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Follow-Up Vision for eHealth 2025

Report on the Year 2020

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Preface

In a change to its appropriation directions for 2020, the Swedish eHealth Agency has been tasked with monitoring the development of digitalisation within healthcare and social services and submitting an annual follow-up report to the Government. The report is to be based on the indicator-based framework developed by the agency for the follow-up of Vision for eHealth 2025. This work is to be conducted in cooperation with the governance and cooperation organisation for Vision for eHealth 2025. This report constitutes the first follow-up within this assignment, which will continue up to and including the year 2025.

Representatives from the eHealth Agency, the Swedish Medical Products Agency (MPA), Inera, the Swedish Agency for Digital Government (DIGG), the Swedish Post and Telecom Authority (PTS), the Swedish Association of Local Authorities and Regions (SALAR) and the National Board of Health and Welfare have participated in this work.

Decisions concerning this report have been made by Director-General Janna Valik. The investigator Gustaf Hedström has served as rapporteur. Åke Nilsson (investigator), Morine Kalulanga (junior investigator), Derya Akcan (investigator), Susanna Wahlberg (head of unit), Charlotta Holm Sjögren (eHealth strategist, National Board of Health and Welfare), Ann-Catrin Johansson (investigator, National Board of Health and Welfare), Andreas Leifsson (analyst, Inera) and Björn Hultgren (IT strategist, SALAR) have participated in the final stages of this report’s preparation.

Janna Valik

Director-General

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Summary

This report describes the development of digitalisation within healthcare and social services in 2020. The report is based on the indicator-based framework developed by the agency for the follow-up of Vision for eHealth 2025. The report has been produced in collaboration with the parties included in the governance and cooperation organisation for Vision for eHealth 2025. The report is based on data from public bodies and other national and international organisations. The working group has selected a number of the indicators that were identified previously and has included indicators in this follow-up report based on an overall assessment that they will provide as good an overview as possible of digitalisation within healthcare and social services.

International comparisons are difficult as there are few comparable international indicators, which was also established in the report *Indikatorbaserat ramverk för uppföljning av Vision e-hälsa 2025* [Indicator-Based Framework for Follow-Up of Vision for eHealth 2025] (Swedish eHealth Agency, October 2020).

An important prerequisite for the implementation of Vision for eHealth 2025, aside from purely technical considerations, is that the population have access to and are willing to use digital equipment and online services. This requires access to the internet, which is generally good in Sweden (> 98 per cent have access to fibre at home), as well as the potential to use these services by, for example, logging in using BankID. There are large differences here in terms of access to BankID between different age groups, with > 99 per cent of those in younger age groups having BankID but only 38.6 per cent of those aged over 80 having BankID.

A strategy for implementing Vision for eHealth 2025, The next step defines four objectives. Several indicators can be linked to the first two objectives, *The individual as co-creator* and *The right information and knowledge*. It is evident in these two areas that the largest interface between the healthcare system and the inhabitants of Sweden when it comes to digital care is the online services provided by 1177 Vårdguiden. In 2020, 191 million visitors and 96 million log-ins were registered, which is almost double the figure for 2019 (51 million log-ins). From a Nordic perspective, a comparison of the Nordic health portals indicates that Sweden, with 1177 Vårdguiden, has the largest number of annual visits per capita, and strong growth from 2013.

In total, 79 per cent state that they have very or quite high confidence in using the online services provided by 1177 Vårdguiden. A smaller proportion (46

per cent) have a positive attitude towards healthcare, consultations and treatment with the aid of digital technology. The proportion who have a positive view of the development of artificial intelligence in health-related services fell from 46 per cent in 2019 to 42 per cent in 2020.

Digital consultations (video and text chat) have become increasingly widespread in the past year. A clear increase is seen that coincides with the spread of Covid-19 in the community.

On average, the regions are now able to display to patients just over half of the amount of information it is technically possible to display to patients through the service *Journalen* [Medical Records] and in *Nationell Patientöversikt* [National Patient Overview] (NPÖ). Only a few municipalities are displaying information in NPÖ.

However, an increasing number of municipalities are offering various types of welfare technology in the different types of accommodation: ordinary home, sheltered accommodation for older people and support and service accommodation for people with disabilities.

The prerequisites for the two remaining objectives defined in *A strategy for implementing Vision for eHealth 2025, The next step* are more difficult to monitor as there are few measurable indicators in these areas. This applies to the objectives *Safe and secure information processing* and *Development and digital transformation hand in hand*. Of the indicators there are within the scope of these objectives, it appears, among other things, that the regions' total IT costs as a proportion to total turnover have been stable for a long time at just below three per cent, while there are large differences in terms of how large a portion of this is being invested in development and innovation (from < 5 per cent to > 25 per cent of IT costs). In addition, within the regions there are still several perceived barriers to the introduction of online services. The most common areas are vague legislation, their own resources and the attitude of the organisation.

Continued effort to develop and improve indicators that are followed up both nationally and internationally is required to improve how the development of digitalisation in healthcare and social services is monitored.

1 Introduction

This report provides an overview of digitalisation within healthcare and social services. The report is primarily intended for decision makers at the national level and in regions and municipalities.

In 2016, the Swedish Government and the Swedish Association of Local Authorities and Regions (SALAR) presented a common vision for work with eHealth in Sweden until the year 2025; *Vision for eHealth 2025*.[1] The vision is: *"In 2025, Sweden will be best in the world at using the opportunities offered by digitalisation and eHealth to make it easier for people to achieve good and equitable health and welfare, and to develop and strengthen their own resources for increased independence and participation in the life of society."*

To make it possible to monitor development towards the vision's goal, a framework for follow-up was produced in 2017/2018 , which included proposed initial indicators.[2] This framework has formed the basis of follow-ups in respect of the years 2018 and 2019.[3,4]

The vision was followed by an action plan for the work taking place in the years 2017–2019.[5] The action plan was followed by an implementation strategy for the years 2020–2022.[6] The strategy establishes four objectives, that rest on three fundamental preconditions (Figure 1).

[1] Ministry of Health and Social Affairs and SALAR. *Vision for eHealth 2025*. Stockholm, 2016.
[2] The Swedish Government and SALAR. *Uppföljningsmodell för e-hälsa och en första testmätning – ett diskussionsunderlag* [Follow-up model for eHealth and an initial test measurement – a basis for discussion]. Stockholm, April 2018.
[3] Vision for eHealth 2025. *Follow-up Report 2018, Vision for eHealth 2025*. Stockholm, 2018.
[4] Vision for eHealth 2025. *Vision for eHealth 2025, Follow-up 2019.* Stockholm, April 2020.
[5] Ministry of Health and Social Affairs and SALAR. *Handlingsplan för samverkan vid genomförande av Vision e-hälsa 2025 2017–2019* [Action Plan for Cooperation on the Implementation of Vision for eHealth 2025 2017–2019]. Stockholm, 2017.
[6] Ministry of Health and Social Affairs and SALAR. *A strategy for implementing Vision for eHealth 2025, The next step.* Stockholm, 2020.

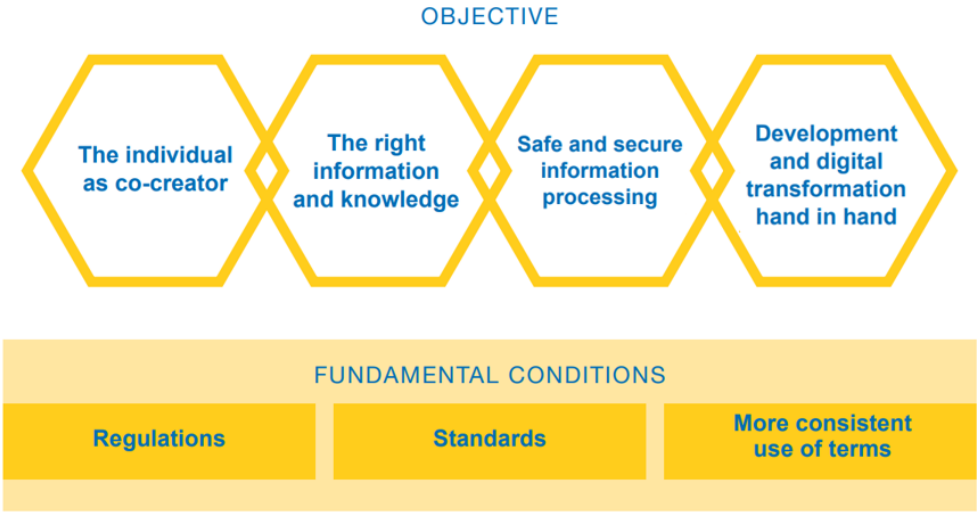

Figure 1. Image showing objectives from A strategy for implementing Vision for eHealth 2025, The next step.[7]

In the appropriation directions for 2020, the Swedish eHealth Agency was tasked with developing an indicator-based framework for following up Vision for eHealth 2025 based on previously developed frameworks.[8] This work was based on existing data as a potential foundation for indicators for further follow-up. During the work, the objectives were made tangible in the form of a number of target areas, and proposed indicators were linked to these target areas and the objectives that were formulated in the vision's strategy for 2020–2022. The assignment was completed according to plan in 2020. The agency has subsequently been tasked with monitoring the development of digitalisation within healthcare and social services and submitting a follow-up report to the Government each year up to and including 2025.

1.1 The assignment

The Swedish eHealth Agency was tasked with the following assignment in its appropriation directions for 2020:

8. Follow-Up Vision for eHealth 2025

The Swedish eHealth Agency shall monitor the development of digitalisation within healthcare and social services and submit an annual follow-up report to the Government. The report is to be based on the indicator-based framework

[7] Ministry of Health and Social Affairs and SALAR. *A strategy for implementing Vision for eHealth 2025, The next step.* Stockholm, 2020.
[8] Swedish eHealth Agency. *Indikatorbaserat ramverk för uppföljning av Vision e-hälsa 2025* [Indicator-Based Framework for Follow-Up of Vision for eHealth 2025]. Stockholm, October 2020.

developed by the agency for the follow-up of Vision for eHealth 2025. This work is to be conducted in cooperation with the governance and cooperation organisation for Vision for eHealth 2025. The assignment shall be reported on to the Government (Ministry of Health and Social Affairs) no later than 15 April each year until 2025, inclusive.

1.2 Scope and delimitations

The follow-up report for 2021 is delimited to encompass chiefly data sets identified in the indicator-based framework developed by the agency and related comparative data, where appropriate.

1.3 Consultation

This work has taken place in cooperation with the governance and cooperation organisation for Vision for eHealth 2025 and by means of participation and contributions from the National Board of Health and Welfare, the Swedish Association of Local Authorities and Regions (SALAR), Inera, the Swedish Medical Products Agency, the Swedish Agency for Digital Government and the Swedish Post and Telecom Authority (PTS).

2 Implementation

The initial work involved in producing indicators for the follow-up of eHealth development in Sweden and Vision for eHealth, has been implemented within the scope of the work on the report *Indikatorbaserat ramverk för uppföljning av Vision e-hälsa 2025*[9] and has been based on the National Board of Health and Welfare's criteria and requirements in respect of the production of indicators.[10] The four objectives listed in the strategy for the years 2020–2022 are made tangible in the report in the form of a number of points that are called target areas. The indicators produced are linked to the updated framework and are reported on the basis of the tangible objectives.[11]

Further information concerning description of processes and methods in respect of updates to the framework for the follow-up of Vision for eHealth 2025 and the production of indicators can be found in the report *Indikatorbaserat ramverk för uppföljning av Vision e-hälsa 2025*. Detailed descriptions of the indicators are in an appendix to this report.[12] This report also indicates that there are several areas where the lack of available indicators makes a complete follow-up and evaluation of development within the area impossible. Indicators included in this follow-up report have been selected on the basis of an overall assessment that they will provide as good an overview as possible of digitalisation within healthcare and social services.

A number of additional indicators that had not been identified previously have been added as they are deemed relevant from the perspective of follow-up. The selection was based on access to updated data for each indicator and the spread of indicators within and between the areas that follow-up has to cover. Certain indicators from previous follow-ups have been abandoned as they are no longer being monitored or have been replaced by other indicators, and some indicators have been excluded as they are judged to overlap with indicators that have been included.

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[9] Swedish eHealth Agency. *Indikatorbaserat ramverk för uppföljning av Vision e-hälsa 2025*. Stockholm, October 2020.
[10] National Board of Health and Welfare. *Handbok för utveckling av indikatorer: för god vård och omsorg* [Handbook for the Development of Indicators: For Good Health and Social Care]. Stockholm, 2017.
[11] Ministry of Health and Social Affairs and SALAR. *A strategy for implementing Vision for eHealth 2025, The next step*. Stockholm, 2020. *Genomförandeplan 2020–2022, Bilaga till Strategidokument Vision e-hälsa 2025* [Implementation Plan 2020–2022 Appendix to Strategy Document Vision for eHealth 2025], Stockholm, November 2020. Swedish eHealth Agency. *Indikatorbaserat ramverk för uppföljning av Vision e-hälsa 2025*. Stockholm, October 2020.
[12] Swedish eHealth Agency. *Bilaga 1 – Indikatorbaserat ramverk för uppföljning av Vision e-hälsa 2025* [Appendix 1 – Indicator-Based Framework for Follow-Up of Vision for eHealth 2025]. Stockholm, October 2020.

As far as is possible, data for recent years have been reported for each indicator. In some cases there are no historical data as the indicator is either entirely new or data has been reformulated in such a way that comparison with previous years is impossible. In those cases where the indicator is still included in the report, it has been deemed interesting even in the absence of historical data.

Reported indicators can be identified in the indicator-based framework (in the report[13] and in the appendix[14]) through the same ID specified in the text of figures (ID x.x). The indicators are also presented in accordance with the structure for the fundamental conditions and objectives defined in *A strategy for implementing Vision for eHealth 2025, The next step.*,[15] In addition to the fundamental conditions, the following are presented in the strategy: Objective 1 – *The individual as co-creator*, Objective 2 – *The right information and knowledge*, Objective 3 – *Safe and secure information processing* and Objective 4 – *Development and digital transformation hand in hand*,

Some data sources from which follow-up data have been obtained occur more frequently than others. The National Board of Health and Welfare conducts an annual follow-up (*E-hälsa och välfärdsteknik i kommunerna* [eHealth and Welfare Technology in the Municipalities]) that shows the development of eHealth and welfare technology in the municipalities and which also involves charting the municipalities' introduction and use of various forms of welfare technology for people who live in different types of accommodation.[16] In this report, the National Board of Health and Welfare points out that the figures should be interpreted with some caution – even though more municipalities are reporting that they are using various types of welfare technology, this still largely involves testing and pilot projects. It is unclear how many people are actually benefiting from this technology.

SALAR conducts an annual survey (*Hälso- och sjukvårdsbarometern* [The Healthcare Barometer]) examining the population's attitudes to, trust in and perceptions of healthcare. A number of new questions about eHealth services were included in the survey for 2020. SALAR, like Inera, is also contributing

[13] Swedish eHealth Agency. *Indikatorbaserat ramverk för uppföljning av Vision e-hälsa 2025*. Stockholm, October 2020.
[14] Swedish eHealth Agency. *Bilaga 1 – Indikatorbaserat ramverk för uppföljning av Vision e-hälsa 2025* Stockholm, October 2020.
[15] Ministry of Health and Social Affairs and SALAR. *A strategy for implementing Vision for eHealth 2025, The next step.* Stockholm, 2020.
[16] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2020* [eHealth and Welfare Technology in the Municipalities 2020]. Stockholm, 2020.

other data that are required in order to enable the monitoring of several indicators.[17]

For a number of years, an annual report into IT development in the regions has also been published in May (*eHälsa och IT i regionerna* [eHealth and IT in the Regions).[18] This report is based on data from questionnaires that are collected from the regions in the first quarter of the same year and data concerning finances from the year prior to the report's publication. Data from this survey also forms the basis of a number of reported indicators.

[17] SALAR. *Hälso- och sjukvårdsbarometern 2020.* Stockholm, 2021.
[18] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. May 2020.

3 Results

3.1 Background factors

The vision states that Sweden will be best in the world *"at using the opportunities offered by digitalisation and eHealth to make it easier for people to achieve good and equitable health and welfare, and to develop and strengthen their own resources for increased independence and participation in the life of society".*[19] How successful we are depends partly on the development of digital solutions within this area, but also on the ability to create fundamental conditions that allow these solutions to be used.

In the international digitalisation comparison DESI, Sweden is ranked second with 6.97 points.[20] For comparison, Finland and Denmark receive 7.23 and 6.91 points, respectively. Only Denmark is awarded a higher score than Sweden for connectivity.[21] In terms of the other dimensions in DESI, Sweden is in the following place in comparison to other countries: human capital[22] – 2nd place after Finland, use of internet services – 2nd place after Finland, integration of digital technology – 6th place, digital public services – 10th place.

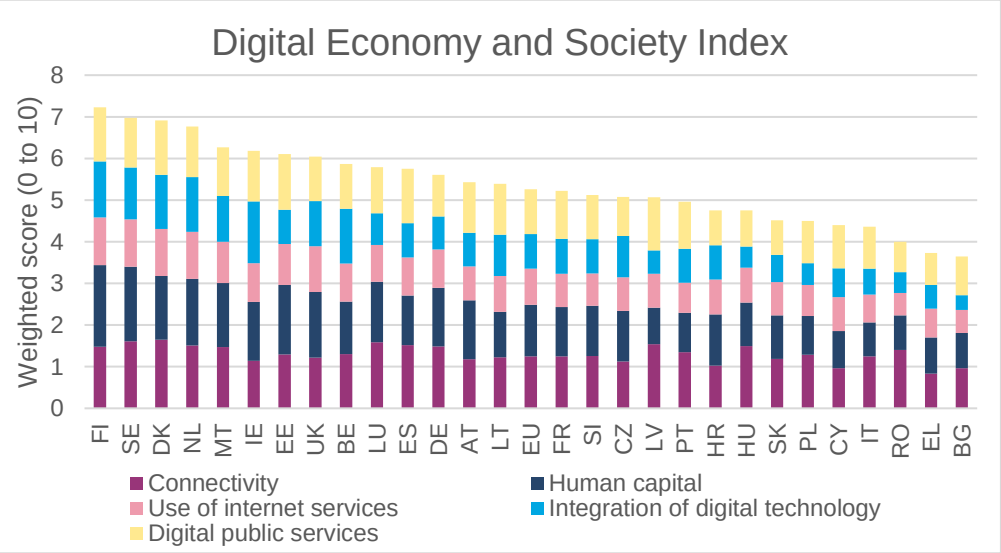

Figure 2. Source: DESI index 2020.

[19] Ministry of Health and Social Affairs and SALAR. *Vision for eHealth 2025*. Stockholm, 2016.
[20] European Commission. *Digital Economy and Society Index (DESI) 2020: Thematic chapters*. EU, 2020. https://ec.europa.eu/digital-single-market/en/desi
[21] Access to, performance and cost of broadband.
[22] Digital competence of the population and among professionals.

Several eHealth solutions are dependent on functioning broadband connections at home. Access to fibre differs depending on geographic location. In general, access to fibre is good in urban areas, but there is more variation in terms of access to fibre for properties outside of urban areas.[23]

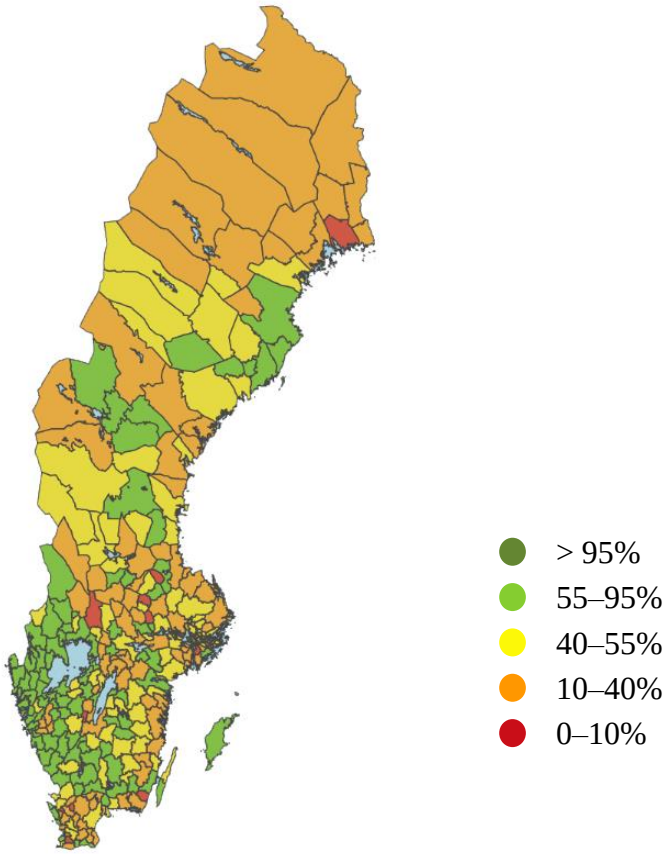

Figure 3. Access to fibre outside of urban areas and small towns. Source: Bredbandskartan.se, 26/01/2021.

In line with the Government's goal "the whole of Sweden connected", almost the entire Swedish population now have access to the internet. The proportion of households that have access to the internet has remained relatively constant at around 98 per cent since 2018.[24]

Although the figure is increasing constantly, there is still a portion of the population that is not using the internet or using the internet very rarely. At

[23] bredbandskartan.se, 26/01/2020.
[24] Swedish Internet Foundation. *Digitalt utanförskap 2020* [Digital Exclusion 2020]. June 2020. Swedish Internet Foundation. *Svenskarna och internet 2019* [The Swedes and the Internet]. October 2019.

the time of the measurements for 2019, just over 86 per cent of the Swedish population had used the internet at least once in the past three months. For comparison, the corresponding figure for Iceland was 95 per cent, just over 93 per cent for Norway and just over 60 per cent for the whole EU.[25]

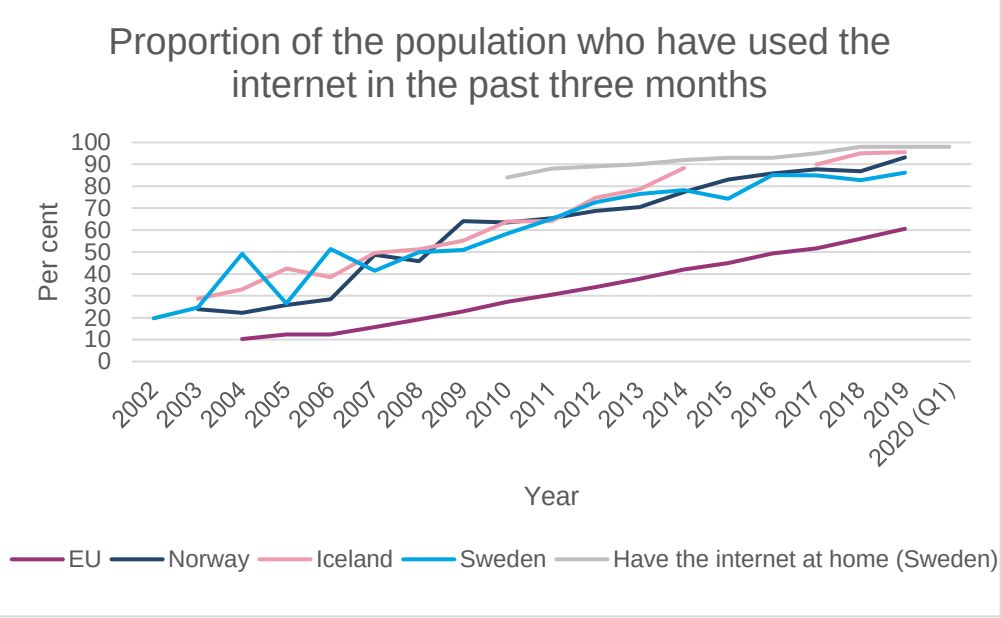

Figure 4. There are no data for Iceland for the years 2015–2016. Sources: DESI index 2020. Swedish Internet Foundation, Digitalt utanförskap 2020 [Digital Exclusion 2020]. Swedish Internet Foundation, Svenskarna och internet 2019 [The Swedes and the Internet 2019].

Access to a digital device such as a mobile phone, computer or tablet is a prerequisite for the ability to utilise digital health and social care. According to the Swedish Internet Foundation's report *Digitalt utanförskap 2020* [Digital Exclusion 2020], there is currently no major shortage of digital devices among the population. In 2020, three per cent of the population listed the lack of a digital device as being a barrier to their ability to use the internet, compared with ten per cent in 2010.[26]

Many digital services require the ability to identify the user, which creates demand for solutions for secure digital identification. There are currently three established forms of e-identification that have been awarded the 'svensk e-legitimation' quality label that individuals are able to obtain: BankID, Freja

[25] European Commission. *Digital Economy and Society Index (DESI) 2020: Thematic chapters*. EU, 2020. https://ec.europa.eu/digital-single-market/en/desi
[26] Swedish Internet Foundation. *Digitalt utanförskap 2020.* June 2020. Swedish Internet Foundation. *Svenskarna och internet 2019.* October 2019.

eID Plus and AB Svenska Pass.[27] BankID has been around for several years and around eight million people now have BankID.[28] Freja eID is a newer option with around 100,000 users.[29] AB Svenska Pass e-identification has been on ID cards issued by the Swedish Tax Agency since 2017.[30]

The proportion of people who have acquired BankID and thus have the opportunity to use this system for identification and log in to various services differs greatly between different age groups. In younger age groups, more than 99 per cent of the population have BankID, which decreases in older age groups. Among people over the age of 80, only 38.6 per cent have BankID.[31]

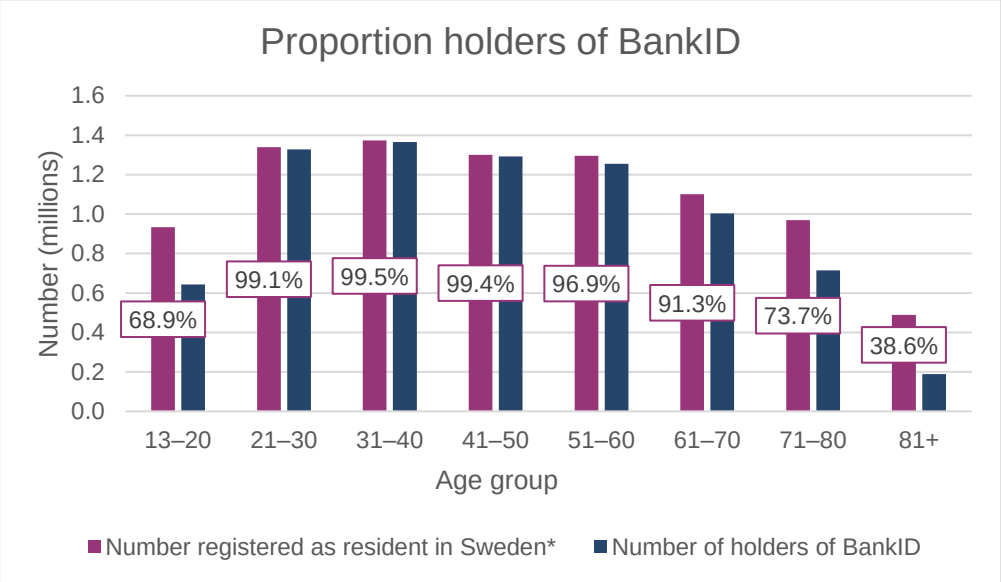

*Figure 5. * Registered as resident in Sweden on 1 November 2020. Source: Finansiell ID-Teknik AB, BankID.*

3.1.1 Comments

There are geographical differences in Sweden when it comes to access to a fibre connection at home. It is primarily in parts of the countryside where a fully expanded fibre network is not yet in place. This can restrict what digital services and eHealth solutions the individual can utilise, at the same time as

[27] DIGG – Swedish Agency for Digital Government. https://www.e-legitimation.se/skaffa-e-legitimation. 16/03/2021.
[28] Statistics from Finansiell ID-Teknik AB, BankID.
[29] Statistics from Freja eID Group AB.
[30] Swedish Tax Agency. 24/03/2021. https://skatteverket.se/privat/folkbokforing/idkort/elegitimationpaidkortet.4.3810a01c150939e893f8169.html
[31] Statistics from Finansiell ID-Teknik AB, BankID.

digital services can often be beneficial for people who live a long way from healthcare facilities.

The importance of taking into account access to BankID in all age groups became clear at the beginning of 2021 when some regions initially called on older people to make an appointment for vaccination against Covid-19 using a service that required BankID. It was not possible for 61.4 per cent of people over the age of 81 to do this as they do not have BankID.[32]

3.2 Fundamental conditions

The fundamental conditions for Vision for eHealth 2025 encompass the following three areas: *Regulations*, *Standards* and *More consistent use of terms*. These are to create the conditions for information exchange, facilitate information transfer and allow interaction between different digital solutions in a standardised ecosystem. These are areas that require a long-term approach, stability and predictability.

3.2.1 Comments

Fundamental conditions lack identified quantifiable indicators that are monitored over time.

3.3 Objective 1 – The individual as co-creator

One prerequisite for person-centred activities is to use the needs and circumstances of patients and users as a starting point in order to enable all of them to be informed and active co-creators. This objective considers the potential for those who are able and want to contribute to their care, health and support to do so. Various forms of digital support should make it possible for individuals' resources to be utilised and for different healthcare and social services activities to become more cohesive. For example, it should be possible for healthcare and social services to be offered close to the population and be more location independent.

One goal is for welfare technology and digital support at home to be offered to patients, users and relatives support outside of traditional care environments and lead to increased security, independence and participation.

[32] DN. 04/02/2021.

Another goal is for healthcare and social services to be accessible and present through digital services that facilitate contact and information gathering by individuals and for the population to have confidence in and a positive attitude towards eHealth.[33]

Welfare technology in various types of accommodation

The proportion of municipalities that have night-time supervision using digital technology in *ordinary homes* has increased from 37 per cent in 2017 to 66 per cent in 2020.[34,35] Examples of this type of technology are security cameras and thermal imaging cameras that enable a user to be supervised without social care staff having to visit them. The proportion of municipalities where it is possible to conduct care planning in ordinary homes using support by video has increased from 59 per cent in 2017 to 86 per cent in 2020. Around 80 per cent of municipalities use video support for coordinated individual planning (CIP) ahead of discharge from hospital, and 71 per cent are using CIP on other occasions. Passive alarms or sensors are the most common type of welfare technology in ordinary homes, and 93 per cent of all municipalities have this. Electronic planning tools as an aid for staff have also become widely used and are now used in 90 per cent of municipalities (Figure 6).[36]

Municipalities are also using various types of welfare technologies within *sheltered accommodation for older people* (Figure 7) and *support and service accommodation for people with disabilities*(Figure 8).[37] In these types of accommodation, night-time supervision using cameras has increased from 11 per cent in 2017 to 44 per cent in 2020 in sheltered accommodation for older people, and from 8 to 33 per cent over the same period in accommodation for people with disabilities. In 2020, the proportion of municipalities that are able to offer care planning by video in sheltered accommodation for older people

[33] Ministry of Health and Social Affairs and SALAR. *A strategy for implementing Vision for eHealth 2025, The next step.* Stockholm, 2020.
[34] The figures presented for proportion of municipalities that offer some welfare technology in various types of accommodation should be interpreted with some caution. Even though more municipalities are reporting that they are using various types of welfare technology, this still largely involves testing and pilot projects. It is unclear how many people are actually benefiting from this technology.
[35] In the *E-hälsa och välfärdsteknik i kommunerna* survey for 2020, welfare technology in ordinary homes has been divided up into elderly care and disability.
[36] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna, 2017–2020.* Stockholm, 2017–2020.
[37] The figures presented for proportion of municipalities that offer some welfare technology in various types of accommodation should be interpreted with some caution. Even though more municipalities are reporting that they are using various types of welfare technology, this still largely involves testing and pilot projects. It is unclear how many people are actually benefiting from this technology.

and in support and service accommodation for people with disabilities is 73 per cent and 65 per cent, respectively. The proportion of municipalities that are using video support for CIP ahead of discharge from in-patient care is 71 per cent and 65 per cent, respectively, in the two types of accommodation, and the proportion of municipalities using CIP with the aid of video on other occasions is 62 per cent and 59 per cent in sheltered accommodation for older people and support and service accommodation for people with disabilities, respectively.

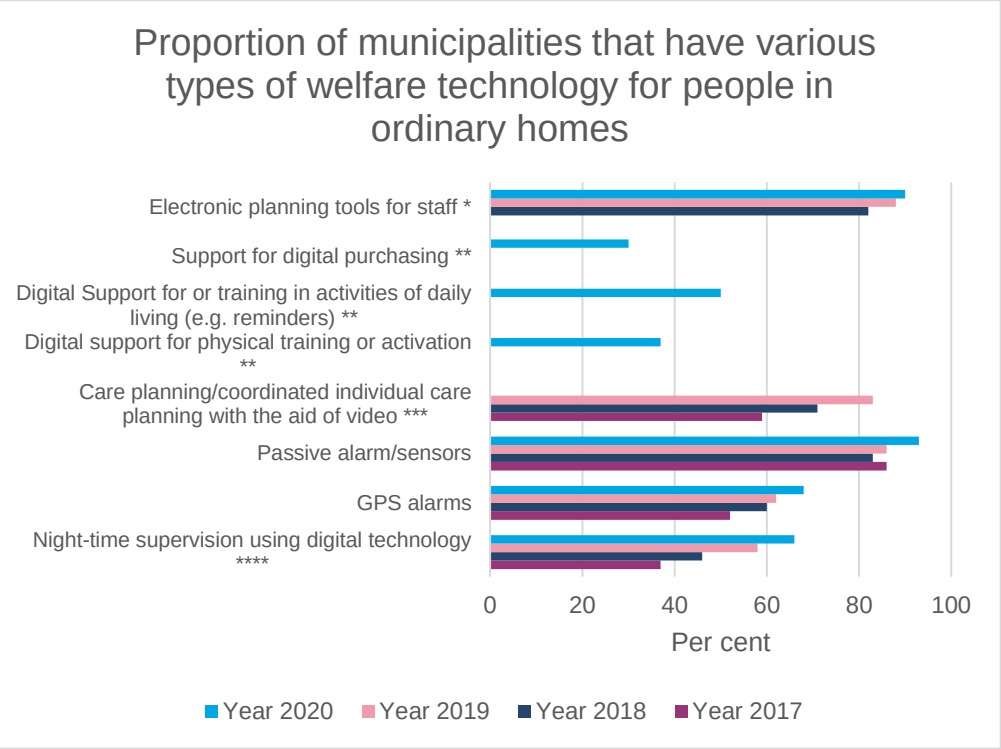

*Figure 6. Proportion of municipalities that have various types of welfare technology for people in ordinary homes, 2017– 2020. * This question was not asked in 2017. ** This question was first asked in 2020. *** In the survey for 2020, the question on care planning with the aid of video was divided up into coordinated individual care planning (CIP) with the aid of video ahead of discharge from in-patient care and on other occasions. The graph shows a combined figure in order to allow retrospective comparisons to be made. **** Security camera, night-time supervision/remote supervision using cameras. Sources: National Board of Health and Welfare. E-hälsa och välfärdsteknik i kommunerna, 2017–2020. (ID 1.1–1.4)*

Although an internet connection is not classified as welfare technology in itself, it makes it possible to use welfare technology and digital health and social care. In sheltered accommodation for older people, the proportion of municipalities that are offering individuals the opportunity to connect to the internet has increased from 61 per cent in 2017 to 77 per cent in 2020. In

support and service accommodation for people with disabilities, the proportion has increased from 59 per cent in 2017 to 74 per cent in 2020.[38]

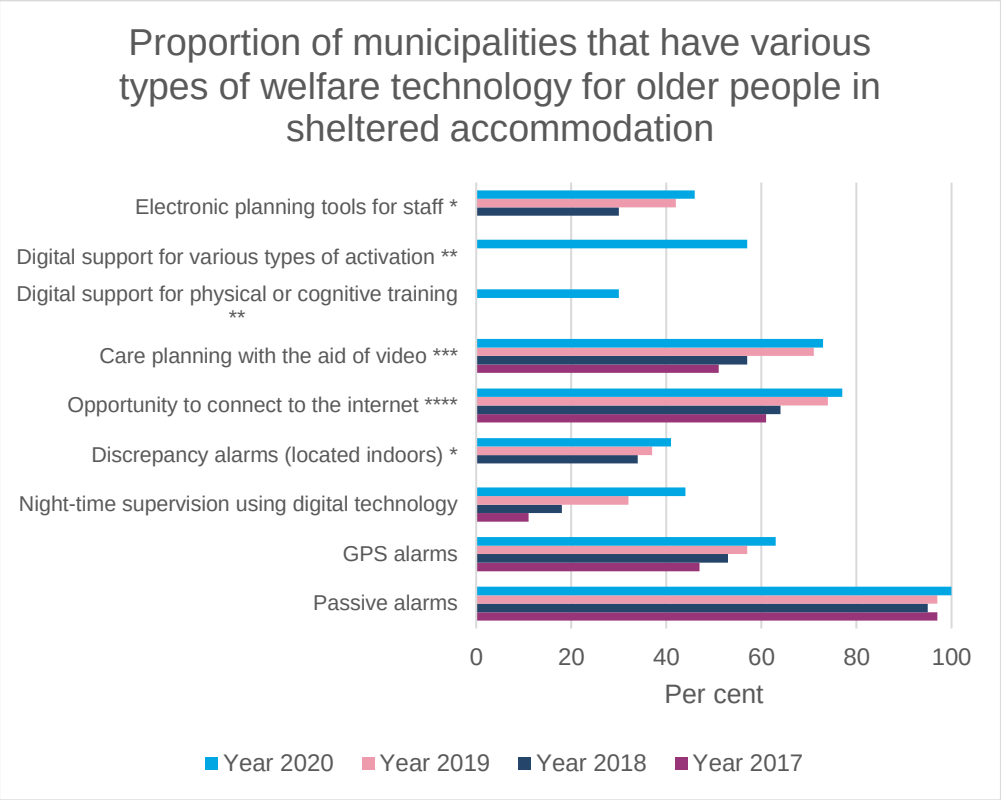

*Figure 7. Proportion of municipalities who have various types of welfare technology for older people in sheltered accommodation, 2017– 2020. * This question was not asked in 2017. ** This question was first asked in 2020. *** In the survey for 2020, the question on care planning with the aid of video was divided up into coordinated individual care planning (CIP) with the aid of video ahead of discharge from in-patient care and on other occasions. The graph shows a combined figure in order to allow retrospective comparisons to be made. **** Refers to internet connection via Wi-Fi or fibre. Sources: National Board of Health and Welfare, E-hälsa och välfärdsteknik i kommunerna, 2017–2020. (ID 1.1–1.4)*

[38] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna, 2017–2020.* Stockholm, 2017–2020.

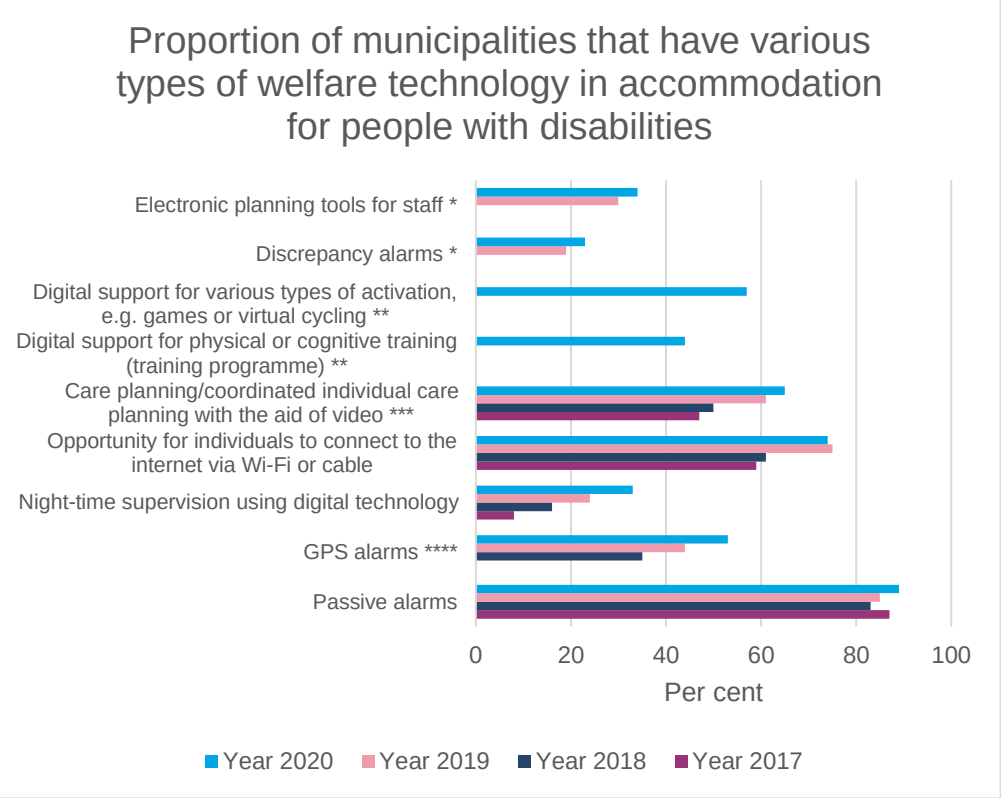

*Figure 8. Proportion of municipalities who have various types of welfare technology in accommodation for people with disabilities, 2017– 2020. * This question was not asked in 2017 or 2018. ** This question was first asked in 2020. *** In the survey for 2020, the question on care planning with the aid of video was divided up into coordinated individual care planning (CIP) with the aid of video ahead of discharge from in-patient care and on other occasions. The graph shows a combined figure in order to allow retrospective comparisons to be made. **** This question was not asked in 2017. Sources: National Board of Health and Welfare. E-hälsa och välfärdsteknik i kommunerna, 2017–2020. (ID 1.1–1.4)*

Welfare technology in municipal healthcare

Municipal healthcare uses welfare technology that differs in some respects from that used by social services. The most common are keyless locks for home nursing, which are used in 64 per cent of municipalities, and epilepsy alarms, which are used in 60 per cent of municipalities.[39] Medicine

[39] The figures presented for proportion of municipalities that offer some welfare technology in various types of accommodation should be interpreted with some caution. Even though more municipalities are reporting that they are using various types of welfare technology, this still largely involves testing and pilot projects. It is unclear how many people are actually benefiting from this technology.

dispensers[40] are another aid and the municipalities involved in providing municipal healthcare have 587 in use.[41]

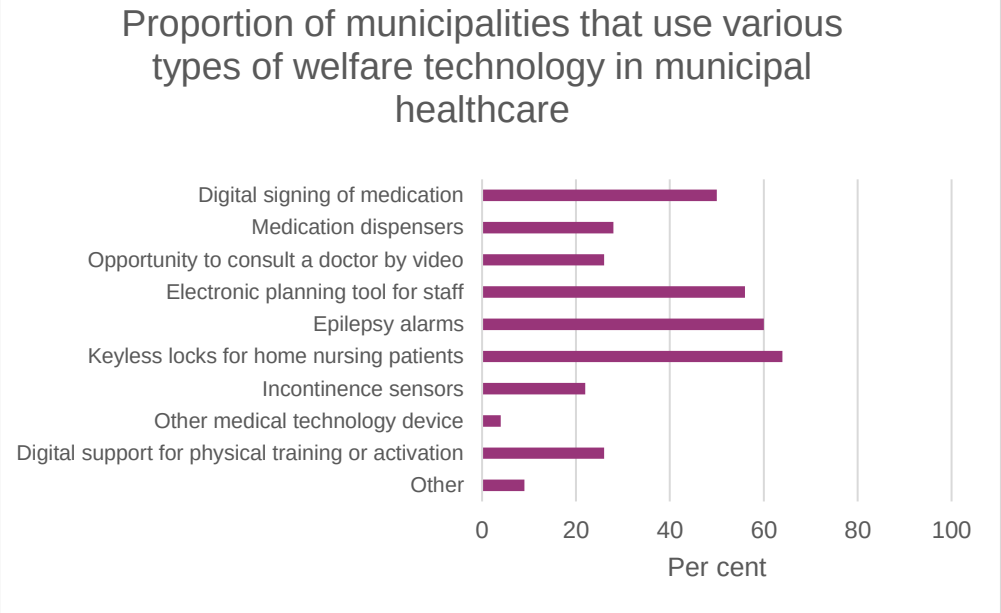

Figure 9. Proportion of municipalities that use various types of welfare technology in municipal healthcare, 2020. Source: National Board of Health and Welfare. E-hälsa och välfärdsteknik i kommunerna 2020. (ID 1.1–1.4)

An increasing number of municipalities are accepting digital applications for assistance

An increasing proportion of municipalities have online services for applying for assistance, primarily financial assistance (40 per cent of municipalities). In addition to the online service, a small proportion of these municipalities also have automated the administration process so that checks and other administration is now handled by the IT system up until the decision is made.[42] Within elderly care and the disabilities area, 31 and 25 per cent, respectively, of municipalities stated that they have online services in the form of digital applications for various types of assistance or interventions. Examples of other online services that are offered include the opportunity to

[40] Medicine dispensers are a digital aid that reminds the patient when it is time to take their medication, dispenses the medication and signals to the care provider if there are any discrepancies.
[41] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna, 2017–2020.* Stockholm, 2017–2020.
[42] Svensson, L. *"Tekniken är den enkla biten": Om att implementera digital automatisering i handläggningen av försörjningsstöd* ["Technology is the Easy Part": Implementing Digital Automation in the Administration of Income Support]. School of Social Work, Lund University. 2019. ISBN: 978-91-7895-154-3.

make appointments with case officers, chat forums and expressions of interest. The proportion of municipalities that do not have any online services has fallen between 2019 and 2020. A total of 66 municipalities (27 per cent) stated that they do not have any online services for any area within social services, while 33 municipalities (14 per cent) had online services within all areas (Table 1).[43]

Proportion of municipalities that have at least one service within social services, by operational area and type of online service, in per cent, 2020.

Operational area	Making appoint-ments (%)	Digital Applica-tion (%)	Chat (%)	Secure communication (%)	Expression of interest (%)	No online services (%)
Children and adolescents	2 (1)	2 (4)	6 (6)	9 (4)	38 (33)	48 (59)
Financial assistance	2 (1)	40 (29)	3 (3)	12 (6)	3 (4)	48 (63)
Family law	6 (5)	3 (3)	2 (3)	6 (3)	4 (5)	74 (82)
Family counselling	8 (6)	1 (3)	2 (2)	4 (3)	2 (2)	74 (86)
Adults with addiction problems	1 (1)	3 (2)	3 (3)	7 (3)	8 (5)	71 (84)
Disabilities	1 (0)	25 (23)	2 (2)	4 (4)	21 (14)	53 (58)
Elderly care	1 (3)	31 (29)	2 (2)	4 (3)	9 (8)	54 (90)

Table 1. Proportion of municipalities that stated they have online services for applying for various types of assistance or intervention, in per cent. Data in parentheses refer to 2019. Sources: National Board of Health and Welfare. E-hälsa och välfärdsteknik i kommunerna, 2019–2020. (ID 2.8)

Digital contacts outside the region

Digital contacts outside the region encompasses healthcare meetings that take place via chat or video and where the patient lives in a region other than that in which the care provider is established. The majority of the actors that offer this type of service nationally, initially established themselves in Region Jönköping and Region Sörmland and then made use of the opportunity patients have to choose freely from providers in the entire country.[44]

There are now 12 private providers that have access to public funding through Region Jönköping or Region Sörmland and supply digital healthcare that is marketed nationally. Four providers dominated this group in 2020, with the following shares of the group's total healthcare contacts: Kry, 40 per cent; Doktor.se, 17 per cent; Min Doktor, 15 per cent; Doktor24, 11 per cent.

[43] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna, 2019–2020.* Stockholm, 2019–2020.
[44] SFS 2014:821. *Patient Act*.

These 12 healthcare providers had a combined total of 2.3 million healthcare contacts in 2020. The volume of digital healthcare provided by these providers doubled in both 2019 and 2020 when compared with the previous year. The reported volume via Region Jönköping and Region Sörmland has been only marginally affected by the fact that healthcare contracts in Skåne (approximately 60,000 in 2020) are now being report directly to Region Skåne and not via Region Jönköping or Region Sörmland (Figure 10).[45]

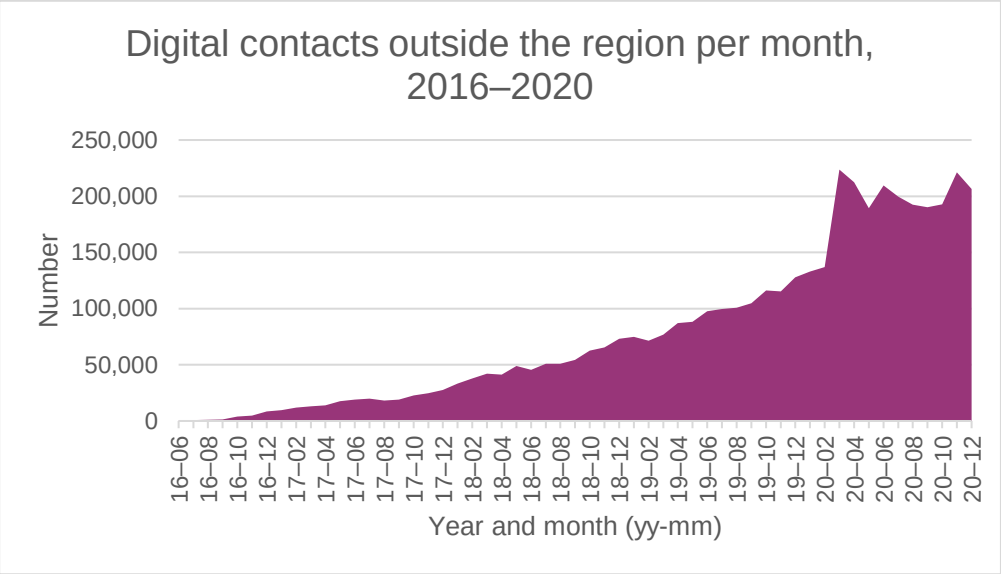

Figure 10. Development of digital contacts outside the region in Jönköping and Sörmland, 2016–2020. Selection based on the fact that the majority of the actors that offer this type of service nationally, initially established themselves in Region Jönköping and Region Sörmland and then made use of the opportunity patients have to choose freely from providers in the entire country. Source: Swedish Association or Local Authorities and Regions (SALAR).[46] (ID 2.3)

Various professional categories participate in the range of services offered digitally. Initially it was primarily healthcare contacts with doctors, but the range has subsequently been expanded to other professional groups (Figure 11). The proportion of digital healthcare contacts conducted with doctors has fallen from 87 per cent in 2018 to 67 per cent in 2020. The proportion of healthcare contacts with nurses and physiotherapists is now 18 per cent and 10 per cent, respectively. Contacts with psychologists are growing and

[45] Statistics from the Swedish Association or Local Authorities and Regions (SALAR). *Digital contacts outside the region.*
[46] After May 2020, KRY reports healthcare contacts for patients registered as resident in Skåne directly to Region Skåne and these patients are therefore not shown in the statistics from Region Jönköping and Region Sörmland. The loss is approx. 5,000 per month. The growth in volume between 2019 and 2020 amounts to 1.2 million and the loss equates to approx. 5 per cent on an annual basis.

account for 5 per cent of all contacts in 2020. Only a small number of digital contacts outside the region involve other professional groups.[47]

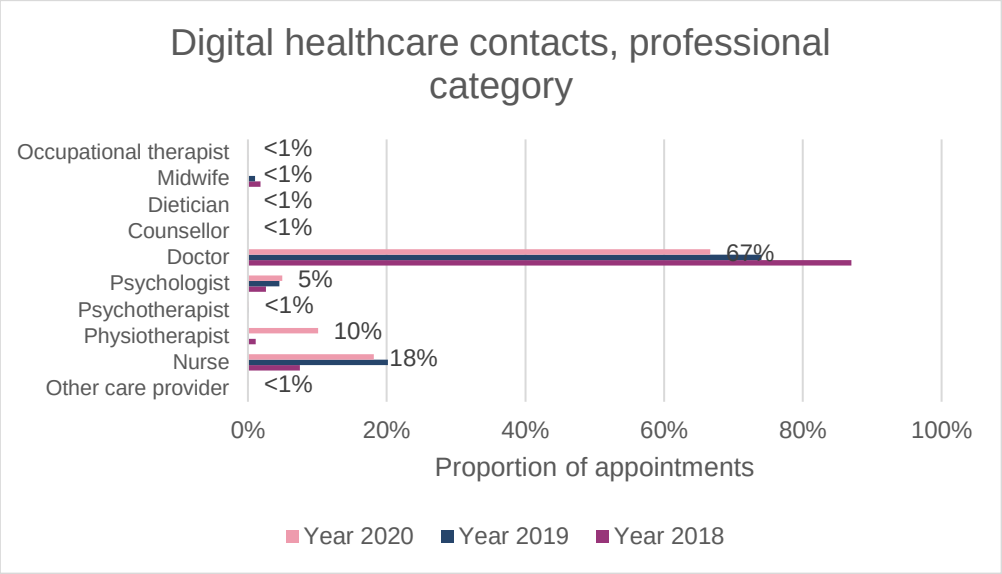

Figure 11. Digital healthcare contacts by professional group from private providers via Region Jönköping and Region Sörmland 2018–2020. The figures by the bar indicate the value for 2020. Source: SALAR. Digital contacts outside the region. (ID 2.6)

The age structure of the patients in digital healthcare is significantly lower than in physical primary care. In the use of digital healthcare, the age group 19–29 years accounts for just under 30 per cent and the group 18–40 for just over 50 per cent of all healthcare contacts. The same age groups account for only 7 and 15 per cent, respectively, of all appointments at primary care centres.[48] These age groups also account for 13.5 and 30 per cent of the population, respectively.

Women use digital healthcare to a greater extent than men (Figure 12). In 2020, women used 88 per cent more digital healthcare than men. Women also seek healthcare more frequently than men in physical primary care, 26 per cent more frequently (Halland, 2019). Women aged 18–35 are the group that accounts for the largest proportion of digital contacts outside the region, with

[47] Statistics from SALAR. *Digital contacts outside the region.*
[48] The comparison with appointments at primary care centres is based on statistics from Region Halland, appointments with patients from within the county at primary care centres in 2019, n=1,533,537.

30.5 per cent, while constituting just over 11 per cent of the Swedish population.[49]

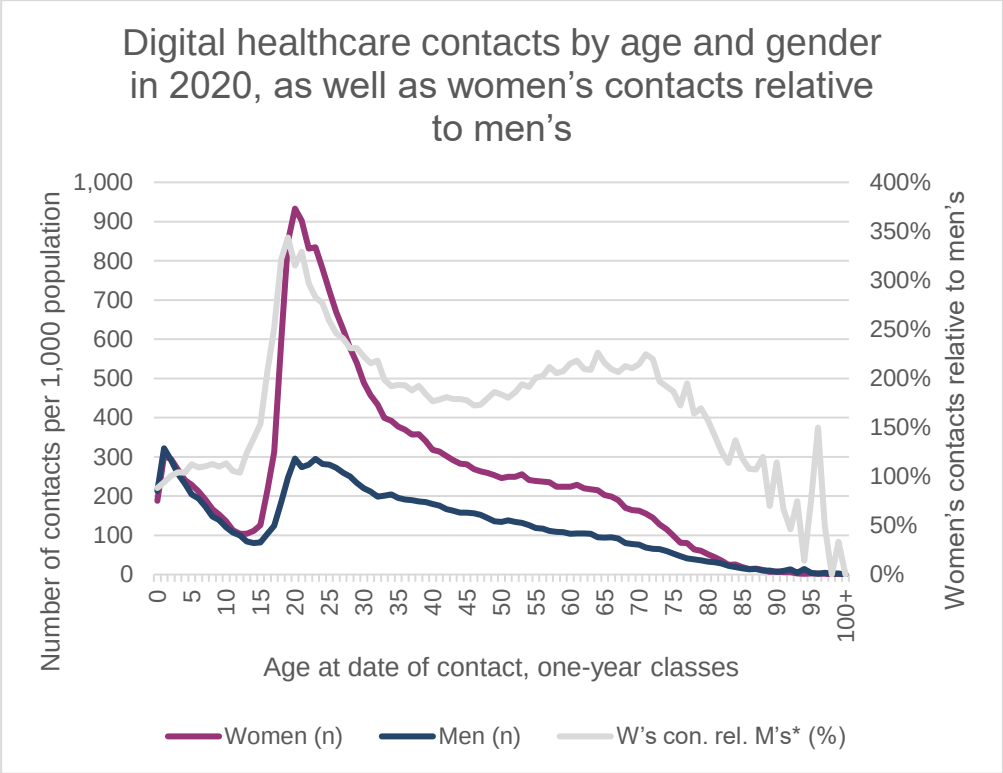

*Figure 12. Healthcare consumption (digital healthcare contacts/1000 population) by age and gender 2020, one year classes * W's con. rel. M's – Women's consumption relative to men's (%). Region Sörmland & Region Jönköping. Source: SALAR. Digital contacts outside the region. (ID 2.4)*

1177 Vårdguiden's online services

Organisations that are connected to a region are able to offer residents access to 1177 Vårdguiden's online services. Exactly which functions and services residents are able to use differs from region to region.

A total of 191 million visits to 1177 Vårdguiden and just over 96 million log-ins have been registered in 2020, which is almost double compared to 2019 (51 million log-ins). The number of log-ins to 1177 Vårdguiden's online services increased by 84 per cent for women and 95 per cent for men, compared with 2019. Women make more extensive use of 1177 Vårdguiden's online services than men up to about the age of 70 (Figure 13). On average, a woman in the age group 30–39 years logged in 21.5 times over the course of

[49] Statistics from SALAR. *Digital contacts outside the region.*

2020, compared with 8.1 times for a woman in the age group 70–79 years, i.e. just over 265 per cent more. The average number of log-ins for men is significantly more stable between the age groups. An increasing number of people aged 70 and over are using the online services at 1177 Vårdguiden. In 2020, 1,430 visits have been made by people over the age of 100. The corresponding figure for 2019 was 1,073.[50]

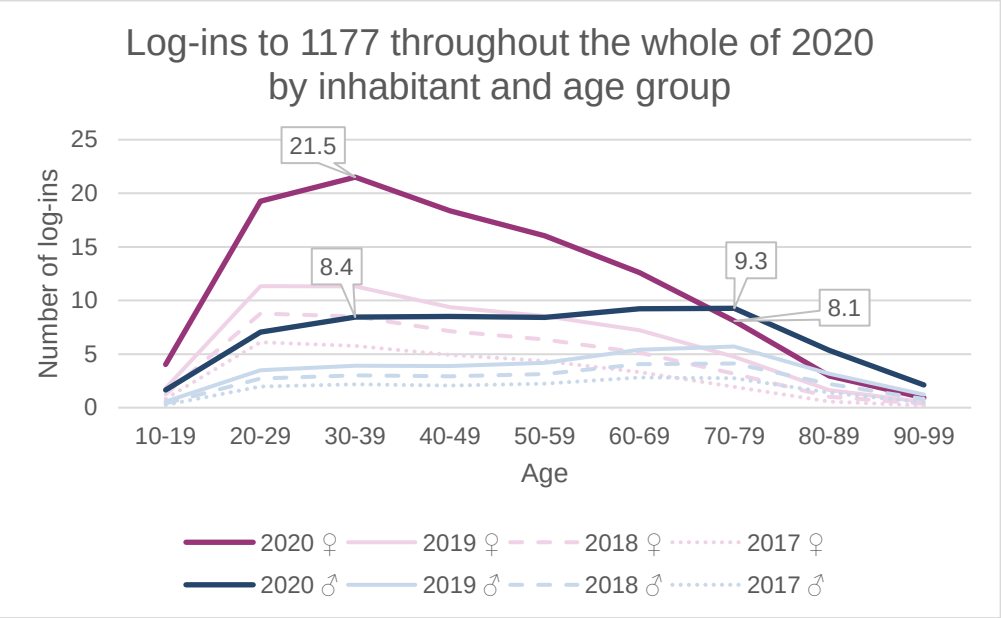

Figure 13. Average number of log-ins at 1177.se Vårdguiden by gender and age group in 2020. Source: Inera. (ID 2.10)

The online appointments diary makes it possible for people to make, reschedule and cancel an appointment with healthcare providers. The number of appointments made using the online appointments diary increased from just under 0.9 million in 2019 to just under 1.8 million in 2020. The number of cancellations and rescheduled appointments also increased by 130,000–160,000 between 2019 and 2020 (Figure 14).[51]

Journalen is the service through which people can access their medical records. For example, it is possible to see notes from healthcare appointments and obtain information about vaccinations, referrals, diagnoses, dental care, medications and test results. Legal guardians are also able to access information about their children until such time as they reach the age of 13.

[50] Statistics from Inera.
[51] Statistics from Inera.

What information is available in Journalen varies from region to region, but the majority of regions are displaying information about diagnoses, test results, contacts with healthcare, notes and restrictions (Figure 15).[52]

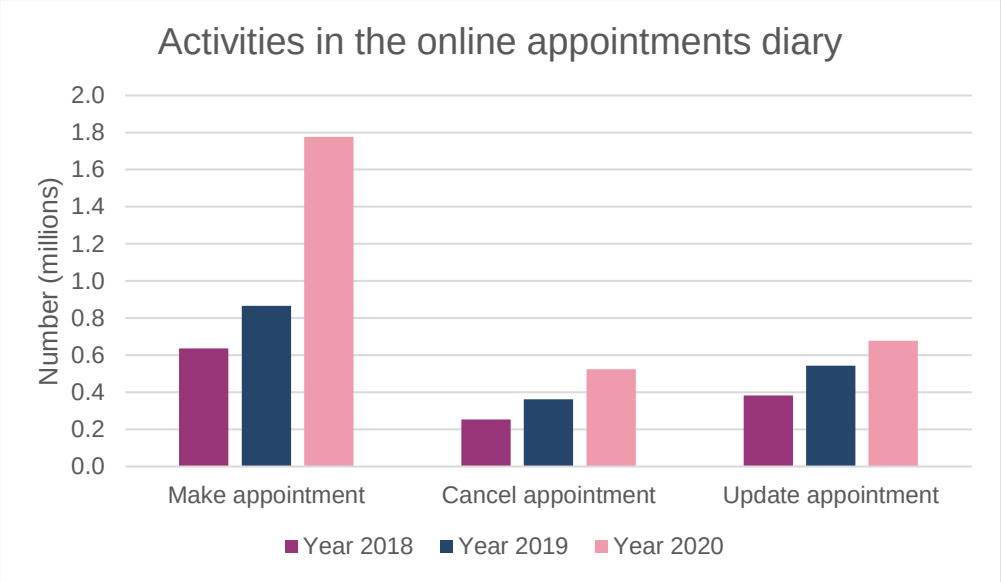

Figure 14. Activities in the online appointments diary 2018–2020. Source: Inera. (ID 2.2)

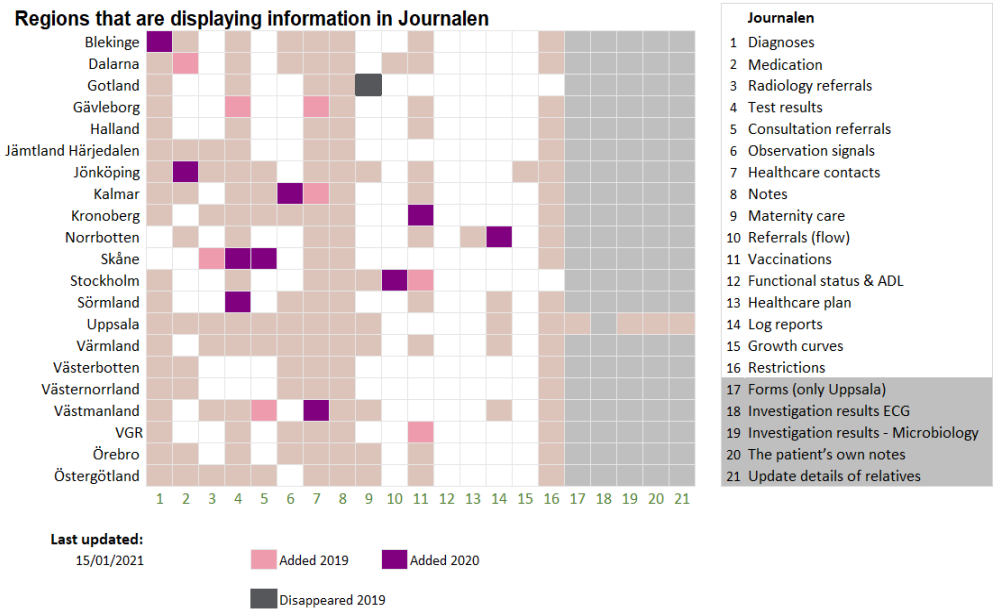

Figure 15. Sets of information patients are able to see in the online service Journalen: Information sets 1–16 in Journalen are possible to add for all regions, while information sets 17–21 require specific conditions. Source: Inera. Retrieved 15/01/2021 (ID 2.11)

[52] Inera.

The platform for support and treatment makes it possible for regions and private healthcare providers with healthcare contracts to offer people support and treatment programmes, known as elements, via the internet. For example, elements can be the alcohol programme eSupport, help with sleep, help with stress or online treatment for depression. The support and treatment service has been operational since 2015 and all regions are now connected to the service via 1177 Vårdguiden.[53]

The number of started and completed elements in the support and treatment service via Inera's platform has increased since 2016. However, there has been a marked acceleration in 2020 compared with the year before, which resulted in 62,241 started and 46,596 completed elements. Proportionally, this increase is larger than the increase in number of treatment providers (Figure 16).[54]

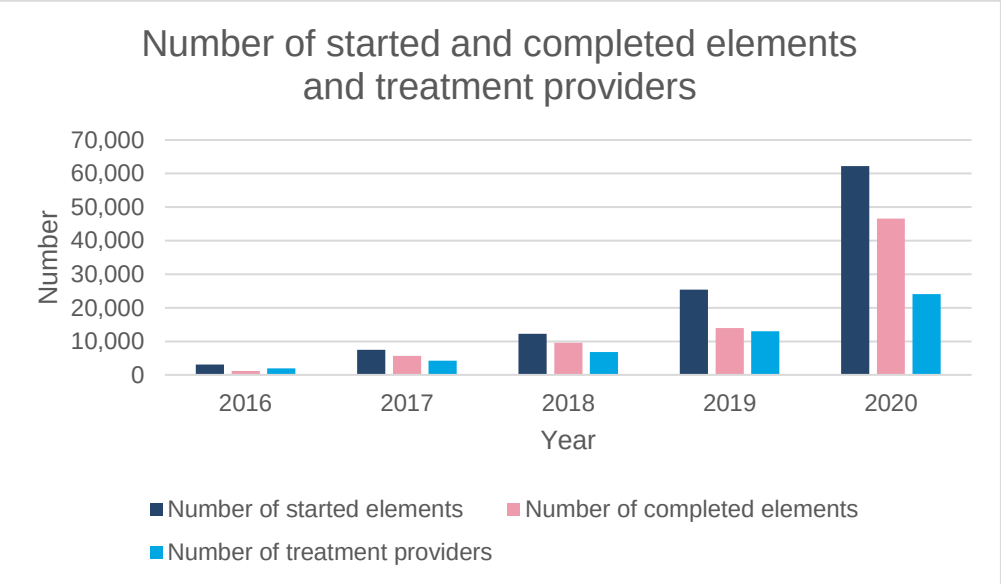

Figure 16. Number of elements (started and completed) and number of treatment providers on Inera's platform for support and treatment, 2016–2020. Source: Inera. (ID 2.12)

Digital arrival registration and payment

Digital arrival registration and payment free up time and reduce the administrative burden on staff. As of the first quarter of 2020, 16 regions had

[53] SALAR. *Användning av program i Stöd och behandling: intervju med regioner 2020* [Use of Programmes in Support and Treatment: Interview with Regions 2020]. Stockholm, April 2020.
[54] Statistics from Inera.

introduced or were in the process of introducing digital arrival registration via terminals in conjunction with healthcare appointments. Two regions were able to offer solutions for payment via terminals, and six regions were in the process of introducing such solutions. Self-service solutions for arrival registration and payment via app had been introduced or were in the process of being introduced in a few regions (Figure 17).[55]

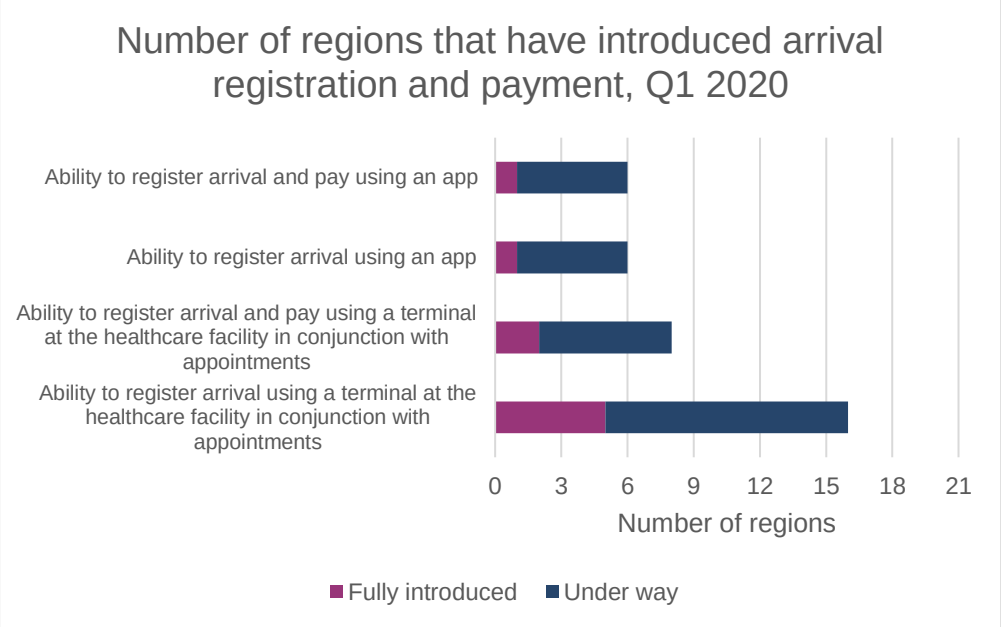

Figure 17. Number of regions that have introduced arrival registration and payment, 2020 The questions was asked in a new way in 2020. In 2020, 19 regions answered the question. Data collected Q1 2020. Source: eHälsa och IT i regionerna, 2020.[56] (ID 2.1)

Attitudes, trust in and experiences of eHealth

If Vision for eHealth 2025 is to be successful, it is not sufficient simply for the technical solutions to be in place. For the goals set out in the vision to be achievable, the Swedish population must also be willing to use digital solutions. It is important that people trust the system and have a positive experience of and attitude towards the services.

A number of new questions relating to this area were included in the 2020 version of *Hälso- och sjukvårdsbarometern* from SALAR. The majority of the population have a very or quite positive attitude to the use of 1177

[55] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. May 2020.
[56] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. May 2020.

Vårdguiden's online services (79 per cent). A slightly smaller proportion have a very or quite positive attitude to healthcare, consultations and treatment with the help of digital technology (46 per cent), while there are more people who have a very or quite positive attitude to more opportunities to be cared for at home with the aid of digital technology (59 per cent) (Figure 18).[57]

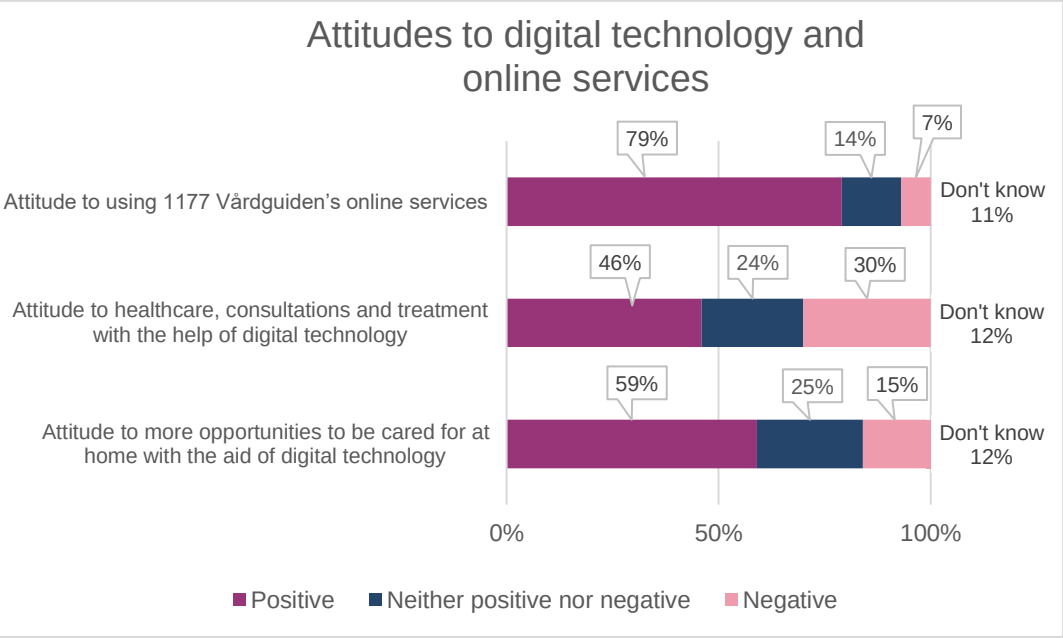

Figure 18. Attitudes to digital technology and online services. New question in the survey for 2020. Source: SALAR. Hälso- och sjukvårdsbarometern 2020. (ID 3.2)

There is a geographical difference in how large a proportion of those asked have a very or quite positive attitude in each question. Three regions that end up at the top in terms of proportion of respondents who have a positive attitude to 1177 Vårdguiden's online services are Uppsala (83 per cent), Örebro* (81 per cent) and Västerbotten* (81 per cent), while three regions with the lowest proportion of positives are Skåne* (77 per cent), Jönköping* (77 per cent) and Gävleborg (76 per cent). On the question of attitude to healthcare, consultations and treatment with the help of digital technology, three regions with the highest proportion of respondents who have a positive attitude are Stockholm (53 per cent), Västerbotten (48 per cent) and Uppsala (48 per cent), while three regions with the lowest proportion of positives are Gävleborg* (40 per cent), Blekinge (39 per cent) and Västernorrland (39 per cent). Three regions who end up at the top in terms of proportion of respondents who have a positive attitude on the question of more

[57] SALAR. *Hälso- och sjukvårdsbarometern 2020.* Stockholm, 2021.

opportunities to be cared for at home are Stockholm (66 per cent), Uppsala (63 per cent) and Västra Götaland* (60 per cent), while three regions with the lowest proportion of positives are Västernorrland* (53 per cent), Gävleborg (52 per cent) and Kronoberg (52 per cent).[58,59]

In general, younger people have a more positive attitude than older people, which is also true of those who rate their general health as being good. People who were born outside of Europe have a more positive attitude to healthcare, consultations and treatment with the help of digital technology than people who were born in Sweden or the other Nordic countries.[60]

In 2020, 42 per cent (46 per cent in 2019) stated that they had a generally positive attitude to the development of AI (artificial intelligence) within health-related services, while 34 per cent had a negative attitude (29 per cent in 2019) and 24 per cent stated that they did not know (25 per cent in 2019). The survey for 2020 contained a couple of new question, one of which related to positive attitude to AI within various aspects of healthcare (Figure 19). The area with the largest proportion who had a positive attitude to the use of AI was its use to remind people to take their medication (58 per cent) or to help with directing people to the right hospital or ward (53 per cent).[61]

[58] * The ranking is based primarily on the proportion who are positive to the question. In the cases where more than one region has the same proportion of positive answers to the question, regions with a value that, with 95% confidence, is higher or lower than the figure for the whole country have been chosen ahead of regions where the difference compared to the whole country does not reach this level of confidence. In the event there is more than one region that meets these requirements, regions have been ranked on the basis of proportion that have a quite or very negative attitude.
[59] SALAR. *Hälso- och sjukvårdsbarometern 2020.* Stockholm, 2021.
[60] SALAR. *Hälso- och sjukvårdsbarometern 2020.* Stockholm, 2021.
[61] Insight Intelligence. *Svenska folket och AI. Svenska folkets attityder till Artificiell Intelligens 2020* [The Swedish Population and AI. Attitudes of the Swedish Population to Artificial Intelligence]. Stockholm, 2020.

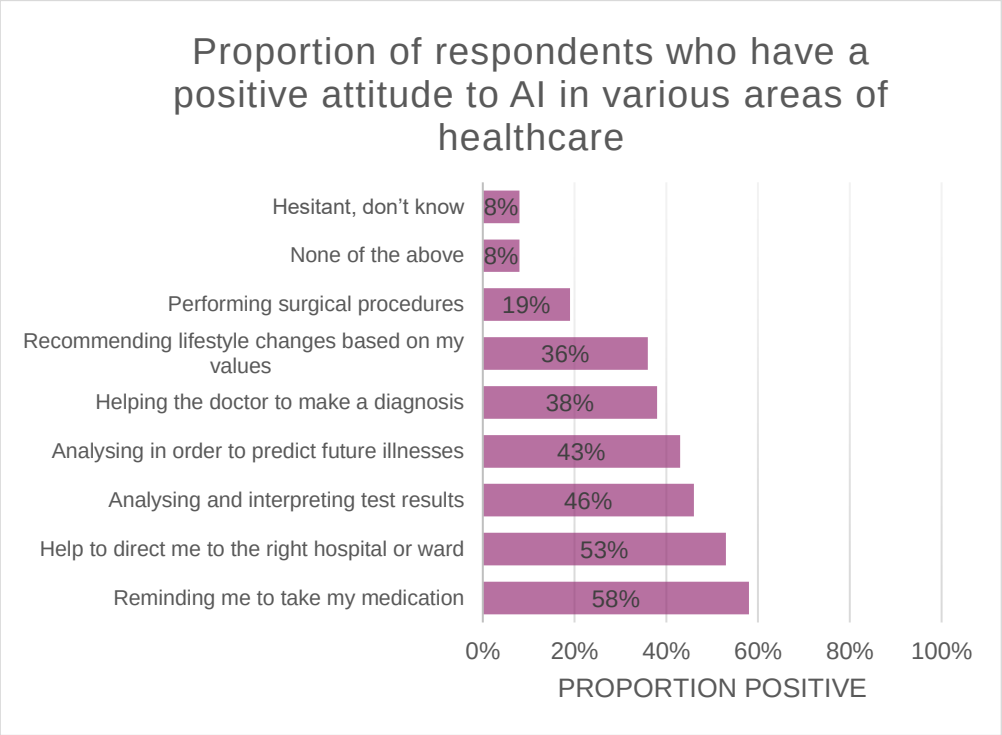

Figure 19. Proportion who have a positive attitude to the use of AI within various areas within healthcare, 2020. Source: Insight Intelligence. Svenska folket och AI [The Swedish Population and AI]. 2020. (ID new)

3.3.1 Comments

The survey relating to municipal welfare technology in various types of accommodation and within the healthcare system only established which municipalities have a certain solution, not how widespread it is in the municipality or how many people have access to it. Even though more municipalities are reporting that they are using various types of welfare technology, this still largely involves testing and pilot projects, and the figures should therefore be interpreted with some caution.[62]

The dramatic increase in digital contacts outside the region at the beginning of 2020 coincides with the start of the Covid-19 pandemic.

1177 Vårdguiden is the healthcare portal that the population uses most, when compared with equivalent portals in Denmark, Finland and Norway. Sweden is at the top with 18 visits per inhabitant in 2020, an increase of just under 40 per cent compared with 2019. Finland has the lowest number of visits per

[62] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2020*. Stockholm, 2020.

inhabitant in 2020 (6 visits), while Norway and Denmark, respectively, have 14 and 11 visits per inhabitant in 2020 (Figure 20). The differences may partly be explained by content and how the different national portals are used.[63]

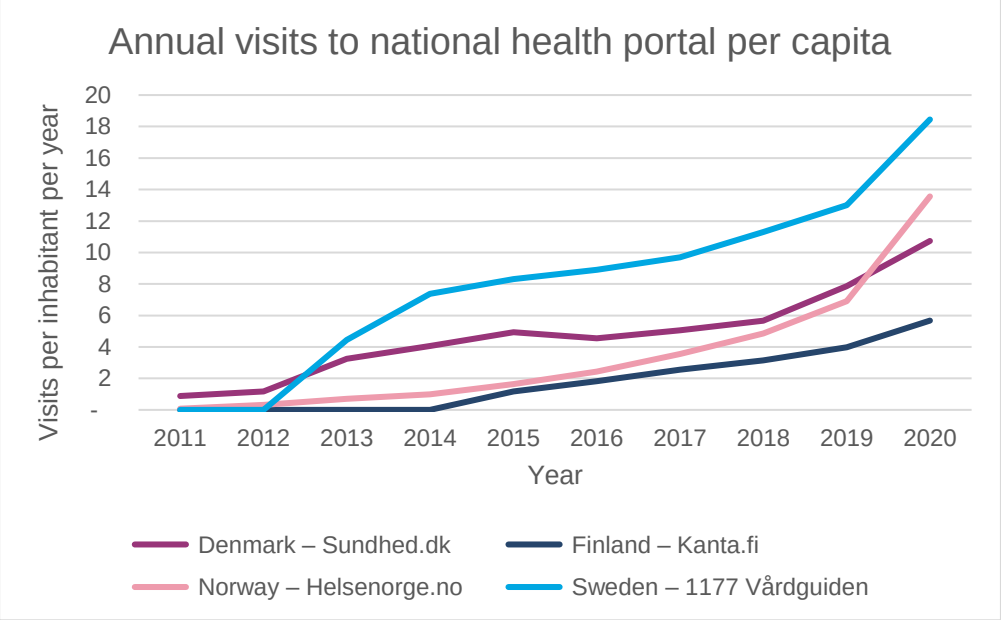

Figure 20. Source: Nordic Health Portal Analysis. 2021.

Journalen is the service used most by those who log in to 1177 Vårdguiden, with a total of just under 45 million log-ins. The other popular services on 1177 Vårdguiden have substantially fewer log-ins, approximately 2.5 million for applications to renew prescriptions and just over 1 million for contact enquiries. Between 2019 and 2020, the use of all of the most popular services has increased, with the exception of "Change appointment", which has fallen from around 750,000 to 700,000 (Figure 21).[64]

[63] *Nordic Health Portal Analysis.* 2021.
[64] *Nordic Health Portal Analysis.* 2021.

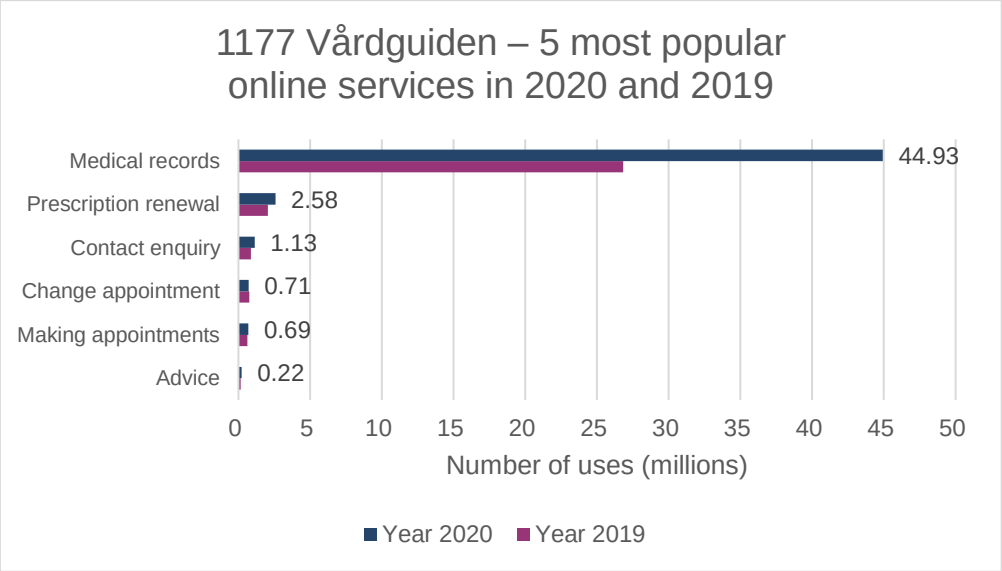

Figure 21. Rounded to the nearest thousand. Source: Nordic Health Portal Analysis. 2021.

The list of medication is the most used service on Helsenorge.no, with around 8.5 million views in 2020. Use of all of the most popular services increased between 2019 and 2020 (Figure 22).[65]

Applying to renew a prescription is the most used service on Kanta.fi, with around 3 million applications in 2020. In general, the use of all of the most popular services on Kanta.fi increase between 2019 and 2020 (Figure 23).[66]

[65] *Nordic Health Portal Analysis.* 2021.
[66] *Nordic Health Portal Analysis.* 2021.

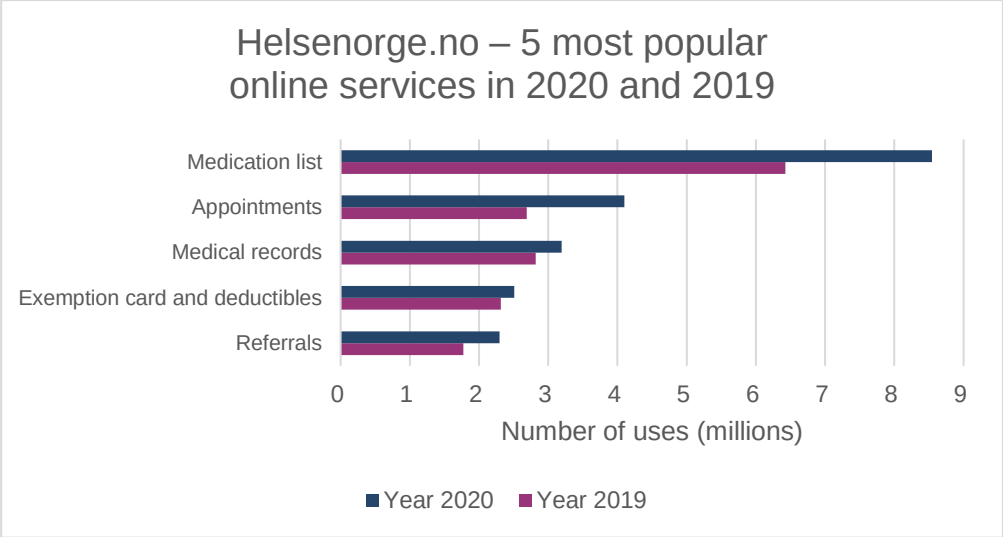

Figure 22. Rounded to the nearest thousand. Source: Nordic Health Portal Analysis. 2021.

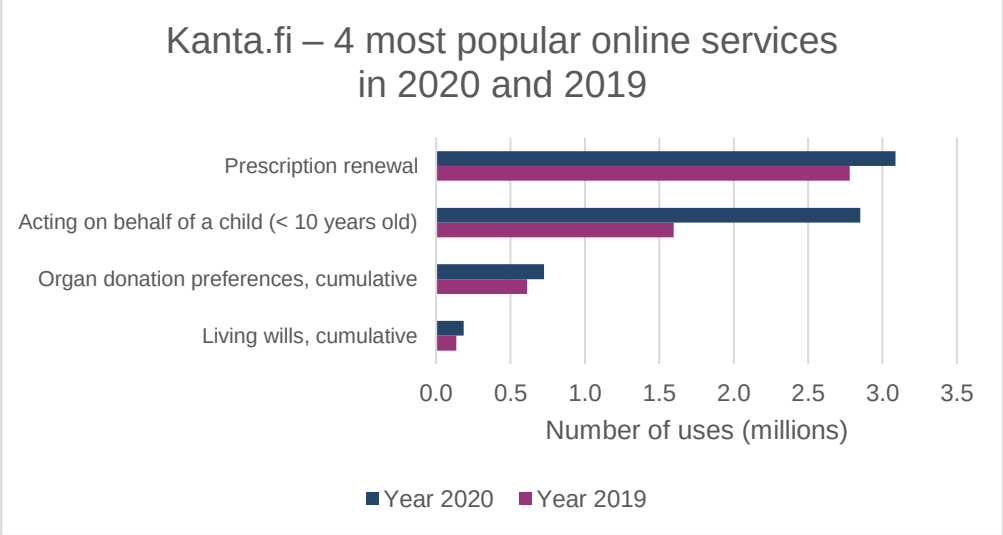

Figure 23. Rounded to the nearest thousand. Source: Nordic Health Portal Analysis. 2021.

3.4 Objective 2 – The right information and knowledge

One prerequisite for the provision of equitable and gender-equal healthcare and social services of a good quality is ensuring that members of staff have the right information and knowledge when interacting with patients and users. This objective encompasses access to appropriate and clear documentation about the patient or user and about the individual's contact with health and social care providers. This also encompasses access to decision support and the best available knowledge at all times in the organisation's processes. This is dependent on health and social care organisations having effective information management in which the results from data processing can be applied in order to improve operations.

Use of Inera's national services

One way to measure how members of staff are changing, or have the prerequisites to change, their working practices is to measure the use of various national services. Measurement of Inera's national services can be done by measuring the number of producer calls to the national service platform.[67] The number of producer calls reflects use of the platform, which has increased at a stable rate in recent years (Figure 24). In autumn 2020, however, this growth increased dramatically, which means that total growth for 2020 was clearly in excess of the equivalent for 2019, 59 per cent in 2020, compared with 41 per cent in 2019.[68]

One of the services that is accessible through the national service platform is the national patient overview (NPÖ). NPÖ allows healthcare staff to access patients' medical records that have been documented by other healthcare providers. The regions are also able to integrate this information in order to display it in their own medical records systems. All regions are displaying a certain amount of medical records information in NPÖ, with some displaying more than others (Figure 25). No region is displaying all the information. In 2020, seven regions made one additional information set available (in one case two information sets) in NPÖ.[69]

[67] The national service platform is a technical platform that simplifies, secures and streamlines information exchange between different IT systems within health and social care, for example between NPÖ and the regions' systems. When an organisation wants to obtain a certain type of information from one or more other organisations, a call can be made to the national service platform. Total producer calls is the number of such calls. Source: Inera.
[68] Statistics from Inera.
[69] Statistics from Inera.

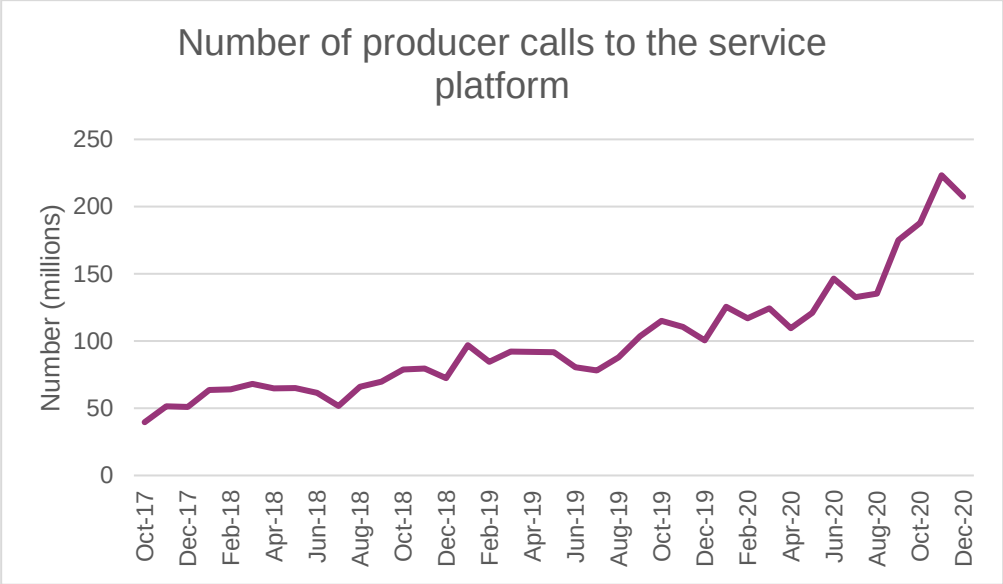

Figure 24. The national service platform is a technical platform that simplifies, secures and streamlines information exchange between different IT systems within health and social care, for example between NPÖ and the regions' systems. When an organisation wants to obtain a certain type of information from one or more other organisations, a call can be made to the national service platform. Total producer calls is the number of such calls. Source: Inera. (ID 4.1)

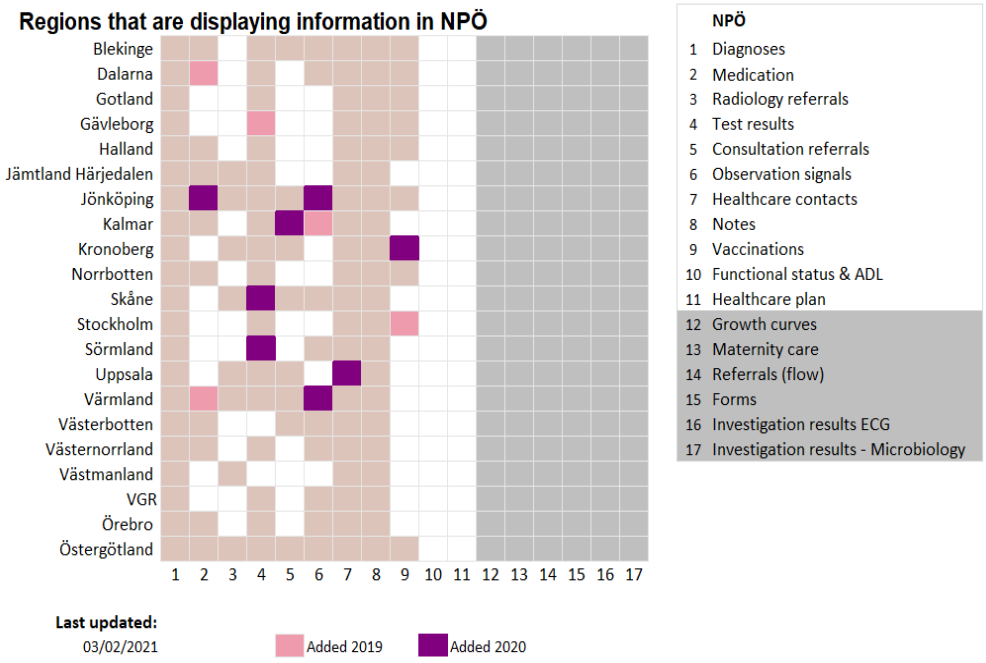

Figure 25. Information sets that regions are displaying as producers in the Nationell Patientöversikt [National Patient Overview](NPÖ). Dark-grey points show information sets where development work is ongoing and not all the prerequisites for displaying this information are in place. Source: Inera. (ID 4.2)

A small number of private healthcare providers are also connected to NPÖ as producers. Figure 26 describes what information sets these healthcare providers are able to display.

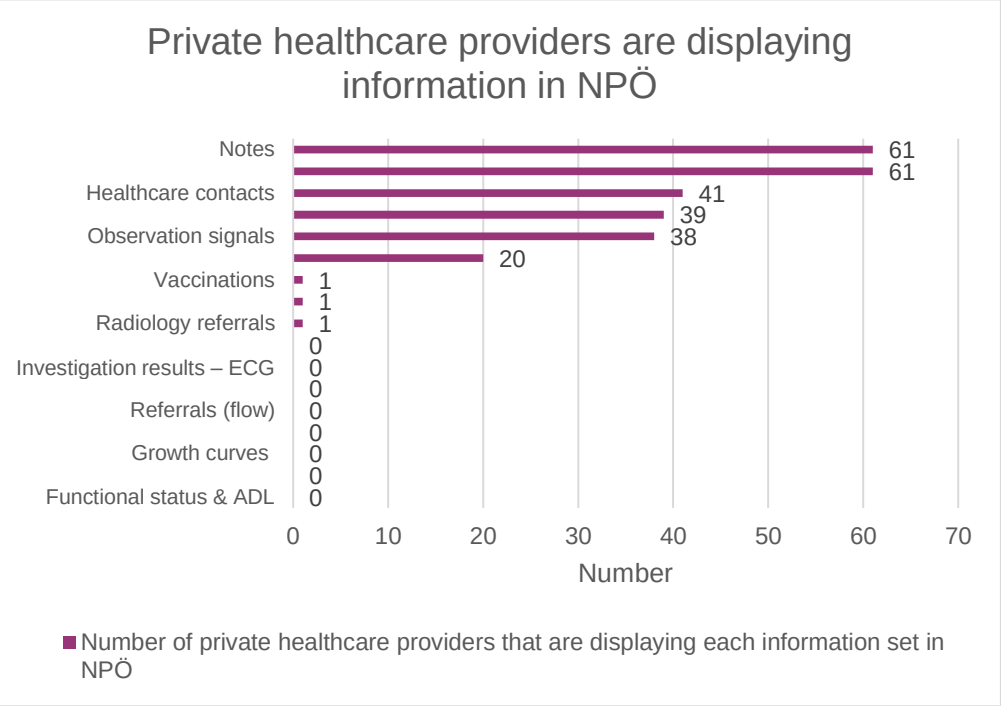

Figure 26. NPÖ – Nationell Patientöversikt [National Patient Overview]. Source: Inera. (ID 4.4)

In total, 284 of the country's 290 municipalities were consumers of NPÖ at the end of 2020. A clear majority of the municipalities are thus using NPÖ in order to access medical records information from other healthcare providers. A total of 33 of the county's 290 municipalities are also producers in NPÖ, which means that the information from their own systems is visible to others. In 2020, nine municipalities made one or more additional information sets available in NPÖ (Figure 27).[70]

[70] Statistics from Inera.

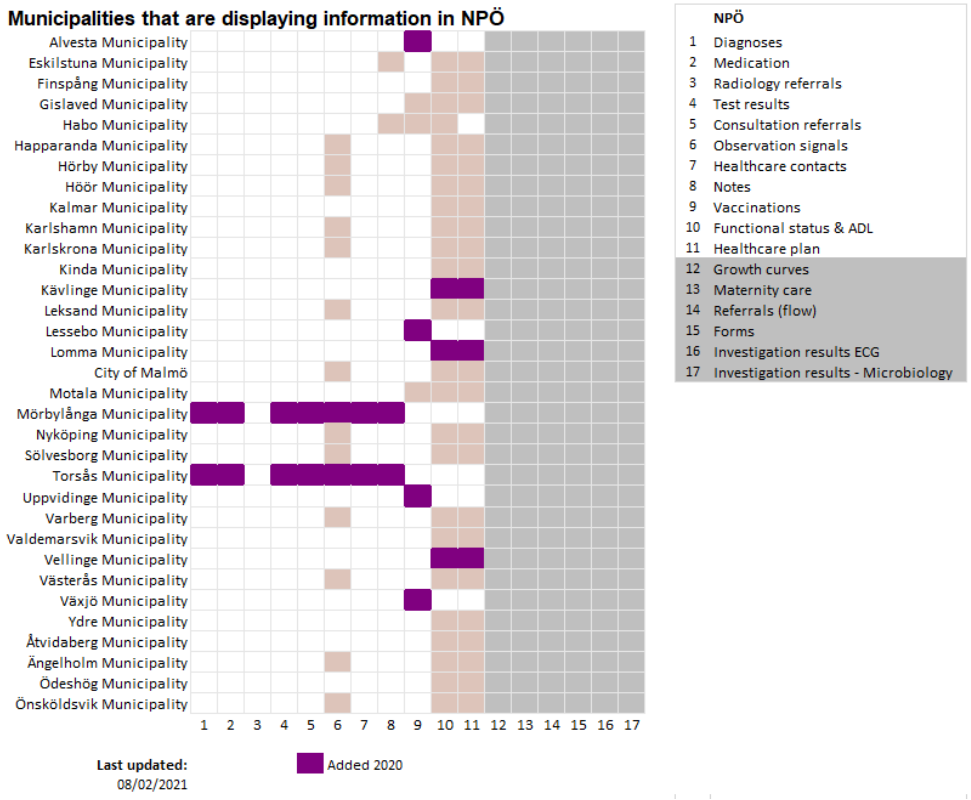

Figure 27. NPÖ – Nationell Patientöversikt [National Patient Overview]. Dark-grey points show information sets where development work is ongoing and not all the prerequisites for displaying this information are in place. Source: Inera. (ID 4.17)

Solutions other than NPÖ can be used in order to provide staff who work in healthcare and social services with good conditions in which to work and access to relevant information. Coherent record-keeping makes it possible for regions to share medical records with other healthcare providers, provided the requirements in the Patient Data Act are complied with.[71] In recent years, the regions have primarily been using the facility for coherent record-keeping with private healthcare providers that have healthcare contracts but also with municipalities and other regions (Figure 28). A few regions (3) are also using this facility with private healthcare providers that do not have healthcare contracts. Five of 18 regions that answered the question stated that they have all of their activities included in coherent record-keeping. Other regions make

[71] SFS 2008:355 as worded in accordance with SFS 2020:1042. *Patient Data Act*.

exceptions for certain activities, with the most common exceptions including sexually transmitted infections, dental care and childbirth.[72]

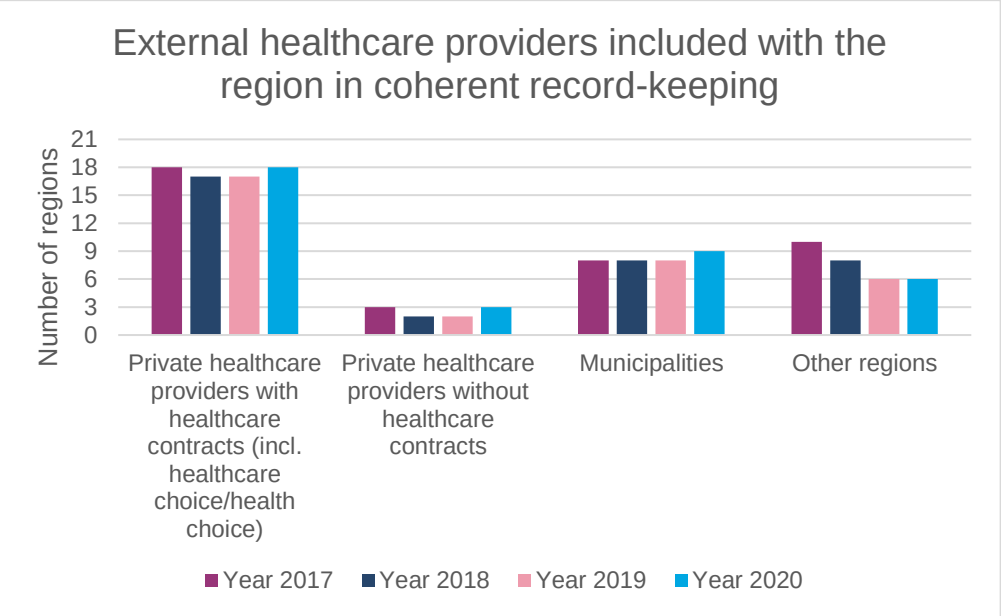

Figure 28. In 2017, 20 regions answered the question. In 2019, 18 regions answered, and 19 regions answered in 2020. Data collected in Q1 of each year. Sources: eHälsa och IT i regionerna, 2017–2020. (ID 4.6)

Potential for mobile working

More and more of groups of staff are able to read and document information digitally on mobile devices. The trend is particularly evident in home help services and municipal healthcare services. When mobile members of staff visit individuals in their homes, they may need information from the municipality's IT system. They may also need to document what has emerged during the visit.

There are various solutions available for reading and documenting information while mobile, for example smartphones, tablets, digital pens and laptops. Between 2015 and 2018, the proportion of municipalities where all members of staff are able to document information while mobile increased from 5 to 12 per cent. As of 2019, municipalities have been asked to disclose whether members of staff are able to document information while mobile, by operational area. The results from the survey for 2020 are shown in Figure 29.

[72] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. May 2020.

In 48 per cent of municipalities, all home help staff have the opportunity to document information while mobile, compared with 43 per cent of municipalities in 2019. The proportion is significantly lower in the other areas and varies from 11 to 22 per cent. There has been an increase since 2019. The largest increases has taken place in the area children and adolescents. In 2019, all members of staff in 16 per cent of municipalities were able to document information while mobile, compared with 22 per cent in 2020.[73]

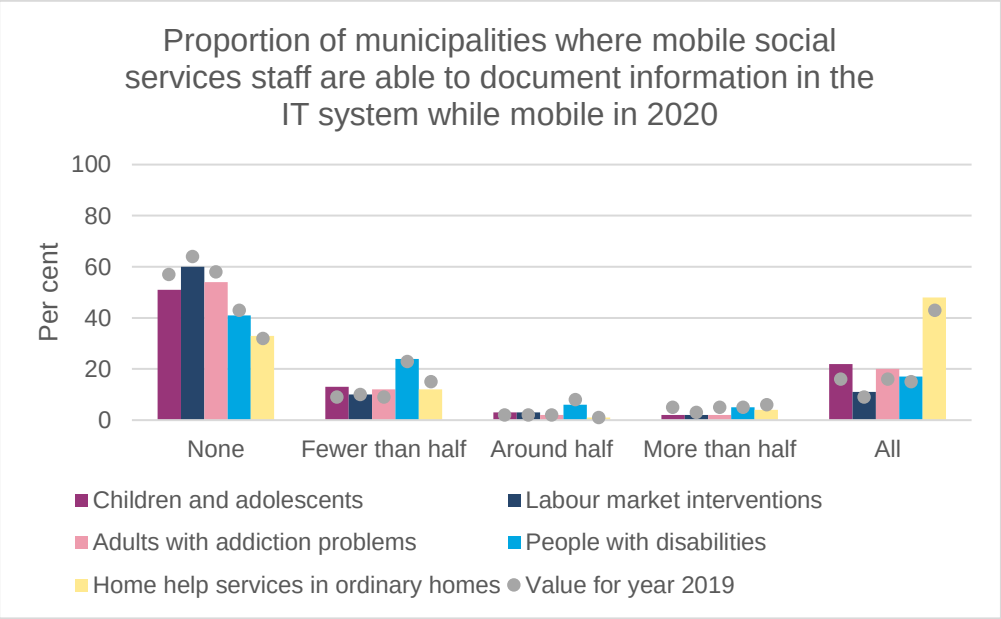

Figure 29. Proportion of municipalities where mobile social services staff are able to document information in the IT system while, by operational area, in per cent, 2020. Source: National Board of Health and Welfare. E-hälsa och välfärdsteknik i kommunerna 2020. (ID new)

The proportion of municipalities where all mobile licensed healthcare professionals are able to document information in the local IT systems when they are out of the office has increased from 16 to 42 per cent between 2017 and 2020. In 31 per cent of municipalities, none of the licensed healthcare professionals are able to document information while mobile (Figure 30).[74]

[73] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2020*. Stockholm, 2020.
[74] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2020*. Stockholm, 2020.

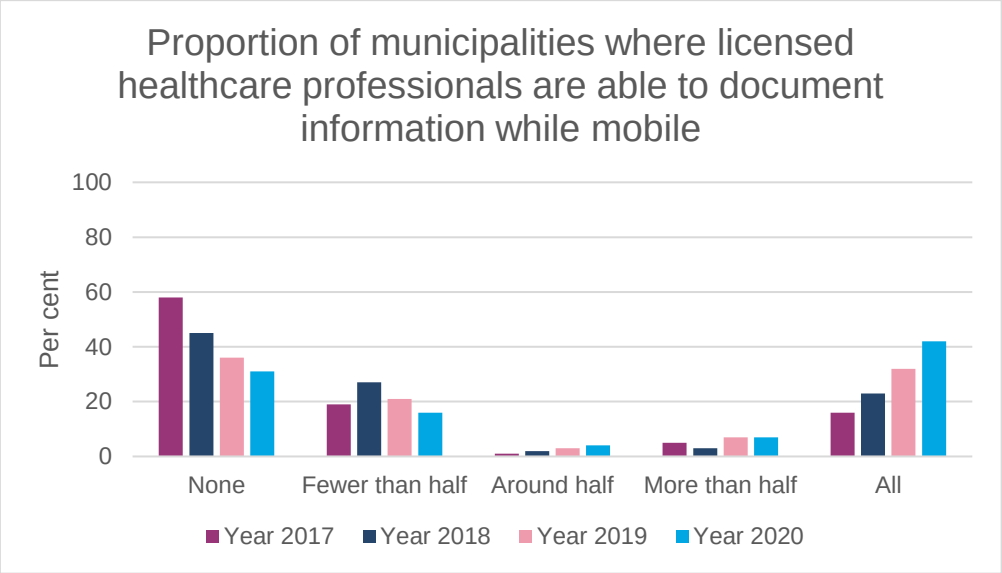

Figure 30. Proportion of municipalities where mobile licensed healthcare professionals have access to equipment for document information in the municipality's IT system while mobile, in per cent. Sources: National Board of Health and Welfare. E-hälsa och välfärdsteknik i kommunerna, 2017–2020. (ID 4.26)

Development towards being able to read and document information in IT systems using mobile devices is also taking place in the regions. The use of tablets increased in the regions by approximately 19 per cent in 2019. The proportion of tablets in relation to number of employees varies between the regions from 1.8 per cent to 15.0 per cent. In 17 (of the 19 regions that answered), tablets are used in direct healthcare work, and two-factor authentication is used for log-in in 14 of these regions.[75]

Decision support and best available knowledge in every meeting

Appropriate and efficient information management provides healthcare and social services staff with better conditions in which to do their jobs. If it is possible to support staff by using decision support that gives them situation-specific access to the best available knowledge at all times, there is greater chance of each patient and user receiving healthcare and support based on the best available knowledge. Decision support of this type is used by pharmacies.

Almost all prescriptions in Sweden are now electronic (> 99%). This means that prescription information is available, when needed, at all pharmacies,

[75] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. May 2020.

which provides better conditions for using decision support such the electronic expert support EES. When a prescription is dispensed, the pharmacist always conducts a comprehensive assessment of the recipient's medication in relation to age, sex and other medications. The Swedish eHealth Agency offers the decision support EES in order to assists pharmacists when checking for potential drug interactions, inappropriate medications or incorrect doses. The decision support is available at all out-patient pharmacies in Sweden. The use of EES increased in 2020 and went from initially being used in approximately 20 per cent of all dispensed prescriptions to around 40 per cent by the end of the year.[76]

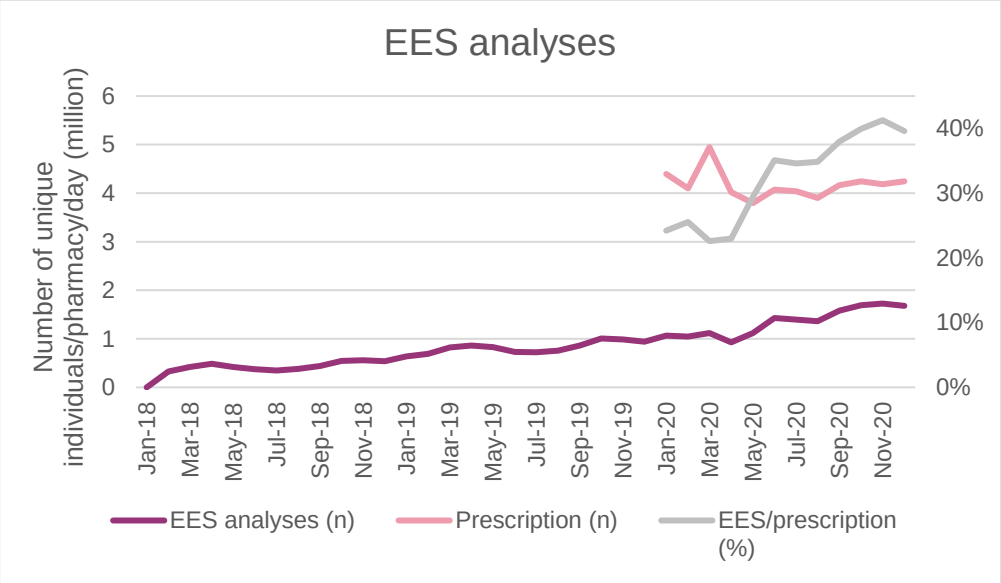

Figure 31. Electronic expert support (EES) is used as decision support in pharmacies. The graph shows the number of analyses over time. Data on number of dispensed prescriptions is only available from 2020. Source: Swedish eHealth Agency. (ID 5.1)

3.4.1 Comments

The increase in number of dispensed prescriptions in March 2020 coincides with the initial phase of the coronavirus pandemic and an observed trend that the populations hoarded various goods to an increased extent.

Within the scope of its work with digital infrastructure (eHDSI)[77], the EU is working to gradually introduce services that will give EU countries the

[76] Statistics from the Swedish eHealth Agency.
[77] *eHealth Digital Service Infrastructure*.

opportunity to exchange health information. This has to be possible to do in a safe, efficient and interoperable way and will make it possible to ensure continuity of care for European citizens when they are travelling within the EU. Structurally, the European Commission is supplying infrastructure for the EU countries, for which they will then be able to create "generic services" in order to connect national eHealth systems through what are known as "National Contact Points for eHealth". The goal is for these services to be introduced by 2025. At the end of 2020, Sweden was not yet connected to this infrastructure in a way that permits the exchange of health information. Connected countries are shown in Table 2.[78] Initially, it was only prescriptions from Finland that could be dispensed in Estonia. Other information transfers have subsequently come online. In 2019, an average of 20 Finnish prescriptions per day were dispensed in Estonia. In 2020, an average of nine Finnish prescriptions per day were dispensed in Estonia and three Estonian prescriptions per day in Finland. The lower figure for 2020 is probably explained by reduced mobility during the coronavirus pandemic.

Doctors from countries:	**Year 2019** **can access health data about citizens from:**	**Year 2020**
Croatia	Czechia (Sep. 2019)	Malta (Feb. 2020), Portugal (Feb. 2020)
Luxembourg	Czechia (Jun. 2019), Malta (Dec. 2019)	
Malta		Portugal (Feb. 2020), Croatia (Dec. 2020)
Portugal (SNS and SPMS websites)		Malta (Jan. 2020), Croatia (Dec. 2020)
Czechia		Croatia (Dec. 2020)
Health data about citizens from the following countries:	**can be consulted by doctors from the countries below, through the patient summary:**	
Czechia	Luxembourg (Jun. 2019), Croatia (Sep. 2019)	
Malta	Luxembourg (Dec. 2019)	Portugal (Jan. 2020), Croatia (Feb. 2020)
Portugal		Malta (Feb. 2020), Croatia (Feb. 2020), Luxembourg (Mar. 2020)
Croatia		Malta (Dec. 2020), Portugal (Dec. 2020), Czechia (Dec. 2020)
ePrescriptions from countries:	**can be picked up from pharmacies in:**	
Croatia		Finland (Aug. 2020), Portugal (Aug. 2020)

[78] Electronic cross-border health services | Public Health (europa.eu), https://ec.europa.eu/health/ehealth/electronic_crossborder_healthservices_en. 03/03/2021.

Estonia		Finland (Jun. 2020), Croatia (Aug. 2020)
Finland	Estonia (Jan. 2019), Croatia (Sep. 2019)	Portugal (Aug. 2020)
Portugal (SNS and SPMS websites)		Estonia (Jun. 2020), Finland (Aug. 2020), Croatia (Aug. 2020)
Pharmacies in the countries:	**can dispense ePrescriptions for citizens from:**	
Croatia	Finland (Sep. 2019)	Estonia (Aug. 2020), Portugal (Aug. 2020)
Estonia	Finland (Jan. 2019)	Croatia (Mar. 2020), Portugal (Jun. 2020)
Finland		Estonia (Jun. 2020), Portugal (Aug. 2020), Croatia (Aug. 2020)
Portugal		Finland (Aug. 2020), Croatia (Aug. 2020)

Table 2. Source: EU Electronic cross-border health services.[79]

3.5 Objective 3 – Safe and secure information processing

The objective *Safe and secure information processing* concerns the ability to process and protect information in an appropriate way. At the same time, it is also important that data are correct, that the individual has the opportunity to influence how the data are used and by whom, and that it is possible to find out what data there are. In order to avoid and prevent incidents and facilitate digital organisational development, the ability to process information needs to be developed continually at pace with external changes. Systematic information security management is central to this. The ability to process information safely and securely is dependent on regions and municipalities having the resources and expertise required for systematic information security management. IT systems also have to facilitate secure information exchange within and between social services and the healthcare system, but also with other organisations in the public sector. Among other things, this requires common principles for identity and authorisation control.[80]

Resources and expertise for information security management

One measure of resources and expertise for information security management in the organisation is whether there is anyone who is responsible for work

[79] Electronic cross-border health services | Public Health (europa.eu), https://ec.europa.eu/health/ehealth/electronic_crossborder_healthservices_en. 03/03/2021.
[80] Ministry of Health and Social Affairs and SALAR. *A strategy for implementing Vision for eHealth 2025, The next step.* Stockholm, 2020.

with informatics. Eleven of the regions state that they have defined a position as being responsible for informatics, while nine regions state that they believe they have sufficient expertise in the field of informatics (Figure 32).[81]

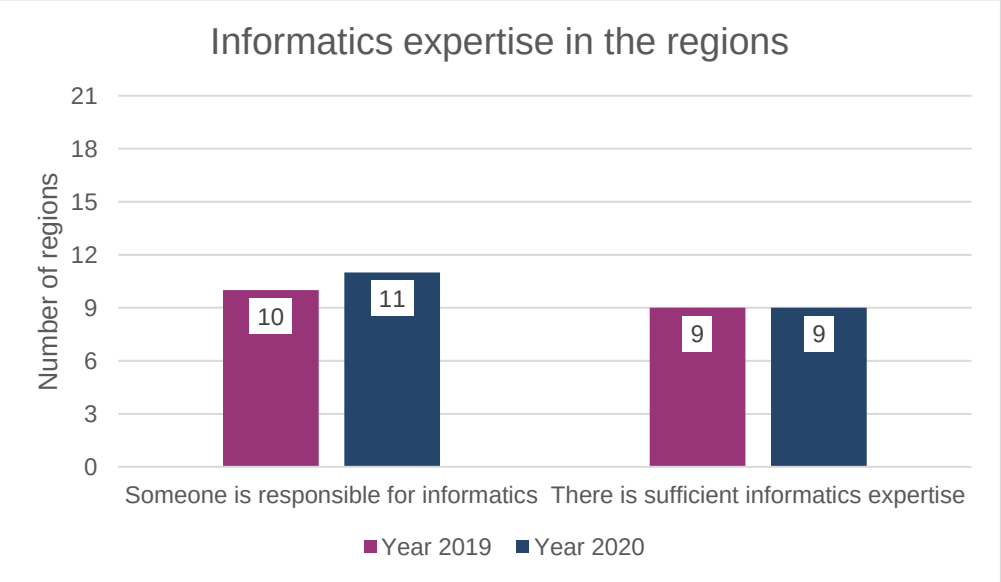

Figure 32. This indicator was not measured prior to 2019. In 2019, 18 regions answered the question. In 2020, 19 regions answered the question. Data collected in Q1 of each year. Sources: eHälsa och IT i regionerna, 2019, 2020. (ID 9.1 and ID 10.2)

In 2020, approximately 73 per cent[82] of municipalities had an employee who is responsible for coordinating information security management. The corresponding figure for 2019 was 71 per cent.[83] In 2020, 7 per cent of municipalities had more than one full-time employee for this work, which was an increase of 4 percentage points from the previous year.[84]

When it comes to whether the municipality regularly (at least once per year) follows up risks and requirements for development of information security in its social services, this figure is 55 per cent in both 2019 and 2020.[85]

[81] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. May 2020.
[82] 182 of 251 municipalities that answered.
[83] 150 of 204 municipalities that answered.
[84] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2020*. Stockholm, 2020. National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2019*. Stockholm, 2019.
[85] Ibid.

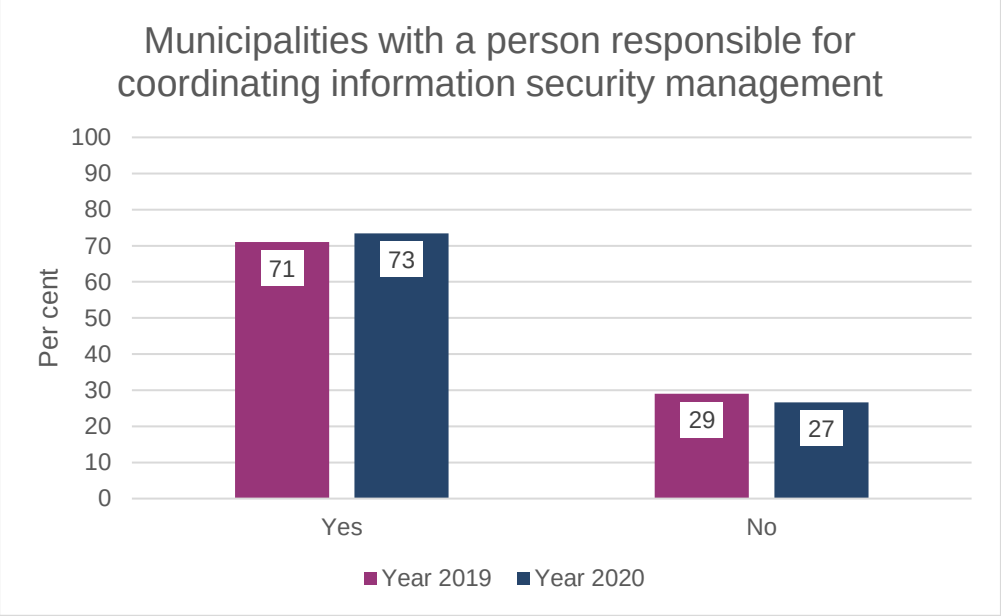

Figure 33. In 2019, 144 (of 202 that answered) municipalities answered that they had an employee who is responsible for coordinating information security management. In 2020, 182 municipalities answered yes to this question (of a total of 250 municipalities that answered). Sources: National Board of Health and Welfare. E-hälsa och välfärdsteknik i kommunerna, 2019–2020. (ID 7.1)

Classification of information is a fundamental activity in order to ensure that information and resources have the necessary protection. Using new digital technologies makes information transparent, traceable and legally certain.

Classification of information sets is an important part of information security management in order to ensure accuracy and make the information available in the best way for authorised persons. Classification of information sets also makes it possible to identify what information needs to be protected because of personal data and confidentiality rules.[86]

In 2020, 18 per cent of all municipalities had classified all objects (16 per cent in 2019), and 58 per cent of municipalities had classified parts of their objects (54 per cent in 2019). The proportion of municipalities that had not conducted any security classification at all was 24 per cent (30 per cent in 2019) (Figure 34).[87]

Of the municipalities that had classified all their objects, a majority (71 per cent) are using SALAR's tool KLASSA[88], while 2 per cent are using the

[86] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2020*. Stockholm, 2020.
[87] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2020*. Stockholm, 2020.
[88] SALAR. *KLASSA.* https://klassa-info.skr.se. 03/03/2021.

model that the Swedish Civil Contingencies Agency (MSB) has produced.[89] Other municipalities have their own models for classification or cite models produced by private companies .[90]

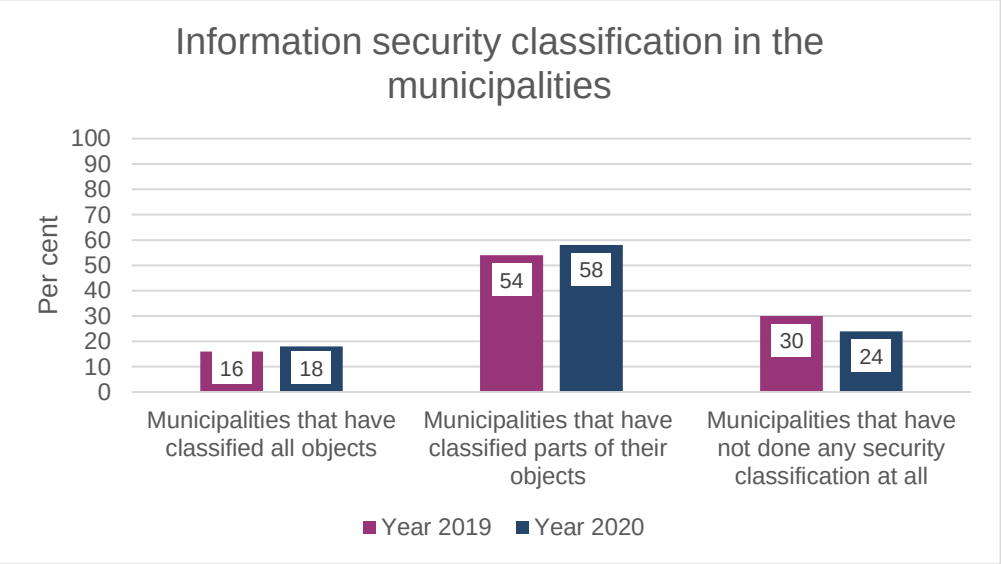

Figure 34. Sources: National Board of Health and Welfare. E-hälsa och välfärdsteknik i kommunerna, 2019–2020. (ID 7.3)

Secure information exchange

The Patient Data Act was introduced in 2008 and requires adaptation of healthcare systems, primarily relating to coherent record-keeping with blocking, consent management and scrutiny of logs.[91] In 2020, the majority of the regions are still not applying the Patient Data Act in full (Figure 35).[92]

[89] MSB 0040-09. *Modell för klassificering av information* [Model for Classification of Information]. MSB. Stockholm. May 2009.
[90] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2020*. Stockholm, 2020.
[91] SFS 2008:355. *Patient Data Act*.
[92] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. May 2020.

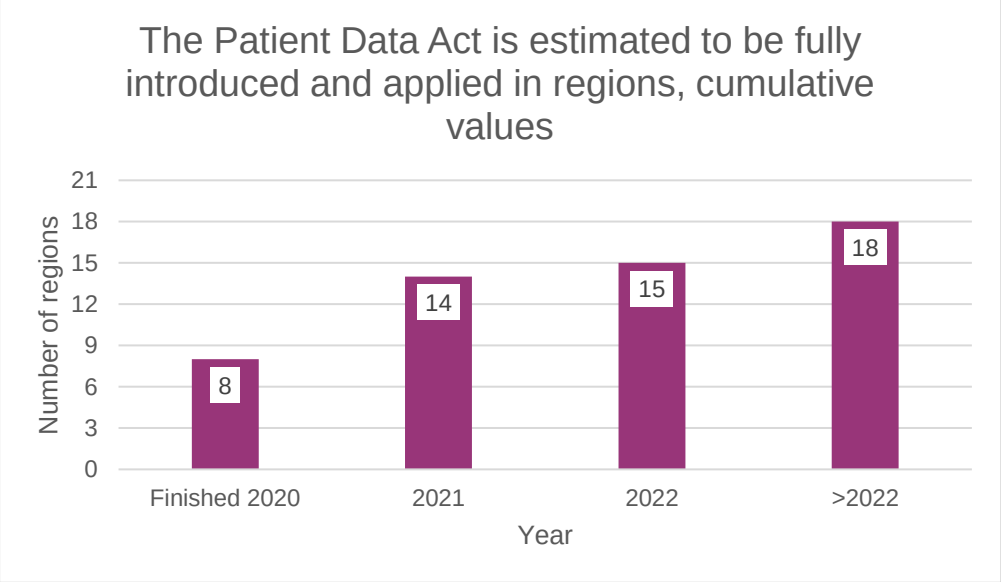

Figure 35. In 2020, 19 regions answered the question. Data collected Q1 2020.
Source: eHälsa och IT i regionerna, 2020. (ID 8.6)

One important aspect of information security management is that only authorised persons have access to confidential information. Consequently, systems need to be equipped with log-in and access procedures. There are various ways to log in using strong authentication, for example with SITHS cards, employee ID cards or BankID.[93]

In 15 per cent of municipalities, all systems require strong authentication, whereas no system requires strong authentication in 2 per cent of municipalities. The proportion of municipalities that have not secured any systems has been falling for several years, but so is the proportion of municipalities that apply strong authentication in all digital systems that processes personal data (Figure 36).[94]

[93] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2020*. Stockholm, 2020.
[94] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2020*. Stockholm, 2020.

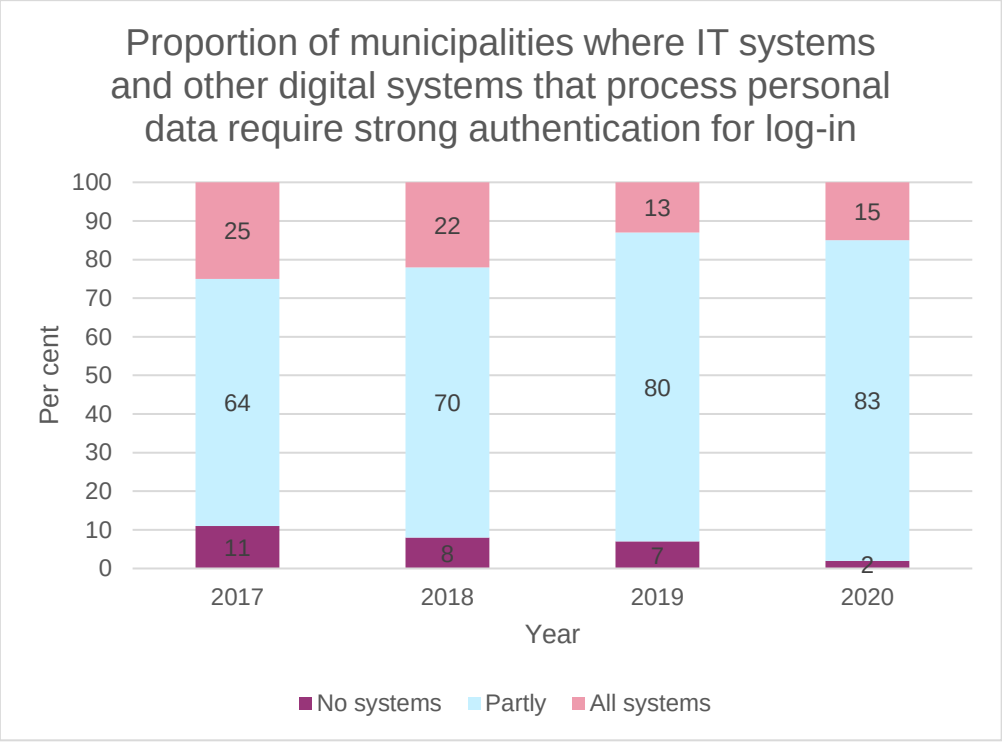

Figure 36. Source: National Board of Health and Welfare. E-hälsa och välfärdsteknik i kommunerna 2020. (ID 8.2)

Another way to monitor and maintain information security is through regular follow-ups of risks and development requirements. In 2019 and 2020, 55 per cent of municipalities were regularly (at least once per year) following up information security risks and development requirements in their social services.[95]

3.6 Objective 4 – Development and digital transformation hand in hand

Digitalisation is changing the conditions for organisations in all sectors. This objective takes into account the fact that sustained effort is required in order to support the capacity for organisational development and to equip individuals and organisations with the capacity and skills required. One important aspect of successful digitalisation projects is senior management's knowledge and potential to control development in the organisation in both the boardroom and through, for example, polices and strategies. Continuing professional development in digitalisation needs to be prioritised in the near

[95] National Board of Health and Welfare. *E-hälsa och välfärdsteknik i kommunerna 2020*. Stockholm, 2020.

future and coordinated national support needs to be offered in order to introduce new technologies and working methods. One important prerequisite for this is that the right conditions are in place in the form of regulations and technical and semantic standards. Achieving the maximum impact requires new forms of collaboration between central government authorities, regions, municipalities, private providers and the enterprise sector.[96]

Strong leadership, governance, organisation and digital competence

Knowledge of digitalisation in the organisation is important if it is to benefit from the opportunities presented by digitalisation. Although only eleven regions had appointed an employee responsible for informatics (see Figure 32), 18 regions had an information security policy at the beginning of 2020, and 16 of these had an information security plan.[97] At the beginning of 2020, twelve regions stated that they had produced a mobility strategy and a further two regions stated that they planned to produce such a strategy over the course of 2020 (Figure 37).[98]

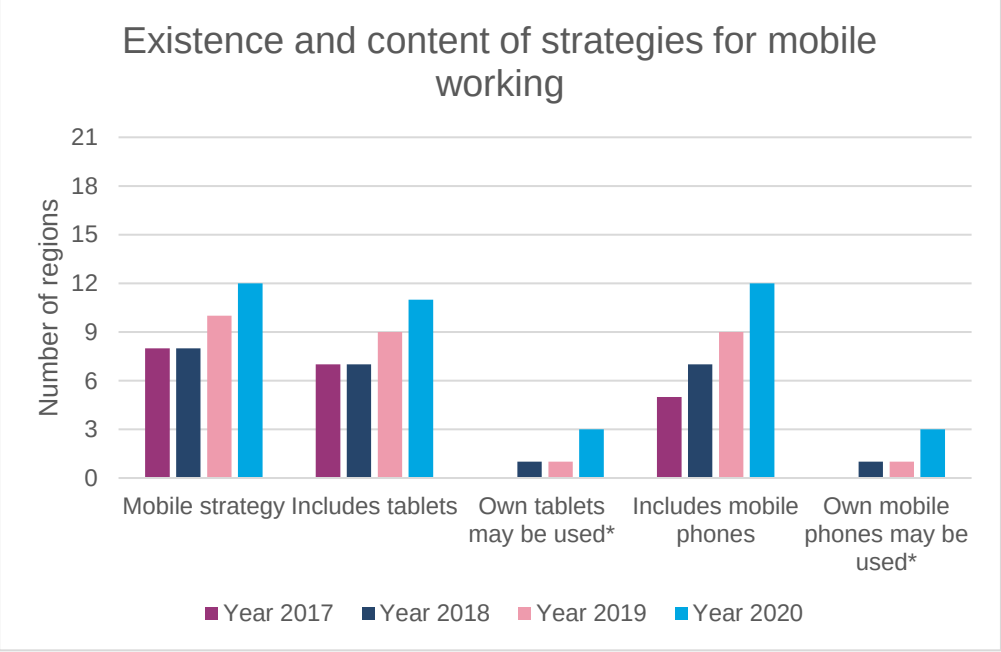

*Figure 37. * This question was not asked in 2017. In 2017 and 2018, 20 regions answered the question. In 2019, 18 regions answered and 19 regions answered in 2020. Data collected in Q1 of each year. Sources: eHälsa och IT i regionerna, 2017–2020. (ID 9.2)*

[96] Ministry of Health and Social Affairs and SALAR. *A strategy for implementing Vision for eHealth 2025, The next step*. Stockholm, 2020.
[97] Only 19 regions answered the question. Region Gotland, Region Stockholm and Region Kalmar Län did not answer.
[98] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. May 2020.

Funding is an important factor to take into account in order to provide organisations with the opportunity to take advantage of the opportunities of digitalisation and deal with its challenges. Based on 18 regions that submitted data, the total IT costs for all regions in 2019 were estimated at approximately SEK 12.4 billion. IT costs as a proportion of turnover have remained relatively stable at 2.8 to 2.9 per cent since 2004 and in relative terms, the total costs can be seen as almost unchanged, despite the absolute costs of IT having increased in recent years.[99]

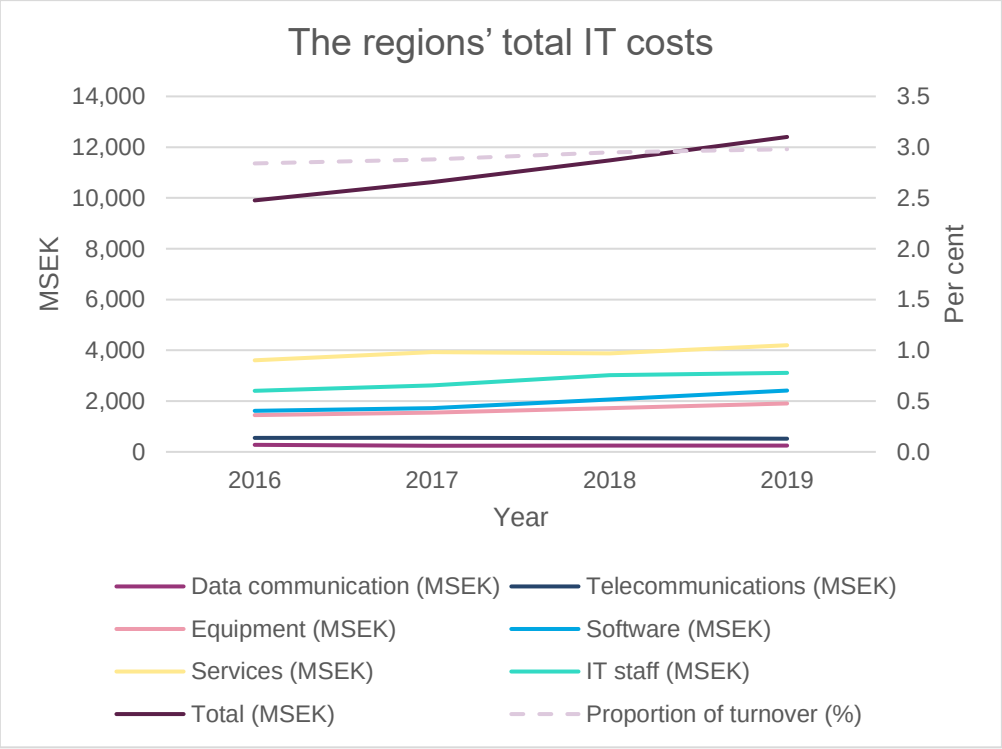

Figure 38. In 2017 and 2018, 20 regions answered the question. In 2019 and 2020, 18 regions answered the question. The response rate has varied in the past. Sources: eHälsa och IT i regionerna, 2017–2020. (eHälsa och IT i regionerna reports financial data for the year before the year in which the report is published.) (ID 9.3)

There are differences between the regions in terms of the proportion that has been allocated for new development, innovation and new digital solutions (Figure 39). It has also become more common for regions to provide specific

[99] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. 2017–2020.

support for innovation, for example through establishing test beds and allocating specific resources for innovation.[100]

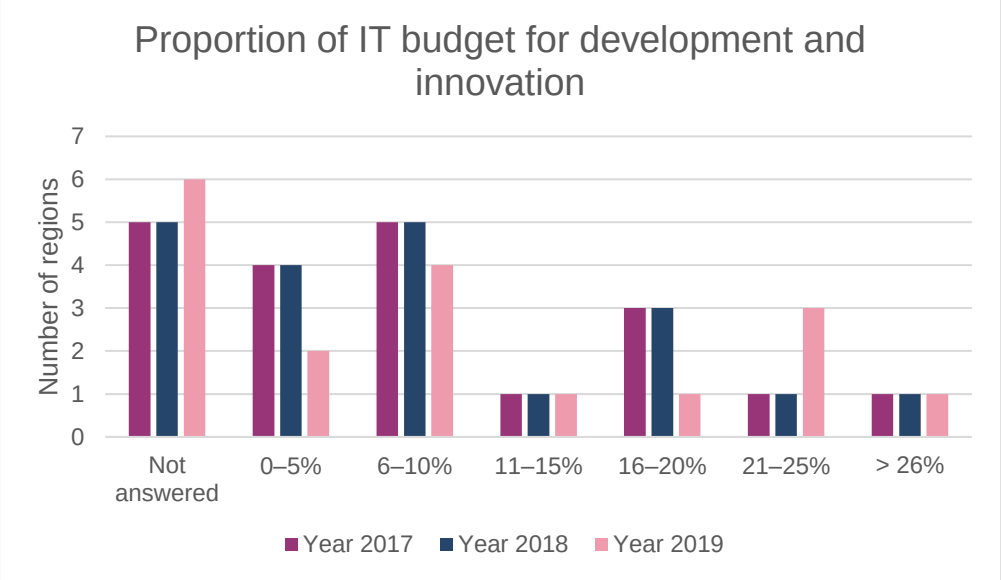

Figure 39. Proportion of the IT budget that is spent on IT development, innovation and new digital solutions. In 2019 and 2020, 18 regions answered the question. Sources: eHälsa och IT i regionerna, 2018–2020. (eHälsa och IT i regionerna reports financial data for the year before the year in which the report is published.) (ID 9.3)

Continuing professional development is an important part of the digital transformation and a prerequisite if organisations are to have the ability to assimilate new knowledge and members of staff are to adopt new working methods. This requires the right expertise both among management and in the organisation.[101] Eleven of the 19 regions that answered have defined a position with responsibility for informatics (which is an increase compared with the previous year), and nine regions believe they have sufficient expertise in the field of informatics (Figure 32), which is the same as the previous year.[102]

Regulations and technical and semantic standards

Digitalisation has the potential to create the prerequisites both for increased accessibility of information and for the transfer of information. If this is to be

[100] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. 2018–2020.
[101] The Standish Group International. *Chaos Report 2015*. The Standish Group International, Inc. 2015.
[102] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. May 2020.

possible, legal prerequisites, good information security and consistent semantic and technical standards are required.

Within the regions there are perceived barriers to the introduction of new online services. The number of perceived barriers increased between 2018 and 2019, with the barriers “vague legislation” and “finances” increasing most. There are a further five regions that list barriers within these areas in the most recent survey, compared with the previous survey.[103]

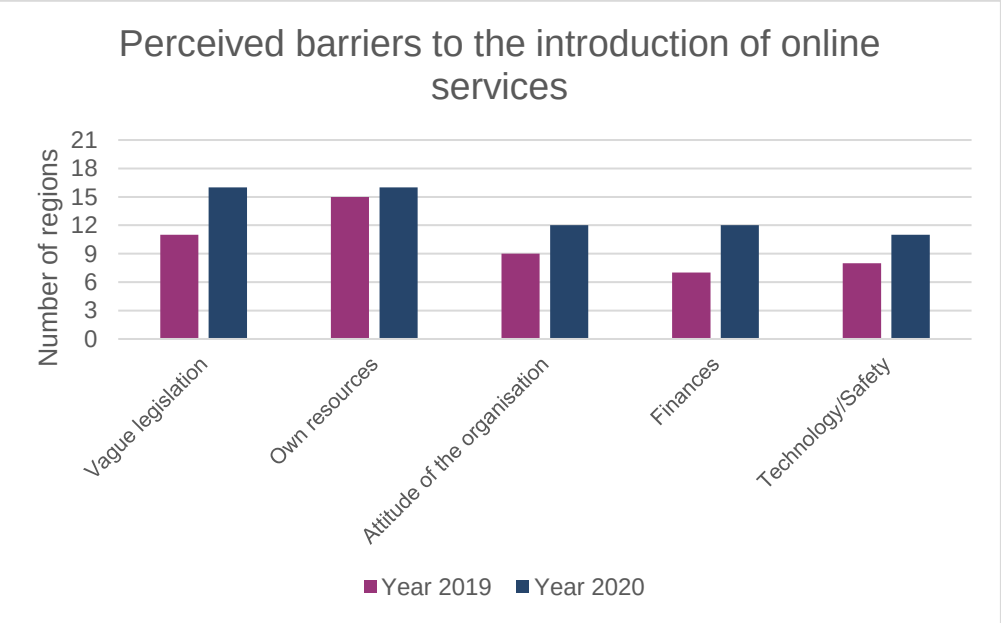

Figure 40. Perceived barriers to the introduction of online services. In 2019 and 2020, respectively, 18 and 19 regions answered the question. Data collected in Q1 of each year. Sources: eHälsa och IT i regionerna, 2019–2020. (ID 12.2)

Some examples of legal barriers experienced by the regions are listed below. These primarily involve barriers relating to cloud services, but also other legal barriers:

- The General Data Protection Regulation (GDPR) in relation to the Cloud Act.[104]
- The boundary between healthcare and social care and the Social Services Act as opposed to the Patient Data Act.
- GDPR, the Patient Data Act and the NIS Directive.

[103] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. 2019–2020.
[104] *Clarifying Lawful Overseas Use of Data Act*. By virtue of the Cloud Act, American authorities can turn to courts and request that data stored outside of US territory by American suppliers be handed over.

- The Public Access to Information and Secrecy Act and the use of cloud services.
- The Public Procurement Act and competition legislation.
- The Patient Data Act/National Pharmacopoeia Act.
- The Health and Medical Services Act and the Social Services Act, which impede cooperation.
- Coherent record-keeping across organisational boundaries.
- Legislation relating to cloud services both within and outside of the EU.
- Information security in cloud services.

New forms of collaboration and coordination

Despite there being perceived legal barriers relating to coherent record-keeping and the boundary between the Social Services Act and the Patient Data Act, regions are communicating with one another and with municipalities. Coordinated healthcare planning with the aid of IT takes place in all regions. Region Kronoberg has also introduced a medical records system that it shares with the municipalities and that includes coordinated healthcare planning.[105]

Five regions have implemented service contracts and joined Inera's platform that allows them to send electronic referrals across organisational boundaries. What these five regions have in common is that they use the same system supplied for their medical records system and that the type of referral is consultation referral.[106]

Another form of cooperation is taking place at the county level. In spring 2020, there was a digital agenda for 13 counties, and a further two counties were planning to complete a joint agenda in 2020. There is a common action plan for digital agendas in eleven counties, and a further two stated that this would be created over the course of the year (Figure 41).[107]

[105] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. May 2020.
[106] Statistics from Inera.
[107] Jerlvall, Pehrsson. *eHälsa och IT i regionerna*. May 2020.

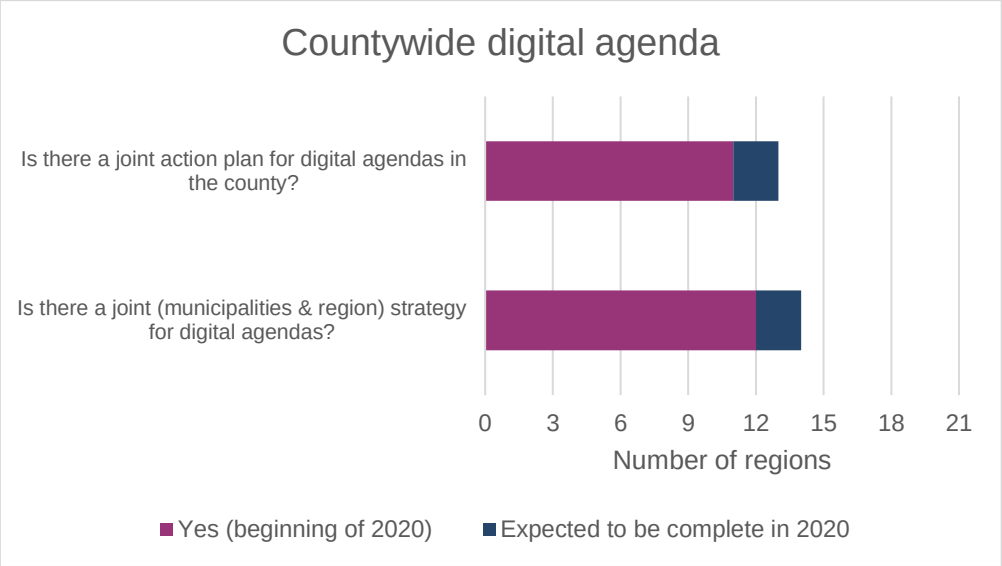

Figure 41. Digital agenda at the county level. In 2020, 19 regions answered the question. Data collected Q1 2020. Source: eHälsa och IT i regionerna, 2020. (ID 13.4)

4 Future work

Rapid change is taking place in the eHealth landscape, as well as in health and social care itself. This means that some indicators used for follow-up are becoming obsolete or new opportunities for follow-up/indicators are emerging. In addition, it is established in the report *Indikatorbaserat ramverk för uppföljning av Vision e-hälsa 2025* that many areas currently have no indicators for adequate follow-up.[108] Consequently, existing indicators need to be continually evaluated and updated, and new indicators need to be created in order to make relevant follow-up possible.

As part of this work, the Swedish eHealth Agency will endeavour to develop new indicators that can form the basis of national, regional or municipal governance of digitalisation in healthcare and social services. Potential indicators that reflect preventive healthcare will be investigated, as will the potential to include qualitative data in follow-up.

Many of the services that are followed up in this report have not been implemented in all regions or municipalities. There is judged to be potential to increase digitalisation at the national level simply by increasing the use of

[108] Swedish eHealth Agency. *Indikatorbaserat ramverk för uppföljning av Vision e-hälsa 2025*. Stockholm, October 2020.

existing solutions. Future work also includes plans to investigate regions' and municipalities' capacity to offer services linked to existing IT systems.

To make this possible, the agency will be working to expand national cooperation with other actors such as industry representatives, higher education institutions, research institutes and other central government authorities. There are also plans to expand international cooperation, both in terms of developing Nordic cooperation further and cooperation within the EU.