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# Distance Health Services Organization in University Hospitals: The Case of a Public University Hospital

Nevzat DEVEBAKAN* Ramazan ERDEM**

* Associate Professor, Dokuz Eylül University Izmir, Türkiye, ORCID Number: 0000-0002-8444-7066

** Professor, Süleyman Demirel University, Isparta, Türkiye, ORCID Number: 0000-0001-6951-3814

## Abstract

In today's globalized healthcare market, it must strive to deliverthe healthcare services required by their target audience using modern medical technology and software, regardless of physical location, country and/or geography. Although distance health services and telemedicine applications are not new, their use has surged among healthcare organizations due to the contagious nature of the New Coronavirus Disease (Covid-19) or corona pandemic. This study aims to analyze the legal aspects of Distance Health Services (DHS) in a public university hospital, including the process for obtaining a "Distance Health Service Activity Permit Certificate", the characteristics, quantity and qualifications of the human resources required, the physical setup of the service areas, and the information technologies and systems to be used. It also addresses the ministry audit criteria related to the pricing, invoicing and reimbursement for health services, aiming to contribute to the structuring stages of distance health services of similar health institutions.

## INTRODUCTION

With the development and spread of information and communication technologies (ICT) across all areas of life, significant changes have occurred in business practices. In this context, the advancement of distance health services should be viewed in parallel with developments in information technologies, such as machine learning, big data, artificial intelligence applications, and the increased ease of accessing and sharing information through the widespread use of personal computers and the internet.

## CONCEPTS RELATED TO DISTANCE HEALTHCARE SERVICES

Before defining telemedicine, telehealth, m-health, and e-health, it is useful to explain these concepts in detail. The World Health Organization (WHO) defines telemedicine as "the delivery of healthcare by all health professionals, where distance is a critical factor, using information and communication technologies to improve the health of individuals and communities through diagnosis, treatment, illness and injury prevention, exchange of valid information for research and evaluation, and continuing education for healthcare providers" (WHO, 2010). This definition emphasizes the use of information and communication technologies in healthcare-related tasks and processes. Telemedicine plays an important role in enhancing access to healthcare services by enabling the transfer of specialized medical knowledge to remote areas, improving health outcomes, and supporting decision-making processes (Iqbal and Khan, 2017).

A concept closely related to telemedicine is telehealth. Kazley et al. (2012) note that although telemedicine and telehealth can be used interchangeably, telehealth encompasses a broader range of services, including those provided by other healthcare professionals (such as pharmacists, physiotherapists, and nurses) outside of hospitals, in addition to hospital-based diagnostic and treatment services. Telemedicine specifically refers to the remote delivery of clinical services, including activities like diagnosis, monitoring, and treatment (Bonica et al., 2024). In contrast, telehealth is a broader term that includes not only clinical services but also non-clinical services, such as remote administrative meetings and continuing medical education (Ahmad et al., 2022).

M-health is defined as 'medical and public health applications supported by mobile devices such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices' (WHO, 2011). Additionally, it is important to discuss the concept of e-health.

The Ministry of Health defines e-health as 'the use of information technologies in the healthcare sector to provide effective and efficient health services, ensure rapid access for citizens, and facilitate sustainable data sharing with relevant stakeholders.' In summary, e-health can be defined as 'all types of medical informatics applications designed to facilitate the management and delivery of health services' (Bonfiglo, 2013). Della Mea (2001) noted that with the emergence of the e-health concept, the term 'telemedicine' became obsolete, and e-health emerged as an umbrella concept encompassing all applications of information and communication technologies in health services. Therefore, it is more accurate to consider telehealth services as a component of e-health.

As a term that encompasses telemedicine, telehealth, m-health, and e-health, distance healthcare emphasizes the remote delivery of health services using information and communication technologies. Its goals include increasing treatment effectiveness, reducing costs, and ensuring the sustainability of health systems on a global scale (Ahmad et al., 2022). The Ministry of Health (2022) defines distance healthcare as 'healthcare services provided by a healthcare professional to individuals requesting services through a distance health information system.

## DEVELOPMENT OF DISTANCE HEALTH SERVICES

The development of information and communication technologies (ICT) has significantly impacted various sectors, reshaping communication, access to information, and business processes. In the late 20th century, the rise of the knowledge economy marked a clear transition to networked social and economic activities. This shift was facilitated by the widespread adoption of ICT by governments, citizens, and businesses, as well as the establishment of global internet infrastructure (Yeretnova and Sartakova, 2021).

The health sector is one of the areas where technological developments have been most rapidly reflected. Innovations in ICT have profound consequences for the delivery and organization of health services, as well as for health and disease management. In this regard, the development of distance health services worldwide progresses in parallel with the information and communication infrastructures of individual countries.

Recent advances in medical technology have revolutionized the way patients are monitored, tracked, and managed over long distances, including wireless medical sensor networks and wearable devices (Binu et al., 2019). These developments are crucial for providing access to

healthcare services, particularly for individuals in rural and underserved areas where traditional healthcare delivery may be limited (Carey et al., 2018). Furthermore, the integration of distance health interventions based on internet or mobile communication networks has proven effective for chronic disease management, such as hypertension, by offering ongoing support and medication adherence reminders (Wu et al., 2019).

Overall, the development of telehealth alternatives has a transformative impact on bridging gaps in access to healthcare and delivering quality care to various segments of society. The use of telehealth services has gained prominence globally, especially during the Covid-19 pandemic, demonstrating its effectiveness in enabling real-time consultations between healthcare providers, facilitating distance screening for conditions such as dermatological issues, and implementing monitoring programs for chronic diseases like chronic obstructive pulmonary disease and heart failure (Behar et al., 2020).Additionally, the integration of clinical guidelines into distance health applications has shown potential for increasing acceptance, utilization, and accessibility of these guidelines, particularly for healthcare professionals in remote areas, thereby enhancing the overall quality of care provided (Reddy et al., 2017).

## DISTANCE HEALTH SERVICES IN TÜRKİYE

From the Turkish perspective, one of the pioneering steps in the process of e-health services was the establishment of the Information Processing Center at Hacettepe University Hospital. In 1967, Dr. Aydın Köksal, assigned by İhsan Doğramacı to set up a data processing center in the hospital, worked for two years, resulting in the largest computer system established in Türkiye at that time. Subsequently, the hospital implemented important health informatics systems such as the CORTTEX Integrated Hospital Information Management System and PACS, maintaining its position as a pioneering institution in this field (Köksal, 2007; Ak, 2009).

In the 1990s, as part of the 1st and 2nd Health Projects of the Ministry of Health, the establishment and development of health information systems, hospital information systems, and management information systems at the national level became priority targets. Consequently, the Department of Information Processing was established within the ministry to coordinate these initiatives (Özsarı, 1998; Ak, 2009). With the introduction of the 2003 Health Transformation Program (HTP), numerous health information technology applications were implemented to facilitate access to health services (Caner et al., 2018; Kose et al., 2020). Currently, various

applications such as the Central Physician Appointment System (CPAS), Personal Health Record System (PHRS), Ministry of Health Communication Center (MHCC), Barrier-Free Health Communication Center (HCS), and the Ministry of Health Telemedicine System are in use (Kuh, 2019). These technological advancements have created new possibilities and opportunities in health service delivery, including distance health service provision.

The Covid-19 pandemic, which lasted several years in Türkiye as it did worldwide, significantly contribute to the adoption and spread of information and communication technologies across all aspects of life. During the pandemic, schools continued education through remote methods, remote working became commonplace, and discussions emerged regarding the application of digital opportunities in various sectors.

In 2021, the Ministry of Health General Directorate of Health Information Systems launched the "Dr. e-Nabız Tele-Health Project" through the E-Nabız system to enhance citizens' access to healthcare services. This project enabled Covid-19 patients in isolation and citizens in contact with healthcare providers to conduct online video consultations with their physicians. Patients who made appointments through the MHRS could see their doctors online and print prescriptions by clicking on the link sent via SMS at the appointment time. The project was piloted in hospitals in Ankara, Kırıkkale, Yalova, and Istanbul, as well as in family physicians' offices in Samsun, with the goal of expanding its reach. Furthermore, in recent years, telehealth services have emerged as an alternative to strengthen primary health care and home care, reduce hospital visits and admissions, and thereby decrease costs.

On February 10, 2022, the Ministry of Health published the "Regulation on the Provision of Distance Healthcare Services" to establish a legal framework for delivering these services. The regulation includes provisions for providing healthcare services regardless of location and outlines the principles for authorizing facilities to offer distance healthcare services, registering health information systems, and supervising healthcare providers. It mandates that the information systems necessary for distance healthcare services must be developed and registered in accordance with the standards set by the Ministry. Distance healthcare services encompass various offerings, such as examinations, medical consultations, disease management, and follow-up care. The regulation also addresses patient information, identity verification, patient rights, and the protection of personal data. Additionally, prohibitions and limitations on providing distance healthcare services have been established, and such services are also permitted within the

framework of international health tourism. Healthcare facilities must obtain an operating license from the Ministry to provide distance healthcare services.

## FUTURE FORECAST REGARDING DISTANCE HEALTHCARE SERVICES

Telehealth offers numerous advantages that contribute to improving healthcare delivery and patient outcomes. One significant benefit is that patient care can be provided away from hospitals or other healthcare facilities. This allows for risk assessments and screening processes for conditions such as infectious diseases to be conducted remotely using mobile applications or self-administered test kits (Sullivan & Aral, 2022). Consequently, this decentralization of patient care increases access to healthcare services, reduces the physical burden on healthcare facilities, and makes healthcare more convenient and efficient for patients. Additionally, remote health monitoring lowers healthcare costs by providing cost-effective solutions for both healthcare providers and patients, thereby contributing to the sustainability of global healthcare systems (Binu et al., 2019). By leveraging telehealth technologies, healthcare organizations can optimize resource utilization and streamline healthcare delivery processes, which reduces costs while improving treatment outcomes.

Telehealth interventions based on the Internet or mobile communication networks have the potential to enhance patient engagement and adherence to treatment plans, particularly for chronic diseases such as hypertension. These interventions are especially beneficial for older patients and those living in rural areas, as they provide ongoing support, medication adherence reminders, and lifestyle guidance (Wu et al., 2019). Moreover, telehealth systems facilitate the implementation of personalized care strategies, offering tailored interventions and follow-up care for patients, ultimately leading to improved health outcomes (Liu et al., 2022). Overall, the advantages of telehealth extend beyond cost savings to encompass access, patient engagement, and personalized care delivery, with the potential to significantly transform healthcare delivery and enhance patient well-being.

Despite these advantages, distance health services also present some disadvantages. One notable challenge is the potential obstacles healthcare providers face when integrating telehealth technologies into traditional workflows (Alvarado et al., 2017). A failure to effectively integrate telehealth technology with conventional service delivery can lead to inefficiencies and hinder the adoption of these services by both patients and healthcare personnel, preventing seamless

integration into existing healthcare practices. Additionally, some remote health monitoring devices may have limitations, such as signal quality issues, intermittent recordings, and patient acceptance problems, which can affect the reliability and effectiveness of telehealth interventions (Liu et al., 2022). Furthermore, challenges arise in directing patients who are accustomed to receiving care in hospitals and healthcare facilities toward telehealth services.

The digital divide, highlighted by Kuh (2019), emphasizes the disparities between individuals who can and cannot access information and communication technologies, as well as those who can effectively utilize them. This divide can also manifest in access to health services, potentially leading to inequalities among individuals, institutions, societies, and countries in the context of distance healthcare services.

Despite these challenges, distance health services are expected to play an increasingly significant role in our lives as a component of healthcare delivery. Next-generation information and communication technologies, such as artificial intelligence, deep learning, machine learning, and big data, will further enhance the effectiveness and efficiency of distance health services.

This study aims to develop an application procedure for healthcare institutions wishing to provide distance health services within the framework of the legislation in Türkiye. The following sections will explain this process using the example of a university hospital.

## DISTANCE HEALTH SERVICE APPLICATION PROCESS IN TÜRKİYE
### Distance Health Service Activity Permit Certificate

Health institutions wishing to provide distance health services must first obtain a 'Distance Health Service Activity Permit.' Once the permit is secured, it must be added to the institution's existing activity permit, necessitating an update to the activity permit. The application process for obtaining a Distance Health Service Activity Permit Certificate is regulated by the Regulation on the Provision of Distance Health Services (Art. 8). To apply for this permit, the health institution must submit the required documents to the Provincial Health Directorate;

- Health Facility Opening/Operation Permit Certificate
- Distance Healthcare Information System (DHIS) Authorization Certificate
- Technological Equipment List
- Venue List
- List Containing the Information of the Healthcare Professional(s)

·     International Health Tourism Authorization Certificate (If available)

If the Provincial Health Directorate identifies any deficiencies during the examination of the application file, it will notify the applicant within 15 business days. If the application meets the necessary requirements, it will be forwarded to the General Directorate of Health Services after being reviewed by a commission established by the Directorate. Upon approval by the General Directorate, the 'Distance Health Service Activity Permit' will be issued, specifying the fields and boundaries of the activity. If the applicant health institution holds an International Health Tourism Authorization Certificate, the relevant international health areas will also be indicated.

## Distance Health Information System

Distance Health Information Systems (DHIS) can be defined as platforms that utilize technologies focused on protecting personal data, ensuring patient privacy, and securely sharing information in the service delivery processes between healthcare users or clients and healthcare professionals providing distance healthcare services. For these systems to be used in delivering health services, they must be developed or registered with the Ministry of Health. This regulation has initiated billing processes for health institutions affiliated with the Ministry of Health, aligning them with the standards set by the Social Security Institution.

With the amendments made to the Social Security Institution Health Implementation Communiqué (SCIHIC), the following changes now apply to health institutions affiliated with the Ministry of Health:

Distance health services can be invoiced using the procedure code '520032 Health Services for Distance Patient Evaluation' found in the Annex-2B list of the SCIHIC. However, when provided by tertiary healthcare providers affiliated with the Ministry of Health, the code '520032' will be billed at twice the transaction point price.

- For the same patient at the same health service provider, the cost of "Health services for distance patient evaluation" is covered by the Institution at most once per day.
- If prescribed, medications can be obtained from contracted pharmacies.
- The number of applications for "Health services for distance patient evaluation" invoiced to the Institution cannot exceed 15% of the total number of outpatient applications across all branches, excluding emergency room applications, during a single day at the health service provider.

- If the amounts listed in Annex-2/A of the SUT are billed during the outpatient visit of the patient to the same health service provider for the same specialty branch, excluding emergency room applications, the "520032 Health services for distance patient evaluation" procedure cannot be billed for the same specialty branch within 10 days, including the day of the outpatient visit.

- If the "520032 Health services for distance patient evaluation" procedure is billed during the patient's outpatient visit to the same healthcare provider for the same specialty branch, excluding emergency room applications, the "520032 Health services for distance patient evaluation" procedure cannot be billed for the same specialty branch within 10 days, including the day of the outpatient visit.

### Distance International Health Tourism Services

Healthcare facilities that have obtained an International Health Tourism Authorization Certificate are permitted to provide distance healthcare services as part of international health tourism and tourist health, in accordance with the relevant legislation. In this context, an International Health Tourism Unit must be established within the healthcare institution.

To establish this unit, the healthcare facility must achieve a minimum score of 85 out of 100 in the Turkish Quality Standards in Health Evaluations. Additionally, a physician responsible for health tourism and an assistant must be designated for this unit, both of whom must have scored at least 65 points on the foreign language exams conducted by the Turkish Student Selection and Placement Centre, or have qualifications that are recognized as equivalent. This information must be communicated to the Ministry of Health.

### Authentication and Protection of Personal Data in Distance Health Services

According to the principles outlined in the Ministry of Health General Directorate of Public Hospitals' circular numbered 2024/8 on Distance Patient Assessment (DPA), it has been established that data controllers and individuals responsible for data processing must handle personal data obtained through services provided under the Regulation on Distance Health Services in compliance with the Law on the Protection of Personal Data and relevant legislation. They are responsible for ensuring the technical and administrative security related to this matter. The circular also states that healthcare professionals may request the client to display their official

identity document on camera at the beginning or during the video call within the healthcare institution.

## Audit and Administrative Sanctions in Distance Health Service Provision

The audit questions in the annex of the Regulation on the Provision of Distance Health Services are categorized as appropriate, inappropriate, and exempt. Regarding administrative sanctions, the ministry's detection levels are graded between 1 and 5. As the number of determinations increases, the severity of the administrative sanctions also escalates in parallel. When examining the ministry's audit questions; it is evident that health institutions may face administrative sanctions for several reasons. These include providing distance health services without the ministry's permission, offering services in areas for which they are not authorized, delivering services outside the scope of distance health, utilizing healthcare professionals who have not been issued a work certificate, employing professionals who are not authorized to practice their profession in Türkiye, failing to provide necessary information to individuals requesting health services, neglecting to take required measures in accordance with the Patient Rights Regulation, and not storing personal data in compliance with the "Law No. 6689 on the Protection of Personal Data" and its secondary regulations. Additionally, the Ministry imposes sanctions for issues such as taking video and audio recordings without the express consent of the parties, failing to store these recordings in the health institution or in secure data centers permitted by the Ministry without the express consent of the parties, not deleting the recordings after twelve months, not providing relevant works and actions related to distance health services in the central health data system according to the procedures and principles determined by the Ministry, and failing to send the information and documents requested by the Ministry.

## 1. STRUCTURING THE DISTANCE HEALTH SERVICES SYSTEM AT DOKUZ EYLÜL UNIVERSITY HOSPITAL

### 1.1. Method

In obtaining research data, we utilized relevant literature, data related to the Distance Health Services Unit of Dokuz Eylul University Hospital (DEUH), and national legislation on the subject. This part of our study will focus on the structuring of the distance health services system in DEUH, a public university hospital where the distance health system has been established. To conduct the research, a study permission certificate dated 08.03.2024, numbered E-14585038-663.08-930701,

was obtained from the hospital. The ethical appropriateness of the study was approved by decision number 33, made during the meeting of the Dokuz Eylul University Social and Human Sciences Scientific Research and Publication Ethics Committee on 02.04.2024.

## 1.2. Distance Health Service Activity Authorization Certificate

Healthcare organizations wishing to provide distance healthcare services must have/issue the documents required in Table-2.

**Table 2. Documents Required for Distance Health Service Activity Authorization Certificate**

| Documents to be Prepared for Distance Health Service Activity Authorization Certificate Application | Explanations |
|---|---|
| Activity Authorization Certificate | Health Institution Opening/Functioning Authorization Certificate |
| Distance Healthcare Information System (KTS) Authorization Certificate | The period of authorization granted by the Ministry of Health must not be older than the validity date for the application. |
| Technological Equipment List | Computer, hard disk, Audio and video peripheral equipment etc. |
| Venue List | The sketch of the room / clinic / clinic units within the institution / organization where the distance health service is planned to be provided, the approval of the sketch by the unit where the institution / organization / medical practice requesting service provision is licensed, the sketch should cover the area where the distance health service provision will be made, it should be clearly visible and clearly visible, and it should be indicated in writing on the sketch in the form of "Distance Health Service Provision Room / Clinic" that the relevant service is planned to be provided in these units / units.. |
| List Containing Information of Healthcare Professional(s) | List of physicians who will provide distance health services (including Dietician, Psychologist and Physiotherapist), Identity information, diplomas (certified as original, including the registration part on the back of the diploma) and the identity information and diplomas (certified as original, including the registration part on the back of the diploma) of the relevant physician/non-physician professional (Dietician, Psychologist and Physiotherapist) must be included. |
| International Health Tourism Authorization Certificate | If the institution/organization wants to provide the service in question within the international scope, there must be a document to be submitted |
| The commitment letter | In the commitment letter, a commitment letter sample containing explanations on how they will fulfill the service-based activity (working hours, working order, working order of the physicians providing services, etc.) should be prepared and all of the documents in question should be approved by the authorized person (Manager / Managing Director / Health Professional) of the health institution / organization requesting wet signed and stamped and submitted to the ministry) |

DEUH completed the documents specified in Table 2 and submitted an official application to the Izmir Provincial Directorate of Health. In accordance with the provisions of the "Regulation on the Provision of Distance Health Services," published in the Official Gazette on 10.02.2022 and numbered 31746, the hospital received a "Distance Health Service Activity Permit Certificate" dated 04.01.2024, with document number USH-694. However, for health institutions to legally commence distance health services, the phrase "Distance Health Service Delivery Unit" must be added to the list of "Medical Units/Centers Licensed/Certified within the Health Facility" on the hospital's activity authorization certificate, and the "Activity Authorization Certificate Revision Approval Date" must be reflected in the renewed activity authorization certificate. Following the issuance of the authorization certificate, 61 physicians from 18 departments/sciences were included in the distance health service system in the first stage. In selecting the departments/sciences and physicians, the hospital management conducted a voluntary demand assessment among the physicians.

**Table 3. Departments/Disciplines and Number of Physicians Included in the Distance Health Services System at DEUH  in the First Stage**

| Department | Number of Physicians |
|---|---|
| Department of Ophthalmology | 1 |
| Department of Otolaryngology | 1 |
| Department of Radiology | 1 |
| Department of Chest Diseases | 1 |
| Department of Medical Genetics | 1 |
| Department of Public Health | 1 |
| Department of Forensic Medicine | 1 |
| Department of Medical Pharmacology | 1 |
| Mental Health and Diseases | 2 |
| Department of Neurosurgery | 2 |
| Department of Medical Biochemistry | 2 |
| Department of Nuclear Medicine | 3 |
| Department of Urology | 5 |
| Department of Infectious Diseases | 5 |
| Department of Physical Therapy and Rehabilitation | 5 |
| Department of Cardiology | 8 |
| Department of Pediatrics | 8 |
| Department of Internal Medicine | 13 |
| Total | 61 |

With the implementation of the online appointment system for hospital distance health services and the integration of the Distance Health Information System (DHIS) with the hospital's existing Hospital Information Management System (HIMS), distance health services are now being offered

by physicians who previously applied to the hospital management to provide these services. The documents of 80 physicians and healthcare workers have been submitted to the Provincial Health Directorate with a request to be added to the "Distance Health Service Activity Permit Certificate." Once the review is completed by the directorate, feedback will be provided to address any deficiencies identified. If there are no deficiencies and a favorable decision is made, the application will be sent to the General Directorate of Health Services for approval to issue a new document. Upon approval from the general directorate, the new "Distance Healthcare Activity Permit Certificate" will be issued.

**Table-4: Departments/Disciplines and Number of Physicians Included in the Distance Health Services System at DEUH in the Second Stage**

| Department | Number of Physicians |
|---|---|
| Department of Pediatric Cardiology | 1 |
| Department of Skin and Venereal Diseases | 1 |
| Pediatric Infection Department | 1 |
| Department of Pediatric Gastroenterology | 1 |
| Department of Pediatric Rheumatology | 1 |
| Department of Child Neurology | 1 |
| Pediatric Genetic Diseases | 1 |
| Department of Orthopedics and Traumatology | 1 |
| Chest Diseases Intensive Care | 1 |
| Department of Ear Nose and Throat | 1 |
| Department of Sports Medicine | 1 |
| Department of Geriatrics | 1 |
| Department of Occupational Diseases | 1 |
| Department of Chest Diseases | 1 |
| Department of Urology | 1 |
| Medical Aesthetics and Cosmetology | 1 |
| Dietitian | 1 |
| Psychologist | 1 |
| Physiotherapist | 1 |
| Department of Gynecology and Obstetrics | 2 |
| Department of Medical Oncology, Division | 2 |
| Endocrinology-Metabolism Diseases Department | 2 |
| Pediatric Metabolism Science Branch | 2 |
| Department of Cardiovascular Surgery | 2 |
| Department of Neurology | 2 |
| Department of Cardiology | 2 |
| Department of Internal Medicine | 2 |
| Department of General Surgery | 3 |
| Child Adolescent and Mental Health Department | 3 |
| Department of Pediatric Hematology and Oncology | 3 |
| Department of Mental Health and Diseases | 3 |
| Department of Anesthesiology and Reamination | 4 |

| | |
|---|---|
| Department of Pathology | 4 |
| Department of Radiology | 6 |
| Department of Child Health and Diseases | 11 |
| Total | 60 |

## 2. FINDINGS REGARDING DISTANCE HEALTH SERVICES AT DOKUZ EYLUL UNIVERSITY HOSPITAL

A total of 80 online interviews were conducted at DEUH from the date of receiving the authorization certificate for distance health services until the date of the study. The findings indicate that the areas with the highest interest in distance health service activities are, in order, Mental Health, Forensic Medicine, Rheumatology, Urology, and Medical Genetics. It is believed that the field of Mental Health attracts patients due to the lengthy nature of treatment and the unique characteristics of the discipline. Conversely, feedback regarding the field of Forensic Medicine suggests that service users seek legal opinions, particularly from forensic medicine experts, which contributes to the interest in this area.

## 3. DISCUSSION AND RECOMMENDATIONS

The dissemination of Distance Health Service Activities within health institutions is crucial for reaching healthcare professionals regardless of time and location. In this context, distance health services serve as a tool to enhance the overall health level of society. Additionally, allocating a certain percentage of the income generated through distance health services to healthcare workers can have a motivational impact. This approach not only incentivizes staff but also provides an alternative revenue stream for the healthcare institution. Given the limited financial resources of public university hospitals, such revenues can help alleviate financial pressures on the institution, at least to some extent.

One of the challenges encountered in delivering distance health services is that, despite the service user making an appointment and paying the fee, the meeting may not occur for various reasons. In such cases, refund transactions are processed through the accounting office in accordance with public legislation. Furthermore, integration issues may arise between the Distance Health Information System (DHIS) and the Hospital Information Management System (HIMS) used by the hospital. At this juncture, the integrative role of health managers becomes even more critical for all parties involved.

## References

Ahmad, I., Asghar, Z., Kumar, T., Li, G., Manzoor, A., Mikhaylov, K., … & Harjula, E. (2022). Emerging technologies for next generation remote health care and assisted living. IEEE Access, 10, 56094-56132. https://doi.org/10.1109/access.2022.3177278

Ak, B. (2009). "Health Informatics in Turkey, a Personal Evaluation and an International Success Story: CorTTex", XI. Academic Informatics Conference Proceedings, 11-13 February 2009, Harran University, Şanlıurfa.

Alvarado, M., Kum, H., Coronado, K. G., Foster, M., Ortega, P., & Lawley, M. (2017). Barriers to remote health interventions for type 2 diabetes: a systematic review and proposed classification scheme. Journal of Medical Internet Research, 19(2), e28. https://doi.org/10.2196/jmir.6382

Behar, J. A., Liu, C., Kotzen, K., Tsutsui, K., Corino, V. D. A., Singh, J., … & Clifford, G. D. (2020). Remote health diagnosis and monitoring in the time of covid-19. Physiological Measurement, 41(10), 10TR01. https://doi.org/10.1088/1361-6579/abba0a

Binu, S., Misbahuddin, M., & Paulose, J. (2019). A signature-based mutual authentication protocol for remote health monitoring. SN Computer Science, 1(1). https://doi.org/10.1007/s42979-019-0010-3

Bonfiglio, S. (2013). A business perspective., 251-276. https://doi.org/10.1007/978-1-4614-8842-2_9

Bonica, G. M., Johns, R. W., & Jadvar, H. (2024). Telehealth and telemedicine. Clinical Nuclear Medicine, 49(7), 644-647. https://doi.org/10.1097/rlu.0000000000005254

Caner, A., Karaoglan, D., & Yaşar, G. Y. (2018). Utilization of health-care services by young children: the aftermath of the turkish health transformation program. The International Journal of Health Planning and Management, 33(3), 596-613. https://doi.org/10.1002/hpm.2504

Carey, T. A., Sirett, D., Russell, D., Humphreys, J. S., & Wakerman, J. (2018). What is the overall impact or effectiveness of visiting primary health care services in rural and remote

communities in high-income countries? a systematic review. BMC Health Services Research, 18(1). https://doi.org/10.1186/s12913-018-3269-5

Della Mea, V. (2001). what is e-health (2): the death of telemedicine?. Journal of Medical Internet Research, 3(2), e22. https://doi.org/10.2196/jmir.3.2.e22.

Iqbal, S. and Khan, N. (2017). Effectiveness and future prospects of telemedicine/remote health care management applications in Pakistan. Mehran University Research Journal of Engineering and Technology, 36(4), 807-818. https://doi.org/10.22581/muet1982.1704.06.

Kazley, A., McLeod, A., & Wager, K. (2012). Telemedicine in an international context: definition, use, and future., Menachemi, N. and Singh, S. (Ed.) *Health Information Technology in the International Context* (*Advances in Health Care Management, Vol. 12*), Emerald Group Publishing Limited, Leeds, pp. 143-169. https://doi.org/10.1108/S1474-8231(2012)0000012011

Köksal, A. (2007). Hacettepe Years, A Flower of Revolution Blooming in the 44th Year of the Republic, (1st Edition). Hacettepe University Publications.

Kose, I., Rayner, J., Birinci, Ş., Ülgü, M. M., Yılmaz, İ., & Güner, Ş. (2020). Adoption rates of electronic health records in Turkish hospitals and the relation with hospital sizes. BMC Health Serv Res, 20, 967 (2020). https://doi.org/10.1186/s12913-020-05767-5

Kuh, Z. (2019). A research on the digital divide in the use of health services, Süleyman Demirel University, Institute of Social Sciences, Department of Health Management, Master's Thesis, Isparta.

Liu, X., Fan, J., Guo, Y., Dai, H., Xu, J., Wang, L., … & Hu, W. (2022). Wearable smartwatch facilitated remote health management for patients undergoing transcatheter aortic valve replacement. Journal of the American Heart Association, 11(7). https://doi.org/10.1161/jaha.121.023219

Özsarı, H. (1998). General information note on health projects and health information systems studies, Modern Hospital Management, 2(6), 15.

Reddy, S., Orpin, V., Herring, S. E., Mackie-Schneider, S., & Struber, J. (2017). Use of clinical guidelines in remote australia: a realist evaluation. Journal of Evaluation in Clinical Practice, 24(1), 152-158. https://doi.org/10.1111/jep.12772

Republic of Turkey Ministry of Health (2022). Regulation on the provision of remote health services, 10 February 2022 (resmigazete.gov.tr), Access Date: 10.08.2024.

Republic of Turkey Ministry of Health Digital Hospital, https://dijitalhastane.saglik.gov.tr/?_Dil=1, Access Date: 10.08.2024

Sullivan, P. S. and Aral, S. O. (2022). The dynamic remote health system: determinants, consequences, and implementation frameworks. Sexually Transmitted Diseases, 49(11S), S7-S11. https://doi.org/10.1097/olq.0000000000001652

T. C. Sağlık Bakanlığı Bilgi Sistemleri Genel Müdürlüğü (2021). https://sbsgm.saglik.gov.tr/TR-77430/dr-e-nabiz-muayeneye-basladi.html

WHO (2010). Telemedicine: opportunities and developments in Member States: report on the second global survey on eHealth. WHO Library Cataloguing-in-Publication Data. https://iris.who.int/handle/10665/44497

WHO (2011). New Horizons for health through mobile technologies. In Global Observatory for Health Series; World Health Organization: Geneva, Switzerland, 2011.

Wu, Y., Zhao, P., Li, W., Cao, M., Du, L., & Chen, J. (2019). The effect of remote health intervention based on internet or mobile communication network on hypertension patients. Medicine, 98(9), e14707. https://doi.org/10.1097/md.0000000000014707

Yeretnova, Y. and Sertakova, E. (2021). The specifics of rural school in Russia: historical and pedagogical analysis. Proceedings of the Conference on Current Problems of Our Time: The Relationship of Man and Society (CPT 2020). https://doi.org/10.2991/assehr.k.210225.055