

# E-Health in Norway Before and During the Initial Phase of the Covid-19 Pandemic

Rolf WYNN <sup>a,1</sup>

<sup>a</sup>*UiT The Arctic University of Norway, Tromsø, Norway*

**Abstract.** The use of e-health services has for many years gradually increased in Norway as in most European countries. Searching for information about health and illness has previously by far been the most popular service. In this study, we review the literature with the aim of examining any changes in e-health use during the Covid-19 pandemic. We find that there has been a marked change in Norway, with an extreme increase in video consultations, especially in primary care and in the mental health field. The government has also released an app for tracking the illness, which so far has been downloaded by approximately 1/4 of the population. These changes are likely to impact the use of e-health also after the pandemic.

**Keywords.** E-health, Telemedicine, Norway, Covid-19

## 1. Introduction

For many years, the use of e-health has gradually increased in Norway as it has in Europe in general [1-4]. In a population-based representative study of people aged 40 and above conducted in Norway in 2015-2016, with more than 18,000 respondents, 52.7% had used e-health services in the last year [5,6]. While the availability of video consultations, health apps, and other services has improved, until recently, by far the most utilized e-health service was searching for information about health and illness online [6,7].

The Covid-19 pandemic has impacted society as well as the health services in many ways, and we wanted to examine which changes in e-health use the pandemic has resulted in so far in Norway.

## 2. Methods

We performed a narrative search of the literature for empirical studies presenting data on e-health use in Norway during the Covid-19 pandemic, restricted to studies dating from March and April 2020.

We searched PubMed and Google Scholar, using variations of the following search terms in different combinations: ‘Covid-19’, ‘Corona virus’, ‘e-health use’, ‘video consultation’, ‘app’ and ‘Norway’ in Norwegian and English.

Given the short time the illness has been observed in Norway, we also searched for relevant ‘grey literature’, including newspaper articles, websites with relevant

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<sup>1</sup> Corresponding Author, Rolf Wynn, Department of Clinical Medicine, Faculty of Health Sciences, UiT The Arctic University of Norway, N-9037 Tromsø, Norway; E-mail: rolf.wynn@uit.no.

information, official documents, etc., describing the use of e-health during the initial phase of the Covid-19 pandemic in Norway.

### **3. Results**

We were unable to identify any relevant peer-reviewed publications, probably due to the recency of the topic. However, there were several reports of changes in e-health use during the pandemic and the ensuing shutdown (i.e. mass quarantine) from 13<sup>th</sup> of March, 2020. One Regional Health Authority reported a 350% increase in video consultations in March [8] and one Mental Health and Substance Use Clinic increased its use of video consultations from zero to 250 consultations in 12 days [9].

A one-day count performed on the 16<sup>th</sup> of March, 2020, found that there had been approximately 11,000 video consultations involving general practitioners and municipal-level mental health services [10]. 80% to 90% of the general practitioners in Norway were technically able to provide video consultations in the third week of March [10].

This great increase in video consultations appeared to be driven by necessity. The Norwegian Directorate of Health recommended, when possible, to use e-health services (including video consultations) to reduce the risk of contagion [11]. Some health providers, such as most private practice clinical psychologists, were forced to close their offices for a period of several weeks by the authorities and could only provide remote/e-health services [12].

While the shift to e-health during the initial phase of the pandemic appeared to be seen as acceptable or even welcomed [8-10], some voiced concerns that the lack of traditional services was challenging particularly for some patient groups, such as severely mentally ill patients or patients with severe substance use problems [13]. During the epidemic, some patients might not receive timely physical examinations and other procedures that necessitate physical consultations, while others may not be able to fully benefit from the provider-patient relationship without physical face-to-face encounters [7,14-16].

Another possibly landmark shift in the use of e-health occurred with the introduction of the app ‘Smittestopp’ (‘Stop the infection’). The app was developed by the Norwegian Institute of Public Health and Simula and its purpose is to aid the health authorities in limiting the transmission of coronavirus [17]. The app transmits information obtained through Bluetooth and GPS about the user’s position, movements and physical proximity to other app users to a central database.

In a first phase, anonymous data about movement patterns obtained from the app will be used in fighting the pandemic. In a second phase, data from the Norwegian Surveillance System for Communicable Diseases will be combined with data obtained from app to warn the user if he or she has come into contact with someone who is infected and therefore needs to take appropriate action, including self-quarantining [17].

In the period from 16<sup>th</sup> of April to the 29<sup>th</sup> of April, 1.45 million Norwegians had downloaded the app [18], which amounts to approximately 27% of the total population of Norway. It is expected that more people will download the app as its functionalities come into use and its usability is proven to the population, although some have voiced privacy concerns [18]. On Iceland, a Covid-19 tracking app was by the end of April downloaded by approximately 40% of the population [18].

#### 4. Discussion

While e-health uptake has been steadily increasing for a long period, spurred on by an increase in new technologies such as mobile apps [1-7], the Covid-19 pandemic has resulted in very fast changes in the use of e-health in Norway. A rapidly spreading virus and an ensuing mass quarantine lead the authorities to enforce social distancing measures and recommend the use of e-health services whenever possible [11].

Many Norwegian hospitals and clinicians have previously been slow in providing remote consultations and other e-health services [4,7]. The pandemic changed the situation rapidly, leading to a very fast increase in the use of video consultations. During the Covid-19 pandemic there appears to have been an explosion in the number of clinicians offering e-health services, and in particular video consultations [8-10]. This change appears to have been particularly great within the field of mental health services [9,10], which lends itself especially well to video consultations and other e-health tools, as it usually does not typically depend on regular face-to-face interactions and physical examinations (with the possible exception of the most severely ill patients) [13].

More than a quarter of the total population downloaded a Covid-19 tracking health app to their smartphones within less than 2 weeks [18]. This massive roll-out of a government-sponsored health app is likely to change attitudes and further the use of new e-health tools such as health apps into mainstream Norwegian healthcare.

We do not know how the epidemic will develop in Norway or around the world and how it will impact the population and the health service as it unfolds. However, it seems likely that the high interest in e-health today might be conducive to a permanent strengthening of the role of e-health in the health services in Norway. Many hospitals and clinicians have started to routinely use e-health tools, and it is likely that -while the services have their limitations- many will experience that these tools can work well in a range of situations, increase access and save travel time [19], which may encourage the use of e-health services also after the pandemic.

This paper draws on a narrative review methodology, which has limitations. The literature search was not systematic and we were unable to identify any relevant peer-reviewed publications, probably because of the recency of the topic.

#### 5. Conclusions

The Covid-19 pandemic has, during its first six weeks, resulted in major changes in the use of e-health in Norway. Little is known about how the pandemic will develop in Norway and in other countries, but it is likely that the uptake of e-health will remain at a higher level than before the pandemic. Many providers, patients, and other users are getting introduced to and accustomed to different e-health services and are discovering the many benefits as well as the limitations of these services.

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