. quality registrations and scientific research.

3. **Improve the inclusion of best practices in the area of eHealth in healthcare directives and care processes.**

The parties involved in developing quality directives for healthcare, such as the scientific healthcare trade associations, health insurance companies and patient organizations, can make forms of evidence-based eHealth part of new or revised directives. That way, we can create clarity for healthcare providers as to which forms of eHealth can make a positive contribution to good healthcare.

4. Improve integration of eHealth in curriculums and provide training and education in the field of eHealth.

In collaboration with educational institutes, trade associations can make sure that existing curriculums correspond better with the integration of eHealth in the healthcare process. They can also work towards a wider range of (accredited) eHealth training options. It is important to ensure that people can practice with concrete eHealth applications in basic training and in continued education in practice.

5. Improve research on (preconditions for) safe and effective applications of eHealth.

Education and research institutes, supported by research funding, can further study the effectivity of eHealth and the preconditions for the safe and effective use of eHealth. This will create more trust within the healthcare sector in the use of safe and effective eHealth.

6. Conduct further research on the financing issue surrounding eHealth.

Despite the opportunities created in a previous stage, the healthcare sector continues to regard financing options as limiting.
In collaboration with health insurance companies, the government can further determine which specific problems healthcare providers experience in financing eHealth. Based on that, the government can take further measures to address negative triggers.

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