A Critical Analysis of the Digitization of Healthcare Communication in the EU: A Comparison of Italy, Finland, Norway, and Spain

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This article provides a critical analysis of the digitization of healthcare communication in Italy, Finland, Norway, and Spain. Particularly, we focus on organizational communication and interactions among institutions, providers, and patients. A qualitative content analysis was conducted on data collected between January and May 2019 from (a) documents and policies and (b) interviews in each country with health-related key experts. Results indicate that Finland and Norway are closer than Italy and Spain to the EU discourse concerning the digitization of healthcare communication. Despite what we see as two roads of innovation, all four countries share problems such as the transition toward patient-centered care and the standardization of e-services at different levels. Given that the COVID-19 pandemic has accelerated these practices since March 2020, this article suggests that European digitization of healthcare is undergoing rapid change that warrants broader analysis.

Keywords: EU, digitization, healthcare communication, patient-centered care, COVID-19 pandemic

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Demographic global changes have put health organizations across the globe under considerable strain. Confronted with both the paucity of professionals and the rise of ageing and chronic disease populations, the governments of the European Union (EU) member states are forced to increase the budget on health expenses[2] (Organisation for Economic Co-operation and Development/European Union, 2018). The response to the COVID-19 pandemic is a clear indicator of how healthcare digitization could be a promising way of developing more efficient and sustainable infrastructures (Organisation for Economic Co-operation and Development/European Union, 2020). However, although 52% of EU citizens would like to have online access to their health records, a vast majority of Europeans (8 out of 10) have never used online health services in the past 12 months (European Commission, 2017).

A possible answer to this disparity between reality and expectations can be found within the process of digitization itself. Several studies confirm that most patients have embraced the use of digital technologies to improve their health management (Lovari, 2017), but healthcare organizations continue to face problems with digitization. Many of these challenges are financial and technological, but others also result from cultural factors or privacy concerns (Vaagan, 2015). For example, some reports outline that 43% of the EU population has an insufficient level of digital skills (European Commission, n.d.). Despite the existing differences between the countries, a big segment of Europeans is on the verge of digital exclusion. Similarly, "questions about how ethics should underpin data-centric healthcare have taken central stage as new actors and processes threaten to erode public models of healthcare" (Gonzalez-Polledo, 2018, p. 632).

In this context, digitization is also affecting healthcare communication processes. Although digital health has the potential to enhance the dialogue and provision of services between different stakeholders, it is a transition linked to complexity. The different technologies integrated into healthcare practices are generating increasing amounts of data that need to be processed and evaluated before they can be communicated (Lupton, 2018). This reality not only affects healthcare communication processes at the level of provider–patient, provider–provider, and institution–provider relationships (Wright, Sparks, & O'Hair, 2008), but also within institution–institution, institution–patient, provider–institution, patient–institution, patient–provider, and patient–patient relationships (Torkkola, 2018). Examples of these different forms of healthcare communication are outlined in Table 1, including consultation (provider–provider relationship), self-care (institution–patient relationship), and medical advice (patient–provider relationship). As health organizations are *negotiated orders* that depend on the cooperation among different parties to function properly (Tjora & Scambler, 2009), digitization is only going to be successful if healthcare communication processes between these actors works coordinately.

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[2] Norway is not a member state, but fully integrated in most EU legislation and policies (European Free Trade Association, n.d.).

Table 1. Different Forms of Healthcare Communication.

Actor 1	Actor 2	Examples
Institutional	Institutional	Documentation
		Service management
		Allocation
	Provider	Education management
	Patient	Service guidance
		Self-care
Provider	Institutional	Institutional practices
		Patient recordings
	Provider	Consultation
		Collegial support
	Patient	Medical examination
		Anamnesis (patient case history)
Patient	Institutional	Health services info
		Ranking of institutions and hospitals
	Provider	Medical advice
		Ranking of medical expertise
	Patient	Information experience
		Peer support

Source. Torkkola (2018).

In addition to influencing communication and healthcare practices, digitization also implies a deeper change related to patient empowerment and patient-centered care (Organisation for Economic Co-operation and Development/European Union, 2018). Some of the concepts related to this transformation include e-Health, medicine 2.0, or telemedicine (Eysenbach, 2008; Lupton, 2018). This means that, although evidence-based medicine continues to carry great weight in health interventions, patients now have access to large amounts of health-related information (e.g., through social media), thus, authors are talking again about the concept of *infomedicine* (Eysenbach, 2008; Foss & Rothenberg, 1987). This term describes how disease is not so much an abnormality carried by a patient but rather an increasingly large amount of virtual information disconnected from the body (Mol, 2002). Although this transformation has improved shared decision making between physicians and patients (Meskó, Drobni, Bényei, Gergely, & Győrffy, 2017), the degree of digital competencies of EU citizens suggests that not everyone benefits from the same opportunities.

At the same time, there is an increasing number of signals indicating that laypeople are challenging medical expertise in a framework characterized by a general distrust in institutions (Edelman, 2019). Among regulatory bodies, online activities about (ill) health of these individuals are causing concerns, especially regarding disinformation and misinformation. In this context, the aims of this study are to (1) examine how and to what extent healthcare communication is being digitized in Italy, Finland, Norway, and Spain, and (2) compare the state of this transition in each country. The analysis focuses on the state of e-consultations (Norway, Spain) and the use of social media in health (Italy, Finland), as two of the more widespread innovations within the digital health ecosystem (Lupton, 2018). Although these health systems share some

challenges, countries in Southern Europe have experienced more recession and setbacks in terms of finances and regulations (Petmesidou, Pavolini, & Guillén, 2014). For example, the severity of the 2008 financial crisis in Italy and Spain resulted in the application of budget cuts that diminished the capacity of their health systems (Serapioni & Hespanha, 2019). Other factors that make these countries different include population or the statistics on Internet use (see Table 2).

Table 2. Details of Each Country.

Variable	Country			
	Italy	Finland	Norway	Spain
Type of health system	Public	Public	Public	Public
Population in millions	59.6	5.5	5.3	47.3
Share of elderly (aged 65 and over)	23.2%	22.3%	17.5%	19.6%
Life expectancy at birth (2018)	83.4	81.8	82.8	83.5
Health expenditure per capita (2019)	2,473	3,103	4,505	2,451
Internet use (past 3 months)	76%*	97%	98%	93%
Percentage of individuals (65–74 years old) that have used the Internet for seeking health information	20%*	60%	52%	41%
Percentage of individuals that have never used the Internet	17%*	2%	1%	6%
Active social media penetration	60%	60%	70%	62%

*Data from 2019. *Source*. Population, share of elderly, and Internet figures from Eurostat (2020a, 2020b, 2020c); life expectancy and health expenditure figures from Organisation for Economic Co-operation and Development/European Union (2020); and social media figures from Statista (2020).

To examine whether these factors have affected healthcare digitization, this article addresses the following research questions:

RQ1:　How have digitization processes in four different countries changed healthcare communication?

RQ2:　What kind of challenges have health professionals, patients, and healthcare organizations faced in these digitization processes?

RQ3:　What kind of challenges will digitization of healthcare communication face in these four countries toward 2030?

Methodology

First Phase of the Data Collection

The first phase consisted in collecting data from multiple documents and policies in the European framework that discussed the state of health systems and their digitization in Italy, Finland, Norway, and Spain. Records retrieved included health laws, state health plans, technical and analytical reports, news

articles, scientific papers, and statistics. For each country, the authors retrieved records between January and April 2019 until reaching data saturation (approx. between 10 and 15 records per country). The selection of references was based on the following criteria: Records (1) must be retrieved from official sources; (2) must discuss the state of the health system; and (3) must discuss the digitization transition of the health system. This first data sample was analyzed through a qualitative content analysis using a grid that considered the macro areas related to the research questions of this study.

Second Phase of the Data Collection

The second phase consisted in collecting data from eight interviews[3] (four by e-mail, two face-to-face, and two by telephone) with health specialists and policy regulators, including a communication manager and a hospital manager (and former regional politician) in Italy; a doctor and a regional politician in Finland; a health scholar and a regional politician in Norway; and a doctor and a nurse from two leading institutions in Spain. The interviewees, experts at the regional level but with national experience and connections, come from the regions of Sardinia (Italy), Pirkanmaa (Finland), Akershus (Norway), and Catalonia (Spain). These regions share similar population figures (i.e., between 500,000 and 1.5 million inhabitants), except for the Catalonia region, with an approximate population of 7.5 million inhabitants.

The interviews, conducted by the authors between April and May 2019, were based on a semistructured common guide that covered main national priorities, challenges, and policy documents in healthcare communication of each country (see Appendix). Interview questions were created from the analysis of the data collected during Phase 1. The selection of interviewees was based on the following criteria: Interviewees (1) must belong to the same region; (2) must have knowledge regarding healthcare communication and the country scenario; (3) must work for the health sector; and (4) must be involved with the digitization transition. All interviews were transcribed verbatim and analyzed through a qualitative content analysis based on pattern matching, which "involves the comparison of a predicted theoretical pattern with an observed empirical pattern" (Sinkovics, 2018, p. 468; Strauss, 1987). This allowed the researchers to examine the interview transcripts along with the information obtained during the first phase of the data collection. The analysis was conducted by the researchers in each country independently, and the conclusions reached were later discussed in common over numerous meetings conducted in English.

Digitization of Healthcare: Emerging National Strategies

Italy

Considered one of the most efficient institutions in the world (Miller & Lu, 2018), the Italian Health Sector (*Servizio sanitario nazionale* [SSN]) is a public system. It was created with a specific law in 1978 based on the principles of healthcare and provisions universality, equality, and solidarity (guaranteed by the funding of citizens taxes) (Establishment of the National Health Service, 1978). The SSN provides health services free of charge or on payment of a copay fee and for which the Ministry of Health is guarantor at the national level, and it is expected to deliver these services to all citizens. The same law designed a

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[3] Norway (face-to-face interviews), Italy (telephone interviews), Finland and Spain (e-mail interviews).

decentered healthcare system: The health policy coordination remained at a national level, whereas the 20 Italian regions were assigned specific functions related to healthcare provisions in the territories, including the management of public hospitals and local health authorities, legal public bodies with organizational and financial independence. Particularly, these regions provide territorial healthcare services, including preventive activities, diagnostic services, and home-delivered healthcare to chronic patients. An important role in the SSN is also played by University Hospitals, institutions of excellence in the field of research and healthcare services.

Between the late 1990s and early 2000s, two laws changed the nature of the Italian health system, introducing principles of managerial management and corporatization, while maintaining the public nature of healthcare. This process enhanced the regionalization of the national healthcare system, and it was accompanied by a spending review process, but also by the penetration of digital technologies. The most important policy document is the *National Health Plan*, which identifies the guidelines for the Italian health policy. In turn, the regions also stipulate Regional Health Plans that must be in accordance with the national plan, but specifically addressed to the needs of the territories. However, the existence of these multiple regulations has several impacts on implementing communication strategies at national and local/regional level. A first input toward the digitization of the Italian health system emerged with the approval of the *Strategic Plan Europe 2020* at the beginning of 2010. Italy adopted it with a policy plan called *Strategy for Digital Growth 2014–2020*, integrated in June 2016 to answer specific European Commission requests.

Particularly, a leading role was played by the Italian Ministry of Health through the *Digital Agenda Program* and the *e-Health Information Strategy*. Some central assets of these plans include telemedicine and e-Health, dematerialization of health records and procedures, e-Prescription, m-Health, and single booking center for healthcare provisions. Another important document is the *Treaty for Health*, which aligned national and regional interests about digitization and health services. Italian healthcare communication changed profoundly with digitization. Transparency and efficacy have been key drivers of this process undertaken at different speeds within the SSN. A typical trait of the Italian scenario is the gap between what is reported in the national plans and the real state of healthcare digitization in the Italian regions (i.e., fragmented situation from North to South of the country). Despite the efforts of the Italian government to harmonize and interconnect regional systems, there are some regions with a high level of implementation of digital health services together with other ones that are lagging with low rates. The lack of a strong national coordination and of a culture of innovation in the health system, and the scarcity of digital competencies of professionals and elderly people in comparison with other EU countries, are some of the reasons behind these misalignments (Observatory for Digital Innovation in Healthcare, n.d.). A current challenge is related to the diffusion of online health misinformation (Lovari, Martino, & Righetti, 2021). This threat is affecting healthcare professional–patient relationships as well as public health organizations and citizens healthcare communication practices, like in the case of the COVID-19 pandemic (Scarpa, Sghedoni, & Valetto, 2020; RQ1, RQ2, RQ3).

In Italy, social media represent an interesting peculiarity. These platforms started to be conceived as environments to stimulate patients' engagement. The Italian government was one of the first to state the importance of social media for healthcare communication. Indeed, Italy approved the *Guidelines of Online Communication for Health and Care* in 2010, in which the legislator highlighted the strategic role of

social media for enhancing public health and for codesigning health policies with citizens/patients. Italians are intensive social media users, platforms used both for debating about civic issues (Eurostat, 2016) and for searching for health-related information (Centro Studi Investimenti Sociali-Forum per la Ricerca Biomedica, 2012). Several studies have reported a constant increase in the adoption of official social media accounts by local health authorities (LHAs) and public hospitals. With a prevalence of Facebook and YouTube, data show how the percentage of Italian LHAs with official channels grew from 34% to 67% in only four years (Lovari, 2017; Vanzetta et al., 2014; RQ2).

Interviews conducted in May 2019 indicate how several challenges are still waiting for solutions. The first issue is sustainability, particularly from an economic point of view. As pointed out by an interviewee, "since the SSN is financed by taxes, the persisting economic crisis and the lack of economic growth are still impacting the stability of the system" [authors' translation] (Communication manager, personal communication, May 2019). This factor is exacerbated at regional level, creating inequalities between different geographical areas of the country and reverberating in the growth of passive mobility that triggers new vicious impoverishment mechanisms. The second challenge is fully implementing digital health for citizens (e.g., guarantee the access to services and health records from mobile devices). Particularly, "the adoption of digital health records remains a challenge, since regional use rates are very dissimilar in the country, with three regions that were still inactive in 2018" [authors' translation] (Hospital manager and former regional politician, personal communication, May 2019). Therefore, there is a need to work on interoperability of patient records both at the national and European level, but also working on increasing organizational and individual digital competencies (RQ3).

Finland

Finland's social welfare and healthcare system is founded on government-subsidized municipal social welfare and healthcare services. There are 295 municipalities, which are responsible for providing care services for residents. Municipalities have by law the primary responsibility to organize social and healthcare services for their residents. Public primary healthcare services are either produced by the municipalities themselves, provided in cooperation with other municipalities, or purchased from private and public providers. Today, there are some municipalities where all care services are produced by the private sector (Kuntaliitto, 2020). Alongside the municipal system there are private and occupational health services. Specialized care is provided by hospital districts. Each municipality belongs to a hospital district that has a central hospital. Health and social services are mainly funded by general tax revenues (Ministry of Social Affairs and Health, 2013). There is universal access for primary and specialized care, but it is not totally free. In specialized care, there is freedom of choice within public specialized healthcare units. In primary healthcare, a patient has a right to choose the healthcare center yearly.

Finland started its healthcare digitization in the middle of 1990. The EU *e-Health Action Plan* (European Commission, 2004) called for the member states to draw up their national e-Health roadmaps by the end of 2006. Finland's e-Health roadmap was published in 2007 (Ministry of Social Affairs and Health, 2007). In 2015, state of the art and trends in e-Health and e-Welfare in Finland were monitored by the National Institute for Health and Welfare, and the results of the monitoring were published in the report *e-Health and e-Welfare of Finland* (Hyppönen, Hämäläinen, & Reponen, 2015). According to this

document, Finland is well on the way toward digitizing many of the healthcare services. Prescriptions, laboratory test results, and services booking are most frequently electronically used and needed by citizens. However, in surveys conducted in 2014, only 12% of respondents reported to have used e-services for social and healthcare. Still, 89% of Finnish people were using the Internet in 2018 (Official Statistics of Finland, 2018). Some of the key obstacles to the use of e-services include complicated terms of use and the usability/accessibility conditions for people with disabilities (Hyppönen et al., 2015).

The challenge of Finnish healthcare digitization is to make the e-services so user-friendly that both patients and professionals see them as valuable and useful. The objective of the *eHealth and eSocial Strategy 2020*, for example, is "to support the renewal of the social welfare and healthcare sector and the active role of citizens in maintaining their own well-being by improving information management and increasing the provision of online services" (Ministry of Social Affairs and Health, 2015, para. 1). In the interviews conducted in May 2019, both the health-related expert and the regional politician gave many examples of e-Health developing projects, like long-distance monitoring of pacemakers, e-consultation among medical experts, symptoms navigators, virtual hospitals, and digitalized self-care. The municipalities and hospital districts have been very active to promote e-services. Still, there is a lack of financial resources. The interviewed doctor (personal communication, May 2019) pointed out that, "especially in the starting phase, when it is difficult to see benefit of ICT and digitization, there is an enormous need for euros" [authors' translation] (RQ1, RQ2).

In this context, social media are the most discussed segment of digital technologies connected to healthcare and health promotion. Evidence indicates that laypeople use these resources for searching, sharing, and producing health information and for peer support (Moorhead et al., 2013; Smailhodzic, Hooijsma, Boonstra, & Langley, 2016). A former Finnish case study (Torkkola, 2014, 2015) shows the same findings: For citizens, social media are platforms for information. The study investigated discussions on pharmaceuticals that were conducted in *Suomi24*, one of the most popular discussion group sites in the country. Social media discussions were dominated by illnesses characterized by individual experiences on side effects and medicine reactions.

Although social media are significant platforms for health issues, there are few studies that showcase the professional usage of these resources. In 2019, a second case study addressed this topic in the context of Finnish healthcare (Torkkola, Vuolanto, & Parviainen, 2019), and the findings are consistent with previous research (Gagnon & Sabus, 2015; Kotsenas et al., 2018): (1) online spread of health-related misinformation concerns health professionals, and (2) digital technologies create new opportunities for developing healthcare services. However, results also display some contradictory views. Even though social media are perceived as supportive and informative platforms for patients, very few of the respondents use these resources to communicate with patients (or they use their professional status when they participate in health-related discussions in social media). Thus, there is a growing need for new practices and virtual channels in healthcare communication that is asking for orientation not only from healthcare organizations but also from education and political decision making. In the context of healthcare digitization, these studies make clear that experiences of laypeople are essential for developing online services (RQ3).

COVID-19 has challenged healthcare practices and forced to find out alternative ways not only for information sharing but also for medical consultation. Kela, the Social Insurance Institution of Finland, has changed its practices and compensates now all type of online consultations with private health services (Kela, 2020), and many public organizations have started to provide these services, too. Furthermore, social media has shown its significance for communication between authorities and citizens: COVID-19 official information has been spread over both these resources and traditional media, and the Finnish government has made use of influencers with the objective of disseminating the information to a wider population (Henley, 2020). Overall, the COVID-19 pandemic has boosted the digitization of the Finnish society and, perhaps, reduced obstacles to respond the need of using social media and virtual resources in the communication between citizens and healthcare.

Norway

The Norwegian healthcare system is based on universal access, decentralization and free choice of provider. In 2019, Norway ranked second in Europe after Switzerland regarding health expenditure per capita (Organisation for Economic Co-operation and Development/European Union, 2020). Members of the Norwegian National Insurance scheme (most residents in Norway) are entitled to access healthcare services. Healthcare in Norway is not free, and residents must pay for all treatment. However, once you reach an annual limit of expenditure (currently just over 2,000 krone), you receive an exemption card entitling you to free treatment for the remainder of the year. This system ensures that everyone pays a little, but those who are sick are not burdened with large medical bills. Exemptions to this system include children under 16 and pregnant women, who receive free healthcare. The organization Helfo is the primary access point for healthcare administration. Through Helfo, citizens can choose or change their general practitioner (GP) and be reimbursed medical expenses (Nikel, 2017).

Regarding governance, healthcare policy is controlled centrally, but responsibility for healthcare provision is decentralized. Municipal authorities organize and finance primary healthcare services based on local demand. Central authorities are responsible for the management and finances of the hospital sector. Public hospitals are managed by four Regional Health Authorities (RHA) under the supervision of the Ministry of Health and Care Services. There are a limited number of privately owned hospitals, and most of these are funded by the public. Private health insurance is the exception, not the rule. Residents (including asylum seekers) are entitled to a GP. If the doctor you select has vacancies, you can register free of charge, and you can also change your GP up to twice per year. Each GP manages their own appointments system. In April 2012, the Norwegian government launched a national campaign (*På nett med innbyggerne*) to fully digitize the central government. E-mail was emphasized as the main channel of communication between authorities and citizenry. State organizations would henceforth offer free applications for smartphones, iPads, and PCs. Public services would hence become digitized and be the ordinary communication channel between the government and citizens. All enterprises and citizens would receive their own secure, digital postboxes and receive messages by SMS and/or e-mail. This digital transformation would take time to implement and raised challenges like national standardization, broadband expansion, and security (Vaagan, 2015). This change, that also involved healthcare services, presupposed a certain level of digital health literacy, including retrieving, finding, understanding, assessing, and using online health information and using online tools to follow up on your own sickness

(Norwegian Ministry of Health and Care, 2019). Therefore, digitization has significantly transformed the way healthcare communication works and increased the interest in e-Health research (e.g., Lunde, Nilsson, Bergland, Kværner, & Bye, 2018; RQ1).

The Norwegian Directorate for e-Health (2019) developed from a former e-health division under The Norwegian Directorate of Health. In 2016, it was placed directly under The Ministry of Health and Care Services, reflecting the importance of e-Health. Its two main responsibilities are (a) national steering and coordination of e-Health through close operation with regional health authorities, technical organizations, and other interested parties; and (b) to develop and administer digital solutions to improve and simplify the e-Health/Care sector. In January 2019, the government appointed for the first time a Minister of Digitization (Nikolaj Astrup, from the Conservative Party). To address the challenges that digitization is posing to health professionals, patients, and organizations, he announced that the government would present a digital strategy for the public sector, in which data management will occupy a central role (especially securing General Data Protection Regulation compliance and harnessing artificial intelligence [AI] and big data to improve diagnostics/treatment). He also supported the digital strategy of the EU and the directive on digital services covering data sharing, which will guarantee users the same rights whether they pay with money or user data (Astrup, 2019). Both EU strategy and member state adaptation will need to address the issue of using AI and ethical algorithms for the benefit of patients, practitioners, and society alike (Powles & Hodson, 2017; RQ2).

Interviews conducted in April–May 2019 confirm that digitization of healthcare has "improved accessibility to services for ordinary citizens and that welfare technology, healthNorway.no and electronic patient medical records are considered the most useful services" [authors' translation] (Health scholar, personal communication, April 2019). Similarly, the interviewed regional politician (personal communication, May 2019) pointed out that "national standardization remains a challenge because several stakeholders (hospitals, regional health enterprises, the pharmacy industry) all have their own digital solutions" [authors' translation]. In this context, it should be recalled that mobile technology, apps, and social media are becoming increasingly important both as tools/platforms and as objects of research (Lunde et al., 2018; Sloan & Quan-Hasse, 2017).

An ongoing case study involving different e-consultation services (Dr.Dropin, Kry, Eyr) indicates that the use of this resource is on the increase in all age groups. Eighty-seven percent of medical centers and GPs, primarily in the private sector, today offer e-consultations, and each month 4,000 online consultations by private GPs involve videos. Eighty-one percent of the medical emergency centers access the summary patient key records on a weekly basis (Norwegian Directorate for e-Health, 2019). The COVID-19 pandemic has greatly increased the popularity of this service, as daily visits to helsenorge.no grew from 223,000 to 515,000 since the adoption of restrictive measures (Norwegian Directorate for e-Health, 2020). Although many conditions cannot be treated online, certain types of ailments and conditions can be helped and treatment/prescriptions can be administered online, including in several languages and sent to pharmacies abroad. From the patient's point of view, e-consultations are reassuring in that long waiting lists and queues are avoided and they cost less than face-to-face consultations. From the practitioner's perspective, e-consultations are also useful because they accommodate many patients and help filter out less serious conditions (RQ3).

Spain

In terms of health, Spain enjoys a good reputation. Apart from leading the EU life expectancy statistics (Organisation for Economic Co-operation and Development/European Union, 2020), the Spanish National Health System (NHS) is considered one of the most efficient organizations in the world (Miller & Lu, 2018). The NHS works under the principle of universal free health services, by which all citizens have the right to health regardless of their economic and employment status (General Health Act, 1986). However, the Spanish NHS is a complex organization that has suffered several setbacks, especially with the 2008 economic crisis.[4] One big problem is the shortage of professionals: In Spain, "a hospital nurse can be attending a total of 15 or 20 patients per shift, when at the European level this is unthinkable" [authors' translation] (Nurse, personal communication, May 2019).

Organizationally, the Spanish NHS is divided in three levels (central, regional, local). The Ministry of Health, Consumer Affairs and Social Welfare (hereafter the Ministry) is the primary decision maker and establishes valid standards and requirements for healthcare provision (central level). However, health competencies are decentralized in 17 regions that are coordinated by the Interterritorial Council for the NHS (regional level). Likewise, each of these regions is subdivided in different health areas (local level). Although the Ministry shares its regulatory power with regional governments, this institution is the department responsible for coordination and cooperation regarding interterritorial and international health issues. The problem lies in the limited symbiosis between the levels and regions, which increases the disparities in services and quality of care between the different autonomous communities. Moreover, in response to the economic crisis and the major expenditure on healthcare, the tension between decentralization and the national character of the Spanish NHS has been object of negotiation in favor of the role of the Ministry.

These organizational complexities have influenced the digitization process of the Spanish NHS. First references to e-Health appear in the *Quality Plan for the NHS* (Spanish Ministry of Health and Social Policy, 2006), with specific mention of electronic health records (EHR) and prescriptions, a common ID health card, and the integration of telemedicine solutions to the health system. Although most development goals have been attained (Sánchez-García, 2019), the problem lies in the time it has taken to reach them and the influence the dynamics of change, both in society and technologies, could have over these digital transformations. For instance, having a common EHR framework is complex due to the multiple brands, systems, and protocols used in the different health centers (De la Torre-Díez, González, & López-Coronado, 2013). Nevertheless, health professionals think that shared EHRs "provide considerable benefits for both the patient and the healthcare staff, since the entire patient's trajectory is recorded. This facilitates the diagnosis [and avoids] unnecessary or previously performed tests" [authors' translation] (Nurse, personal communication, May 2019; RQ1).

Despite such claims, telemedicine implementation in the Spanish NHS is still at a very early stage. The creation of apps and devices is mainly in the hands of health professionals, who through small

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[4] The Spanish NHS withdrawn universal free health services to unregistered nonresident people from 2012 to 2018.

initiatives/projects create these solutions with the collaboration of external companies.[5] This is a vision shared by healthcare staff, who think that in Spain "health standard is at the level of the best thanks to the availability of the health professionals involved" [authors' translation] (Doctor, personal communication, May 2019). Although there is no nation-wide strategy on telemedicine, some regions (e.g., Andalusia, Catalonia) are working in digital health projects funded by their regional governments.[6] From a communication perspective, this top-down approach means that the Ministry has only worked on the digitization of provider–provider and administrator–provider relationships. Moreover, although the digitization of EHRs has allowed patients to access their health information anytime, individuals tend not to use these services due to the absence of feedback or because they do not have the necessary competencies to use them (see Table 2; RQ2).

In this sense, Catalonia has developed an eConsulta program, where patients can have digital consultations with their primary care doctors. Through this service, individuals can chat with their providers about medication and test results or send photographs and external tests for further examination. Preliminary results of this exploratory project indicate that this service has saved face-to-face visits to both patients and professionals (López, 2019), increasing the efficacy of healthcare. Although the program is still under development, Catalan health authorities have considered it a key infrastructure to administer the consultations resulting from the closure of primary care centers as a preventive measure related to the COVID-19 pandemic (Corporació Catalana de Mitjans Audiovisuals, 2020). Considering that local health services are fundamental structures of the Spanish NHS, solutions such as the eConsulta show that systems must be reorganized in a patient-oriented way. Nevertheless, the struggle around how to manage interoperability in the Spanish NHS is still unresolved. The few studies available remark that the use of digital solutions in Spain is still not comprehensive (Marca et al., 2014). Professionals themselves think that regulatory bodies must first solve problems such as waiting lists or the shortage of professionals before developing a nationwide digitization strategy (Doctor, personal communication, May 2019). The gap between the assumptions of legislative measures and the velocity of technological changes in Spain is still too wide. The interferences in terms of coordination, integration, and the lack of a common roadmap are showing the discrepancy between the political, rhetorical discourses, and the concrete measures to follow up (RQ3).

Rhetoric Against Reality

This critical analysis shows both similarities and differences in contemporary healthcare digitization processes. Table 3 summarizes the findings identified in this study. The following paragraphs focus on comparing the countries both according to the innovation discussed in their individual analysis (social media for Italy and Finland, e-consultations for Norway and Spain) and from a more general healthcare communication perspective.

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[5] For example, the app ScanKids VH (Vall d'Hebron Barcelona Campus Hospitalari, n.d.).

[6] Distintivo AppSaludable (Agencia de Calidad Sanitaria de Andalucía, n.d.), Sello TICSS (TIC Salut Social, n.d.).

Table 3. Country Comparisons of RQ Findings.

| Country | Research question | | |
	RQ1	RQ2	RQ3
Italy	Profound changes in healthcare communication	*Strategy for Digital Growth 2014–2020* (2014)	Harmonization and interconnection of regional systems remain challenges
	Transparency and efficacy as key drivers of digitization	*Digital Agenda Program* and *e-Health Information Strategy* (2016)	Address fake news and misinformation related to health topics (e.g., COVID-19), especially in social media
	Change focused on telemedicine and dematerialization of health records and procedures	Digitization disparities between Northern and Southern regions	
		Scarcity of digital competencies is a challenge	Reach health sustainability
Finland	Considerable changes in healthcare communication	Healthcare digitization started in mid-1990, redefined in 2007 with the e-Health roadmap	Develop user-friendly e-services both for patients and health professionals
	Prescriptions, laboratory test results, and bookings of services are mostly digital	*eHealth and eSocial Strategy 2020* (2015)	Include laypeople experiences in e-services development
	Municipalities and hospitals as key promoters of digitization	Information management and engaging citizens in the use of e-services for social and healthcare remain challenges	Facilitate virtual communication between patients and health professionals
Norway	Considerable changes in healthcare communication following 2012 government policy of complete digitization of public sector communication with citizenry	Norwegian Directorate for e-Health (2019)

First Minister of Digitization appointed in 2019

Standardization and harmonization of platforms/services remain challenges | Standardization and harmonization of platforms/services remain challenges

Ongoing R&D on e-consultations and the COVID-19 pandemic confirm increased reliance on e-Health, especially e-consultations |
| | E-consultations popular | | |
| | More R&D focus on e-Health | | |

Spain	Poor changes in healthcare communication due to organizational complexities	No nation-wide telemedicine strategy	Addressing legislative problems of the Spanish NHS remains a challenge (e.g., waiting lists)
	Change focused on the interoperability of both EHRs and prescriptions	Digitization focused on provider–provider and administrator–provider relationships	
			Development and implementation of a nationwide digitization strategy (e.g., strengthen the system against future systemic risks)
	Creation of a common ID health card	Provision and implementation of telemedicine options remain challenges	
			Transition toward patient-centered care, especially e-consultations

Regarding social media, Italy and Finland show interesting similarities related to the use of these platforms, like having the same figures concerning active social media penetration (see Table 2). Although other factors suggest that Finland embraced digitization earlier than Italy (Table 2), Italians seem to be more active in using these platforms dialogically (e.g., to debate about civic issues; Eurostat, 2016). From a healthcare perspective, evidence shows that health information-seeking practices are high in both populations (Centro Studi Investimenti Sociali-Forum per la Ricerca Biomedica, 2012; Torkkola, 2014, 2015). Moreover, Italy and Finland include public health organizations at national/local levels that use social media for healthcare communication. However, depending on the specific communication guidelines of the organizations and on technological/cultural aspects, the adoption process of these platforms differs from country to country (Guidry et al., 2020). For example, though Finnish authorities made use of social media to improve the content of the Finnish *eHealth and eSocial Strategy 2020*, Italy is a significant example of the rhetoric of digital innovation. The number of public health organizations on social media is still limited, and the Italian Ministry of Health has been broadly criticized by publics and media for using these platforms inefficiently. Some of the factors behind this low-quality communication include the lack of institutional strategy or the fear of losing control in the online dialogue with patients in both ordinary and crisis situations (Lovari, 2017; Lovari et al., 2021).

The implementation of e-consultations in Norway and Spain operates at different speeds. In Norway the digital transformation of the government began in 2012 (including the establishment of a fully operative e-Health division), but Spain is still working on a nation-wide digitization strategy that seems unlikely to be completed soon. One of the reasons behind this disparity could be related to the resources invested in health, as Norway's health expenditure is almost double per capita than that of Spain (Table 2). Moreover, whereas 87% of medical centers and GPs in Norway offer this service, e-consultations are still being developed in Spain. Despite this trend will be influenced by the COVID-19 pandemic, the few services available in the Spanish NHS are provided by the private sector, and there is only one public web-based platform at a very early stage of development (eConsulta). The only similarity between Norway and Spain is the widespread private nature of e-consultations. Factors like the statistics on Internet use can help us

understand these disparities (Table 2). The Norwegian government has considered digital competencies a basic skill for their inhabitants since 2006 (Sbertoli, 2018), but the infrastructure to provide this training in Spain depends on the budget of every institution or the existing education law. Although being influenced by many factors (e.g., regulations), a key element for a successful healthcare digitization is the population's degree of literacy about technologies.

From a broader perspective, digitization also raises common concerns in all the analyzed countries. At the institutional level, for example, there is the question of healthcare costs. A priori, expectations of cost reduction could be realistic, but findings suggest that healthcare digitization needs more resources. In addition, our critical analysis shows that the Italian and Spanish transition is proceeding slower than those of their Northern counterparts. This uneven progression of healthcare digitization puts health accessibility and equal opportunities of European populations at risk, a situation that leads to the creation of digital social inequalities (Lupton, 2018). Furthermore, since most technologies in the market are provided by the private sector, health-related experts have the responsibility to examine which impact these actors are having on the principle of universal access to healthcare. At the health professional level, healthcare digitization raises questions about their education. The study cases analyzed suggest that this transition requires regular training of these individuals, including the adoption of new digital communication skills. At the same time, successful healthcare digitization includes the willingness to use health technologies, but most health professionals have reported concerns about authority/inaccuracy when confronted with digital solutions (Meskó et al., 2017). Although this issue can be related to organization policies (Harris, Mueller, & Snider, 2013), our results align with Lupton's (2018) study, especially regarding social media practices in health (Table 3). Lastly, healthcare digitization raises the question of self-care at the patient level. As indicated in our analysis, the main concern here is related to misleading online health information, thus requiring improved health literacy among patients (see Table 3). In this context, it should be recalled that many older people and people with cognitive difficulties do not have the skills needed to use digital technologies. This indicates that there will be a need to offer both off-line and online services, an aspect that will directly affect the future of e-consultations.

Conclusion

This study provides added value in comparing digitization processes and healthcare communication. Particularly, our results suggest that there are two roads of innovation in Europe: Finland and Norway have digitized their healthcare systems in a harmonized fashion, whereas Italy and Spain have delayed digital health implementation (see Table 3). Nevertheless, some limitations must also be noted. For example, despite being able to interview health-related key experts with different backgrounds, the type of interviews/interviewees has not been the same in all cases. Although our initial intention was to interview with the same method a politician and a health specialist in each country, complications arising from cultural, managerial, and bureaucracy differences between the countries analyzed forced us to conduct the second phase of the data collection in different ways. Given the complexity of the topic explored, as well as the digital acceleration due to the COVID-19 pandemic, further research should homogenize this aspect and include a larger number of interviewees to provide a broader analysis of the European transition toward healthcare digitization. Similarly, because the interviewees selected are from specific regions, their contributions may have some bias in relation

to their territory. Regardless of these difficulties, we believe that this study is a first valuable exploration to the state of the digitization of healthcare communication in the EU.

Furthermore, our findings also indicate that these different velocities regarding healthcare digitization pose problems for the efficient management of a global crisis like the COVID-19 pandemic. In situations when healthcare communication is crucial to save lives, countries need a coordinated response, but in Italy and Spain, this has proven to be a challenge. In this context, future studies should consider the cultural differences between the countries analyzed, as the COVID-19 pandemic has shown that Italy and Spain have a few cultural factors that make them different from the rest of Europe (e.g., close connections with extended family; Sendra, Farré, Lovari, & Lombi, forthcoming). Likewise, it has been suggested that the use of digital technologies creates new challenges (e.g., regarding patients' privacy) that can increase disparities between individuals (Lupton, 2018). Since existing research has mostly focused on the benefits of healthcare digitization, future studies must address how these risks are affecting health management of both in ordinary and crisis conditions. This debate is even more important considering that global health governance and digital health will most likely be a central priority for the EU in the future. When this happens, it could be an occasion to address common challenges identified in this article, such as digital health education of both patients and professionals, interoperability of e-services, and the transition toward patient-centered care (see Table 3). Until then, the findings of this study indicate that the European transition toward digital healthcare communication warrants further analysis and investments.

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Appendix: Interview Guide

1. In your opinion, are there significant differences in how the health and care sector is organized in your country as compared with other countries in the EU/EEA region?

2. In your opinion, what are the main challenges regarding health and care provision in your country?

3. Do you consider health and care provision to be primarily a public responsibility?

4. Do you consider that more privatization is beneficial in health and care provision?

5. Which are the three most important policy papers on digitization of health and care services in your country?

6. To what extent have these policy papers been implemented at the national and regional/local level?

7. If not implemented/fully implemented at the national/regional/local level, what are the main reasons for this?

8. Can you cite examples of excellence in the provision of digital health and care services in your country? (e.g., patient records, prescriptions, mobile technology apps, social media)

9. Other comments