REVIEW ARTICLE

Annals of Agricultural and Environmental Medicine 2025, Vol 32, No 1, 59–65
www.aaem.pl

Development of telemedicine in Poland – organizational, ethical and communication challenges

Agnieszka Pochrzęst-Motyczyńska[1,C], Jarosław Pinkas[2,C], Urszula Religioni[3,C], Janusz Ostrowski[4,C]

[1] *Director's Office, Centre of Postgraduate Medical Education, Warsaw, Poland*
[2] *Director of the School of Public Health CMKP, Centre of Postgraduate Medical Education, Warsaw, Poland*
[3] *Department of Lifestyle Medicine, School of Public Health CMKP, Centre of Postgraduate Medical Education, Warsaw, Poland*
[4] *Vice Dean of the School of Public Health, Centre of Postgraduate Medical Education, Warsaw, Poland*
A – Research concept and design, B – Collection and/or assembly of data, C – Data analysis and interpretation, D – Writing the article, E – Critical revision of the article, F – Final approval of the article

Pochrzęst-Motyczyńska A, Pinkas J, Religioni U, Ostrowski J. Development of telemedicine in Poland: organizational, ethical and communication challenges. Ann Agric Environ Med. 2025; 32(1): 59–65. doi: 10.26444/aaem/192793

Abstract

Introduction and Objective. We are witnessing a revolution in the field of telemedicine, which has begun to be used in every medical specialty. The aim of the review is to identify and summarise ethical and communication challenges related to the development of telemedicine in Poland.

Review Methods. Scientific articles found in the electronic databases PubMed and ScienceDirect were analyzed using key words: telemedicine; Distance Counseling; e-Health Service and Digital Health Technology. Guidelines of the World Health Organization (WHO), the American Telemedicine Association (ATA) and the General Medical Council (GMC) were taken into account. Data is presented on e-services of the Ministry of Health, the E-Health Centre and National Health Fund.

Brief description of the State of Knowledge. According to data from the National Health Fund, since 2020, the percentage of online consultation provided in Primary Health Care and Specialist Outpatient Care has been decreasing. In Poland, the potential resulting from the development of e-services is still untapped. The introduction of e-prescription and e-referral is convenient for the patient and staff, but does not have a health effect.

Summary. In order to improve the efficiency of the health care system, it is necessary to focus on the further development of new e-services. It is worth introducing solutions that allow the use of medical data and test results to relieve the patient of the burden of transferring medical records to subsequent doctors. It is necessary to develop a standard for the provision of teleconsultations in order to eliminate pathological prescription issuance through online platforms providing consultations. Remote provision of medical services also requires further development of the digital competences of both staff and patients.

Key words

Poland, telemedicine, communication, telehealth, eHealth ethics

INTRODUCTION AND OBJECTIVE

The first mention of telemedicine appeared in *The Lancet* as long ago as 1897, which referred to teleconsultations of paediatricians by telephone [1]. The beginnings of telemedicine – understood as the transmission of medical data at a distance – were mentioned in 1905 on the occasion of Willem Einthoven's transmission of an ECG recordings via telephone cable from a hospital to a laboratory 1.5 km away [2]. In 1948, the first X-ray image was sent over a distance using a telephone line in the United States [3].

Telemedicine is defined as medical activity performed by persons with the required professional qualifications through systems enabling the remote transfer of data [4]. According to the World Health Organisation (WHO), telemedicine – the provision of healthcare services at a distance – can improve clinical management and expand the range of services [5]. The WHO emphasises that the COVID-19 pandemic in particular and the related restrictions on the provision of services have caused a great deal of interest in the deployment of telemedicine services. In the USA, telemedicine software providers reported a 2,000 percent increase in visits to their platform by the end of April 2020 [6].

According to the WHO, the constant development of new information and communication technologies makes it impossible to create a single definition of telemedicine. In a 2010 report, the WHO indicated that by 2007 there were as many as 104 different definitions of the term [7]. Telemedicine services cover an increasingly wide range of medical services and solutions which concern [8]:

- specialist consultations (online consultation);
- remote monitoring of a patient's health (online consultation);
- medical education and mentoring of medical staff (telelearning);
- constant access of patients to information in the field of medicine and health; – performing procedures or surgery carried out with the use of a remotely controlled surgical robot (telesurgeries);
- emergency medical services;

✉ Address for correspondence: Agnieszka Pochrzęst-Motyczyńska Director's office, Centre of Postgraduate Medical Education, Warsaw, Poland
E-mail: agnieszkapochrzest2@gmail.com

Received: 28.05.2024; accepted: 30.08.2024; first published: 11.10.2024

– rehabilitation, counselling and supervision of prescribed exercises (telerehabilitation),
– continuing education of medical staff by teleconferencing (teleconferencing).

The American Telemedicine Association (ATA) defines 'telemedicine' as the exchange of medical information between two or more users using electronic communication to improve the health of patients [9]. According to the ATA report, by 2030, telemedicine will solve some of the most difficult challenges in healthcare, including those related to levelling-out inequalities in access to healthcare [10]. Various applications and benefits have made telemedicine an essential strategy to face pandemics. However, access to these benefits requires end-to-end logistics to ensure the successful implementation of other solutions [11]. In institutions where telemedicine has been implemented, the tool has been accepted by both users and patients alike [12]. To ensure the proper functioning of telemedicine, it must be fully integrated into healthcare systems, and for this to be possible, appropriate regulations and policies must be generated that embrace this new way of providing services [13].

Etymologically, the word 'telemedicine' has its origin in the Greek word *tele* – 'at a distance', and the Latin word *mederi* – 'the art of healing' [14]. Today, a revolution is taking place in the field of telemedicine which has begun to be used in every medical specialty [15].

The term 'e-health' or 'telehealth' takes precedence over such concepts as 'telemedicine' or 'telemedicine services'. These terms are understood as all information and solutions in telecommunication technology used in health care, i.e. in the provision of health services [16]. The concept of eHealth therefore encompasses information and communication technology tools and services used in health care [17]. As part of eHealth, e-referrals, e-prescriptions and e-sick leaves are carried out.

The definition of the term 'telemedicine' has not been included in the Act of 09.10.2015 amending the Act on the Health Care Information System and Certain Other Acts [18], which introduced the possibility of providing health services via IT and communication systems. The amendment introduced the phrase: 'the profession may also be exercised by means of ICT or communication systems' [19].

REVIEW METHODS

Literature was identified through searching such electronic databases PubMed and Science Direct and review of journals over the past four years to identify ethical and communication challenges regarding telemedicine. Search key words included: Telemedicine; Distance Counseling; e-Health Service; Digital Health Technology. The guidelines of the World Health Organization (WHO), the American Association of Telemedicine (ATA) and the General Medical Council (GMC) were taken into account. Additionally, in order to expand the researched topic, electronic databases and websites were included which, according to the authors' knowledge, play an important role in describing the topic. To a large extent, data obtained from the National Health Fund we also used and analysed. After the initial assessment of the articles by three authors (AP, JO and UR), with the participation of the author JP, who resolved any doubts of the other two authors by consensus, articles were selected that most fully related to the specific team and objectives of the review. All publications were analyzed using a non-systematic review method.

DESCRIPTION OF THE STATE OF KNOWLEDGE

In Poland, from 1 January 2020, primary health care facilities (PHCs) were obliged to provide teleconsultations. However, it was not until the announcement of the state of epidemic and the need to introduce remote provision of health services, that in March 2020, online doctor consultations were implemented on a large scale in primary health care. During the pandemic, medical online consultations became popular as a form of providing medical and health care services remotely, and could take the form of a phone or video call [15].

In 2020, when the COVID-19 pandemic began in Poland, there were healthcare facilities in which as many as 80% of medical consultations took place in the form of teleconsultations [20]. According to data from the National Health Fund, since 2020, however, the percentage of online doctor consultations provided in both Primary Health Care (POZ) and Outpatient Care has been decreasing [21]. In September 2020, 2.3 million online consultations were reported in primary health care (accounting for 17.60% of the services provided in primary health care). For comparison, in September 2021, 1.8 million online consultations were provided in primary health care (which accounted for 12.62% of the services provided), and in September 2023 – over 1 million online doctor consultations (which accounted for 8.10% of the services provided in primary health care). According to the data of the National Health Fund, over the last 3 years there has been an increase in the number of facilities that have reported at least one teleconsultation in primary health care. In September 2020, such services were provided by 3,161 primary health care facilities, and in September 2023 – 5164.

The percentage of online doctor consultations is also decreasing. However, in contrast to primary health care facilities, there are fewer and fewer facilities offering teleconsultations in ambulatory care. In September 2020, 756,000 online consultations were provided in outpatient care (which accounted for 11.86% of the services provided in ambulatory care). In 2020, 3856 facilities reported at least one service with online doctor consultations procedure. In September 2023, approximately 232,000 services in the form of teleconsultations were provided in specialist clinics (which accounted for 3.36% of the services provided in ambulatory care). During this time, 3,102 facilities reported at least one service with the teleconsultation procedure.

In 2023, the National Health Fund reported that 124 million online doctor consultations were provided in the last 3 years (since the institution have been registering such services), which is 12% of all services [22]. 70% of them were granted in primary health care. According to data from the National Health Fund, after the pandemic, up to 60% of psychiatric services and 40% of primary health care services were provided remotely, but over time, the interest in this form of providing services decreased. At present, the situation is stable.

In primary health care, about 9 – 10% of medical

consultations are teleconsultations (Fig. 1). In ambulatory care, the percentage of online consultation is about 4% (Fig. 2), but if the services provided in radiology are added, which is hybrid because the descriptions are made at a distance from the research equipment, then it would be higher. In psychiatry and addiction treatment, online doctor consultations account for about 20%.

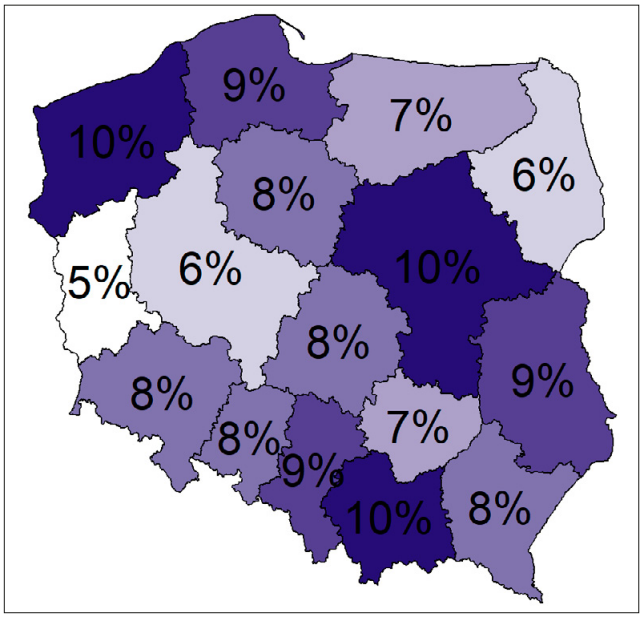

Figure 1. Percentage of teleconsultations among primary healthcare services (as of December 2023).
Source: Data from the National Health Fund

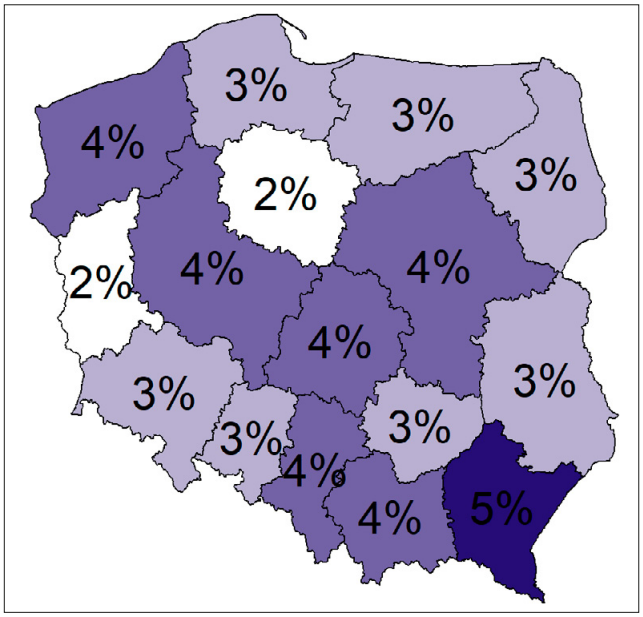

Figure 2. Percentage of teleconsultations among outpatient specialist care services (as of December 2023).
Source: Data from the National Health Fund

Other analyses conducted in Poland also confirm that the percentage of teleconsultations decreased as the pandemic subsided [23]. Similar conclusions emerge from studies conducted in Denmark, Norway, the United Kingdom, The Netherlands and Germany [24]. Despite the assumption that teleconsultations and videoconsultations would be widely used in general practice after COVID-19, in practice, the standard consultation methods returned [25]. During the COVID-19 pandemic, many studies indicated that teleconsultations were well-received by patients and doctors and, with the right approach, could revolutionize medicine for years to come. However, studies conducted after the pandemic indicate many barriers that could have prevented the development of teleconsultations. These barriers included: improvement in the quality of teleconsultations, including technical solutions, technological support for doctors and patients, lack of financial incentives, and lack of understanding cultural and social barriers [24].

In 2023, The e-Health Centre conducted a survey among healthcare entities [26] which showed that the availability of e-services in Poland is at a low level. The surveyed entities most often provide patients with the opportunity to check the results of tests online (36.4%). Online access to medical records is provided by 15.4% of the surveyed facilities, with hospital patients more often (21.3%) having this option. The majority (61.4%) of the surveyed entities do not provide patients with access to e-services via their website, and have no plans to implement them.

In Poland, the binding document of an operational and implementation nature is the 'Strategy for the Development of e-Health in Poland for the years 2022–2027' [27]. According to this document, e-health solutions should support the patient and the healthcare system, and are also intended to facilitate communication with medical professionals. The strategy was to be implemented in 3 stages. In the first stage, the nationwide implementation of e-services was to take place (mid-2023), and in the second stage (two years later), solutions supporting coordinated patient care were to come into force. The third stage involved the use of solutions related to clinical decision support and telemedicine. Scheduled dates were not met.

The authors of the study 'Digitization Policy. Opening Report' emphasize that the potential of telemedicine is not used in Poland due gross negligence and failure to complete the construction of the P1 platform, i.e. an ICT project that is the core of e-health in Poland [28]. The platform collects, for example, e-prescriptions, e-referrals or the history of visits to which the patient has access on their Internet Patient Account (IKP). In 2024, the Ministry of Health reported that 1.93 billion e-prescriptions and 197 million e-referrals were issued in Poland, and IKP has 17.92 million users [29]. The authors of the 'Digitization Policy' report emphasize that the core of the P1 platform was to be the collection of data on patients' medical events, e.g. test results, treatments and surgeries, allergies, chronic diseases, and other health data. Making such data available to doctors would lead to a sharp increase in the efficiency of providing health services by avoiding repeated consultations and diagnostic tests. According to experts, only the recording and use of medical data and test results can help coordinate comprehensive patient care. According to the authors of the study, it is the family doctor who should be the coordinator of the treatment with the support of specialists. In order to achieve this, both primary health care and outpatient care require investments in staff training and ICT infrastructure, enabling wide access of doctors to telemedicine.

The development of teleconsultations has resulted in a problem with their errant misuse. In February 2023, to prove

the point, in just over an hour – without contacting a doctor – a journalist obtained a prescription for a powerful anti-anxiety and antiepileptic drug [30]. The journalist used one of the portals offering e-prescriptions and e-sick leave for a fee. To receive an e-prescription, all that has to be done is to complete a virtual questionnaire. The ensuing article showed the disturbing phenomenon of commercial issuance of sick notes and online prescriptions on demand. After this exposé of the errant misuse of online consultations, the Ministry of Health limited the issuance of e-prescriptions for psychotropic and narcotic drugs [31]. However, the problem of the misuse of e-prescriptions has not been solved. According to data of the Supreme Chamber of Physicians, 2 doctors broke the record by issuing 0ver 700,000 e-prescriptions in a year [32]. In March 2023, as many as 868 doctors exceeded the average number of prescriptions issued, which is 60. The doctor who issued the record number of prescriptions prescribed them for medical marijuana, emergency contraception, weight loss drugs, antibiotics and strong painkillers. This shows how big a threat the platforms offering online consultations are to public health.

When the problem of the errant misuse e-prescription issuance was publicised, the question arose as to where exactly lies the ethical limit to refuse to issue an e-prescription to a patient. Global and national medical organizations and scientists have been discussing ethical issues in telemedicine since the early 1980s [33]. From the beginning, ethical issues in telemedicine have been considered in terms of aspects such as: doctor-patient relationship, confidentiality and data security, informed consent, patient and family satisfaction with telemedicine services. It was emphasized that following ethical issues in telemedicine is a fundamental aspect of high quality services. Other issues raised in the literature included the quality of remote care, access to medical records, consent, and privacy protection [34]. Legal and ethical issues concerned such important aspects as: information about the risks and benefits of remote therapy, patient privacy and confidentiality, data protection and security, equity of access, and quality of care [35]. The variety of newly-implemented telemedicine services is an ongoing, natural experiment that presents challenges. Physicians need updated guidelines on the ethical use of telemedicine, and policymakers need evidence to make informed decisions about their development [34]. If telemedicine is to be implemented, it must be done under clear, precise, and unambiguous legal coverage [36].

The progressive commercialization of medicine means that the patient increasingly becomes a client who expects the doctor to provide a service, which affects their relationship [37]. In the past, when a patient visited a doctor, his trust had to be implicit because medical knowledge was almost unattainable for him. In the age of the Internet, where medical information is widely available, when a patient keeps an appointment, he expects his requests, sometimes even demands, to be fulfilled. In this new relationship, the patient becomes a customer who expects to be served. Doctors, however, emphasize that this is a dangerous trend because the expectations of patients alone should not be the measure of a doctor's work. Doctors emphasize that the situation has been exacerbated by the operation of prescription machines using online consultations. In this way, patients are prescribed, among other things, antibiotics or strong opioid drugs [38]. As a result, prescribing drugs begins to resemble the fulfillment of patients' wishes, rather than their prescription according to medical indications [39]. This is illustrated by an interview with a female doctor who in 2021 issued over 320,000 prescriptions for 260,000 patients and earned over PLN 100,000 per month. Describing her work, the doctor emphasized that several assistants, including a nurse and medical secretaries, worked with her. She added that the IT system allowed her to serve several patients simultaneously [40]. However, the doctor involved is at risk of losing her medical license.

The issue of providing health services at a distance is addressed in the Code of Medical Ethics [41]. In December 2023, the Medical Ethics Committee of the Supreme Medical Council emphasized in its statement that the sale of prescriptions and sick leaves on demand is not tantamount to teleconsultations, which is a health service provided remotely [42]. The Medical Ethics Committee of the Supreme Medical Council has prepared a proposal to amend the Code of Medical Ethics. According to this draft, Article 9 would be amended [43], according to which personal contact between doctor and patient is the most appropriate form of a doctor-patient relationship. Before providing services in the form of an online consultation, the doctor is obliged to verify the patient's identity and ensure that the online doctor consultation is confidential. Especially in the treatment of chronic conditions, it had to be provided as a consultation in the course of ongoing treatment or, to ensure continuity of treatment, until an in-person visit was possible. It is not recommended for patients who have not yet been treated by a specified doctor, or who reports a new health problem.

Guidelines for the provision of telemedicine services are contained in a resolution of the Presidium of the Supreme Medical Council [44], according to which the doctor, among other things, should make sure that the patient is informed and understands the nature of the provision of advice as part of the teleservice, conduct a thorough interview, bearing in mind that without seeing the patient and acting without the possibility of a physical examination, he must be more insightful. At the end of the online consultation, the doctor should provide the patient with recommendations and ensure that the patient fully understands them. In the case of patients with special needs, with their consent, it is worthwhile asking a family member to ensure that everything is understood. After online consultation, the doctor must record in the medical record that an online consultation was provided via phone, video or chat).

With the development of e-services and mobile health applications, a change in the approach to the protection of sensitive medical data is increasingly emphasized. There will be opinions that reliance on informed consent in the case of, for example, mobile applications, is a poor protection of privacy because people privacy policies are not yndrstood, and often not even read by the patient [45].

The ubiquity of the Internet and development of new technologies are undoubtedy changing medical communication [15]. Researchers emphasize that during a televisit, when there is no visual communication available and no possibility of conducting a medical examination, the doctor should be particularly vigilant when it comes to verbal signals transmitted by the patient, such as the vocabulary used, silence, fluctuations in tone of voice or intonation. Lack of such vigilance can lead to misunderstandings [15]. In online consultation, the voice becomes the basic communication tool. It is on the basis of voice tone, timbre, speed of speech and

clarity of speech, that the patient builds his attitude towards the doctor. The specialist's voice should not be too loud, as this could cause anxiety and negativity. Being too quiet can also be negative, because the interlocutor may be perceived as an insecure person and not inspire the trust which is necessary in the doctor-patient relationship. In online communication, the pace of speaking is also very important and should emphasize the most important content. During online consultation, the doctor cannot examine the patient, therefore during the teleconsultation, clinical knowledge combined with the ability to observe and visualise, and specific communication competences are essential [15]. An imperfection in the system through which the physician communicates with the patient may lead to the omission of some symptoms of the disease, and an incorrect diagnosis [46].

The 'Strategy for the Development of e-Health in Poland for 2022–2027' states that the role of e-health is to implement ICT tools that not only support communication, but also the exchange of orders, data and medical documentation. Feedback from the patient on satisfaction and assessment of the quality of the service provided is also an element of communication [27]. Tools supporting communication between the health care system and the patient are, for example, the *pacjent.gov.pl* portal, the Internet Patient Account (IKP) and mobile application (mojeIKP). For digitally excluded patients, alternative solutions should be prepared, such as, hotlines, bots, chatbots and SMS.

During the COVID-19 pandemic, several new tools were launched to support communication between the patient and the system [47]. In December 2022, the National Vaccination Programme 989 Hotline was launched, through which it was possible to register, among others, for vaccination against COVID-19, against HPV and for the Prevention 40 PLUS Programme. In 3 years, the airline handled almost 3 million connections. In May 2021, the First Contact Teleplatform (TPK) was launched. By dialling 800 137 200, a telemedical consultation with a doctor or nurse was available, and medical staff could issue an e-prescription, e-referral or e-sick leave. From the end of May 2021 – mid-December 2023, the TPK handled more than 380,000 connections. New electronic communication channels create new challenges related to remote patient service. A coordinated care programme was implemented in primary care [48], and by the end of 2023, about 40% of patients in Poland had access [49]. According to the assumptions, the patient has contact with a coordinator who supervises the treatment process.

In order to develop further e-services, healthcare providers must have the necessary equipment, software and high-bandwidth Internet access, as well as the knowledge about their use, and according to what standards. According to a 2023 survey conducted by E-Health Centre among healthcare entities, more than half of the surveyed entities (54.5%) face barriers to digitization [26]. The survey shows that the key barrier to digitalization is the lack of sufficient financial resources for IT investments (36%). The other most frequently indicated limitation was the insufficient digital competence of employees (8.4%). In hospitals, resistance from medical staff was also indicated as a common barrier to digitalisation (10.7%).

By far the most frequently used telemedicine solutions are online doctor consultations (80.9 93.2%) [26]. Interesting conclusions were drawn from the pilot project of telecare for patients with heart failure carried out at the National Institute of Cardiology in Warsaw [50]. For 3 months, patients with heart failure took daily measurements of body weight, blood pressure and heart rate, and sent the results via a mobile application to a special telemedicine platform. If the measurements were outside the limits, they were marked as an alarming measurement, and in justified cases, the monitoring team contacted the patient. The pilot study involved 424 patients with an average age of 65 years. 83% of patients assessed the necessity of daily measurements very well, and 55% of the respondents declared that they would also take them in the future. According to the pilot study, this was a big challenge to organize the cooperation of many centres. Telemonitoring required the patient to be more involved in the treatment process, as self-observation and the ability to respond to disturbing symptoms were crucial. The lack of commuting to medical facilities was cited as an advantage of telecare. The authors of the pilot study emphasized that this form of care required a high level of involvement of the medical team, as well as the nursing and auxiliary staff, e.g. medical coordinators. In order to activate the patients and involve them in the treatment process, the staff had to devote a lot of time to their training and education. These experiences are worth taking into account when planning future telemedicine ventures.

SUMMARY

The development of eHealth services should be a priority when it comes to healthcare in Poland. The development of eHealth services is the only way to ensure access to specialist healthcare for an ageing population given the shortage of specialist doctors and nurses. According to a demographic forecast, by 2060, there will be 11.9 million elderly people living in Poland, constituting 38.3% of the total population [51].

In order to improve the efficiency of the health care system, it would be necessary to focus on the implementation of further e-services on the P1 platform. In the first place, it is worth introducing solutions that allow for the recording and use of data on the results of examinations and consultations in order to relieve the patient of the burden of transferring documentation to subsequent doctors. As a result, the GP will have the technical capacity to become a treatment coordinator, facilitated by the development of comprehensive care in primary health care. The key barrier to launching e-services is the low level of digitization of medical facilities in Poland, and the lack of consistency in the introduction of new eHealth tools. From the point of view of patient safety and public health, the errant misuse of online consultations to issue e-prescriptions and e-sick leaves on a mass scale is dangerous. Despite the introduction of some restrictions on the prescribing of e-prescriptions, over-prescribing of medicines by online platforms is still a problem. In the face of the development of platforms that allow for remote, commercial issuance of e-prescriptions and e-sick leaves, it is necessary to clarify the standard of online consultation in order that it cannot be used as a tool that allows the issuance of e-prescriptions, without disregarding due diligence standards in patient care. Legislative changes should also take into account the ethical aspect, assuming that the issuance of e-prescriptions is determined by medical rather than commercial considerations.

REFERENCES

1. Bashshur R, Shannon GW. History of Telelmedicine: Evolution, Context and Transformation. Mary Ann Liebert. New Rochelle (NY); 2009.
2. Moukabary T. William Einthoven (1860–1927): father of electrocardiocardiography. Folia Cardiologica Excerpta. 2002;2(9):456–457.
3. Piecuch A. Universality of information and communication technologies. Telemedicine. J Educ Technol Computer Sci. 2012;3(2):27. https://eti.ur.edu.pl/static/img/k01/kwartalnik/2012/ETI_2_12.pdf
4. Koenner M, Malinowska A. Telemedicine – legal aspects. Asteria Med Publishing House; 2020.
5. WHO. Consolidated telemedicine implementation guide. November 2022 https://iris.who.int/bitstream/handle/10665/364221/9789240059184-eng.pdf?sequence=1 (access: 11.11.2023)
6. Finnegan M. Telehealth booms amid COVID-19 crisis: Virtual care is here to stay. 2020 Telehealth booms amid COVID-19 crisis; virtual care is here to stay – Computerworld (access: 17.03.2024)
7. WHO. Global Observatory for eHealth titled Telemedicine: opportunities and developments in Member States: report on the second global survey on eHealth. 2010 https://iris.who.int/bitstream/handle/10665/44497/9789241564144_eng.pdf?sequence=1&isAllowed=y (access: 01.11.2023)
8. Demitrescu T. Telemedicine. A guide for doctors. Cracow: Help-Med Publishing House; 2021. p. 12–13.
9. Telehealth: Defining 21st Century Care. https://www.americantelemed.org/resource/why-telemedicine/ (access: 01.11.2023)
10. The ATA and A Action's Vision 2030: The Future of Telehealth in the United States, https://app.hubspot.com/documents/5096139/view/463088081?accessId=0eb620&__hstc=223170372.1e0a433ea73011708a6c5c1c6ec0a0ef.1698861163474.1698937128760.1699632227167.4&__hssc=223170372.11.1699632227167&__hsfp=2592604787 (access: 10.11.2023)
11. Hollander JE, Carr BG. Virtually perfect? Telemedicine for Covid-19. N Engl J Med. 2020;382:1679–1681. doi: 10.1056/NEJMp2003539
12. Pappot N, Taarnhøj GA, Pappot H. Telemedicine and e-Health Solutions for COVID-19: Patients' Perspective. Telemed J E Health. 2020 Jul;26(7):847–849. doi:10.1089/tmj.2020.0099
13. Hincapié MA, Gallego JC, Gempeler A, Piñeros JA, Nasner D, Escobar MF. Implementation and Usefulness of Telemedicine During the COVID-19 Pandemic: A Scoping Review. J Prim Care Community Health. 2020 JanDec:11:2150132720980612. doi:10.1177/2150132720980612
14. Król-Całkowska J. E-medical records and telemedicine. Legal aspects. Warsaw: Wolters Kluwer; 2021. p. 19.
15. Jankowska AK, Langrand Ch. Teleconsultations. In: Mastalerz-Migas A, Jankowska AK, Barański J. Physician and Patient Communication in Family Medicine. Wrocław: Edra Urban & Partner; 2021. p. 21, 22.
16. Gęsicka D. Telemedicine services as information society services. In: Lipowicz I, Szpor G, Świerczyński M. Telemedicine and E-health. Law and Computer Science. Warsaw: Wolters Kluwer; 2019. p. 75–76.
17. Wrześniewska-Wal I, Hajdukiewicz D. Telemedicine in Poland – legal, medical and ethical aspects. UWM 2020. Studia Prawnoustrojowe 50. p. 509–524. https://wpia.uwm.edu.pl/czasopisma/sites/default/files/uploads/Studia_Prawno_Ustroj owe/2020/50/509-524.pdf
18. Zoń KM. Civil law determinants of the provision of health services in the telemedicine model in Polish law. CH Beck; 2022. p. 53.
19. Explanatory memorandum to the bill amending the act on the health care information system and certain acts, Sejm paper No. 3763. 23.07.2015, part 1. p. 239, https://www.sejm.gov.pl/sejm7.nsf/PrzebiegProc.xsp?nr=3763.
20. Report on the satisfaction survey of patients using teleconsultations with a primary care physician during the COVID-19 epidemic prepared by the Patient Service Department of the National Health Fund. Warsaw. 2020. https://www.nfz.gov.pl/aktualnosci/aktualnosci-centrali/teleporady-zbior-zasad-idobrychpraktyk-dla-lekarzy-poz,7788.html (access: 18.01.2024).
21. Statistical data provided by the National Health Fund for the purposes of this article in February 2024 on the number of services provided in the form of teleconsultation in primary care and AOS facilities in Poland.
22. Telemedicine requires a wider stakeholder dialogue. The background is the trust of Poles. Health Market. 05.11.2023. https://www.rynekzdrowia.pl/E-zdrowie/Telemedycyna-wymaga-szerszego-dialogu-zainteresowanych-stron-Tlem-jest-zaufanie-Polakow,251279,7.html (access: 10.11.2023).
23. Więckowska B, Raulinajtys-Grzybek M, Byszek K. Teleconsultations in Poland: Will the COVID-driven Popularization of Teleconsultations Turn into a Long-Lasting Strategy? In Digitalization and Innovation in Health Routledge; 2024. p. 85–110.
24. Assing Hvidt E, Atherton H, Keuper J, et al. Low adoption of video consultations in post–COVID-19 general practice in northern Europe: barriers to use and potential action points. J Med Int Res. 2023;25:e47173. doi:10.2196/47173
25. Walley D, McCombe G, Broughan J, et al, Use of telemedicine in general practice in Europe since the COVID-19 pandemic: A scoping review of patient and practitioner perspectives. PLOS Digit Health. 2024 Feb 14;3(2):e0000427. doi:10.1371/journal.pdig.0000427
26. Results of the 7th edition of the Survey on the Degree of Computerization PWDL. https://cez.gov.pl/pl/page/o-nas/aktualnosci/wyniki-vii-edycji-badania-stopnia-informatyzacji-pwdl (access: 22.02.2024).
27. Strategy for the Development of e-Health in Poland for 2022–2027. Program Rozwoju e-Zdrowia na lata 2022–2027. https://www.gov.pl/web/zdrowie/program-rozwoju-e-zdrowia-na-lata-2022-2027 (access: 11.11.2023).
28. Digital policy. Opening report. December 2023. https://law4growth.com/publikacje/raport-otwarcia (access: 24.01.2024).
29. Data of the Ministry of Health on digitization in healthcare. https://www.gov.pl/web/zdrowie/cyfryzacja-w-ochronie-zdrowia2 (access: 18.01.2024).
30. Nowosielska P. Golden business on e-health. Dziennik Gazeta Prawna. 31.01.2023. https://serwisy.gazetaprawna.pl/zdrowie/artykuly/8649163,recepty-przez-internet-watpliwosci-nil-lekarze.html (access: 31.01.2023).
31. Regulation of the Minister of Health of 12 July 2023 amending the Regulation on narcotic drugs, psychotropic substances, category 1 precursors and preparations containing these drugs or substances (DzU 2023 poz. 1368). https://pacjent.gov.pl/aktualnosc/recepty-na-leki-psychotropowe (access: 31.01.2023).
32. Nowosielska P, Klinger K. Several hundred prescriptions a day, the business of a lifetime on patients. Dziennik Gazeta Prawna. 27.06.2023. https://serwisy.gazetaprawna.pl/zdrowie/artykuly/8741019,recepty-telemedycyna-ereceptyetyka-lekarska.html (access: 17.03.2023).
33. Langarizadeh M, Moghbeli F, Aliabadi A. Application of ethics for providing telemedicine services and information technology. Med Arch. 2017;71:351–355. https://doi.org/10.5455/medarh.2017.71.351-355
34. Kaplan B. Revisiting health information technology ethical, legal and social issues and evaluation: telehealth/telemedicine and COVID-19. Review Int J Med Inform. 2020 Nov:143:104239. doi:10.1016/j.ijmedinf.2020.104239
35. Solimini R, Busardò F.P, Gibelli F, Sirignano A, Ricci G. Ethical and Legal Challenges of Telemedicine in the Era of the COVID-19 Pandemic. Medicina. 2021 Dec; 57(12):1314. doi:10.3390/medicina57121314
36. Membrado CG, Barrios V, Cosín-Sales J, Gámez JM. Telemedicine, ethics, and law in times of COVID-19. A look towards the future. Rev Clin Esp (Barc). 2021 AugSep;221(7):408–410. doi:10.1016/j.rceng.2021.03.002
37. Prof. Mastalerz-Migas: It doesn't cost anything to smile and say "good morning" to the patient. 4.10.2023. Puls Medycyny. https://pulsmedycyny.pl/prof-mastalerz-migasusmiechi-powiedzedzenie-pacjentowi-dzien-dobry-nic-nie-kosztuje-1197245 (access: 04.10.2023).
38. Nowosielska P. Tape opioid issuance at teleconsultations is doing well. Proposals to civilize prescription machines in March? Dziennik Gazeta Prawna, 15.02.2024. https://www.gazetaprawna.pl/wiadomosci/kraj/artykuly/9432327,tasmowewystawianieopioidow-na-teleporadach-masie-dobrze-propozycje.html (access: 20.02.2024).
39. Gumowska P. Styczyński J. "Miodowa 15". Mastalerz-Migas on coordinated care and the problem of antibiotic resistance". 19.01.2024. Health Market. https://www.rynekzdrowia.pl/Polityka-zdrowotna/Miodowa-15-Mastalerz-Migas-oopiecekoordynowanej-i-problemie-antybiotykoopornosci,254217,14.html (acces: 23.01.2024).
40. Ogórek S. She issued more than 300,000 prescriptions in one year. Wyborcza.biz. 28.08.2023. https://wyborcza.biz/biznes/7,177151,30116961,wystawila-ponad-300-tys-recept-w-jednym-roku-pracowalam-po.html (access: 25.08.2023).
41. Zoń K. The Code of Medical Ethics in the Context of Distance Treatment – Considerations in the Context of Article 9. https://nil.org.pl/uploaded_files/1579510028_08-zon.pdf (access: 22.07.2020).
42. The Medical Ethics Committee of the Supreme Medical Council. Position paper on the phenomenon of online commercial prescription and exemption. 12.02.2023 https://nil.org.pl/drukuj/7609/1 (access:23.01.2024).
43. The Medical Ethics Committee of the Supreme Medical Council has prepared a proposal for Article 9, which sets out the most important rules for teleconsultation. https://nil.org.pl/aktualnosci/8253-nowelizacja-kodeksu-etyki-lekarskiej-projekt-art-9 (access:23.01.2024).

44. Resolution No. 89/20/P-VIII of the Presidium of the Supreme Medical Council of 24 July 2020 on the adoption of guidelines for the provision of telemedicine services.
45. Kaplan B, Ranchordás S. Alzheimer's and m-health: Regulatory, privacy, and ethical considerations. In: Hayre CM, Muller D, Scherer M, editors. Everyday technologies in healthcare. London, New York: CRC Press, Boca Raton; 2019. p. 31–52. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3500158.
46. Klimek J. The pitfalls of teleconsultation. In: Medical Newspaper. 2023;3:34–35.
47. Wykowski J. Patient hotlines. Some disappear, others remain. The Ministry of Health and the National Health Fund translate and provide data. Health Market. 24.12.2023. https://www.rynekzdrowia.pl/Polska-i-swiat/Infolinie-dla-pacjentow-Jedne-znikajainnezostaja-MZ-i-NFZ-tlumacza-i-podaja-dane,253431,15.html (access: 06.01.2023).
48. Care coordinated in primary care. https://www.nfz.gov.pl/dla-swiadczeniodawcy/opieka-koordynowana-w-poz/ (access:23.01.2024).
49. Gomułka A. Nearly 40% of patients in Poland have access to coordinated care. cowzdrowiu.pl. 15.01.2024. https://cowzdrowiu.pl/aktualnosci/post/blisko-40-procpacjentoww-polsce-ma-dostep-do-opieki-koordynowanej (access: 19.04.2024).
50. Summary of the pilot project "Improving access to healthcare services in the field of telemedicine and e-health – Telemonitoring of patients with heart failure". Health Market. https://www.rynekzdrowia.pl/Serwis-Kardiologia/Narodowy-Instytut-Kardiologii-podsumowal-pilotaz-telemedycyny-dla-pacjentow-z-niewydolnoscia-serca,254030,1014.html (access: 23.01.2024).
51. Situation of older people in Poland in 2022. Warsaw Białystok: Statistical Office in Białystok; 2023. Główny Urząd Statystyczny the_situation_of_older_people_in_poland_in_2022.pdf (stat.gov.pl) (access: 23.01.2023).