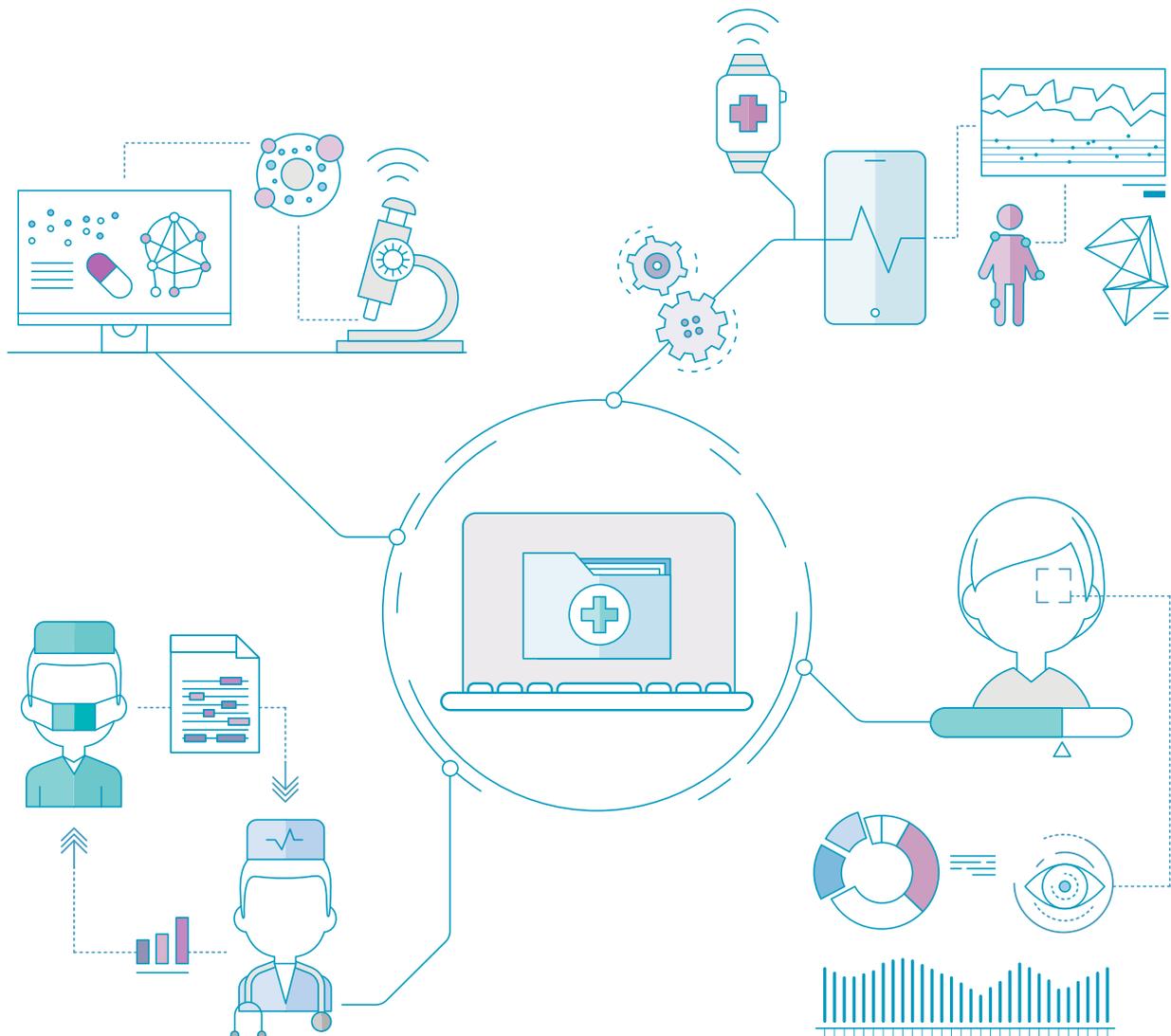




ehealthmonitor 2019

NURSES



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INTRODUCTION

The eHealthmonitor 2019 is a two-phased mixed-methods study (structured survey and focus group interviews). It was assigned by the federal and regional Belgian governments, and RIZIV/INAMI, and executed by imec and imec-SMIT-VUB in collaboration with WeLL.

The eHealthmonitor 2019 offers insight in the use of and experience with different eHealth services and digital applications in Belgian healthcare. Data was collected via **online questionnaires** (October–December 2019) from **six target groups**: General Practitioners (N=849), Specialists (N=941), Pharmacists (N=692), Nurses (N=1095), Nursing Assistants (N=118) and Citizens (N=5046). **It is important to keep in mind that the data was collected previous to the COVID-19 sanitary crisis.**

This report describes the **survey results** for the group of **nurses**. All other reports, including a more detailed methodological section and the executive summary of all results (in French and Dutch), can be retrieved via www.ehealthmonitor.be. Before we present the results a short overview of the followed methodological procedure for all surveys is described.

QUESTIONNAIRE DEVELOPMENT AND DATA COLLECTION

The final questionnaires were iteratively developed with feedback from experts and representatives of the target group, with a focus on current use and experiences with the available eHealth services. This resulted in **6 different questionnaires** with comparable questions where relevant. **All questions focused on the experience of health care professionals and citizens in the past year (October 2018–September 2019) and our results therefore reflect the situation before the COVID19 sanitary crisis.**

We **recruited participants via several approaches**. The cabinet of the federal and regional health ministers and the RIZIV/INAMI communicated through their different channels and sent out a press release that was picked up by specialized press. Also, an invitation to participate was sent to all Belgian health professionals via the eHealthBox. Furthermore, we mobilized the help of many regional and federal health organizations, such as our project partners, unions, professional associations and interest groups to spread the questionnaires to their members. We want to thank them for their efforts. Citizens were reached through commercial panels such as imec.Maakdatmee and Bilendi Belgium.

DATA CLEANING AND ANALYSIS

Partially completed surveys were not systematically removed during **data cleaning**. Only respondents with unusual and/or inconsistent responses were removed by verifying open questions. Thus, the **N for each particular question is provided** under the table/graph, showing lower response rates for some of the items.

The **obtained sample** of each target group of healthcare professionals was **compared to the national statistics of healthcare practitioners 2019¹** for representativeness by region, age and sex. For the **citizens** the obtained sample was compared to the **statistics of the Belgian population** for representativeness by region, age, sex and education level². For each profession, as well as for the citizens, detailed information of the samples demographics is provided at the start of each report. In addition, disclaimers are added to the reports where the percentages of groups in our sample do not accurately represent the size of this group in society.

The **quantitative data was analyzed** using SPSS Statistics version 26. Due to the sample sizes, very small differences often still reached statistical significance³. The findings presented represent the **total sample** and cover the **Belgian trends** and attitudes. However, **when distinctive regional variations** are noticed these are **pointed out**.

1 Steinberg, P. (2019). Jaarstatistieken met betrekking tot de beoefenaars van gezondheidszorgberoepen in België. Cel Planning van het Aanbod van de Gezondheidszorgberoepen

2 Statbel (Algemene Directie Statistiek – Statistics Belgium). Kerncijfers Belgische bevolking 2019. FOD Economie, KMO, Middenstand en Energie.

3 Lantz, B. (2013). The large sample size fallacy. Scandinavian journal of caring sciences, 27(2), 487–492.

For each target group the **most relevant open-ended questions** with regards to the services (e.g. services with lowest usage, services with highest dissatisfaction) and the feedback question at the end of the survey were analyzed. All selected questions were first coded inductively (open coding) using MAXQDA 2020. When no new information was detected and saturation was reached, these codes were categorized. These categories were then used to complete focused coding of the rest of the data. **The main categories are reported.**

Recruiting exclusively via a digital questionnaire might limit the external validity of the results. The findings provide an **indication** of the trends, barriers and possibilities with regard to eHealth in Belgium for people of the target groups **who are already active online**. Therefore, the results presented in this report are limited to our sample and do not represent all segments of the entire Belgian population.

KEY CONCEPTS AND DEFINITIONS

This section provides an overview of the **key concepts and definitions** that are used throughout the report.

The definition of eHealth by the European Commission was adopted for the eHealthmonitor 2019, namely “... *tools and services that use information and communication technologies (ICTs) to improve prevention, diagnosis, treatment, monitoring and management of health and lifestyle*”¹. This definition is interpreted and applied in a broad sense to avoid a too restrictive scope, which could be unwanted to evaluate and monitor evolution over time.

AI / Artificial intelligence. A system which can, to a certain degree, feel, observe and think like human beings and which can act in a rational way. For example, artificial intelligence is used in self-driving cars or in health care to offer support with decisions regarding medical treatment (e.g. wound care).

BeRAI 2.0. eHealth service that allows the evaluation and/or follow-up of the health condition and care needs of a vulnerable patient or a patient with a complex care situation.

Care robot. A robot that can perform certain domestic tasks or care tasks. For instance, having a conversation with a patient, showing specific exercises and accompanying a patient in executing them or giving patient education. This includes hugging robots or telepresence robots (a tablet on wheels that is controlled remotely).

CEBAM. eHealth service that allows online access to independent, scientific medical information.

Digital applications. The total offer of apps, programs or digital devices that can be used to comply with the care needs of a patient. These can be provided by the public sector or the private sector.

e-birth. eHealth service that allows online submission of an electronic birth notification and/or the medical details with regard to the birth.

Electronic drug dispenser. An electronic device that automatically offers the right medication at the right time to the patient and reminds the patient to take his/her medication.

Electronic Medication Record. eHealth service that provides an electronic overview of the medication of the patient.

Electronic monitoring techniques. Electronic devices that allow care takers to keep an eye on their patient (e.g. movement sensors, a personal alarm in the form of a necklace or watch, an interactive buzzer system, an electronic bed pad, video and/or audio surveillance).

Government health portal (official national or regional health portal). A secured website/application, provided by the federal or the regional government, that stores and makes personal health data accessible to healthcare professionals involved in the patient's care. For instance, Mijgezondheid/Masanté, MyHealthViewer, CoZo, Vlaams Ziekenhuis Netwerk, Réseau Santé Bruxellois/Brussels Gezondheidsnetwerk and Réseau Santé Wallon.

Insisto. eHealth service that allows to treat questions regarding not directly accessible youth assistance for a minor, in particular granting an access certificate and effectively allocating an offer of support of a facility.

Management of eHealth certificates. eHealth service that provides the possibility to submit an online application or renewal for a eHealth certificate.

MediPrima. eHealth service that allows the consultation of decisions by CPAS/OCMWs concerning the financial coverage of medical assistance.

¹ European Commission. eHealth: digital health and care [Web page] (2019) [cited 22 June 2020]. Available from: https://ec.europa.eu/health/ehealth/overview_en

MyCareNet/CIVICS. eHealth service that allows the consultation of a database with the commercialized medication in Belgium and the conditions of remuneration of the medication in Chapter IV.

MyCareNet – Medical administration. Health service that allows the transfer of medical-administrative documents amongst medical professionals from the home care sector and the insurance institutions.

Private health portal. A secured website/application, provided by a healthcare professional/health care institution (e.g. hospital, doctor's practice, nursing service) or another private partner (e.g. a company), that stores and makes personal health data accessible to healthcare professionals involved in the patient's care.

SAM v2. eHealth service that allows the consultation of a reference database regarding medication.

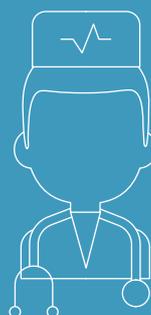
Telemonitoring. A method that allows healthcare professionals to monitor patients remotely. A patient measures a health parameter (e.g. blood pressure, blood sugar level) with a measuring instrument, sensor or another device, possibly stores these parameters digitally and possibly shares them with a healthcare professional. Furthermore, telemonitoring allows healthcare professionals to ask additional questions to the patient in a digital way.

UPPAD. eHealth service that allows the consulting administrative information which the government has about you as a medical professional.

Video calling. A form of care where the healthcare professional and the patient communicate remotely via a screen (e.g. Skype, FaceTime). The patient and the healthcare professional can see each other and talk to each other.

CHAPTER 01

SOCIO-DEMO



SOCIO-DEMO OF OUR SAMPLE

The table below provides an overview of the **socio-demographic characteristics** of the nurses included in our **sample**. The percentages between brackets reflect the percentages in the **Belgian population**¹.

	Belgium	Flanders	Wallonia	Brussels
REGION (N=1032)		N=565 54,7% (65,6%)	N=400 38,8% (29,4%)	N=67 6,5% (5,0%)
AGE (N=1054)				
< 25 years	2,7% (3,5%)	3,3%	1,8%	3,0%
25-34 years	22,7% (18,1%)	24,6%	19,8%	23,8%
35-44 years	29,7% (20,0%)	29,6%	29,4%	32,8%
45-54 years	26,2% (21,2%)	24,2%	28,5%	28,4%
55-64 years	18,0% (22,5%)	17,4%	20,0%	12,0%
65+ years	0,7% (14,8%)	0,9%	0,5%	N/A
LANGUAGE (N=1095)				
Dutch	56,1%	99,6%	0,5%	20,9%
French	43,9%	0,4%	99,5%	79,1%
SEX (N=1054)				
Female	79,0% (86,7%)	77,5%	82,8%	68,7%
Male	20,8% (13,3%)	22,3%	17,0%	31,3%
Other	0,2%	0,2%	0,3%	N/A
FUNCTION (N=1095)				
Nurse in training	2,8%	2,3%	2,5%	9,0%
Nurse	97,2%	97,7%	97,5%	91,0%
WORK EXPERIENCE AS NURSE (N=1011)				
0-4 years	10,3%	11,4%	8,7%	9,8%
5-9 years	14,1%	15,4%	11,5%	19,7%
10-14 years	13,5%	14,9%	12,6%	6,6%
15-19 years	14,9%	13,9%	14,6%	24,6%
20-24 years	13,2%	11,4%	16,7%	8,2%
25-29 years	10,0%	11,0%	8,7%	9,8%
30-34 years	14,3%	13,2%	15,4%	16,4%
35-39 years	6,9%	6,9%	7,7%	1,6%
40-44 years	2,6%	1,5%	4,1%	3,3%
45-49 years	0,2%	0,4%	N/A	N/A

TYPE OF WORKPLACE (N=1036)				
Child and Youth care	1,4%	2,3%	0,3%	0,0%
Elderly care	8,4%	12,7%	3,0%	4,5%
Care for the disabled	0,8%	1,1%	0,5%	0,0%
Mental healthcare	3,7%	3,4%	4,3%	3,0%
Home care	25,2%	27,8%	24,5%	7,5%
Hospital	58,6%	50,1%	69,0%	68,7%
Rehabilitation care	0,7%	0,5%	1,0%	0,0%
GP practice	3,0%	2,5%	3,5%	4,5%
Other	5,1%	4,8%	3,8%	16,4%

Compared to the Belgian population:

- Nurses in **Flanders** are slightly **underrepresented** and nurses in **Wallonia** are slightly **overrepresented**. Nurses in **Brussels** are **almost equally** represented
- Nurses in the age category **25-44 years old** and **45-54 years old** are slightly **overrepresented**. Nurses in the **55-64** and **65+** age category are **underrepresented**²
- **Male** nurses are slightly **overrepresented**

² The percentages in the reference statistics (Steinberg, 2019) reflect the number of nurses that are allowed to practice their profession. However, in the eHealthmonitor 2019 we only included nurses who are still actively working as a nurse, which might explain the big difference in the 65+ category.

CHAPTER 02

EHEALTH SERVICES



EHEALTH SERVICES

In this part of the report we will focus on how nurses **manage patient files**, the **use of eHealth services provided by the government**, the level of **satisfaction with the use of these eHealth services** and the **general attitude of nurses towards the use of digital applications** in their professional life.

1. MANAGING THE PATIENT FILE

Nurses were asked to indicate how often they used one of the listed digital devices in their daily job. A **computer** was used daily by 90,4% of nurses in our sample. A **smartphone** and **tablet** were generally **less used** in patient care: 67,0% of nurses never used a tablet and 48,1% of nurses never used a smartphone.

	Daily	Weekly	Monthly	Yearly	Never
DIGITAL DEVICE					
Computer	90.4%	5.9%	1.5%	0.6%	1.7%
Tablet	18.9%	6.1%	3.9%	4.1%	67.0%
Smartphone	37.2%	7.4%	3.6%	3.7%	48.1%

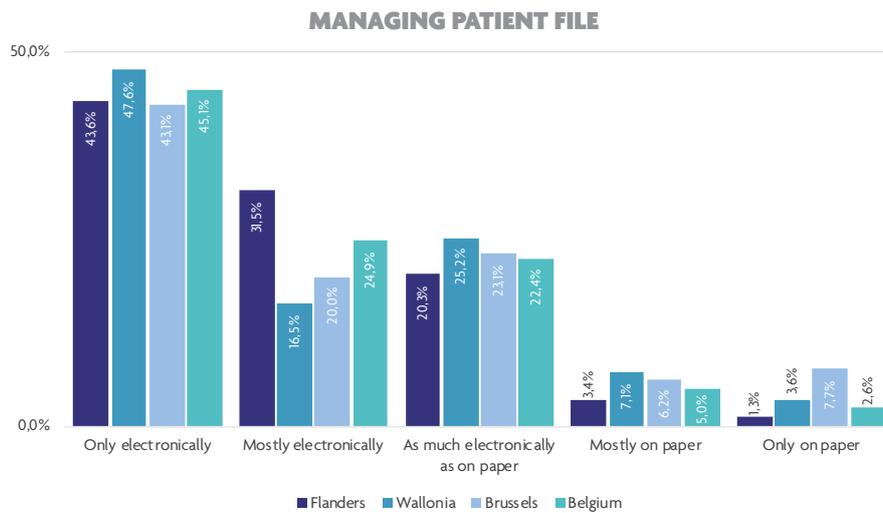
Table 1. How often do you use the following digital applications during your job as a nurse? (N=1017)

Our results showed that the percentage of nurses who use a **smartphone** (45,5%) or **tablet** (26,4%) was higher in Flanders.

		Daily	Weekly	Monthly	Yearly	Never
DIGITAL DEVICE	REGION					
Computer	Flanders	90.6%	5.8%	1.4%	0.4%	1.8%
	Wallonia	89.4%	6.3%	1.8%	1.0%	1.5%
	Brussels	93.9%	4.5%	0.0%	0.0%	1.5%
Tablet	Flanders	26.4%	6.7%	4.9%	4.5%	57.6%
	Wallonia	10.6%	5.1%	2.8%	3.3%	78.2%
	Brussels	4.5%	7.6%	3.0%	6.1%	78.8%
Smartphone	Flanders	45.5%	7.9%	2.9%	2.0%	41.7%
	Wallonia	28.1%	6.3%	3.5%	5.8%	56.2%
	Brussels	21.2%	9.1%	10.6%	6.1%	53.0%

Table 2. How often do you use the following digital applications during your job as a nurse? (N=1017)

Nurses were also asked how they managed the patient files. The majority of nurses in our sample (70,0%) indicated that they managed the patient files **mostly or only electronically**.

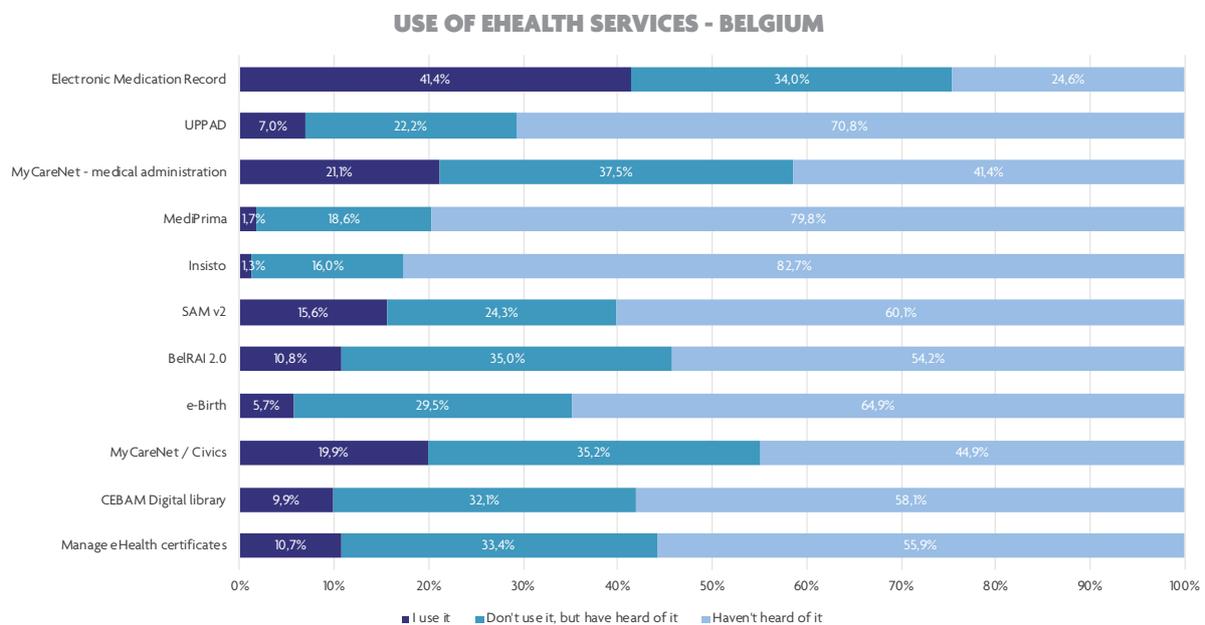


Graph 1. How do you manage patient files? (N=1011)

2. USE OF EHEALTH SERVICES

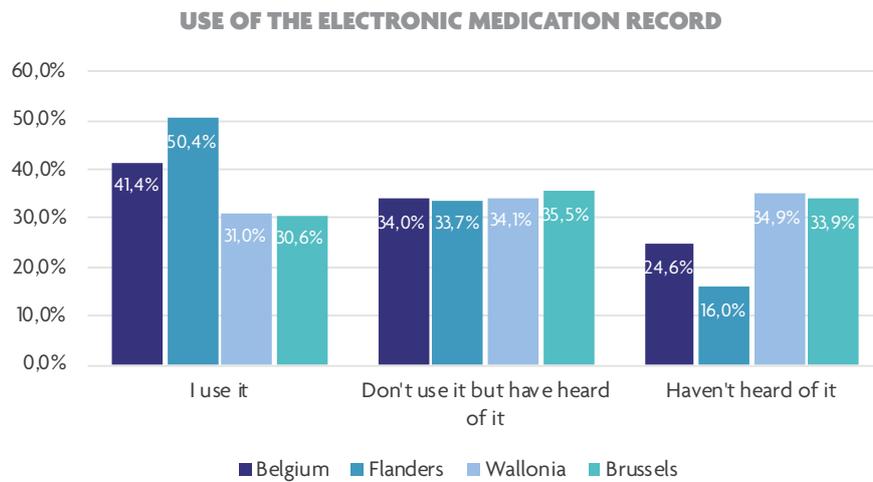
Nurses were asked for each of the **eHealth services provided by the government**, that are available to their profession, to indicate whether they used this service in the past year (October 2018 - September 2019).

For most eHealth services, except the Electronic Medication Record, the majority of nurses in our sample **had not used the service or had not heard of it**.



Graph 2. Do you use the following eHealth services? (N=954)

The **most used** eHealth service is the Electronic Medication Record (41.4%), which is used most in Flanders (50.4%) and almost equally in Wallonia (31%) and Brussels (30.6%).



Graph 3. Do you use the following eHealth service? (N=954)

Exploration with other variables showed that the **use** of various eHealth services varied across **age** categories.

EHEALTH SERVICE	AGE	Don't use it, but have heard of it		
		I use it	Don't use it, but have heard of it	Haven't heard of it
Managing eHealth certificates	< 25	5,6%	22,2%	72,2%
	25-34	8,5%	27,2%	64,3%
	35-44	9,9%	32,2%	58,0%
	45-54	14,6%	36,4%	49,0%
	55-64	10,2%	41,5%	48,3%
BelRAI 2.0	< 25	25,0%	16,7%	58,3%
	25-34	8,5%	27,7%	63,8%
	35-44	9,9%	33,9%	56,2%
	45-54	9,6%	40,6%	49,8%
	55-64	15,0%	41,5%	43,5%
SAM v2	< 25	25,0%	16,7%	58,3%
	25-34	14,3%	18,3%	67,4%
	35-44	14,8%	23,7%	61,5%
	45-54	15,3%	26,4%	58,2%
	55-64	17,0%	32,0%	51,0%
UPPAD	< 25	5,6%	19,4%	75,0%
	25-34	4,0%	14,7%	81,3%
	35-44	6,7%	21,2%	72,1%
	45-54	8,8%	25,3%	65,9%
	55-64	9,5%	29,9%	60,5%
Electronic Medication File	< 25	55,6%	16,7%	27,8%
	25-34	53,1%	22,3%	24,6%
	35-44	36,0%	32,9%	31,1%
	45-54	35,2%	42,9%	21,8%
	55-64	42,2%	40,8%	17,0%

Table 3. Do you use the following eHealth services? *Category 65+ was omitted from reporting as n = 3. (N = 951)

A. QUALITATIVE FEEDBACK ON THE USE OF EHEALTH SERVICES

The reasons for not using an eHealth service were analyzed for some of the eHealth services with the **lowest rate of usage**.

UPPAD

1. Lack of knowledge or information

Nurses mentioned they **did not know** the eHealth service or they did not know **where to find it**.

Resp 918. "Onvoldoende kennis."

Resp 250. "Je ne connaissais pas, mais maintenant oui."

Resp 320. "Weet niet waar ik dit moet zoeken."

2. Lack of time

Nurses indicated that they had **not found the time to learn more** about the eHealth service.

Resp 151. "Nog geen tijd gehad om er meer over op te zoeken."

Resp 284. "Pas eu le temps de me pencher dessus."

Resp 646. "Tijdsgebrek."

MANAGING EHEALTH CERTIFICATES

1. Lack of knowledge or information

Nurses mentioned they **did not know** the eHealth service or **how to use** it.

Resp 217. "Je ne connais pas du tout."

Resp 914. "Nog onvoldoende gekend."

Resp 143. "Je ne connais pas les démarches pour pouvoir profiter de ce service."

Resp 296. "Weet niet hoe het moet."

Nurses also did not seem to know whether the service was **accessible** to them, or not.

Resp 119. "Dacht geen toegang als verpleegkundige."

Resp 198. "Je ne sais pas si c'est développé dans ma région ou dans mon hôpital. Ou si c'est uniquement accessible aux médecins?"

2. User friendliness and accessibility of the service

Nurses found the **use** of the eHealth service **complex** and experienced problems with **accessing** the service via their **software package**.

Resp 225. "Het is heel ingewikkeld."

Resp 583. "L'utilisation de ce service n'est pas accessible aux infirmiers via les logiciels informatiques."

Resp 206. "Heb reeds geprobeerd zo een certificaat aan te vragen maar dat is niet gelukt."

Resp 216. "Pas de possibilité à partir de mon logiciel."

3. Another person/department is responsible

Nurses mentioned that the features provided by this eHealth service are **not part of their job** or are done by **another department/colleague**.

Resp 899. "IT-dienst doet dit."

Resp 812. "C'est ma collègue qui utilise le système mycarenet."

Resp 507. "Gebeurt door administratieve dienst."

Resp 1015. "Je renforce des équipes comme indépendante, ce n'est pas moi qui m'occupe de ces aspects."

E-BIRTH

1. Not part of the job

Nurses mentioned they do not have **access** to this eHealth service or that it is **not part of their job** to use this service.

Resp 907. "Als nachtverpleegkundige moet ik geen volledig dossier invullen."

Resp 997. "Sage femmes le font pour nous pas d'accès pour les infirmières pédiatriques."

2. No access to the service (software)

Nurses stated that their **software package** does not provide them **access** to this eHealth service.

Resp 216. "Mon logiciel ne le permet pas."

Resp 287. "Pas d'accès via mon logiciel pro."

3. Lack of information

Nurses indicated that they are **interested** in this eHealth service, but that they **lack information**.

Resp 350. "Te weinig info, wel interesse."

3. INTEREST IN THE USE OF EHEALTH SERVICES

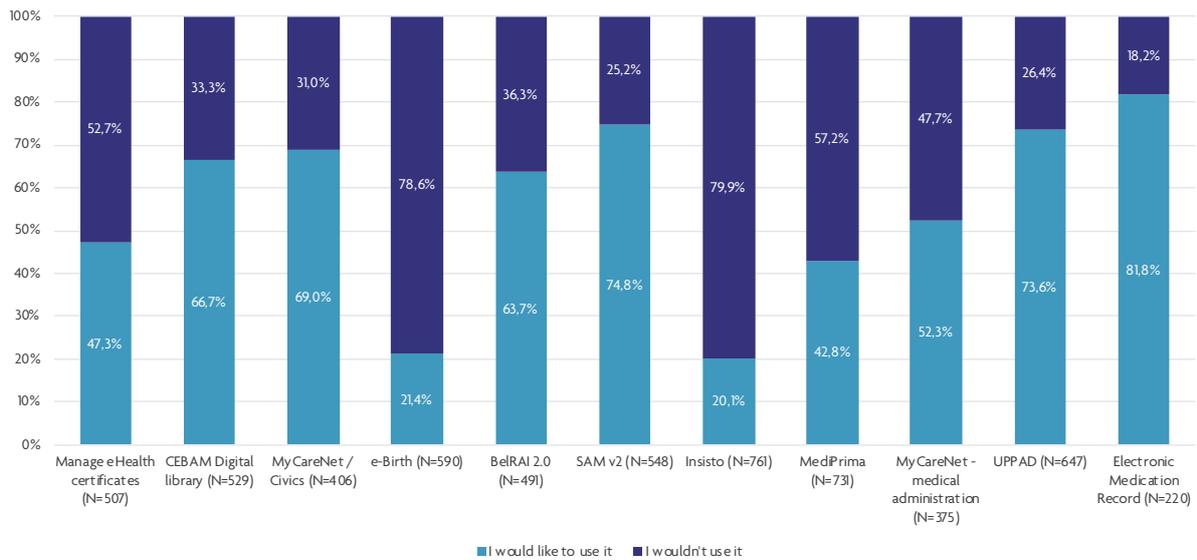
For those eHealth services nurses had **not heard of**, they were asked whether they would like to use them. In general, nurses in our sample were **most interested to use** the following eHealth services:

- The Electronic Medication Record (81,8%)
- SAM v2 (74,8%)
- UPPAD (73,6%)
- MyCareNet/Civics (69%)
- CEBAM Digital Library (66,7%)

Our results showed regional differences in the interest of nurses to use eHealth services. We listed these regional differences for the services that nurses were **most** interested to use:

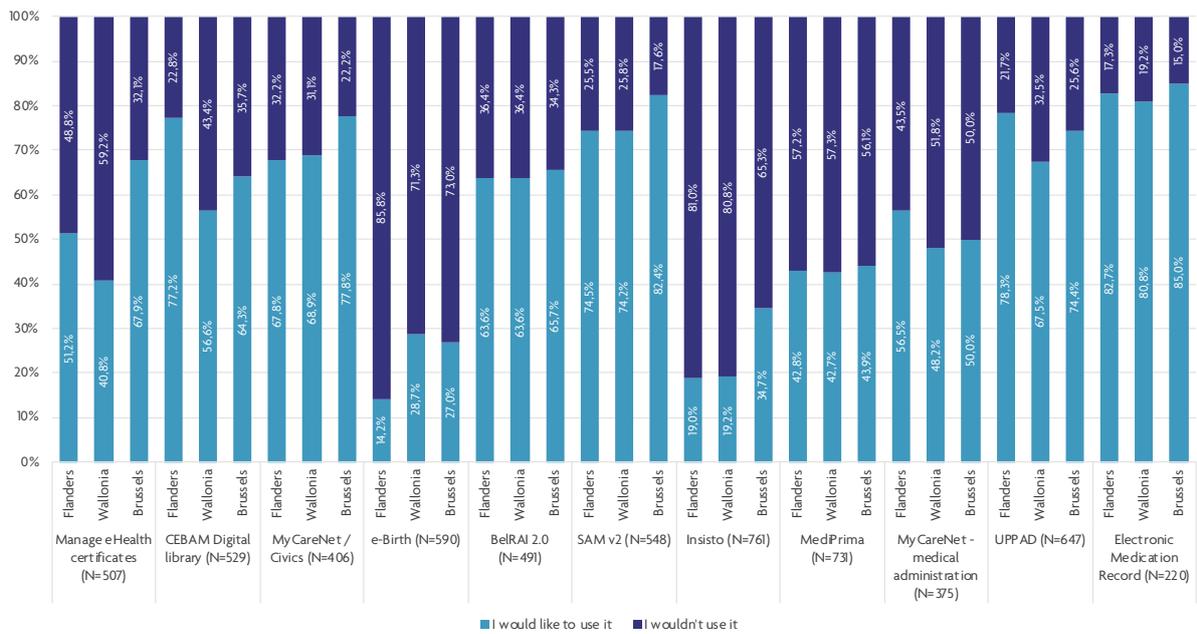
- The Electronic Medication Record: higher interest in Brussels (85%)
- SAM v2: higher interest in Brussels (82,4%)
- UPPAD: higher interest in Flanders (78,3%) and Wallonia (74,4%)
- MyCareNet/Civics: higher interest in Brussels (77,8%)
- CEBAM Digital Library: higher interest in Flanders (77,2%)

INTEREST IN THE USE OF EHEALTH SERVICES IN BELGIUM



Graph 4. Would you like to use the following eHealth services? (N is provided per service)

INTEREST IN THE USE OF EHEALTH SERVICES BY REGION



Graph 5. Would you like to use the following eHealth services? (N is provided per service)

4. SATISFACTION WITH EHEALTH SERVICES

For those eHealth services nurses had used in the past year (October 2018 - September 2019), they were asked to indicate how **satisfied** they were with the **use of the service**.

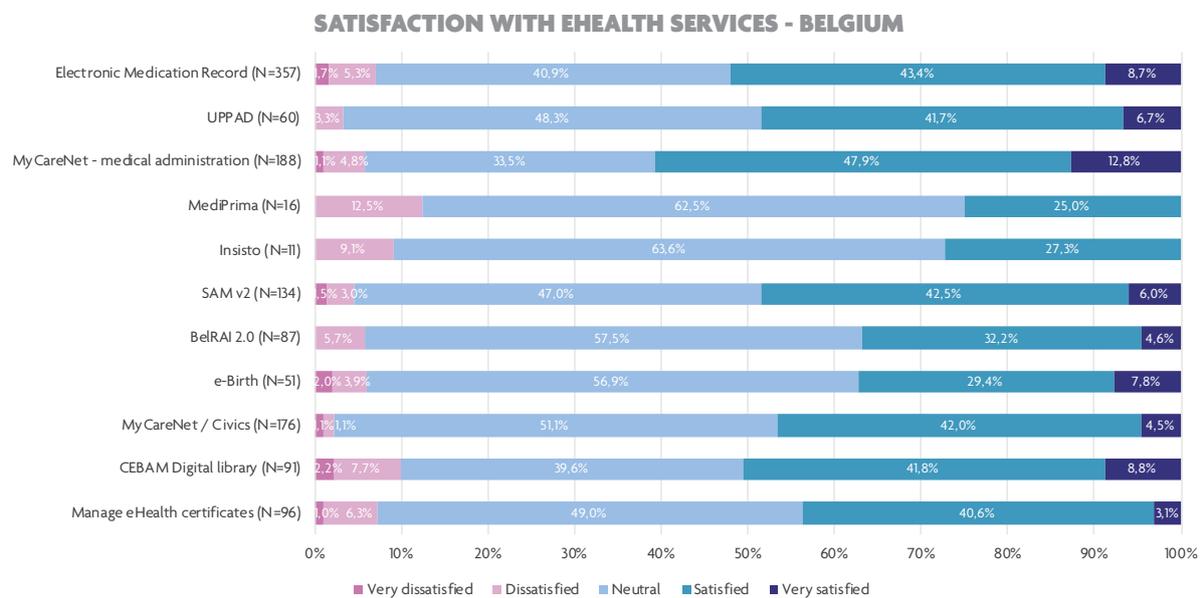
Our results showed that, in general, nurses in our sample were mostly **neither satisfied nor dissatisfied** with the use of eHealth services.

The eHealth services with the **highest rate of satisfaction** are:

- MyCareNet – medical administration (60,7% of users were (very) satisfied)
- Electronic Medication Record (52,1% of users were (very) satisfied)
- CEBAM Digital Library (50,6% of users were (very) satisfied)

The eHealth services with the **lowest rate of satisfaction** are:

- MediPrima (25,0% of users were (very) satisfied)
- Insisto (27,3% of users were (very) satisfied)
- BelRAI 2.0 (36,8% of users were (very) satisfied)



Graph 6. How satisfied are you with the following eHealth services? (N provided per service)

Exploration with other variables showed that the **level of satisfaction** with Managing eHealth Certificates varied for different **age** categories.

		Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Managing eHealth certificates	AGE					
	25-34	0,0%	11,8%	47,1%	35,3%	5,9%
	35-44	3,7%	3,7%	59,3%	33,3%	0,0%
	45-54	0,0%	2,7%	40,5%	54,1%	2,7%
	55-64	0,0%	15,4%	61,5%	23,1%	0,0%

Table 4. How satisfied are you with the following eHealth services? (N = 94)

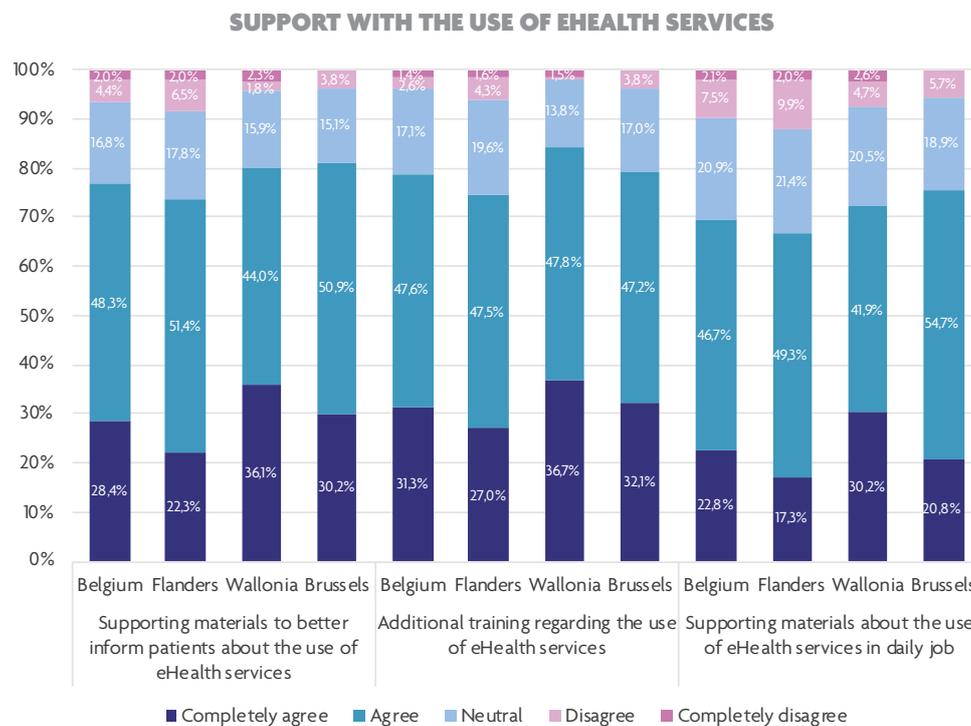
5. NEED FOR SUPPORT WITH THE USE OF EHEALTH SERVICES

More than 70% of nurses in our sample expressed the need for additional training and supporting materials for the use of eHealth services:

- 78,9% of nurses would like **additional training** regarding the use of eHealth services
- 76,7% of nurses would like supporting materials to better **inform patients** about the use of eHealth services
- 69,5% of nurses would like supporting materials for the **use of eHealth services in their daily job**

Our results showed regional differences in the need for support with the use of eHealth services:

- A higher percentage of nurses in Wallonia (81,1%) and Brussels (80,1%) expressed the need for supporting materials to better **inform patients** about the use of eHealth services
- A higher percentage of nurses in Wallonia (84,5%) expressed the need for **additional training** regarding the use of eHealth services
- A higher percentage of nurses in Brussels (75,5%) expressed the need for supporting materials about the **use of eHealth services in their daily job**



Graph 7. To what extent do you agree or disagree with following statements regarding support in using eHealth services in your professional life? (N=838)

Answers to the above statements were provided on a 5-point Likert-scale from completely disagree (1) to completely agree (5). These three statements formed a reliable scale, with Cronbach's alpha higher than .75 for all healthcare professions. Higher scores therefore indicate a higher need for support with the use of eHealth services. The answers were recategorized into three levels, based on the average score for the three statements:

- An average score of 2.4 or lower indicated a **low need for support** with the use of eHealth services
- An average score between 2.5 and 3.5 indicated a **medium need for support** with the use of eHealth services
- An average score of 3.6 or higher indicated a **high need for support** with the use of eHealth services

Our results showed that the vast majority of nurses in our sample (95,5%) fall into the medium or high need for support category.

NEED FOR SUPPORT	Low need	Medium need	High need
	4,5%	18,5%	77,0%

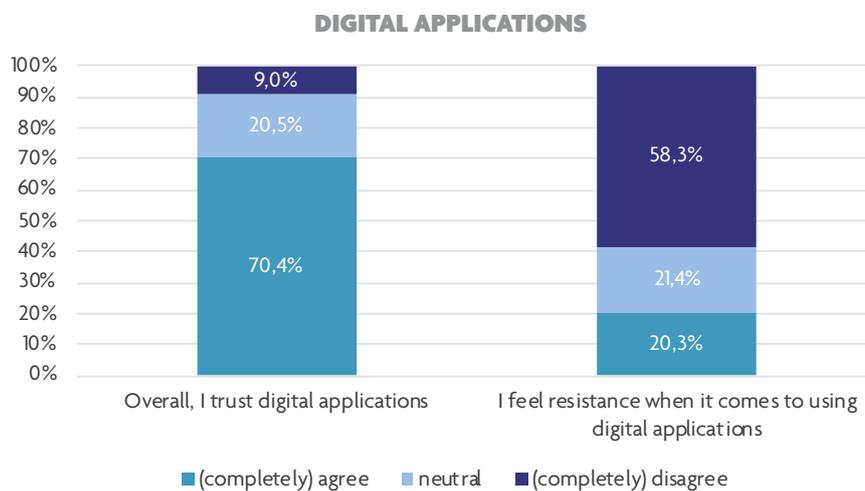
Exploration with other variables showed that the **use** of MyCareNet and MediPrima, varied according to the **need for support** with the use of eHealth services.

EHEALTH SERVICE	NEED FOR SUPPORT	Don't use it, but have		
		I use it	heard of it	Haven't heard of it
MyCareNet	Low need	15.8%	23.7%	60.5%
	Medium need	13.5%	37.4%	49.0%
	High need	24.5%	38.1%	37.5%
MediPrima	Low need	0.0%	10.5%	89.6%
	Medium need	3.2%	12.3%	84.5%
	High need	1.4%	19.8%	78.9%

Table 5. Do you use the following eHealth services?(N = 838)

6. GENERAL ATTITUDE TOWARDS THE USE OF DIGITAL APPLICATIONS

Nurses were asked for their opinion regarding the use of digital applications in their professional life. The majority of nurses in our sample (70,4%) indicated they trust digital applications. 20,3% of nurses indicated to feel a certain degree of **resistance** when it comes to using digital applications.



Graph 8. To what extent do you agree or disagree with following statements regarding your use of digital applications in your professional life? (N=808)

Exploration with other variables revealed that **trust** and **resistance** varied between **genders**. **Resistance** towards the use of digital applications also varied across **age categories**.

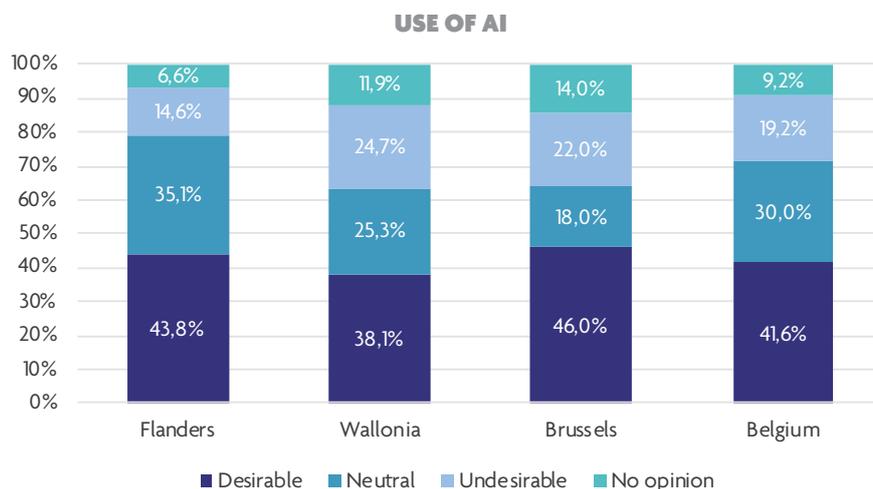
STATEMENT	SEX	Completely disagree	Disagree	Neutral	Agree	Completely agree
		Overall, I trust digital applications	Male	0,6%	7,6%	21,1%
	Female	1,7%	7,5%	20,4%	60,7%	9,6%
I feel resistance when it comes to using digital applications	Male	26,3%	40,4%	16,4%	12,9%	4,1%
	Female	14,9%	41,2%	22,8%	18,2%	2,8%

Table 6. To what extent do you agree or disagree with following statements regarding your use of digital applications in your professional life? *Category 'other' was omitted from reporting as n = 1. (N = 807)

STATEMENT	AGE	Completely disagree	Disagree	Neutral	Agree	Completely agree
		I feel resistance when it comes to using digital applications	< 25	23,3%	46,7%	23,3%
	25-34	18,9%	44,7%	15,3%	17,9%	3,2%
	35-44	14,1%	50,2%	20,7%	12,4%	2,5%
	45-54	20,0%	32,4%	23,6%	20,9%	3,1%
	55-64	15,0%	30,8%	28,3%	20,8%	5,0%

Table 7. To what extent do you agree or disagree with following statements regarding your use of digital applications in your professional life? *Category 65+ was omitted from reporting as n = 2. N = 806.

41,6% of nurses found the use of digital tools in decision making, that use **AI** to make suggestions, **desirable**. 30% was **neutral** and 19,2% felt it was **undesirable**. Our results showed that a higher percentage of nurses in Brussels (46,0%) find the use of AI desirable.



Graph 9. What is your opinion on using digital tools in decision making that use AI to make suggestions (e.g. selecting the most suitable wound care)? (N=803)

7. KEY FINDINGS

MANAGING PATIENT FILES

- A **computer** is used daily by 90,4% of nurses in our sample. A smartphone and tablet were generally less used in patient care: 67% of nurses never used a **tablet** and 48,1% of nurses never used a **smartphone**.
- 70% of nurses manage the patient files **mostly or only electronically**

USE OF EHEALTH SERVICES

In general, the majority of nurses had not **heard of** or **did not use** the various eHealth services.

- The five eHealth services that nurses were **most interested** in using are:
 - The Electronic Medication Record (81,8%)
 - SAM v2 (74,8%)
 - UPPAD (73,6%)
 - MyCareNet/Civics (69%)
 - CEBAM Digital Library (66,7%)

SATISFACTION WITH EHEALTH SERVICES

Nurses were mostly **neither satisfied nor dissatisfied** with the use of eHealth services

- eHealth services with the **highest rate of satisfaction** are:
 - MyCareNet – medical administration (60,7% of users were (very) satisfied)
 - Electronic Medication Record (52,1% of users were (very) satisfied)
 - CEBAM Digital Library (50,6% of users were (very) satisfied)
- eHealth services with the **lowest rate of satisfaction** are:
 - MediPrima (25,0% of users were (very) satisfied)
 - Insisto (27,3% of users were (very) satisfied)
 - BelRAI 2.0 (36,8% of users were (very) satisfied)

NEED FOR SUPPORT WITH THE USE OF EHEALTH SERVICES

More than 70% of nurses in our sample expressed the need for support with the use of ehealth services

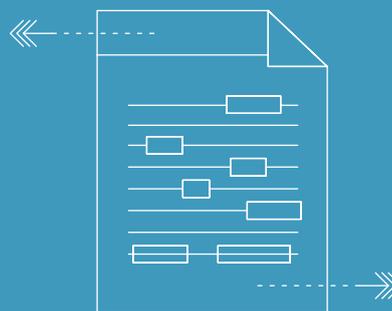
- **Additional training** regarding the use of ehealth services (78,9%)
- Supporting materials to better **inform patients** about the use of ehealth services (76,7%)
- Supporting materials for the **use of ehealth services in their daily job** (69,5%)

GENERAL ATTITUDE TOWARDS THE USE OF DIGITAL APPLICATIONS

- The majority of nurses (70,4%) **trust** digital applications
- 20,3% of nurses feel **resistance** when it comes to using digital applications
- 41,6% of nurses found the use of digital tools in decision making, that use **AI** to make suggestions, **desirable**

CHAPTER 03

EXCHANGE OF HEALTH DATA AMONGST HEALTHCARE PROFESSIONALS



EXCHANGE OF HEALTH DATA AMONGST HEALTHCARE PROFESSIONALS

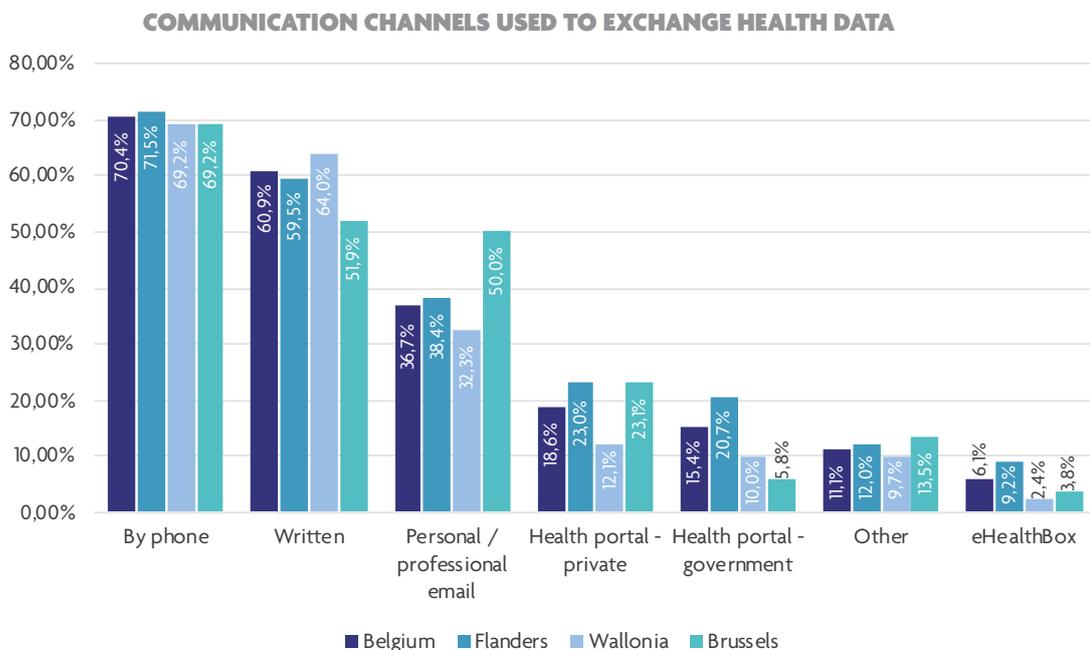
In this part of the report we will focus on the **communication channels** nurses use to **exchange health data** with other healthcare professionals and/or healthcare institutions and their **satisfaction** with **the offer of digital communication channels** that are available for their profession.

1. COMMUNICATION CHANNELS USED TO EXCHANGE HEALTH DATA

In general, nurses in our sample mostly exchanged health data with other healthcare professionals by **phone** (70,4%), via **written communication (paper)** (60,9%) and via their **professional/personal email** (36,7%). The **eHealthbox** was the least used method (6,1%).

Our results showed regional differences in the use of certain communication channels to exchange health data:

- A higher percentage of nurses in Brussels (50,0%) used their **personal/professional email**
- A higher percentage of nurses in Flanders (20,7%) used a **government health portal**
- A higher percentage of nurses in Brussels (23,1%) and Flanders (23,0%) used a **private health portal**
- Use of the **eHealthBox** is higher in Flanders (9,2%)



Graph 10. How do you exchange health data with other health care professionals/health care institutions? (Multiple choices possible) (N=818)

Exploration with other variables showed that the **communication channels** nurses used to exchange health data with other health care professionals varied by **age** and **gender**.

	By phone	Written	eHealthBox	Personal / professional email	Health portal - government	Health portal - private	Other
AGE							
< 25	67,7%	58,1%	6,5%	29,0%	19,4%	29,0%	9,7%
25-34	68,4%	65,8%	5,7%	34,2%	16,1%	18,1%	10,4%
35-44	68,0%	61,5%	6,1%	34,0%	18,0%	15,2%	13,5%
45-54	71,7%	57,1%	6,6%	41,6%	12,4%	20,4%	8,0%
55-64	77,0%	60,7%	5,7%	38,5%	13,1%	20,5%	13,9%

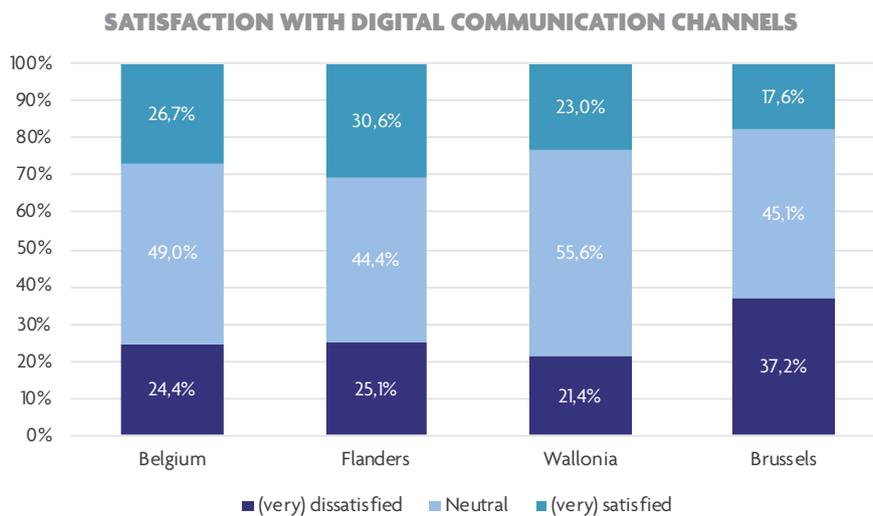
Table 8. How do you exchange health data with other health care professionals/health care institutions? (Multiple choices possible). Category 65+ was omitted from reporting as n = 2. (N=816)

	By phone	Written	eHealthBox	Personal / professional email	Health portal - government	Health portal - private	Other
SEX							
Male	71,5%	58,1%	11,0%	45,3%	19,2%	19,2%	12,8%
Female	70,1%	61,7%	4,8%	34,3%	14,4%	18,4%	10,7%

Table 9. How do you exchange health data with other health care professionals/health care institutions? (Multiple choices possible). For gender, the category 'other' was omitted from reporting as n = 1. (N=817)

2. SATISFACTION WITH DIGITAL COMMUNICATION CHANNELS

Just over one in four nurses in our sample (26,7%) are **(very) satisfied** with the offer of **digital communication channels** that are available for their profession. Our results showed that a lower percentage of nurses in Brussels (17,6%) are (very) satisfied with the offer of digital communication channels.



Graph 11. How satisfied are you with the offer of all digital communication channels that are currently available for your profession? (N=817)

Exploration with other variables showed that the **level of satisfaction** with the offer of digital communication channels varied across **age** categories and **gender**.

	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
AGE					
< 25	3,3%	3,3%	30,0%	63,3%	0,0%
25-34	3,1%	21,2%	44,6%	29,0%	2,1%
35-44	5,7%	23,8%	47,5%	23,0%	0,0%
45-54	4,4%	18,6%	53,1%	22,1%	1,8%
55-64	4,1%	17,2%	55,7%	22,1%	0,8%

Table 10. How satisfied are you with the offer of professional communication possibilities that are available for your profession? *Category 65+ was omitted from reporting as n = 2. (N = 815)

	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
SEX					
Male	8,1%	22,7%	39,5%	27,9%	1,7%
Female	3,3%	19,3%	51,6%	25,0%	0,9%

Table 11. How satisfied are you with the offer of professional communication possibilities that are available for your profession? *Category 'other' was omitted from reporting as n = 1. (N = 816)

3. KEY FINDINGS

COMMUNICATION CHANNELS USED TO EXCHANGE HEALTH DATA

The **3 most used mediums** to exchange health data with other health care professionals are

- Phone (70,4%)
- Written communication (paper) (60,9%)
- Personal/professional email (36,7%)

The **eHealthbox** is the least used method (6,1%)

SATISFACTION WITH DIGITAL COMMUNICATION CHANNELS

26,7% of nurses in our sample are **(very) satisfied** with the offer of **digital communication channels** that are available for their profession.

CHAPTER 04

ONLINE COMMUNICATION WITH PATIENTS

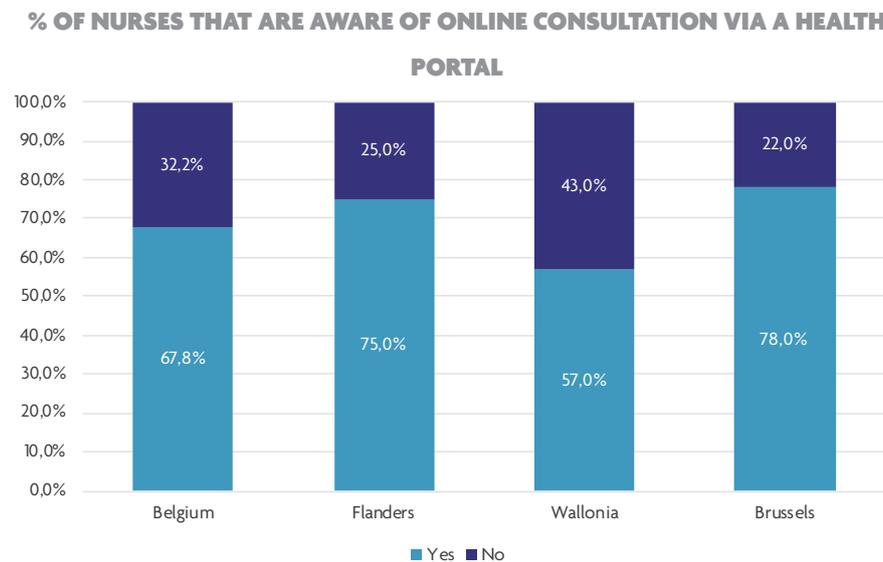


ONLINE COMMUNICATION WITH PATIENTS

In this part of the report we will focus on different forms of online communication between nurses and patients. First, we will discuss the results regarding **online consultation** and the use of **health portals**. Secondly, we will provide an insight on the attitude of nurses towards **online communication** with patients (e.g. making appointments online, asking questions online).

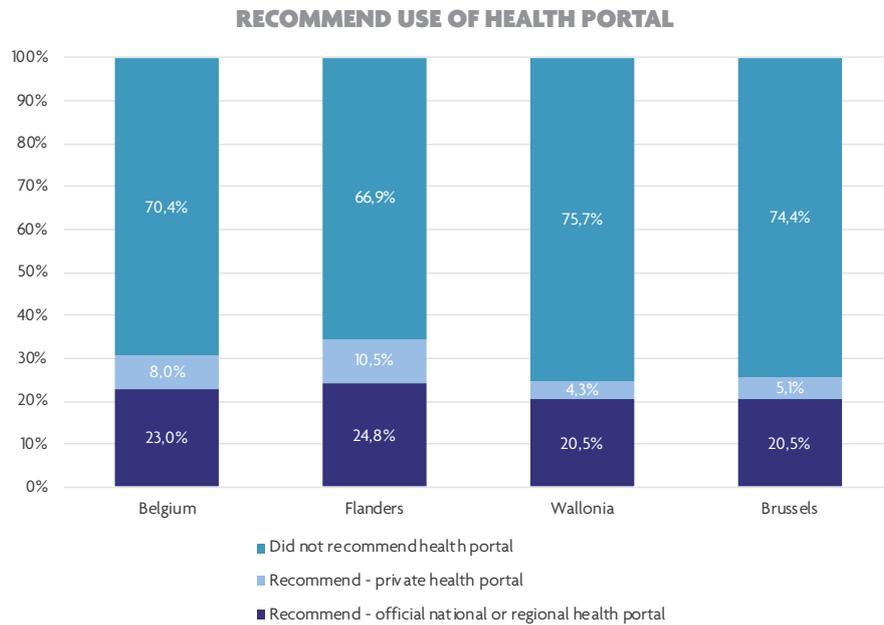
1. ONLINE CONSULTATION

Patients can use a health portal to consult the personal health data that is available for online consultation. The majority of nurses in our sample (67,8%) were **aware** that patients can view their personal health data online via a health portal. Our results showed that a lower percentage of nurses in Wallonia (57,0%) are aware that patients can view their personal health data via a health portal.



Graph 12. Did you know, before answering this questionnaire, that patients can view their personal health data through a health portal? (N=802)

On average, just over 30% of nurses **recommended** one or more of their patients to use a health portal to consult their personal health data: 23,0% recommended the use of an **official national or regional health portal** and 8,0% recommended the use of a **private health portal**. Recommendation rates were the highest in Flanders.



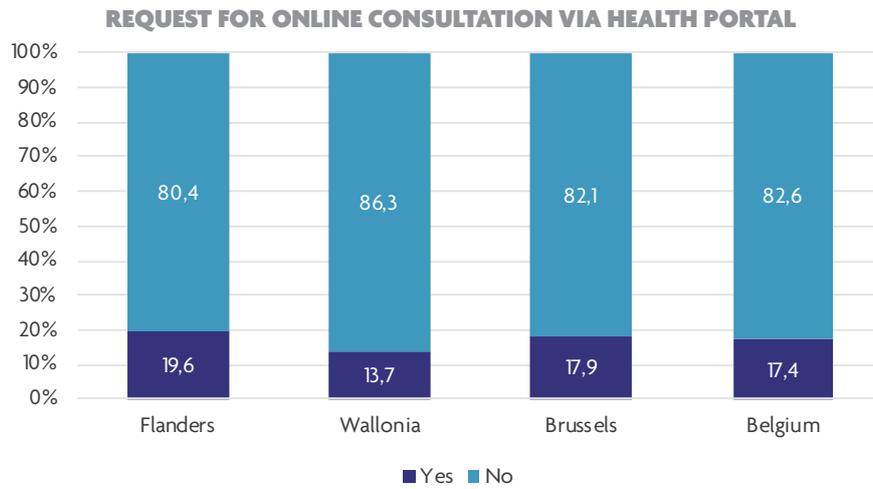
Graph 13. In the past year (October 2018 - September 2019), did you recommend to one or more of your patients to use a health portal to consult their personal health data online? (Multiple choices possible) (N=538)

Exploration with other variables revealed that **recommendation** of online consultation of personal health data via a health portal varied across **age** categories.

	Recommend platform government	Recommend private platform	Did not recommend
AGE			
< 25	31,8%	9,1%	59,1%
25-34	15,8%	8,3%	77,5%
35-44	22,0%	8,5%	70,6%
45-54	29,7%	8,0%	65,2%
55-64	20,3%	6,3%	73,4%

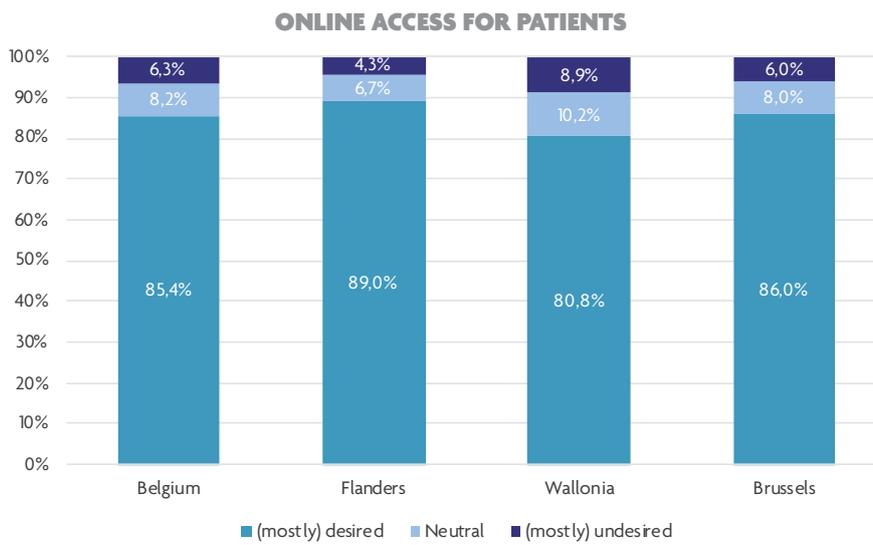
Table 12. In the past year (October 2018 - September 2019), did you recommend to one or more of your patients to use a health portal to consult their personal health data online? (Multiple choices possible) *Category 65+ was omitted from reporting as n = 2. (N = 536)

Less than one in five nurses (17,4%) had one or more patients **asking** them to consult their personal health data through a health portal.



Graph 14. In the past year (October 2018 - September 2019), has one or more of your patients asked you to view their personal health data through a health portal? (N=533)

85,4% of nurses in our sample find it **(mostly) desirable** that patients have online access to their personal health data through a health portal. 6,3% find it (mostly) undesirable and 8,2% is neutral.



Graph 15. What is your opinion on patients consulting their personal health data, kept by a health care professional, online through a health portal? (N=792)

2. RESPONSIBILITIES HEALTH PORTAL AWARENESS

Nurses were asked to indicate who they found mainly responsible for a number of tasks regarding the use and awareness of health portals.

Our results showed that nurses believe the **government** is the main responsible party to **inform** patients of the **existence** of a health portal with their personal health data (72,8%).

The **public health insurance company** (68,8%) and the **government** (67,3%) were most often indicated as the main responsible party to **explain** patients how to **consult** their personal health data through this health portal.

In ensuring that patients **understand** the **health-related information** on this health portal nurses found the **patient** (52,7%) and **themselves** (52,6%) equally responsible.

Nurses also found **themselves** (52,8%) to be mainly responsible to **ensure** that patients **use** this health portal to consult their personal health data, nonetheless **the government** was a close second (48,2%).

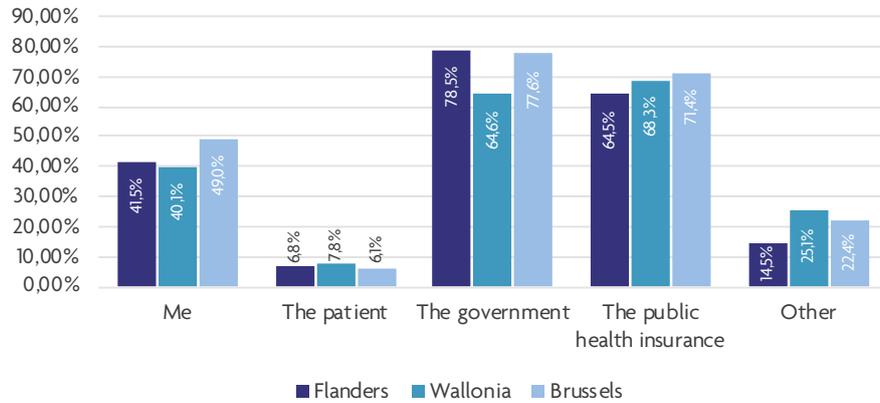
	Me	The patient	The government	The public health insurance company	Other
TASK					
Informing patients about the existence of a health portal with their personal health data	41,4%	7,2%	72,8%	66,5%	19,3%
Explaining patients how they can consult their personal health data on this health portal	34,0%	4,5%	67,3%	68,8%	19,6%
Ensuring that patients understand the health-related information on this health portal	52,6%	52,7%	26,1%	26,9%	33,4%
Ensuring that patients use this health portal to consult their personal health data	52,8%	9,0%	48,2%	33,5%	45,4%

Table 13. According to you, who is mainly responsible for the tasks below? (Multiple choices possible) (N=782)

Our results showed regional differences for each of the four items:

- **Informing patients about the existence of a health portal with their personal health data.** Nurses in Wallonia indicated the public health insurance company (68,3%) as the main responsible party to inform patients of the existence of a health portal.

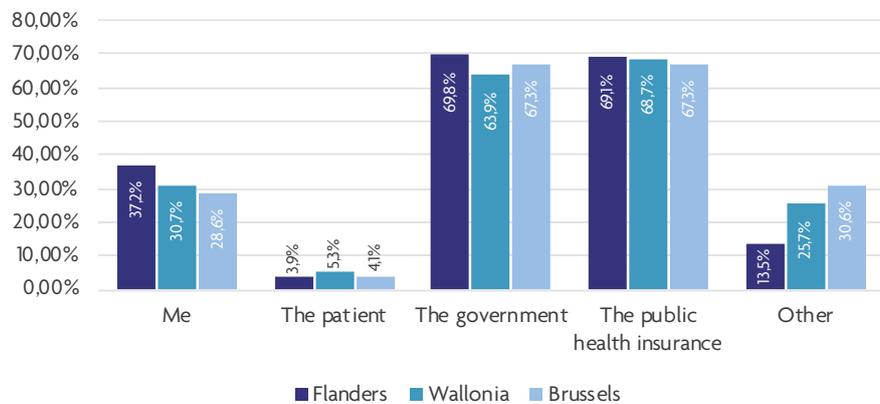
INFORMING PATIENTS ABOUT THE EXISTENCE OF A HEALTH PORTAL



Graph 16. According to you, who is mainly responsible for the tasks below? (Multiple choices possible) (N=782)

- **Explaining patients how they can consult their personal health data on this health portal.** Nurses in Flanders mostly indicated the government (69,8%) as main responsible party, whereas nurses in Wallonia mostly indicated the public health insurance company (68,7%). Nurses in Brussels found them both equally responsible (67,3%)..

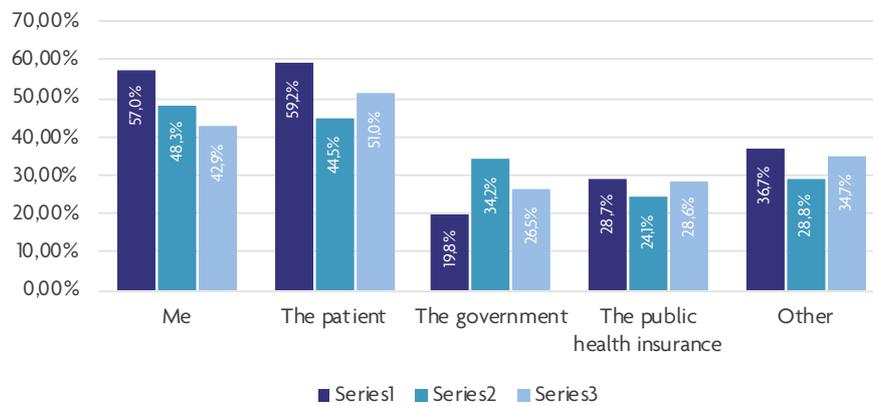
EXPLAINING PATIENTS HOW THEY CAN CONSULT THEIR PERSONAL HEALTH DATA



Graph 17. According to you, who is mainly responsible for the tasks below? (Multiple choices possible) (N=782)

- **Ensuring that patients understand the health-related information on this health portal.** Nurses in Wallonia mostly indicated themselves (48,3%) as the main responsible party to ensure that patients understand the health-related information.

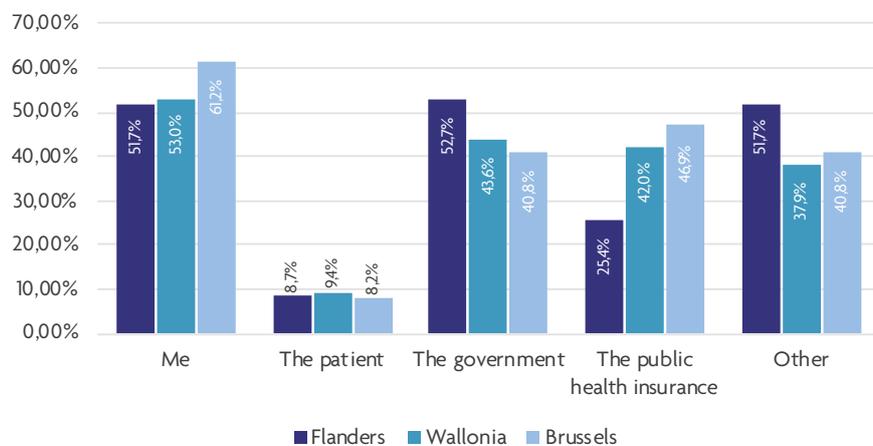
ENSURING THAT PATIENTS UNDERSTAND THE HEALTH-RELATED INFORMATION



Graph 18. According to you, who is mainly responsible for the tasks below? (Multiple choices possible) (N=782)

- **Ensuring that patients use this health portal to consult their personal health data.** Nurses in Flanders mostly indicated the government (52,7%) as the main responsible party, whereas nurses in Wallonia (53,0%) and Brussels (61,2%) mostly indicated themselves. Also, nurses in Brussels indicated the public health insurance company (46,9%) as the second most responsible party to ensure that patients use this health portal.

ENSURING THAT PATIENTS USE THE HEALTH PORTAL



Graph 19. According to you, who is mainly responsible for the tasks below? (Multiple choices possible) (N=782)

Exploration with other variables revealed that **perceived responsibilities** varied across **levels of need for support** with the use of eHealth services and **age** categories. **Gender** only affected perceived responsibility on who has to **explain** patients how they can **consult** their personal health data through this health portal.

		Me	The patient	The government	The public health insurance company	Other
TASK	NEED FOR SUPPORT					
Informing patients about the existence of a health portal with their personal health data	Low need	40,6%	6,3%	81,3%	59,4%	9,4%
	Medium need	33,1%	6,3%	66,9%	62,7%	15,5%
	High need	43,4%	7,4%	73,7%	67,8%	20,7%
Explaining patients how they can consult their personal health data on this health portal	Low need	34,4%	3,1%	65,6%	62,5%	21,9%
	Medium need	31,0%	5,6%	64,1%	69,7%	13,4%
	High need	34,7%	4,3%	68,1%	68,9%	20,9%
Ensuring that patients understand the health-related information on this health portal	Low need	53,1%	15,6%	43,8%	31,3%	25,0%
	Medium need	47,2%	9,9%	43,0%	42,3%	33,1%
	High need	54,1%	8,4%	46,1%	50,5%	34,0%
Ensuring that patients use this health portal to consult their personal health data	Low need	28,1%	21,9%	53,1%	43,8%	25,0%
	Medium need	24,6%	19,0%	54,9%	49,3%	25,4%
	High need	35,7%	28,9%	52,1%	53,8%	26,3%

Table 14. According to you, who is mainly responsible for the tasks below? (Multiple choices possible) (N=782)

		Me	The patient	The government	The public health insurance company	Other
TASK	AGE					
Informing patients about the existence of a health portal with their personal health data	< 25	43,3%	3,3%	73,3%	63,3%	26,7%
	25-34	44,9%	10,1%	76,4%	73,0%	22,5%
	35-44	41,2%	8,6%	75,1%	66,1%	19,3%
	45-54	39,5%	3,2%	68,6%	65,0%	14,1%
	55-64	39,5%	8,4%	69,7%	61,3%	21,8%
Explaining patients how they can consult their personal health data on this health portal	< 25	43,3%	0,0%	50,0%	66,7%	26,7%
	25-34	34,8%	7,9%	69,7%	70,2%	22,5%
	35-44	36,1%	3,9%	70,0%	67,8%	16,7%
	45-54	31,4%	3,6%	66,8%	69,5%	17,7%
	55-64	30,3%	3,4%	63,9%	68,1%	21,8%
Ensuring that patients understand the health-related information on this health portal	< 25	60,0%	13,3%	30,0%	36,7%	33,3%
	25-34	55,6%	9,6%	48,3%	50,0%	37,6%
	35-44	51,1%	10,7%	43,8%	45,5%	33,0%
	45-54	50,0%	7,7%	48,6%	50,5%	30,5%
	55-64	54,6%	5,9%	42,9%	49,6%	33,6%
Ensuring that patients use this health portal to consult their personal health data	< 25	30,0%	33,3%	40,0%	50,0%	33,3%
	25-34	33,7%	26,4%	57,9%	52,2%	29,2%
	35-44	34,3%	31,3%	51,5%	53,2%	24,9%
	45-54	30,0%	23,6%	52,3%	52,7%	24,1%
	55-64	37,8%	23,5%	50,4%	52,1%	25,2%

Table 15. According to you, who is mainly responsible for the tasks below? (Multiple choices possible) Category 65+ was omitted from reporting as n = 2.(N=780)

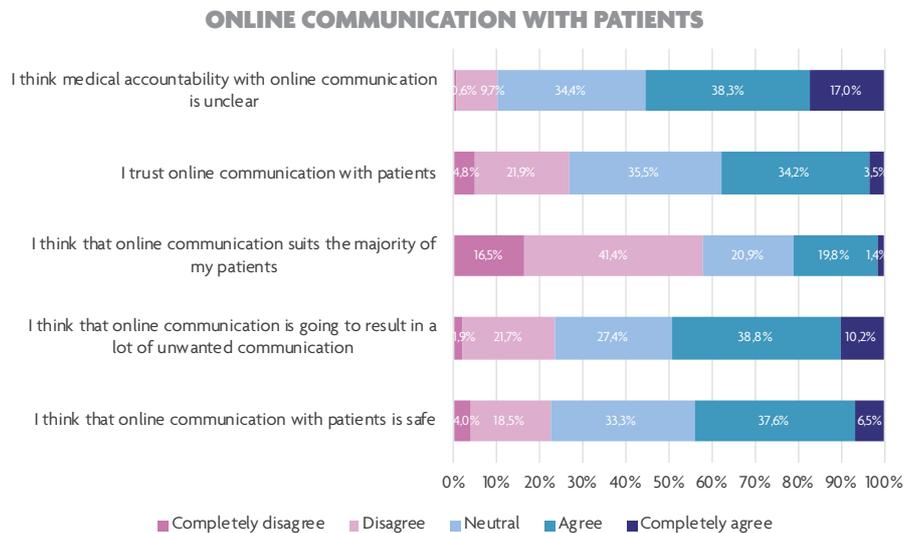
		Me	The patient	The government	The public health insurance company	Other
TASK	SEX					
Explaining patients how they can consult their personal health data on this health portal	Male	30,7%	6,6%	75,3%	74,1%	15,7%
	Female	34,9%	3,9%	65,1%	67,4%	20,6%

Table 28 According to you, who is mainly responsible for the tasks below? (Multiple choices possible) For gender the category 'other' was omitted from reporting as n = 1. (N=781)

3. ATTITUDE TOWARDS ONLINE COMMUNICATION WITH PATIENTS

Nurses were asked their opinion on a number of statements regarding online communication with patients. Our results showed some **potential concerns** regarding online communication with patients:

- 57,9% of nurses in our sample believe that online communication **does not suit the majority of their patients**
- 55,3% of nurses believe that **medical accountability** with online communication is unclear
- Almost half of the nurses (49%) believe that online communication is going to result in **a lot of unwanted communication**
- Less than half of the nurses (44,1%) think that online communication with patients is **safe**
- Over one in four nurses (26,7%) **do not trust** online communication with patients



Graph 20. To what extent do you agree or disagree with following statements regarding online communication with patients (e.g. making appointments online and asking questions online)? (N=771)

Exploration with other variables showed that, in general, nurses with a **low need for support** with the use of ehealth services are somewhat **more concerned**. A higher percentage completely disagrees with the statements 'I think online communication fits the majority of my patients' and 'I trust online communication with patients'. In addition, a higher percentage completely agrees with the statements 'online communication will result in a lot of unwanted communication' and 'medical accountability is unclear with online communication'.

		Completely disagree	Disagree	Neutral	Agree	Completely agree
STATEMENT	NEED FOR SUPPORT					
I think that online communication is going to result in a lot of unwanted communication	Low need	6.5%	22.6%	12.9%	38.7%	19.4%
	Medium need	2.2%	16.5%	32.4%	44.6%	4.3%
	High need	1.7%	22.8%	27.0%	37.4%	11.1%
I think online communication fits the majority of my patients	Low need	19.4%	3.2%	41.9%	25.8%	9.7%
	Medium need	2.2%	15.8%	38.8%	39.6%	3.6%
	High need	3.7%	20.0%	31.6%	37.8%	7.0%
I trust online communication with patients	Low need	19.4%	22.6%	29.0%	22.6%	6.5%
	Medium need	3.6%	19.4%	45.3%	29.5%	2.2%
	High need	4.3%	22.5%	33.6%	35.9%	3.7%
I think medical accountability is unclear with online communication is unclear*	Low need	3.2%	6.5%	32.3%	29.0%	29.0%
	Medium need	0.7%	7.2%	35.3%	48.9%	7.9%
	High need	0.5%	10.5%	34.3%	36.3%	18.5%

Table 16. To what extent do you agree or disagree with following statements regarding online communication with patients (e.g. making appointments online, requesting repeat prescription online and asking questions online)? (N=771) *26.7% of cells count > 5.¹

¹ In the following section there are some analyses where the expected count of cells fell under the recommended minimal cell size of n=5. For these contingency tables that surpass 2x2 designs, 20% of cells are allowed to violate this rule without a problem for statistical purposes. However, there a few analyses yielded significant results but the 20% was surpassed. When the violation was close to the 20% cut-off and fit the trend of similar analyses, they are included with a disclaimer. If the violation was larger, they were not included.

4. KEY FINDINGS

ONLINE CONSULTATION

67,8% of nurses in our sample were **aware** that patients can view their personal health data via a health portal.

- 31% of nurses **recommended** one or more of their patients to use a health portal to consult their personal health data
- Less than one in five nurses (17,4%) had one or more patients **asking** them to consult their personal health data through a health portal
- 85,4% of nurses find it **(mostly) desirable** that patients have access to their personal health data online via a health portal

RESPONSIBILITIES EHEALTH PORTAL AWARENESS

- The **government** was most often indicated as main responsible party to **inform** patients of the **existence** of a health portal with their personal health data (72,8%)
- The **public health insurance company** (68,8%) and the **government** (67,3%) were most often indicated as the main responsible party to **explain** patients how to **consult** their personal health data through this health portal
- Nurses found **the patient** (52,7%) and **themselves** (52,6%) equally responsible to **ensure** they **understand** the health-related information on this health portal
- Nurses indicated **themselves** (52,8%) as the main responsible party to ensure that patients **use** this health portal to consult their personal health data

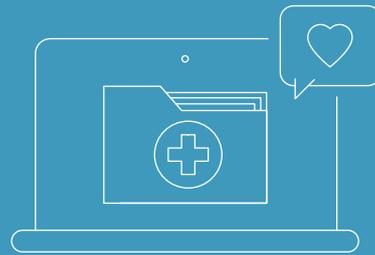
ATTITUDE TOWARDS ONLINE COMMUNICATION WITH PATIENTS

Potential concerns regarding online communication with patients:

- 57,9% of nurses in our sample believe that online communication **does not suit the majority of their patients**
- 55,3% of nurses believe that **medical accountability** with online communication is **unclear**
- 49% of nurses believe that online communication is going to result in **a lot of unwanted communication**
- Less than half of nurses (44,1%) think that online communication with patients is **safe**
- 26,7% of nurses **do not trust** online communication with patients

CHAPTER 05

SELF MANAGEMENT AND ONLINE TREATMENT

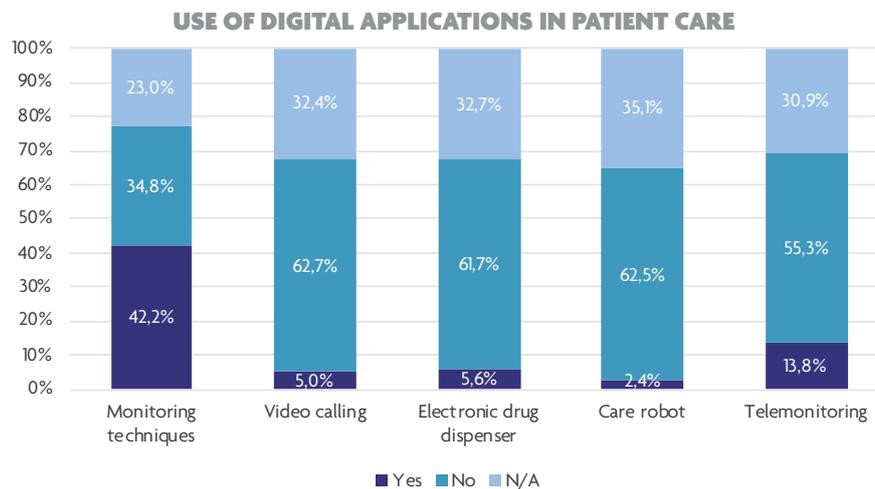


SELF MANAGEMENT AND ONLINE TREATMENT

In this part of the report we will focus on the use of **digital applications in patient care**.

1. USE OF DIGITAL APPLICATIONS IN PATIENT CARE

Nurses were asked whether they used one of the listed digital applications in patient care. Our results showed that **monitoring techniques** (e.g. movement sensors, a personal alarm, an interactive buzzer system, electronic bed pads, video and/or audio surveillance) were used the most (42%). The use of **telemonitoring** (13,8%), an **electronic drug dispenser** (5,6%), video calling (5,0%) and a **care robot** (2,4%) was remarkably lower.



Graph 21. In the past year (October 2018 - September 2019), did you use any of the following digital applications during your job as a nurse? (N=747)

Our results showed some regional differences in the use of digital applications in patient care:

- A higher percentage of nurses in Flanders (50,1%) used **monitoring techniques**
- A higher percentage of nurses (10,6%) in Brussels used **video calling**

DIGITAL APPLICATION	REGION	Yes	No	N/A*
Monitoring techniques	Flanders	50.1%	32.4%	17.5%
	Wallonia	34.1%	37.7%	28.2%
	Brussels	27.7%	36.2%	36.2%
Video calling	Flanders	5.3%	68.1%	26.6%
	Wallonia	3.6%	58.4%	38.0%
	Brussels	10.6%	44.7%	44.7%
Electronic drug dispenser	Flanders	5.6%	65.8%	28.6%
	Wallonia	5.2%	58.7%	36.1%
	Brussels	8.5%	46.8%	44.7%
Care robot	Flanders	2.3%	65.8%	31.9%
	Wallonia	2.6%	59.3%	38.0%
	Brussels	2.1%	55.3%	42.6%
Telemonitoring	Flanders	15.4%	55.7%	28.9%
	Wallonia	11.1%	56.1%	32.8%
	Brussels	17.0%	46.8%	36.2%

Table 17. In the past year (October 2018 - September 2019), did you use any of the following digital applications during your job as a nurse? (N=747) *N/A: not applicable

2. KEY FINDINGS:

USE OF DIGITAL APPLICATIONS IN PATIENT CARE

- 42 % of nurses in our sample used **monitoring techniques** (e.g. movement sensors, a personal alarm, an interactive buzzer system, electronic bed pads, video and/or audio surveillance)
- 13,8% of nurses used **telemonitoring**
- 5,6% of nurses used an **electronic drug dispenser**
- 5,0% of nurses used **video calling**
- 2,4% of nurses used a **care robot**

ANNEX



ANNEX

1. GENERAL QUALITATIVE FEEDBACK ON EHEALTH

1. Too little information or knowledge about the possibilities for nurses and for patients.

Nurses expressed a **lack of knowledge and information** regarding the possibilities of eHealth services for themselves as well as their patients.

Resp 386. "Peu de patients sont au courant des outils et services numériques parce que pas informés , connectés ou bien trop âgés .Il faudrait de façon plus peut être "ludique" les informer , mais surtout les sensibiliser aux énormes avantages que ces outils pourraient apporter au quotidien."

Resp 899. "Onbekend is onbemind."

Resp 873. "Pas assez d'information sur les sujets -> favoriser la communication."

Resp 682. "In de praktijk zijn de e-platformen nog weinig bekend zowel bij de zorgverleners als bij de patiënten."

Resp 1088. "Het zou handig zijn om iedere persoon op een toegankelijke manier op de hoogte te brengen van het bestaan van de digitale toepassingen en diensten in de gezondheidszorg. Niet iedereen maakt regelmatig gebruik van elektronische briefwisseling. Ik zelf heb al langere tijd het gevoel dat ik zelf enkele belangrijke digitale toepassingen en diensten in de gezondheidszorg over het hoofd zie. Of het bestaan ervan nog niet weet."

2. User friendliness of eHealth services and digital applications

Nurses found that the different eHealth services and digital applications were **not always user friendly** and that this hindered them.

Resp 601. "Ik geloof in de meerwaarde van digitale toepassingen. Echter dienst deze gebruiksvriendelijk te zijn en de patiënt en hulpverlener te ondersteunen."

Resp 244. "Plus d'ergonomie dans l'utilisation des différents outils."

Resp 253. "Que dire de tous ces sites en lignes, ce n'est pas facile de s'y retrouver?? [...] Pour ma part, les avancées technologique c'est bien mais je pense que cela va trop vite et en plus des complications dues à l'utilisation de l'ANGLAIS. Etc... etc...etc."

Resp 422. "Ce qui pour moi est rebutant par rapport à tous ces outils c'est la manière de s'y connecté qui me semble compliquée."

In this regard, nurses expressed an important **concern for certain people**, in particular older adults, who **cannot use** the eHealth services..

Resp 296. "Zoals steeds heb ik de indruk dat het voor de jongere mensen allemaal heel duidelijk is. Voor de ietwat ouderen is het wel heel moeilijk om steeds maar weer op de kar van de digitalisering te springen."

Resp 455. "La plupart de mes patients à domicile ne possèdent ni ordinateur ,ni GSM et trouve plus important que leurs soins soient effectués correctement plutôt que d'être connecté ,ce qui est une fameuse perte de temps."

Resp 418. "Compte-tenu de la pyramide des âges actuelle, pensez-vous que l'outil informatique ou électronique soit le plus adapté ? Il faut rester humain !"

3. Access to eHealth services

Nurses expressed that they wanted to have **access to more services and information**, as they feel this might benefit themselves and their patients.

Resp 1074. “Il serait très intéressant pour la prise en charge des dossiers individuels de soin des résidents en MRPA/MRS que les infirmiers est accès via la direction à la plate-forme e-health afin de connaître les autorisations mutuelles, dossier médical global...”

Resp 162. “Verpleegkundige moeten toegangsrechten krijgen tot tot Vitalink, SumEHR en Vaccinnet!”

Resp 849. “On manque d'info, en soins palliatifs à domicile, infirmiers, nous n'avons pas accès au partage des données médicales.”

4. Communication and collaboration with other healthcare professionals

Nurses expressed the need for **better communication and collaboration with other healthcare professionals**, as they feel this would improve the continuity and quality of care.

Resp 274. “Onderling tussen zorgverleners en zorginstellingen is er een grote nood aan onderling digitaal te communiceren en hierin ook conformiteit na te streven. Iedere zorginstelling, -verlener doet eigenlijk zijn eigen zinnig en dit is soms nefast voor de informatie overdracht, de één doet het zuss, de andere zo.”

Resp 309. “Améliorer la transmissions des rapports de consultations entre hopitaux et maisons médicales afin d'assurer le suivi des patients.”

Resp 601. “Daarnaast dient deze multidisciplinair gebruikt te worden.”

Resp 453. “Een gedeeld dossier tussen de verschillende disciplines rond een patiënt bv huisarts, thuisverpleegkundige, apotheek, specialist,... zou een meerwaarde zijn. Eventueel inzage in gedeeltes van dit dossier afhankelijk van discipline. Vooral op medicatiegebied zou dat veel medicatiefouten voorkomen.”

5. Minor themes

- **One uniform system** for all healthcare professionals
- A need for **more support**
- Concerns with the **exchange of and the access to personal health data**
- eHealth services impacting **'human' aspect** of care
- **Technical issues**

