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# UKRAINE

## End of Activity Report

### 2022-2024



LOCAL HEALTH SYSTEM SUSTAINABILITY PROJECT

## **Local Health System Sustainability Project**

The Local Health System Sustainability Project (LHSS) under the USAID Integrated Health Systems IDIQ helps low- and middle-income countries transition to sustainable, self-financed health systems to support access to universal health coverage. The project works with partner countries and local stakeholders to reduce financial barriers to care and treatment, ensure equitable access to essential health services for all people, and improve the quality of health services. Led by Abt Global LLC, the six-year project will build local capacity to sustain strong health system performance, supporting countries on their journey to self-reliance and prosperity.

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## ACRONYMS

AMELP	Activity Monitoring, Evaluation, and Learning Plan
CF	Charitable Foundation
GESI	Gender Equity and Social Inclusion
GKS	Global Knowledge Strategy
GOU	Government of Ukraine
IWG	Inter-Agency Working Group
LHSS	Local Health System Sustainability Project
MIS	Medical Information System
MOH	Ministry of Health (of Ukraine)
NGO	Non-governmental Organization
NHSU	National Health Service of Ukraine
PHC	Primary Health Care
PMG	Program of Medical Guarantees
RGS	Rehabilitation Gaming System
SoE eHealth	State-owned Enterprise “eHealth”
USAID	U.S. Agency for International Development

## LHSS IN UKRAINE

The Local Health System Sustainability Project (LHSS) Ukraine Activity<sup>1</sup> aims to support the Government of Ukraine (GOU) in mitigating corruption, strengthening governance of the health care system, and reconnecting people with essential health services through digital solutions, particularly in response to war-related needs.

Since inception, the primary purpose of the LHSS Ukraine Activity has been to help establish institutional arrangements and strengthen the capacity of the GOU to govern and ensure telemedicine is safely and sustainably offered to the population. In 2022, as a result of the Russian Federation's full-scale invasion of Ukraine, LHSS expanded its support to address emerging war-related needs by assisting the Ministry of Health (MOH) in effectively managing telemedicine efforts. This includes identifying priority services and populations, developing tailored approaches to increase access to care, expanding telemedicine-supported services in health care facilities, and documenting and assessing both international experiences and the ongoing use of telemedicine in Ukraine for the benefit of Ukrainian health sector decision-makers.

### OBJECTIVES

The specific objectives of the LHSS Ukraine Activity are:

*Objective 1:* Strengthen telemedicine governance, policies, and financing

*Objective 2:* Restore availability and access of essential services using telemedicine

*Objective 3:* Strengthen GOU capacity to respond to emergent war-related health conditions and interrupted access to health services

**PERIOD OF PERFORMANCE:** October 2021 – August 2024

**TOTAL ACTIVITY FUNDING:** US \$7,000,000

## BACKGROUND

Since 2015, Ukraine has been working on comprehensive reform of its health care system, with the goal of improving its citizens' health outcomes and reducing their out-of-pocket payments. Reform proponents have sought to improve financial protection, rationalize government and institutional roles, decentralize the delivery of health care services, and increase private sector engagement. A significant role in the reform has been assigned to modern information technologies such as telemedicine services, electronic health records, and e-prescriptions to increase transparency and accountability in the health system. Despite these reforms, informal payments remained endemic, and some level of corruption still existed when the LHSS Ukraine Activity began.

The initial attempts to develop telemedicine in Ukraine began in the early 2000s but were largely project-based and temporary in nature. A more systematic period of telemedicine development occurred between 2007 and 2017 with the establishment of the State Clinical Research and Practical Center for Telemedicine under the MOH. This center's main tasks included developing a network of telemedicine centers across the country to provide telemedicine services to the

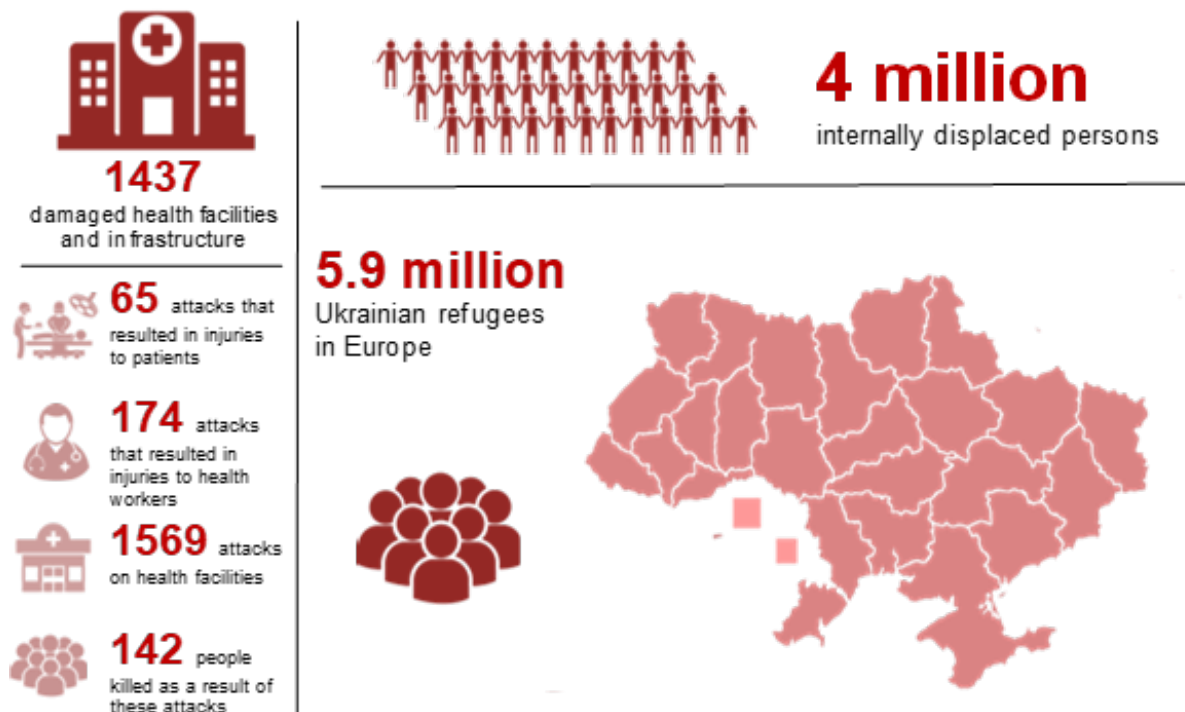
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<sup>1</sup> Throughout this report, the LHSS Ukraine Activity is referred to variously as "the activity," "the project," "the LHSS Project," and "the Ukraine activity."

population. A regulatory framework was established to support the provision of telemedicine services through this network. In 2017, a law was passed defining telemedicine use to reach underserved rural populations. Despite that legislation, the existing model did not fully utilize the potential of modern information and communication technologies. The health financing reform initiated in 2017 changed how health care providers were paid. By the late 2010s, due to funding shortages and changing priorities, the development of telemedicine became chaotic and often depended on local authorities' commitment and the leadership of champions in specific regions<sup>2</sup>.

Today, the provision of medical services through technology is not only a logical continuation of reform but also a necessity of the times. The COVID-19 pandemic brought renewed attention to the benefits of telemedicine, as did the full-scale military aggression by Russia against Ukraine—the war has led to the occupation or destruction of a sizable portion of the health care infrastructure and has drastically limited the population's access to health services. The massive displacement of people, including health professionals, significantly complicates the process of providing and receiving health services due to geographical and logistical obstacles (Figure 1). Ukraine faces an urgent need to provide health services for a wide range of patients, including people with explosive and burn injuries, pregnant women in need of specialized care, and people in need of physical rehabilitation. This need is especially large in remote and frontline areas where traditional, in-person access to health services is severely limited or impossible.

**Figure 1. Consequences of Russia's Full-Scale Invasion of Ukraine, February 2022–May 2024**



Source: World Health Organization Surveillance System for Attacks on Health Care and the UN Office for the Coordination of Humanitarian Affairs, 2024

<sup>2</sup> The word “region” is used in this report in place of the word “oblast (область)” which might be more familiar to Ukrainian speakers.

In these challenging conditions, the LHSS Project team has implemented strategic interventions to restart the development of telemedicine in the country within a short time frame. The interventions had to be targeted to strengthen the governance, policies, and financing of telemedicine, integrate telemedicine into the eHealth system, restore access to essential health services using telemedicine, and enhance the capacity of the GOU to respond to emergent war-related health conditions and interrupted access to health services.

## ACHIEVEMENTS

### OBJECTIVE 1: STRENGTHEN TELEMEDICINE GOVERNANCE, POLICIES, AND FINANCING

#### GENERATED KNOWLEDGE OF TELEMEDICINE AND USED IT TO INFORM DECISION-MAKING

LHSS began its work in Ukraine with a comprehensive analysis of the telemedicine landscape, which comprised a review of experience with telemedicine internationally, a rapid review of international experience with telemedicine in conflict, disaster, and post-conflict settings, a comprehensive landscape assessment of telemedicine in Ukraine, and an analysis of Ukraine's regulatory framework for telemedicine. More specifically, the primary areas of research were:

- Identification of the telemedicine services that are available in the country, where and by whom they are provided, and how they are financed
- Key population groups that benefit the most from telemedicine and the most demanded services
- Analysis of the telemedicine technical infrastructure, gaps, opportunities, and technical requirements
- Analysis of the legal framework, gaps, and bottlenecks
- Analysis of stakeholders and their roles
- International experience and lessons learned in using telemedicine during conflicts
- Costs incurred by health care facilities in deploying and providing telemedicine services, and how this is financed
- Monitoring system of telemedicine services and data utilization for decision-making

#### Gaining Health System Strengthening Knowledge

As part of the global LHSS project's learning exercise, "the Global Knowledge Strategy" (GKS) (see Annex C), the **"Establishment of a strategic vision and supporting legislative environment for telemedicine in Ukraine"** was identified by stakeholders as a health system performance improvement linked to LHSS support. The evidence base supporting the identification of this performance improvement includes 19 developed/updated policies that now regulate broad and specific areas of telemedicine use. Documents of the Telemedicine IWG meetings, the project's studies, examples of evaluation of the developed policies by independent experts, and 20 media publications also provide evidence of this improvement. More information on what was learned from the experience of achieving this result is below.

In order to achieve the goals of the LHSS Ukraine activity and best support local priorities, the project formulated research questions reflecting health system priorities, developed studies to answer the questions, and with stakeholders, used findings to inform actions. LHSS's expert analysis of this range of key issues resulted in a better understanding of the current telemedicine landscape in Ukraine, identified gaps and priorities, and created a knowledge base for data-driven decision-making. It also led to tailored recommendations for Ukraine stakeholder consideration. A summary of the research questions, results of research, and actions are in Table 1.

**Table 1: LHSS Research Informing Actions in the Health System**

Research question	Result of research	Actions
Which vulnerable groups will benefit most from telemedicine?	Vulnerable groups—distinct populations experiencing significant challenges accessing affordable, quality health care relative to the majority—were identified through a national telemedicine landscape analysis	Vulnerable groups defined, included in Ukraine’s Telemedicine Strategy, and made a focus of further activities
What are barriers to use of telemedicine?	Enabling environment issues, medical professionals with low knowledge/access/understanding of telemedicine, low awareness among patients	Technical assistance designed to increase comfort/use of technology, distilling a national vision for telemedicine, an informational campaign, and laws amending the enabling environment
How effectively does the existing legislative framework regulate telemedicine use in general and for vulnerable groups in particular?	Analysis of legislation	Legislation framework updated: Telemedicine Strategy and other new policies adopted, and existing policies amended
Are there technical opportunities to provide telemedicine services?	Analysis of telemedicine architecture and its place in eHealth	Priority telemedicine services determined, specifications to integrate these policies into eHealth developed
How can telemedicine services be financed from the state budget to ensure their affordability?	Analysis of Program of Medical Guarantees (PMG) packages	Telemedicine included in 31 of 41 PMG packages, compared with 10 packages in 2022
What resources are needed at the facility level to use telemedicine?	Study estimated resources for telemedicine-based services at facility level	Communication with facilities, community of practice organized, publications in national and local sites organized/supported to encourage provider uptake of telemedicine
How can specific telemedicine solutions serve vulnerable groups?	Landscape and other analysis, monitoring, reporting, feedback from doctors and patients	Utilization of donated telemedicine solutions supported Grant programs to provide telemedicine services implemented

LHSS used the generated knowledge to cooperate closely with partners to complete the following technical tasks in support of MOH and other stakeholder priorities:

- Creating a vision for telemedicine development
- Identifying key population groups and priority telemedicine services
- Establishing a legal framework
- Developing purchasing arrangements for telemedicine services
- Establishing a vetting process for assessing new technologies for introduction and scale-up into the health system
- Monitoring their utilization, to the training of medical professionals, creation of technical capabilities, and restoration of access to health care.

### **STRENGTHENED TELEMEDICINE GOVERNANCE BY CREATING A PLATFORM FOR INTERSECTORAL DIALOGUE**

The telemedicine landscape assessment showed the lack of an agreed-upon vision for the development and management of a telemedicine system. The creation of a platform for stakeholders’ political and professional dialogue became the first strategic step that LHSS



facilitated. On February 11, 2022, the MOH officially established an Inter-Agency Working Group (IWG) on telemedicine, with LHSS assistance. The group, led by the MOH deputy minister, included representatives of various sectors, such as the Verkhovna Rada (Parliament) of Ukraine, the National Security and Defense Council, the MOH, the National Health Service of Ukraine (NHSU), the State-Owned Enterprise (SOE) “eHealth,” the World Bank, USAID, academic institutions, the private sector, non-governmental organizations (NGOs) representing patient groups, and managers of health care facilities.

“The collaborative efforts of the Inter-Agency Working Group on the Development of the Concept of Telemedicine Implementation in Ukraine have played a crucial role in navigating the complexities of this digital transformation. These efforts are supported by the annual assessments and transparent reporting by the Ministry of Health, which are fundamental for gauging progress and identifying areas for improvement.”

*Kyrylo Malakhov,  
Researcher and engineer, Hlushkov Institute  
of Cybernetics,  
National Academy of Sciences of Ukraine*

During LHSS’s period of work, the IWG held six plenary meetings and more than 20 meetings of thematic subgroups, which resulted in the preparation of the Strategy for the Development of Telemedicine in Ukraine, approved by the Cabinet of Ministers of Ukraine Decree # 625-r on July 14, 2023. The strategy defines strategic goals and actions for 2023–2025 aimed at the development of telemedicine, including:

- Development of technical support of telemedicine, its proper quality and safety, and patients’ access to medical services
- Improvement of the regulatory framework for the development and application of telemedicine
- Improvement of human resources involved in health care provision using telemedicine
- Increasing the level of public awareness of telemedicine issues

## **OVERVIEW OF IWG MEETINGS**

The establishment and activity of the IWG reflects on one hand, the challenges to telemedicine in the socio-political context of Ukraine, and on the other hand, the efforts of the MOH and stakeholders from various sectors to develop telemedicine in Ukraine despite the full-scale war. The IWG was created to prepare the concept for the development of telemedicine in Ukraine—a strategic document did not yet exist in the regulatory arena of Ukraine, despite the ongoing implementation of telemedicine in certain areas of health care. MOH Order # 281 of February 11, 2022, "On establishment of Inter-Agency Working Group on Concept on telemedicine implementation drafting issues" approved the creation of the 34-member IWG. IWG members included government officials, people's deputies (members of Parliament), international partners, scientists, and representatives of medical information system (MIS) companies. The first IWG meeting (on February 22, 2022) inspired the participants, who looked forward to being personally involved in the process of developing telemedicine. Two days later, Russia invaded Ukraine and full-scale war broke out. Within a few months, however, operations and communications had been restored and the patients were able to return to telemedicine where it had existed. A complete list of IWG meetings and its primary achievements can be found below in Table 2.

**Table 2: IWG Meetings and Achievements**

Meeting Date	Primary achievements
February 22, 2022	<ul style="list-style-type: none"> <li>Initial meeting</li> <li>Inspired participants to work towards unified vision for telemedicine in Ukraine</li> </ul>
May 5, 2022	<ul style="list-style-type: none"> <li>Key actors confirmed the MOH's desire to produce a plan for telemedicine development, considering the new realities posed by the Russian invasion</li> <li>Meetings of sub-groups took place from May-June 2022 and contributed to a draft concept note and a corresponding implementation plan</li> </ul>
September 13, 2022	<ul style="list-style-type: none"> <li>Key stakeholders presented their comments and suggestions to the draft concept note</li> <li>Participants agreed on a final draft that MOH departments began processing and coordinating with other ministries</li> </ul>
May 30, 2023	<ul style="list-style-type: none"> <li>Following an extensive approval process that involved numerous consultations with key stakeholders, the document was changed from a "concept" to a "strategy."</li> <li>During the May 2023 IWG meeting, the MOH informed the group that the draft strategy had been agreed on by the relevant ministries and had been submitted to the GOU for approval.</li> <li>The Strategy for the Development of Telemedicine in Ukraine was officially approved and endorsed by the GOU on July 14, 2023</li> </ul>
December 15, 2023	<ul style="list-style-type: none"> <li>Participants focused on further issues of telemedicine development including policy, cooperation, disseminating experience, monitoring, planning, etc.</li> </ul>
July 29, 2024	<ul style="list-style-type: none"> <li>Participants discussed the progress that has been made in technical, regulatory, and financial development of telemedicine. Key stakeholders recognized the value of LHSS contributions to the progress that was made.</li> </ul>

## CREATED A LEGAL ENABLING ENVIRONMENT

The Strategy for the Development of Telemedicine in Ukraine, approved by the GOU in July 2023, was an important strategic achievement, as it ensured a unified vision and coordination of actions between all stakeholders in health area and defined agreed-upon priorities and actions for telemedicine development: further technical support of telemedicine services and their integration with eHealth, improvement of a regulatory framework, staff training, and increasing people's awareness of telemedicine, all of which contributed to the provision of high-quality and safe medical services. This is especially important in the context of war, because the war's destruction of health care infrastructure made telemedicine a key tool for ensuring access to health care.

"The document [Law] establishes the conditions for the provision of such services: all health care facilities and ...doctors who have the appropriate license will be able to provide treatment online. The emergence of clear "rules of the game" in telemedicine area should contribute to the development of online medical services and improve people's access to medical services, because it will become more convenient to receive them. In the future, the number of online services from doctors will increase—not only consultations, but also, for example, chat bots with interpretation of tests, etc."

*Article on the results of the Reform Index (rating of reform policies adopted in the 3rd quarter of 2023) on the Ukrainian Pravda website, November 3, 2023*

The analysis of the legislation on the development of telemedicine carried out by LHSS in 2023 identified gaps in the legal framework that inhibited the development of telemedicine, namely:

- An outdated vision of the development of telemedicine services
- Lack of standards for the provision of telemedicine services
- Insufficient regulation of protection of patients' personal data
- Absence of qualification requirements for health care workers who provide telemedicine services
- Lack of financial mechanisms to support telemedicine

Improving the regulatory framework of telemedicine development and utilization was defined as one of the strategic goals of the Strategy for the Development of Telemedicine, which gave a powerful impetus to the renewal of the legislative framework.

LHSS supported the MOH legal team in the development of the law "On Amendments to Certain Legislative Acts of Ukraine Regarding the Functioning of Telemedicine." After its consideration by the Verkhovna Rada Health Committee and two readings (reviews) before the full Verkhovna Rada, the law was approved on August 9, 2023, and took effect on September 7, 2023. It establishes the legal basis for the widespread use of telemedicine at all levels and in all types of health care and obliges the GOU and the MOH to harmonize their policies with its norms.

At the request of the MOH, LHSS provided technical assistance and developed draft documents to harmonize the legal framework of telemedicine with the recently adopted Law. Over the life of the LHSS Ukraine Activity, the project provided technical assistance to the development and/or updating of 19 policies, including amendments to two laws of Ukraine, six Cabinet of Ministers of Ukraine decrees, and 11 MOH orders, which together establish a legislative basis for the following strategic areas:

- A vision for the development of telemedicine
- Fundamentals of Ukrainian health care legislation
- Procedure of health/rehabilitation services provision using telemedicine
- Telemedicine in the conditions of martial law
- Telemedicine in emergency health care
- Telemedicine in primary health care (PHC)
- Telemedicine in specialized health care
- Telemedicine in rehabilitation
- Telemedicine in palliative health care
- A platform for stakeholder policy dialogue (IWG activity)

LHSS played a key role in identifying and eliminating regulatory barriers that hindered the development of telemedicine in Ukraine. Its technical and analytical support contributed to updates and harmonization of the legal framework, which established a legal basis for integrating telemedicine services into the health care system at all levels. This is critical for improving access to health services (especially during martial law, when the traditional health infrastructure may be damaged or unavailable) and providing Ukrainian patients with high-quality and timely medical care, and medical professionals with clear standards and procedures for providing such services.

## DEFINED FINANCING AND PURCHASING ARRANGEMENTS FOR TELEMEDICINE SERVICES

The other key achievement within this objective was defining sustainable sources of financing for scaling up key services to expand access to care through telemedicine. Recognizing that the war is a significant constraint in the short term, the Activity sought to identify and support domestic financing sources and structures for these services for the long term. This entailed supporting improved NHSU capacity and systems to use available data when providing telemedicine. This advancement has enabled the generation of evidence necessary for further refinement of Program of Medical Guarantees (PMG) purchasing arrangements and monitoring of the performance of providers delivering PMG services using telemedicine. By integrating telemedicine into PMG services, patients are guaranteed the right to access these services via telemedicine, where available, and, equally importantly, NHSU will pay providers to provide the services.

### Refined PMG Purchasing Arrangements

Over the life of the Ukraine Activity, LHSS worked with NHSU to refine and clarify the scope and organizational requirements for delivering PMG services using telemedicine. Only 4 out of 35 PMG service packages in 2021 and 10 of 39 in 2022 mentioned the possibility of using telecommunications to deliver services, and the description of such services was vague. Through detailed analysis and standardization of efforts, NHSU increased the number of PMG service packages that include telemedicine to 31 out of 41 in 2024. This enhancement ensures that telemedicine is now an integral part of health care services covered under PMG.

### Supported Improved NHSU Capacity

While telemedicine became an integral part of services covered under PMG, evidence of telemedicine provision and costs associated with their provision at the facility level was lacking. In calendar years 2023–2024, LHSS collaborated with NHSU to assess the resources used to deliver telemedicine at the facility level, establish a baseline for using telemedicine services under PMG, and develop an analytical model and approach for monitoring provider performance.

The joint LHSS and NHSU assessment of [Resources Associated with Delivering Telemedicine-based Services at the Facility Level in Ukraine](#) was based on eHealth data on telemedicine provision in 2021–2022 by all health providers contracted by NHSU and financial data from selected health facilities. The assessment showed that in 2021–22, the use of telemedicine increased, particularly in war-affected regions; doctor-to-patient teleconsultations were most commonly used by providers contracted for the PHC, Mobile Palliative Care, Tuberculosis at the PHC level, and HIV service packages under the PMG; medical staff spent on average about 7 percent of their time on telemedicine; investment in telemedicine at facility level was minimal; and resources devoted to telemedicine provision varied widely between providers and were mostly covered by PMG payments.

Based on the findings, LHSS proposed policy considerations for NHSU to strengthen purchasing arrangements that expand access to quality care, including:

- **Strengthen the role of facility managers in decision-making regarding investments in telemedicine equipment, currently made by local authorities, the MOH, or donors.** This allocates decision making power to those who are best positioned to understand the needs and extant capacity of their institutions.
- **Accompany investment in telemedicine equipment with staff training and necessary business process changes to ensure the resources are used appropriately.** Tools are

only as useful as those who use them; strengthening staff knowledge of telemedicine and streamlining business processes will raise capacity of the health workforce.

- **Communicate updated PMG packages that require the use of telemedicine to health providers and create a monitoring system for provider performance on telemedicine.** Lack of clear communication has meant that providers are unaware of the availability to use telemedicine services under PMG packages. By informing HCWs of the opportunities and requirements under the law and monitoring their performance, telemedicine utilization will increase.
- **Continue to develop and improve eHealth capabilities related to telemedicine.** Working to streamline and galvanize the legal and technical environments for teleconsultation, telemetry, and teleradiology technologies will ensure that business processes are streamlined and transparent, incentivizing greater adoption by providers.

### **Developed a Simple System to Monitor Providers' Performance**

The initial analysis of eHealth data showed the information gaps (e.g., the lack of capabilities in eHealth to register teleradiology or telemetry services) and the need for more detailed analysis to define technical approaches for further monitoring of provider performance in telemedicine provision. By analyzing over 25 million electronic health records, LHSS and NHSU identified trends, established a baseline for teleconsultation under the PMG, and proposed an approach for further monitoring provider performance using telemedicine. To allow comprehensive data analysis on telemedicine utilization, LHSS and the NHSU co-developed an analytical tool and dashboards to monitor telemedicine utilization across regions, provider type (public/private), care type, PMG packages, and medical specialties, as well as Gender Equality, Disability and Social Inclusion (GEDSI)-specific disaggregation by age, gender, and place of residence (urban/rural) of patients who received teleconsultations. Main trends include:

- Steady growth in teleconsultations from 6 million/4.3 percent of all consultations in 2021 to 10 million/ 6.4 percent in 2023.
- An increase in the share of teleconsultations by private providers from 5 percent (2021) to 14 percent (2023); and among public/communal providers from 4 (2021) to 6 percent (2023).
- More than 70 percent of all teleconsultations were delivered under "Primary health care" (5 million in 2021 and 2022, 7 million in 2023); however, this represented not more than 10 percent of all teleconsultations at the PHC level.
- The highest proportion of teleconsultations was in Mobile Palliative, Tuberculosis, PHC, and Mobile Psychiatric care packages in 2023. There was a sharp increase in the absolute number and share of teleconsultations under the "Mobile Palliative Care" package (0.05 million/31 percent in 2021 to 1.6 million/56 percent in 2023).
- 58 percent of teleconsultations were provided to women and 42 percent to men, with no significant difference between the urban and rural settings.
- More than 60 percent of all teleconsultations were provided to patients aged 40 and over, with the share of teleconsultations for the 65 and over group increasing from 25 percent in 2021 to 36.5 percent in 2023, mostly in rural areas. This is notable given elderly and rural residents were identified as vulnerable populations most in need of telemedicine-enabled health services at the outside of the Ukraine Activity.

Based on the analysis, LHSS and NHSU defined the approach NHSU could use to monitor telemedicine provision, based on simple indicators, triggers, and thresholds to be integrated into

the regular NHSU review process. This will allow NHSU to identify outliers and flag areas that need attention to ensure quality of care, prevent fraud, and benchmark providers to promote good practice.

## DESIGNED TECHNICAL ARCHITECTURE FOR INTEGRATION OF TELEMEDICINE SERVICES INTO THE EHEALTH SYSTEM OF UKRAINE

The LHSS Project successfully designed the technical architecture, and the technical specifications have significantly advanced the integration of telemedicine services into Ukraine's eHealth system. This milestone allows more efficient and safe provision of medical services by enabling access to diagnostic data, reducing data duplication, and enhancing the quality of patient care.

The telemedicine landscape analysis showed that existing telemedicine services are not synchronized with the eHealth Central Database, and this significantly reduces the functional capabilities of telemedicine and hinders its development. This issue is particularly critical when it comes to telemedicine consultations between different health care facilities or when a doctor needs access to diagnostic data collected by another health care facility. If different facilities use the same Medical Information System (MIS), such interactions are possible. If they do not, scheduling a telemedicine consultation becomes much more challenging. For example, it can lead to the need for additional diagnostic services.

In response to an MOH request, LHSS conducted an analysis of the existing eHealth functionality, then held numerous consultations, discussions, and seminars with key stakeholders from NHSU, the SoE eHealth, the MOH Telemedicine IWG, and the private sector, namely, the MIS developers) to determine gaps and priority telemedicine functions that need to be integrated into the eHealth.

As a result, LHSS developed and subsequently gained stakeholder agreement on an architectural model, algorithms, business processes, and mechanisms for ensuring interoperability with an MIS and other telemedicine systems for the integration of the telemedicine functionality into the eHealth system. This included developing technical specifications for the development and implementation of teleconsultation and telediagnostic services in the eHealth Central Database. These documents include descriptions of the processes related to:

- **Teleconsultations:** Business processes for ensuring remote provision of health care services for the following types of interactions:
  - Patient to doctor (family doctor, specialist doctor, health care worker)
  - Doctor to patient (remote consultation initiated by the doctor)
  - Doctor to doctor
- **Telemetry:** Mechanisms for diagnostic data collection, storage, processing, and routing for further use and monitoring of physiological parameters of the human body from devices such as electrocardiographs, spirometers, dermatoscopes, stethoscopes (phonendoscopes), thermometers, pulse oximeters, and glucometers, and other equipment that can transfer data.
- **Teleradiology:** The processes of collecting, storing, processing, and routing of medical images obtained as a result of teleradiological examinations, including computed tomography (CT), radiological diagnostics (especially mammography), magnetic resonance imaging (MRI), and ultrasound diagnostics.

Technical specifications also address crosscutting issues such as: 1) interoperability of eHealth System, MISs, telemedicine solutions and platforms operating in Ukraine; 2) compatibility with international health systems are based on the FHIR standard; 3) implementation of standards and mechanisms for the exchange of medical diagnostic data, including integration with the eHealth central level; and 4) registration of events related to the provision of health care services using telemedicine, including verification of participants and interaction results.

This technical documentation is an important step in the development of telemedicine services, since the integration of telemedicine into the eHealth system ensures more efficient and safe provision of medical services, reduces risks like duplication of data and research, and improves the overall quality of medical care. Integration will enable Ukrainian doctors to cooperate more effectively and exchange information, which will improve the outcomes of patient treatment.

## **OBJECTIVE 2: RESTORE AVAILABILITY AND ACCESS OF ESSENTIAL SERVICES USING TELEMEDICINE**

### **EXPLORED AND ENHANCED OPPORTUNITIES TO REACH VULNERABLE POPULATIONS THROUGH TELEMEDICINE SOLUTIONS**

To enhance access to essential health care services for vulnerable populations by implementing innovative digital solutions, LHSS implemented a small grant program, which generated significant interest among local NGOs, health care providers, and telemedicine equipment and software developers. LHSS received concept notes from 89 local organizations. The selection process prioritized the most impactful projects. LHSS ultimately provided grants to two local organizations: Charitable Foundation (CF) Sheptytskyi Hospital and LLC NK Consulting Group.

#### **CF Sheptytskyi Hospital**

To improve accessibility to health care services for internally displaced persons and people with limited mobility, the LHSS grants supported the CF Sheptytskyi Hospital in reaching 580 people (71 percent women and 29 percent men) with 1,895 remote services (over 60 percent were consultations, and 39 percent were screenings and examinations) in Lviv and Ternopil regions in February–June 2024. Mobile brigades, consisting of a driver and family doctor, traveled to remote villages where they (1) conducted screenings and examinations such as electrocardiograms, ultrasounds, dermatoscopes, blood sugar measurements, and blood tests; (2) used the MIS to hold a "doctor-to-doctor" consultation where they shared examination results with the appropriate specialist doctor; and (3) prepared a consultation report. The specialist doctor prepared a consultation report based on the examination results and forwarded it to the family doctor, who then sent it to the patient.

Patients received timely and efficient care. More than 82 percent of services were provided to patients aged 40 and above, with 51 percent going to those aged 65 and above. Over 95 percent of patients who were project clients who participated in a satisfaction survey (N=60)

#### **Feedback from Patients**

*"Doc Doc has been an invaluable resource for me during these challenging times of war. The therapists on the platform not only helped me manage my anxiety but also taught me effective ways to communicate with my children about the situation. They provided practical advice and emotional support that made a real difference in our family's daily life. I'm grateful for their expertise and compassionate guidance through this difficult period."* – Aliona, 38 years old

*"Doc Doc exceeded my expectations in providing accessible and effective therapy. My doctor expertise in anxiety management and self-esteem issues was evident from our first session. She created a supportive environment where I felt comfortable discussing my concerns and exploring solutions. Psychotherapist's practical advice and encouragement empowered me to make positive changes in my life. I appreciate Doc Doc for their commitment to delivering high-quality mental health care through their user-friendly platform. They truly made a positive impact on my well-being."* – Antonina, 31 years old

described their experience with telemedicine as positive. A significant percentage reported that remote consultations and examinations were as effective as face-to-face visits in the hospital. Many noted that telemedicine support saved time and effort in accessing care, and specifically it enabled them to receive specialist services. This LHSS Project grantee effectively used telemedicine to bridge the gap in health care access for vulnerable populations, demonstrating a scalable model for future initiatives.

### **LLC NK Consulting Group**

Due to Russia's full-scale invasion into Ukraine, about 9.6 million Ukrainians are at risk of developing psychological disorders. By 2023, the MOH estimated 14 million Ukrainians need psychological support.<sup>3</sup>

The purpose of the grant implemented by LLC NK Group Consulting was to address this increased need for mental health services in two ways: (1) by expanding the Ukrainian population's access to mental health services via a mobile application (Doctor Online); and (2) by improving the quality of these services through training mental health specialists on best practices for patient consultations.

NC Group Consulting developed the mobile application with the grant proceeds. The grantee increased availability of mental health care to people affected by the war with Russia through the application; in May–June 3, 493 psychological online consultations were provided—exceeding the target of 3,200.

The grantee also improved the quality of mental health services by strengthening the capacity of mental health professionals to conduct remote psychological consultations and improving data security and patient care plans. The Grantee achieved this by creating a publicly available training course on providing psychological assistance to patients with psychological trauma and delivering that training to 30 psychotherapists. Increasing awareness of the availability of online mental health services in Ukraine was also crucial for the success of the project. NC Group Consulting achieved this by promoting information among target populations on Facebook, LinkedIn, and Telegram pages. More than 700 potential clients have read the publications informing them about the project and the necessity of mental and physical health care.

### **INCREASED AWARENESS OF TELEMEDICINE BENEFITS AND AVAILABILITY**

LHSS-supported studies and practical experience found that telemedicine development in Ukraine requires public awareness and knowledge, specifically:

- (1) Overcoming myths, fears, and prejudices about telemedicine (e.g., Telemedicine is expensive for the facility; Telemedicine is less effective than a personal visit to the doctor; Telemedicine cannot be used in emergency care; Telemedicine in palliative care is nonsense)
- (2) Clarifying the conditions of use of telemedicine, and its advantages and limitations: how telemedicine services are paid for; under what conditions the patient can receive them; technical requirements, and so forth.
- (3) Disseminating successful practices: which telemedicine services are effective and for what groups of patients (considering patient age, condition, mobility, distance from the facility, etc.).

The publication of an article about the Rehabilitation Gaming System (RGS) motivated health care providers to inquire about installing this system in their facilities. Consequently, the system was installed in the Odesa regional children's hospital, leading to the development of over 30 rehabilitation treatment plans for young patients within two weeks.

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<sup>3</sup> Minister of Health Viktor Liashko interview by Olena Hryhorovych, on the Ukrainian Radio program "Today. In the evening," 01/11/2023, <http://www.nrcu.gov.ua/news.html?newsID=100466>.



There are three main target groups for these messages:

- 1) People who make decisions about health care policy, financing, equipment purchases, organization of the health care facility work; government officials, heads of facilities, representatives of local self-government bodies that own the facilities
- 2) Health care workers/rehabilitation specialists who provide telemedicine services
- 3) Patients

To disseminate information and increase knowledge of telemedicine among **decision-makers**, LHSS used various communication channels, including:

- **Generated and analyzed data and shared findings via regular updates for decision-makers:** The majority of analytical reports, briefs, and presentations that LHSS prepared were aimed at generating and disseminating knowledge about telemedicine among decision-makers. They were structured to meet the demand, needs, and communication preferences of the different decision-makers (e.g., presentations that summarized longer reports for high-level decision-makers; discussion sessions with staff who would use the information). LHSS held regular update and coordination meetings with key counterparts, including NHSU, the MOH, and the Ministry of Finance.
- **Telemedicine IWG meetings:** The IWG meetings engaged a wide range of experts and stakeholders. These participants learned about the development of the telemedicine architecture and regulatory framework. Two people's deputies of Ukraine have been IWG members; they supported the drafting and shepherding of the law on telemedicine-related amendments for approval by the Verkhovna Rada. Through participation in the IWG, one of the people's deputies became interested in the introduction of telemedicine in the front-line region of Chernihiv, which he represented. He established communication channels with hospitals, the MOH, and the project to support the installation of telemedicine devices in health care facilities across the region with the intention of forming a telemedicine network between facilities in the near future.

Information and educational work with doctors (and through them, with patients) was carried out via:

- **Publications on websites and social networks,** with explanations, examples of successful experiences, current news, and so forth, attracted the attention of doctors and increased the demand for telemedicine solutions. The National Rehabilitation Center for Mother and Child benefited from the RGS installation. Project specialists helped local media and health care facilities to prepare publications about locally available telemedicine solutions for placement in local information sources for a local audience—potential patients and doctors.
- **Meetings with health care providers:** LHSS conducted master classes and webinars with health and rehabilitation care providers to disseminate best practices, discuss successes and challenges in the functioning of telemedicine solutions, and identify needs when establishing these solutions. Soon after these events, project specialists recorded increased requests from doctors to install telemedicine solutions in their facilities.
- **Participation in international and national scientific and practical conferences,** where the project specialists shared information about telemedicine, its current directions and available telemedicine solutions with the medical scientific and professorial community. In particular, the presentation of project experts at the *International conference on issues of digital education as a prerequisite for the digital transformation of health care and the development of telemedicine* (Odesa, June 2024) was of great interest to the

audience of scientists and professors from medical universities and research institutions who also work as health care providers in university/institution clinics. Such clinics provide specialized care services, funded directly by the state budget or patients. Participants learned they could contract with NHSU under PMG packages to provide telemedicine-supported health service, thus reducing out-of-pocket expenses for patients.

Project specialists who trained doctors to use telemedicine solutions paid special attention to how the doctors should advise patients to use telemedicine, its advantages and limitations, the results it can achieve, and so forth. The instructions were especially important for telemedicine solutions such as HomeDoctor, a device for remote monitoring of health indicators; Carebits, a device for prenatal monitoring; and the rehabilitation application RGS, installed on the patient's smartphone.

LHSS local partner MI Health developed the concept for an information campaign "Telemedicine in Ukraine" to disseminate knowledge and increase awareness of the benefits of telemedicine among health care providers and patients. The campaign concept and implementation plan include key products such as visuals, video shorts, content, and website. LHSS and MI Health conducted several consultations with the communication departments of the MOH, NHSU, and SoE eHealth. These institutions will disseminate campaign materials to doctors and patients, supporting campaign results beyond the life of the LHSS Ukraine Activity.

This increased awareness is crucial to maximizing the benefits of telemedicine for several reasons. It helps to overcome myths and misconceptions about telemedicine, ensures a broader understanding of how and when telemedicine can be used effectively, and spreads successful use cases that demonstrate the benefits of telemedicine for different patient groups. By targeting policy makers, health care providers, and patients, the project ensures a comprehensive approach to integrating telemedicine into the health care system. This integration is essential for improving health care access, especially for vulnerable populations, and integrating telemedicine as a sustainable part of health care delivery in Ukraine.

### **OBJECTIVE 3: STRENGTHEN GOU CAPACITY TO RESPOND TO EMERGENT WAR-RELATED HEALTH CONDITIONS AND INTERRUPTED ACCESS TO HEALTH SERVICES**

Russia's full-scale military invasion of Ukraine in February 2022 has created unprecedented challenges for Ukraine's health care system. Significant destruction of health care infrastructure has limited access to health services, and massive displacements of people have significantly complicated the process of providing and receiving health services. This context has given rise to an urgent need to provide health services, especially in remote and frontline areas, where traditional in-person access to health services is severely limited or impossible.

To help the GOU address these challenges, the MOH received assistance from a number of international companies that offer telemedicine technologies. To date, six donated telemedicine solutions have been implemented in health care facilities at no cost to the government or facilities. These solutions, from companies and organizations



*Pediatric patients use the Rehabilitation Gaming System at the Odesa Regional Children's Hospital*

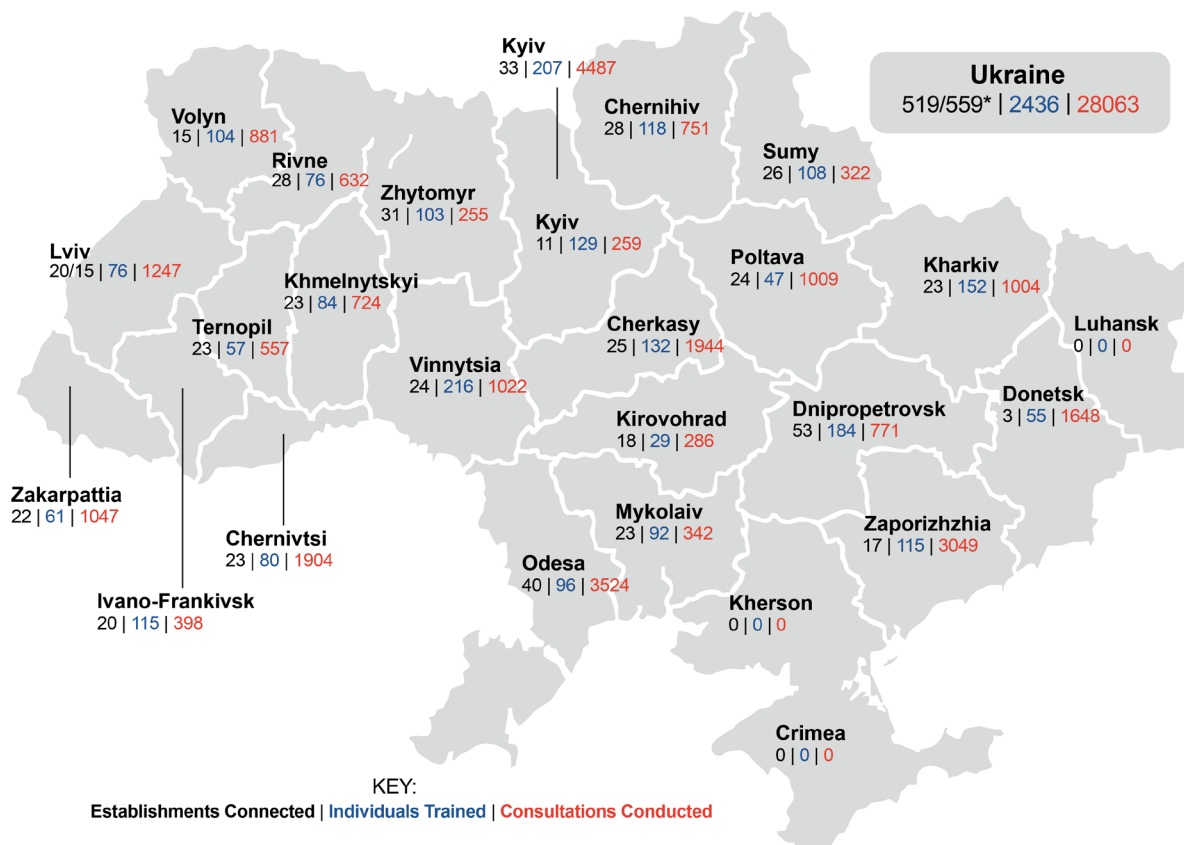
such as Teladoc (USA), Eodyne (Spain), Engauge (USA), Polsat (Poland), NGO Help to Ukraine (Spain), BrainScan (Poland), encompass teleconsultation, teleradiology, telediagnostics, telediagnostics, telediagnostics, teleradiology, and telesurgery technologies, enabling the provision of critical medical services where access to traditional care is limited.

Soon after the invasion began, the MOH requested support from LHSS and, at USAID’s direction, LHSS quickly adapted its work plan to address emergent war-related health conditions and interrupted access to health services. This included organizing a MOH-owned process of receiving, implementing, and supporting the donated telemedicine solutions. It covered assessing the medical needs of health care facilities, training medical staff, adapting technologies to local requirements, and ensuring needed technical assistance.

### STRENGTHENED TELEMEDICINE CAPACITY OF HEALTH SERVICE PROVIDERS

A total of 2,436 individuals (1,673 women and 763 men) were trained to use telemedicine solutions, including 2,354 physicians, 53 nurses, 24 technicians, and 5 administrative workers. Most work at specialized care facilities. LHSS specialists conducted 5,143 technical assistance interactions, providing demonstrations, solving functional problems, addressing operational issues, and retraining staff. Telemedicine solutions were introduced in 519 health facilities throughout the country as demonstrated by figure 2 below.

**Figure 2: Map of Ukraine Showing LHSS Accomplishments by Region as of June 2024**



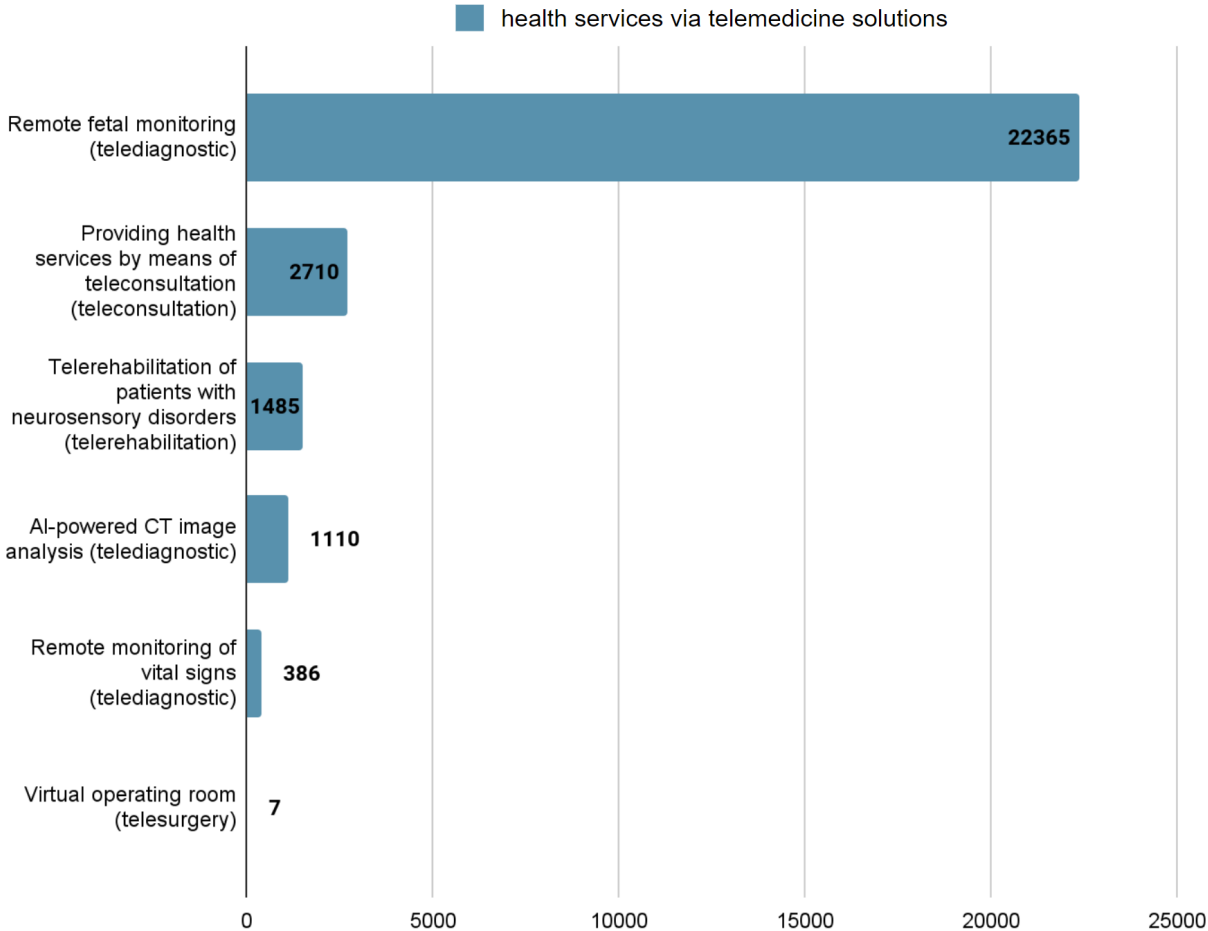
\* Some institutions have more than 1 telemedicine solution installed, so the total number of installations is 559 units

\*\* The number of consultations includes doctor-to-patient format teleconsultations as well as doctor-to-doctor consultations.

### IMPROVED ACCESS TO ESSENTIAL HEALTH CARE SERVICES

By June 30, 2024, 28,063 health services had been provided via donated telemedicine solutions. Telediagnostic services were the most common, accounting for 85 percent of the total services provided, followed by teleconsultation services at 10 percent, telerehabilitation services at 5 percent, and telesurgery services (0.02). A breakdown of health services provided by telemedicine by type can be found below in figure 3.

**Figure 3: Number of Health Services Provided via Telemedicine by Type, April 2022 – June 2024**



Source: LHSS Program Monitoring Data

### ESTABLISHED PUBLIC-PRIVATE PARTNERSHIPS

LHSS facilitated the formation of seven public-private partnerships to introduce relevant telemedicine solutions and address urgent health needs for vulnerable populations, such as pregnant women and people with chronic diseases and traumatic injuries. These partnerships have been crucial in providing health care where facilities face a shortage of physicians and patients live in remote locations. About US\$ 4 million worth of telemedicine solutions and equipment were donated through the MOH.

### SUPPORTED STRATEGIC ALIGNMENT AND SUSTAINABILITY

The GOU's priority action plan for 2024 includes a task on the implementation of telemedicine initiatives, such as those supported by LHSS. This strategic alignment underscores the

significance of LHSS-coordinated telemedicine initiatives and ensures the sustainability of essential achievements and services beyond the conclusion of the LHSS Activity. To promote sustainability, LHSS facilitated the transfer of implementation support to the SoE eHealth. This process, formalized through numerous consultations with key stakeholders, took place between January and May 2024.

## SUMMARY OF EXPERIENCES, LESSONS LEARNED, AND BEST PRACTICES FOR IMPLEMENTATION OF TELEMEDICINE DURING THE WAR IN UKRAINE

LHSS documented and analyzed the deployment of donated telemedicine solutions in Ukrainian health care facilities during the war, with the objective of sharing valuable lessons and best practices for the benefit of Ukrainian and international audiences. Its results are captured in a report, "Summary of experiences, lessons learned and best practices for the implementation of telemedicine during the war in Ukraine" (LHSS 2024), which examines the regulatory support, testing, training of doctors, technical assistance, and experience exchange associated with implementation. The report offers insights into the experiences of more than 400 medical professionals who used telemedicine solutions. Their feedback was essential for understanding the real-world challenges and benefits of telemedicine in a war context. In addition, this experience exchange fostered a collaborative and effective approach to overcoming obstacles.

The summary report highlights the project's successes. It also identifies challenges faced during the deployment of telemedicine solutions and offers practical recommendations for addressing the specific challenges. There also are more comprehensive recommendations for the continued use and expansion of telemedicine solutions, both during martial law and in post-war settings. The information in the report is intended to be a valuable resource for a broad audience, including policy makers, health care administrators, and telemedicine solution providers who can benefit from a roadmap for implementing their own telemedicine initiatives.

### Gaining Health System Strengthening Knowledge

Ukrainian stakeholders and experts, through the LHSS Global Knowledge Strategy learning process, identified a second health system performance improvement achieved with support from LHSS: ***"Establishment of public-private partnerships aiming at reconnecting people to health care and rehabilitation services during war time in Ukraine."*** LHSS collaborated with companies that supplied digital health tools, health care facilities, the MOH, and the SoE e-Health. The evidence base of performance improvement includes signed memoranda of cooperation, registers of involved facilities, lists of telemedicine services provided, technical interactions conducted, and doctors trained, publications in the media, and the LHSS report "Summary of experiences, lessons learned, and best practices for implementation of telemedicine during the war in Ukraine" (2024).

## GESI STRATEGY

Telemedicine is a powerful tool for integrating gender equality and social inclusion (GESI) considerations into the broader health ecosystem. The project contributed to the development of telemedicine with a purposeful eye toward GESI considerations. This included the landscape analysis conducted for the GOU and IWG stakeholders of vulnerable groups and their possible benefits from telemedicine to the policy and technical implementation implications that resulted from those considerations. Ukraine's use of telemedicine solutions with members of different groups (by age, gender, place of residence, type of illness, level of mobility, etc.) has shown that telemedicine ensures these patients' access to (1) timely, (2) geographically and financially accessible, (3) quality, and (4) necessary health care services.

### Populations that Stand to Benefit Most from Telemedicine Are:

1. War-related vulnerable groups: Internally displaced people and people living in occupied and recently de-occupied territories
2. Regular vulnerable groups: People with disabilities, people living in rural areas, older adults, and people with chronic diseases, including mental health conditions

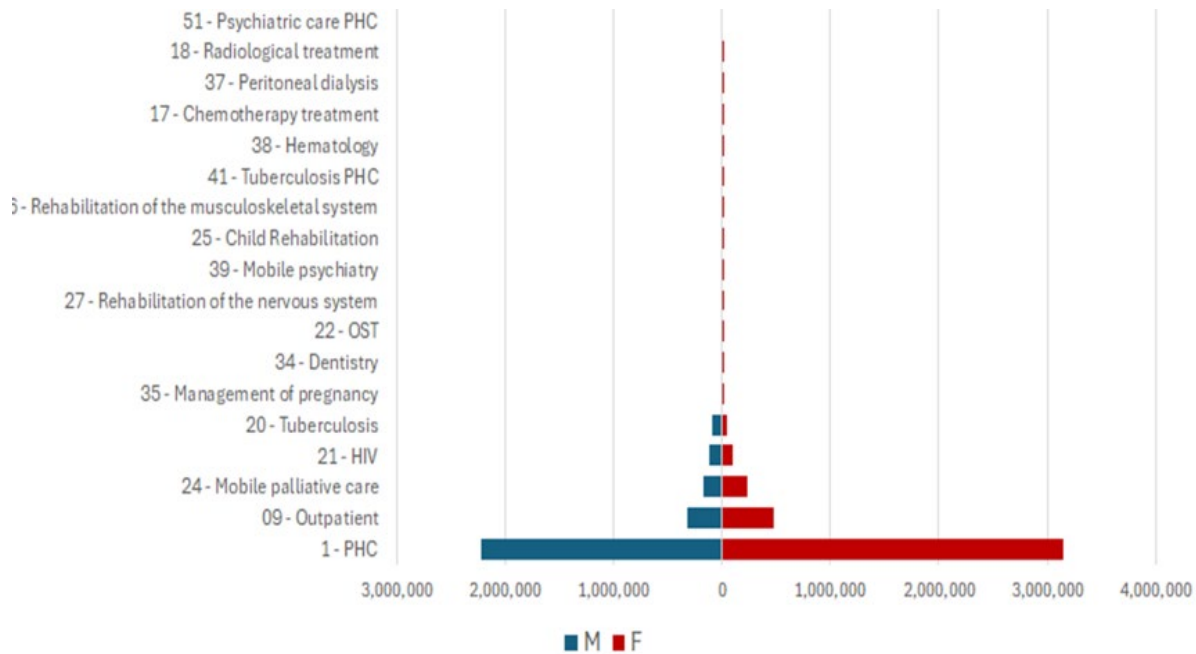
Landscape Assessment of Telemedicine in Ukraine (LHSS, 2022)

## OPPORTUNITIES PURSUED TO CREATE GREATER GENDER EQUALITY AND SOCIAL INCLUSION

While producing the analysis of telemedicine service delivery under the PMG, LHSS incorporated considerations related to age, sex, and urban vs. rural districts into the final report. This report included proposed approaches for monitoring telemedicine use under the PMG, which will enable key stakeholders such as the MOH, NHSU, and the SOE eHealth to understand patterns of usage across key demographics. Ultimately, this will help identify discrepancies in access to health services among vulnerable populations that might be rectified by using telemedicine technologies.

Analyzing the patterns of usage of telemedicine by gender, LHSS found that women consistently use telemedicine at a higher rate than men. In 2022, throughout the health system, 57.9% of teleconsultations were conducted by women while 59% of teleconsultations were provided to female patients with only 41% provided to males. Similarly, 60% of teleconsultations provided in the ambulatory care package of the PMG were for women, while 58% of teleconsultations under the mobile palliative care package were also for women. Further research on this discrepancy between might help to clarify its underlying causes, and whether these usage patterns are consistent with gender differences in in-person provision of health care services. Figure 4 illustrates the distribution of non-specialist teleconsultations between males and females by type of care provided.

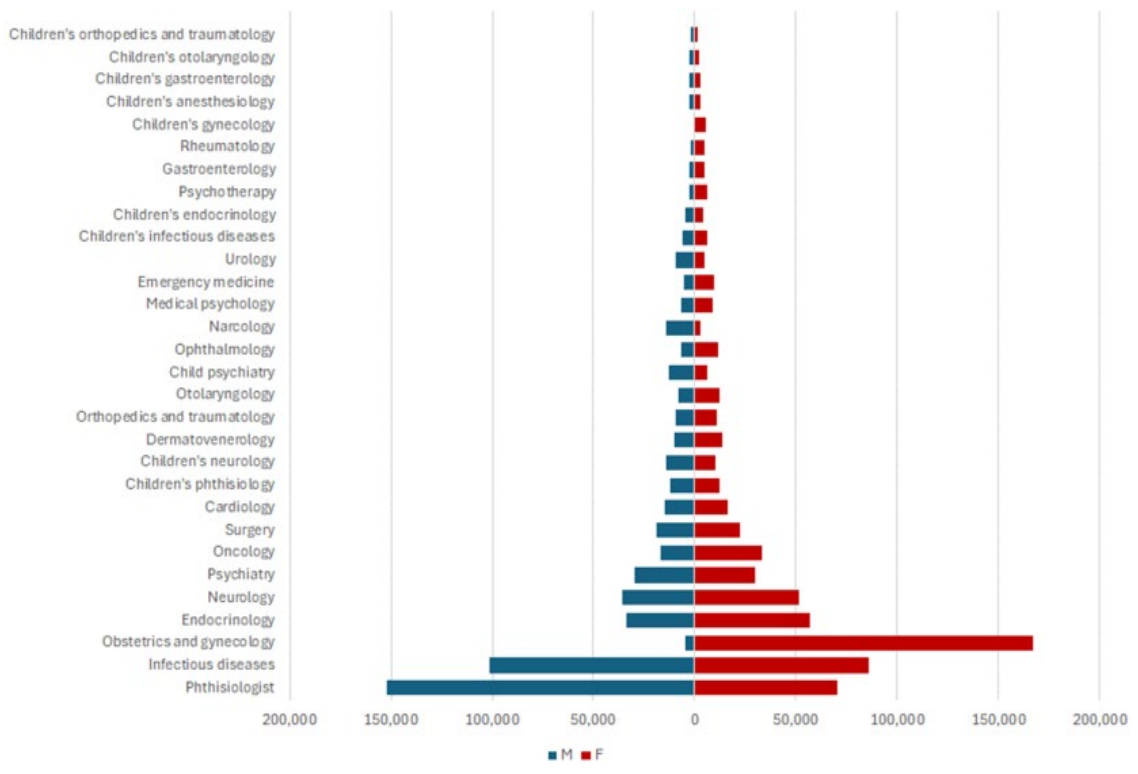
**Figure 4: Distribution of Non-Specialist Teleconsultations by Type and Gender (2022)**



Source for data: SOE eHealth EHRs analysis 2022

This trend is further illustrated in Figure 5 below which shows the breakdown of males and females using teleconsultations to access different types of specialized care.

**Figure 5: Distribution of Specialized Teleconsultations by Type and Gender (2022)**



Source for data: SOE eHealth EHRs analysis 2022

## LESSONS LEARNED

The nationwide deployment and use of telemedicine, particularly during wartime, is unique to Ukraine. The lessons learned by LHSS, most of which are elaborated in analytical reports, could be useful for countries considering ways to develop telemedicine and for stakeholders seeking to expand telemedicine to greater scale in Ukraine. The most important of these lessons are as follows.

### **1. In the context of war, adaptive management is crucial to realizing strategic goals.**

Rapidly changing circumstances, security risks, and problems with technology (interruptions in electricity and the internet) make it necessary to adapt and quickly respond to needs. The strategic goals and implementation decisions under which a development project operates may need to change. Such circumstances forced the LHSS Activity to update its work plan several times, adding certain activities and stopping others in accordance with changing priorities as agreed with USAID and the MOH, including MOH requests for technical assistance with the most pressing problems. The security situation was always considered when determining the possibility of holding meetings (especially larger group ones) with stakeholders, health care workers, partners, and others. The availability, or unavailability, of electricity and internet affected compliance with online communication, installation of telemedicine solutions in health care facilities, and other scheduled activities. Meetings and other technical interactions had to be rescheduled (sometimes to after-hours), and individual training sometimes replaced group training. In this way, resources of both the project and partners were used to the best advantage.

### **2. Involving stakeholders and considering their opinions is important for the successful development of telemedicine.**

LHSS involved stakeholders from various sectors at the regional and national levels in the Telemedicine IWG in a transparent and inclusive manner, to establish communication with them and to ensure consideration of their proposals during the development of the Telemedicine Strategy. In this way, a truly representative national vision for telemedicine in Ukraine was formed. Additionally, LHSS local partner, NGO “Patients of Ukraine” conducted a telemedicine landscape assessment, identifying vulnerable groups that would most benefit from telemedicine services and determine the most frequently used telemedicine services. Patients of Ukraine actively participated in the work of the Telemedicine IWG, collaborating with LHSS on the telemedicine development strategy and implementation plan and identifying priority telemedicine services.

### **3. Telemedicine should be accessible not only to certain vulnerable groups, but to everyone who needs it.**

This lesson is especially pertinent in the context of war. LHSS analyzed various population groups (see *the Telemedicine Landscape Analysis* and *the Strategy for the Development of Telemedicine in Ukraine*, LHSS 2023) that can benefit from telemedicine, considering the disease, mobility, age, and other criteria, as well as the demand for these services (how many patients need them). This informed decisions about the necessary number of telemedicine devices and efficient organization of doctors' work.

LHSS helped the MOH identify and address an unintended barrier to access resulting from an order that the MOH approved in the first months of the full-scale war. Order #1062 (June 2022) entailed a list of injuries, wounds, and other conditions for which services could be provided with telemedicine under martial law. However, practical experience indicated that this list limited access to care. With LHSS findings and recommendations, the MOH issued Order # 77



(prepared with LHSS participation) in January 2024 to cancel MOH Order #1062. The new MOH order removed the list of specific conditions (which implied that only those conditions could benefit from telemedicine supported services) as well as a restriction on the use of remote monitoring only for *"patients with chronic diseases who have already been diagnosed and prescribed treatment,"* thereby enabling telemedicine's use for any patient based on the doctor's decision.

#### **4. Information about telemedicine plays a significant role in its adoption at all levels, from the national level to that of the health care facility and its doctors and patients.**

Regular sharing of telemedicine's advantages, methods of its application, and its further development prospects motivates doctors and patients to use telemedicine services and encourages managers and owners of institutions to seek to attract investments and update facilities' technical capacity. Authorities who voiced support for the development of telemedicine with their actions and speeches in the media confirmed the GOU's trust in telemedicine. As LHSS Ukraine's experience shows, after positive coverage of the operation of specific telemedicine solutions on the MOH website and in local media, project employees received increased requests from health care facilities to install relevant telemedicine solutions. Another effective means of information sharing was meetings (master classes, webinars, etc.) with practitioners, during which doctors described their successes in using telemedicine solutions and thus inspired their colleagues to adopt telemedicine. Thus, support for communication contributed to sustainability and scale-up of telemedicine use, and expanded patients' access to needed services.

#### **What We Learned about Health System Strengthening**

LHSS and stakeholders agreed that their collaboration improved health system performance by establishing a strategic vision for the development of telemedicine in Ukraine and an updated regulatory framework to scale up the use of telemedicine to increase access to health services. These key factors contributed to achieving this:

*Presence of strong political will for telemedicine development at a high level of the GOU, private sector partners, health providers, and donors*

*Effective format of the MOH Telemedicine IWG*

*Effective facilitation of engagement and communication among stakeholders of varying perspectives*

## **LOOKING FORWARD**

The achievements of telemedicine, contributed to by the LHSS Project in close cooperation with international and national partners, and its further development, expansion, and sustainability, depend on the political will and potential of all involved parties. Here LHSS proposes specific recommendations to sustain and scale the results of the Ukraine activity. For all recommendations, and specifically to achieve the visions the health system performance improvements identified through the LHSS Global Knowledge Strategy, the ongoing war/illegal invasion of Russia into Ukraine is the condition most impacting the feasibility of the actions below – the damage and impact it continues to inflict on the health system and the timing and condition of the war's end will continue to impact the context and conditions for the health systems functioning, including the use of telemedicine.

### **OVERARCHING PRIORITY RECOMMENDATIONS**

LHSS puts forth these recommendations for the MOH, the NHSU, and the SoE eHealth to ensure access to quality care through telemedicine. They support the priority of implementing

Ukraine's Strategy for Telemedicine Development, endorsed by the Verkhovna Rada on July 14, 2023

- 1. Continue to integrate telemedicine functionality throughout the Health System.** It should remain a GOU priority to make telemedicine services available to every doctor and every patient regardless of the level of development of the MIS in a particular facility, to improve access to the patient's medical data wherever the medical care was provided, to make medical care more accessible and of high quality, and to allow the effective use of the health care facility's resources.
- 2. Update the regulatory framework of telemedicine to synchronize it with the eHealth technical updates.** Appropriate policies and regulations must keep pace with telemedicine's integration into the eHealth system. The integration of the telemedicine functionality into eHealth will require updating the policies that regulate the provision of services via telemedicine, especially in light of constant advances in eHealth capabilities. This will give health professionals clear and up-to-date guidelines for the use of telemedicine.
- 3. Organize systematic training of medical workers on theoretical and applied issues of the use of telemedicine.** The development of eHealth and its regulatory framework will require training health care facility managers and medical and rehabilitation care providers on the new rules for providing services via telemedicine. Their training also should cover best practices that have been learned from the use of telemedicine methods and tools. The new knowledge and skills should motivate them to use telemedicine services effectively and according to the patient's needs.
- 4. Complete the development of the monitoring system for telemedical services in eHealth.** Collecting and analyzing monitoring data will allow the identification of trends in the provision of telemedicine services and a better understanding of the behavior of providers of the services.
- 5. LHSS recommends development partners, international technical assistance projects, and donors prioritize telemedicine as an area of health care development.** The war's destruction of health infrastructure lends extra importance to the introduction of modern information technologies, which are more effective than existing ones in terms of both medical care and health care financing. Telemedicine is one such technology, and its further development will expand the availability of medical care during the remainder of the war and the post-war recovery. The lack of state funding threatens to reverse the progress Ukraine has achieved in telemedicine. Therefore, it is important that donors that provide technical and financial assistance to the GOU continue to support the development of telemedicine.
- 6. Support for sustaining and scaling up health system performance improvements.** Through the collaborative learning process described in Annex C, LHSS and key stakeholders agreed on what would be required to sustain and scale two specific improvements in health system performance in the future. Although LHSS has supported MOH in designing necessary technological changes allowing full integration of telemedicine, they will need to be followed by corresponding changes in legislation to be maximally effective. For the first system improvement, "Establishment of a strategic vision and a supportive legislative environment for telemedicine in Ukraine," the vision going forward is

for an appropriate legal framework to be created for sustained, scaled, and effective use of telemedicine in Ukraine. Stakeholders agreed that to achieve this specific vision over the next 3–5 years, aligned with the national government vision and strategy, will require the following conditions:

- Further technical assistance and support to the MOH in telemedicine policy development
- Synchronization of technical and regulatory streams in telemedicine
- Availability of financial resources to support policy-development (hiring of consultants, and advisers for policy analysis, drafting/amending the policies, etc.)
- Further technical support for the work of the IWG on the development of telemedicine as an interdisciplinary platform for policy dialogue

The MOH must lead the effort to achieve the above conditions, working in cooperation with international technical assistance projects, donors, development partners, the SoE eHealth, and other entities. See Annex D for more details on conditions, actors and actions recommended to sustain this improvement.

For the second health system performance improvement identified through the learning process, “Establishment of public-private partnerships aiming at reconnecting people to health care and rehabilitation services during wartime in Ukraine,” stakeholders with LHSS developed the following vision for sustainability: Telemedicine solutions are effectively used by motivated, trained physicians to provide needed telemedicine services to patients who are aware of the benefits of these solutions and are interested in using them.

Realization of this vision in the next 3–5 years is possible under the following conditions:

- Further support for the implementation of telemedicine solutions provided as humanitarian aid by the SoE eHealth after the end of LHSS
- Health care facilities’ identification of needs and capacity development for responsible use of telemedicine solutions provided during martial law (free of charge) and after it (following negotiations with the supplier)
- Updating (as necessary) the legal framework regulating the use of telemedicine solutions
- Cooperation with supplier companies regarding the conditions and terms of providing further technical support for telemedicine solutions, in accordance with the specifics of the Ukrainian context
- Integration of telemedicine solutions with facilities MISs
- Organization of training on telemedicine solutions and telemedicine in general
- Increasing interest in telemedicine services among managers of health care facilities, medical workers, and patients

The implementation of actions and the achievement of these conditions require the efforts of the MoH, SoE eHealth, health care facilities, local councils (as owners of institutions), supplying companies, and medical education institutions. See Annex D for more details on conditions, actors and actions recommended to sustain this improvement.

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2. Law of Ukraine # 1053-IX of December 3, 2020 "On rehabilitation in health area". <https://zakon.rada.gov.ua/laws/show/1053-20#Text>.
3. Law of Ukraine # 3301-IX as of August 9, 2023 "On Making Amendments to Certain Legislative Acts of Ukraine on the Functioning of Telemedicine". <https://zakon.rada.gov.ua/laws/show/3301-20#Text>.

#### **Decrees of the Cabinet of Ministers of Ukraine**

1. Decree of the Cabinet of Ministries of Ukraine # 1114 of November 21, 2012 "On approval of Model Terms of Reference of team of emergency (ambulance) health care". <https://zakon.rada.gov.ua/laws/show/1114-2012-п#Text>
2. Decree of the Cabinet of Ministries of Ukraine # 1117 of November 21, 2012 "On approval of Model Terms of Reference of station of emergency (ambulance) health care". <https://zakon.rada.gov.ua/laws/show/1117-2012-п#Text>
3. Decree of the Cabinet of Ministries of Ukraine # 1118 of November 21, 2012 "On approval of the Procedure for informing emergency (ambulance) health care teams about the call of emergency health care and their dispatch to the scene". <https://zakon.rada.gov.ua/laws/show/1118-2012-п#Text>.
4. Decree of the Cabinet of Ministries of Ukraine # 1359 of December 28, 2020 "Some issues of the organization of operational dispatching services of centers of emergency health care and disaster medicine". <https://zakon.rada.gov.ua/laws/show/1359-2020-п#Text>
5. Decree of the Cabinet of Ministries of Ukraine # 1268 of November 3, 2021 "Issues of organization of rehabilitation in health care area". <https://zakon.rada.gov.ua/laws/show/1268-2021-%D0%BF#Text>
6. Decree of the Cabinet of Ministers of Ukraine # 625-r of July 14, 2023 "On approval of the Strategy for the Development of Telemedicine in Ukraine". <https://zakon.rada.gov.ua/laws/show/625-2023-%D1%80#Text>
7. Decree of the Cabinet of Ministries of Ukraine # 370 of April 2, 2024 "On making amendments to the Decree of the Cabinet of Ministries of Ukraine as of November 3, 2021, # 1268". <https://zakon.rada.gov.ua/laws/show/370-2024-п#n10>

8. Decree of the Cabinet of Ministries of Ukraine # 500 of May 3, 2024 “On making amendments related to telemedicine functioning, to some decrees of the Cabinet of Ministers of Ukraine”. <https://zakon.rada.gov.ua/laws/show/500-2024-%D0%BF#Text>

#### **Orders of the Ministry of Health of Ukraine**

1. Order of the Ministry of Health of Ukraine # 681 of November 19, 2015 “On approval of policies related to the use of telemedicine in health area”. <https://zakon.rada.gov.ua/laws/show/z1400-15#Text>.
2. Order of the Ministry of Health of Ukraine # 504 of March 19, 2018 “On approval of the Procedure of primary health care provision”. <https://zakon.rada.gov.ua/laws/show/z0348-18#Text>.
3. Order of the Ministry of Health of Ukraine # 1881 of October 19, 2018 “On approval of Amount of provision secondary (specialized) health care which must be insured by multiprofile hospitals of intensive treatment of the 1<sup>st</sup> and the 2<sup>nd</sup> levels, and of Amendments to the Procedure of regionalization of perinatal care”. <https://zakon.rada.gov.ua/laws/show/z1292-18#Text>.
4. Order of the Ministry of Health of Ukraine # 1308 of June 4, 2020 “On improving organization of palliative care provision”. <https://zakon.rada.gov.ua/laws/show/z0609-20#n22>
5. Order of the Ministry of Health of Ukraine # 2179 of September 24, 2020 “On approval of policies on emergency health care provision”. <https://zakon.rada.gov.ua/laws/show/z1192-20#Text>.
6. Order of the Ministry of Health of Ukraine # 281 of February 11, 2022 “On establishment of Inter-Agency Working Group on the development of the Concept on telemedicine implementation” (recognized invalid by MOH Order # 1906 of November 3, 2023). <https://zakon.rada.gov.ua/rada/show/v0281282-22#Text>
7. Order of the Ministry of Health of Ukraine # 1062 of June 06, 2022 “On organization of health care provision with the use of telemedicine in conditions of martial law” (recognized invalid by MOH Order # 77 of January 15, 2024). <https://zakon.rada.gov.ua/laws/show/z0728-22>.
8. Order of the Ministry of Health of Ukraine # 994 of June 9, 2022 “On test exploitation of telemedicine platforms (systems) in conditions of martial law in Ukraine” (recognized invalid by MOH Order # 538 of March 29, 2024). <https://moz.gov.ua/article/ministry-mandates/nakaz-moz-ukraini-vid-09062022--994-pro-provedennja-testovoi-ekspluatacii-telemedicnih-platform-sistem-v-umovah-voennogo-stanu-v-ukraini>.
9. Order of the Ministry of Health of Ukraine # 1695 of September 17, 2022 “On approval of Procedure of provision of health and/or rehabilitation care with the use of telemedicine for the period of martial law in Ukraine or some of its localities”. <https://zakon.rada.gov.ua/laws/show/z1155-22>.
10. Order of the Ministry of Health of Ukraine # 1906 of November 3, 2023 “On establishment of Inter-Agency Working Group on issues of telemedicine development in Ukraine”. <https://moz.gov.ua/article/ministry-mandates/nakaz-moz-ukraini-vid-03112023--1906-pro-utvorennja-mizhvidomchoi-robochoi-grupi-z-pitan-rozbudovi-telemedicini-v-ukraini>.
11. Order of the Ministry of Health of Ukraine # 77 of January 15, 2024 "On making amendments to the Order of the Ministry of Health of Ukraine of September 17, 2022 # 1695 and on Approval of Amendments to the Procedure for providing medical care with the use of telemedicine, rehabilitation care with the use of telerehabilitation for the period of martial law in Ukraine or some of its localities". <https://zakon.rada.gov.ua/laws/show/z0350-24#n11>.
12. Order of the Ministry of Health of Ukraine # 109 of January 22, 2024 "On test operation of telemedicine solutions under martial law in Ukraine". <https://moz.gov.ua/article/ministry-mandates/nakaz-moz-ukraini-vid-22012024--109-pro-provedennja-testovoi-ekspluatacii-zasobiv-telemedicini-v-umovah-voennogo-stanu-v-ukraini>

#### **Draft policies prepared with LHSS technical assistance**

1. Order of the Ministry of Health of Ukraine “On approval of the Procedure of health and/or rehabilitation care provision with the use of telemedicine” (*to replace MOH Order # № 681, which will be recognized invalid*).

2. Order of the Ministry of Health of Ukraine “On making amendments to the Order of the Ministry of Health of Ukraine # 1881 of October 19, 2018” *(to include telemedicine into specialized health care)*.
3. Order of the Ministry of Health of Ukraine “On approval of Amendments to some policies of the Ministry of Health of Ukraine” *(to include telemedicine into primary health care (MOH Order # 504), emergency care (MOH Order # 2179), and palliative health care (MOH Order # 1308))*.

## ANNEX A. TECHNICAL DELIVERABLES

1. **The Strategy for the Development of Telemedicine in Ukraine:** [The Government of Ukraine has Adopted a Strategy for the Development of Telemedicine](#)
2. **Implementation Plan for Telemedicine in Ukraine:** [The Government of Ukraine has Adopted a Strategy for the Development of Telemedicine](#)
3. **Report of international experiences with telemedicine development:** The Local Health System Sustainability Project (LHSS) under the USAID Integrated Health Systems IDIQ. September 2022. *Lessons Learned from an International Review of Telemedicine*. Rockville, MD: Abt Associates. [Lessons Learned from an International Review of Telemedicine | Local Health System Sustainability Project \(lhssproject.org\)/](#)
4. **Landscape analysis of telemedicine in Ukraine:** The Local Health System Sustainability Project (LHSS) under the USAID Integrated Health Systems IDIQ. March 2023. *Landscape Assessment of Telemedicine in Ukraine*. Rockville, MD: Abt Associates. [Landscape Analysis of Telemedicine in Ukraine \(English\)](#); [Landscape Analysis of Telemedicine in Ukraine \(Ukrainian\)](#)
5. **Technical brief on financing of teleconsultations:** LHSS Ukraine. January 2024. *Estimating resources associated with delivering telemedicine-based services at facility level in Ukraine Study Results*.
6. **Summary of experiences, lessons learned, and best practices for implementation of telemedicine during the war in Ukraine:** Liashenko, Artem, Bohdan Kiziun, Oleksandr Hasych, and Iryna Teleshevska, The Local Health System Sustainability Project (LHSS) under the USAID Integrated Health Systems IDIQ. June 2024. *Telemedicine in Ukraine During the War: Lessons Learned and Best Practices*. Rockville, MD: Abt Global LLC (approved on July 19). [Telemedicine in Ukraine During the War: Lessons Learned and Best Practices \(English\)](#) | [Telemedicine in Ukraine During the War: Lessons Learned and Best Practices \(Ukrainian\)](#)
7. **Technical Specification for telemedicine enabling environment:** The Local Health System Sustainability Project (LHSS) under the USAID Integrated Health Systems IDIQ. June 2024. *Summary: Technical specification for telemedicine enabling environment*. Rockville, MD: Abt Global LLC. [Technical Specifications Summary for Telemedicine Enabling Environment in Ukraine | Local Health System Sustainability Project \(lhssproject.org\)](#)

## ANNEX B. SUCCESS STORIES AND BLOGS

### Success stories

“Expanding Access to Services through Telemedicine in Ukraine.” Success story about telemedicine in Ukraine in Mission Impact Report 2023. <https://www.abtassociates.com/mission-impact-report-2023>.

[New Interagency Working Group is Established to Expand Access to Telemedicine in Ukraine | Local Health System Sustainability Project \(lhssproject.org\)](#). September 19, 2022.

[As War Upends Ukraine’s Health System, Telemedicine Rises to Fill the Gaps | by LHSS Project | Medium](#). March 29, 2023.

[Interactive Storymap: Telemedicine in Ukraine | Local Health System Sustainability Project \(lhssproject.org\)](#). August 17, 2023.

### Blogs

[LHSS Identifies Best Practices for Building Out Ukraine’s Telemedicine System | by LHSS Project | Medium | Medium](#). June 23, 2023.



## ANNEX C. DETERMINANTS OF HEALTH SYSTEM PERFORMANCE IMPROVEMENTS

The health system “performance improvements” referenced in this report are the result of an in-depth exploration of health system performance improvements to which LHSS contributed – Ukraine was one of several LHSS countries to undertake this process. The LHSS Project team conducted structured meetings with key stakeholders to discuss performance improvements related to telemedicine legislation, and with health care providers to discuss performance improvement related to public-private partnerships in telemedicine solutions. All meetings provided powerful feedback about enabling factors (positive determinants) and barriers (negative determinants) as well as about vision, conditions, actions, and actors that enable sustainability and scaling of the improvements in next three to five years.

- Meetings with stakeholders: LHSS held meetings with more than 15 key stakeholders (including technical staff and leadership within the NHSU, the MOH, and SOE eHealth) to discuss project performance improvements, lessons learned and sustainability strategies, including conditions, actors and actions needed to sustain performance improvement.
- Meetings with health care providers: LHSS conducted meetings with more than 130 health care providers and other stakeholders to share best practices and other positive determinants of the performance improvement and challenges experienced in implementing telemedicine solutions. These meetings provided an opportunity for the Activity to support participants in identifying outstanding needs and challenges they seek to address to sustain and scale the performance improvement #2 (see below), and the actions and conditions needed to address them.

The two health system performance improvements that stakeholders explored in depth, and agreed on steps to maintain and take to scale are:

1. Improved governance: *Establishment of strategic vision and supporting legislative environment for telemedicine in Ukraine.*
2. *Establishment of public-private partnerships aiming at reconnecting people to health care and rehabilitation services during war time in Ukraine.*

### THE LHSS GLOBAL LEARNING PROCESS

Using a standardized methodology created by the LHSS Project, the activity identified two key health system performance improvements connected to their work, studied the determinants of the improvements, and identified conditions and actions needed to sustain the improvements. The findings from these efforts contributed to the content in Lessons Learned and Looking Forward section of this final report. This annex summarizes the methodology LHSS countries use to arrive at their findings as implemented in Ukraine.

Overall, the learning methodology seeks to answer the question, *what are lessons learned regarding determinants of health system performance?* The three steps to answering that are:

**Step 1: Select and clearly describe the performance improvement that will be examined and gather evidence to substantiate the performance improvement.**

For the purposes of this effort, a health system performance improvement is defined as a positive change in the functioning of the local health system or a specific part of the health system. Once staff two performance improvements they gathered and documented evidence of the improvement from various sources, including a.) internal sources such as LHSS reports, AMELPs, deliverables, and other knowledge products such as conference or case competition

materials, and b) external sources such as government information, implementing partner and donor reports, academic sources, and media sources.

**Step 2: Identify determinants of the selected performance improvement, and extract lessons learned about the most important determinants.**

LHSS and stakeholders, including USAID Mission staff, participated in facilitated learning sessions where they discussed three guiding questions:

- What are the perceived determinants of this health system performance improvement? (positive and negative)
- How important was each of these determinants in achieving the performance improvement?
- What are lessons learned about the determinants of the performance improvement?

Participants rated the importance of each determinant to the achievement of the improvement.

**Step 3: Identify conditions and actions needed to sustain, institutionalize, and/or scale up the performance improvement.**

For this exercise, the *sustainability* of a performance improvement means the degree to which an organization or health system can continue to perform a function at a level that is sufficient to maintain and/or improve health system outcomes, including adaptability and durability to shocks and changing circumstances. *Institutionalization* is the process of ensuring that a performance improvement is a regular occurrence or behavior that is formally and culturally integrated into the structure and functioning of a health system. An institutionalized improvement is part of a regular function of the health system, supported by behavioral norms, capacity, and laws/policies/regulatory or procedural frameworks (as appropriate), cultural acceptance and widespread legitimacy. *Scaling up* a performance improvement means expanding, replicating, adapting, and sustaining successful health system performance improvements in geographic space and over time to reach a greater number of people, with the intent to reach a national or other appropriate level of impact.

To identify the needed conditions and actions, LHSS and stakeholders discussed:

- What is a 3-5 year plausible vision for a sustained, institutionalized and/or scaled-up health system performance, given the context of the health system and relevant external factors?
- What conditions – e.g., capacities, resources, and political will and engagement from health system stakeholders -- are needed to achieve the vision for the health system performance?
- What practical actions can country stakeholders take to sustain, institutionalize and/or scale up the PI post-LHSS, in line with the 3-5 year vision?

LHSS and stakeholders agreed on the key actor(s) who should be responsible for taking actions.

## CONDITIONS, ACTORS, AND ACTIONS TO SUSTAIN AND SCALE TWO HEALTH SYSTEM IMPROVEMENTS

As part of the learning process described in Annex C, LHSS and key stakeholders engaged in telemedicine at all levels agreed on the following requirements to sustain LHSS-supported health system improvements as described in the tables below.

**Table D.1: Sustaining and Scaling Performance Improvement 1: Establishment of Strategic Vision and Supporting Legislative Environment for Telemedicine in Ukraine**

**Description of a 3-5-year vision for the health system performance improvement:**

*Appropriate legal framework has been created for sustained, scaled, and effective use of telemedicine in Ukraine.*

**Assumptions about any relevant external factors:**

*The most important external factor is Ukraine's victory in the war and the beginning of post-war recovery, which will make it possible to determine stable priorities and establish systematic, predictable work.*

Domain	Condition for sustaining performance improvement	Actions for sustaining performance improvement	Actors Involved
<b>Capacity</b>			
MOH capacity in developing a regulatory framework	Further technical assistance and support for the MOH in telemedicine policy development	<ul style="list-style-type: none"> <li>Monitoring and analysis of organizational and technical changes in telemedicine that require policy regulation</li> <li>Drafting proposals/amendments to policies that regulate the current issues of telemedicine and their submission to the MOH</li> </ul>	International technical assistance projects, development partners, MOH
<b>Resources</b>			
Infrastructure	Synchronization of technical and regulatory streams in telemedicine	<ul style="list-style-type: none"> <li>Development of eHealth</li> <li>Ensuring the functioning of teleconsultation, telemetry, and teleradiology as components of eHealth</li> <li>Updating of policies regulating the work of eHealth, MISs, suppliers of telemedicine equipment, requirements for providers of telemedicine services</li> <li>Updating of procedures for providing medical and/or rehabilitation assistance with the use of telemedicine after the introduction of telemedicine services in the eHealth</li> </ul>	SoE eHealth, MOH
Finances	Availability of financial resources for policy-development activities (hiring of consultants, advisers for policy analysis and drafting/amending the policies, etc.)	<ul style="list-style-type: none"> <li>Ongoing technical assistance and financial support to the MOH from donors, technical assistance projects, charitable organizations</li> </ul>	MOH, development partners, donors
<b>Political will and stakeholder engagement</b>			
Intersectoral dialogue	Further technical support for the work of the Telemedicine IWG on the development of telemedicine in Ukraine as an interdisciplinary platform for policy dialogue	<ul style="list-style-type: none"> <li>Support of regular IWG meetings to share experiences and identify needs in legislation provision of that addresses telemedicine.</li> </ul>	MOH, SoE eHealth, international technical assistance projects, development partners

**Table D.2: Sustaining and Scaling Performance Improvement 2: *Establishment of Public-Private Partnerships Aiming at Reconnecting People to Health Care and Rehabilitation Services During War Time in Ukraine***

**Description of 3–5-year vision for the health system performance improvement:**

*Telemedicine solutions are effectively used to provide necessary telemedicine services by motivated, trained physicians to patients who are aware of the benefits of these solutions and are interested in using them.*

Domain and sub-domain	Condition for sustaining performance improvement	Action for sustaining performance improvement	Actors
<b>Capacity</b>			
Public authorities' capacity to support telemedicine solutions provided as humanitarian aid	Further support for the implementation of telemedicine solutions provided as humanitarian aid by the SOE eHealth (in case of its organizational, financial, and personnel capacity) after the LHSS Ukraine Activity ends	<ul style="list-style-type: none"> <li>Strengthen capacity to support telemedicine solutions.</li> <li>Continue communication with supplier companies.</li> <li>Coordinate technical support of telemedicine solutions, staff training, information activities.</li> <li>Monitor and evaluate the implementation of telemedicine solutions.</li> </ul>	SoE eHealth, MOH
Health care facilities' capacity to work with telemedicine solutions	Health care facilities' identification of needs and capacity development for responsible use of telemedicine solutions provided during martial law (free of charge) and after it (following negotiations with the supplier)	<ul style="list-style-type: none"> <li>Acquire telemedical solutions only if the facility has the appropriate capacities and needs.</li> <li>Transfer unused telemedicine solutions to other facilities.</li> <li>Develop infrastructure (update equipment, software, etc.).</li> <li>Ensure stable electricity supply and Internet connection in the health care facility.</li> </ul>	Health care facilities, local councils (facility owners)
Regulatory support of telemedicine	Updating (as necessary) the legal framework that regulates the use of telemedicine solutions	<ul style="list-style-type: none"> <li>Analyze feedback from health care providers, providers, patients, etc. to make necessary changes to telemedicine regulations.</li> <li>Make changes to regulations to ensure the most effective use of telemedicine solutions, particularly in martial law.</li> </ul>	MOH
<b>Resources</b>			
Infrastructure	Cooperation with supplier companies regarding the provision and further technical support of telemedicine solutions, including the conditions and terms of providing further technical support for telemedicine solutions in the Ukrainian context.	<ul style="list-style-type: none"> <li>Minimize the language barrier (provide resources for translation services, develop an interface in Ukrainian).</li> <li>Organize technical support for telemedicine solutions and users' training.</li> <li>Provide opportunities for adapting the telemedicine solutions to the requirements of Ukrainian legislation (e.g., regarding personal data), facility infrastructure, types of medical care, clinical needs, and so forth.</li> </ul>	Supplier companies, SoE eHealth
	Integration of telemedicine solutions with the facility MIS	<ul style="list-style-type: none"> <li>Address the issue of integration with the MIS for automatic (rather than manual) data entry into the MIS, data exchange between facilities and specialists.</li> </ul>	Supplier companies, health care facilities, MISs

Domain and sub-domain	Condition for sustaining performance improvement	Action for sustaining performance improvement	Actors
Personnel	Organization of training on telemedicine solutions and telemedicine in general	<ul style="list-style-type: none"> <li>• Continue staff training on the use of telemedicine solutions by both doctors and patients.</li> <li>• Include the issue of telemedicine in the educational programs of facilities of higher and postgraduate medical education.</li> </ul>	MOH, SoE eHealth, health care facilities
Other	Increasing of interest in telemedicine services among managers of health care facilities, medical workers, and patients	<ul style="list-style-type: none"> <li>• Provide wide sharing of telemedicine development, the successful implementation of telemedicine solutions through information campaigns and publications on websites and social networks, etc.</li> <li>• Carry out regular monitoring of the use of telemedicine solutions.</li> <li>• Hold master classes on the use of telemedicine solutions and meetings so that users can share their experiences.</li> </ul>	MOH, SoE eHealth, health care facilities

## ANNEX D: PERFORMANCE INDICATOR TABLE

#	No. in AMELP	Indicator	Type	Baseline	FY22		FY23		FY24		Total FY22 + FY23 + FY24		% Achieved (Achieved/Target)	Data Source/Collection Method	Comments	
					Annual Target	Achieved	Annual Target	Achieved	Annual Target	Achieved	Total Target	Achieved				
Indicators from FY22 (indicator numbers are from list of indicators for FY22)																
1	2	Identified vulnerable populations are explicitly included in MOH's implementation plan for telemedicine services	Oc	N/A	Yes	Yes	-	-	-	-	Yes	Yes	100%	LHSS Activity reports and MoH Records	The telemedicine concept note and implementation plan drafted in FY22 required the MOH to identify vulnerable populations. Vulnerable populations were included in the Strategy for Telemedicine Development and were clearly identified in MOH Order #1062 of June 20, 2022	
2	3	Telemedicine landscape analysis report produced	Op	No	Yes	No	-	Yes	-	-	Yes	Yes	100%	LHSS Activity reports and MoH Records	Due to long approval process (July 2023), rapidly changing priorities in wartime, and LHSS's completed telemedicine landscape analysis, which identified these populations, the above-mentioned task became moot; vulnerable populations were listed in Telemedicine Strategy (to explain the principle of health care accessibility). The target was achieved in FY23. The report is posted on the LHSS website, and widely disseminated.	
3	4	Documented evidence demonstrating 'at scale' telemedicine interventions for vulnerable groups from international experiences	Op	No	Yes	Yes	-	-	-	-	Yes	Yes	100%	LHSS Activity reports, Minutes of the Meeting and MoH Records	Completed a review of telemedicine in conflict settings and the international telemedicine review.	
4	6	Telemedicine implementation plan produced	Op	No	Yes	Yes	-	-	-	-	Yes	Yes	100%	LHSS Activity reports and MoH Records	Telemedicine implementation plan produced in FY22 and approved (as an operations plan) in FY23 by the Cabinet of Ministers.	
5	7	Number and types of telemedicine services for vulnerable groups identified	Op	0	N/A	0	-	3	-	-	N/A	3	N/A	LHSS Activity reports and MoH Records	Based on telemedicine landscape analysis findings, three telemedicine services (teleconsultation, telemetry, and teleradiology) were identified as the most beneficiary for vulnerable populations.	
Indicators for FY22, FY23 and FY24																
6	1	Number of policies/standards related to telemedicine, developed, updated, or adapted	Op	0	2	2	2	3	2	14	6	19	316.7%	Legislation database records and LHSS Activity reports	All "newly developed" and amended "basic" policies are counted (not amendment tools). Five drafts were developed, submitted to the MOH, and counted in the final figure achieved.	
7	2	Percent of the Task Order (TO) work implemented by local partners <sup>(S&amp;T)</sup>	Oc	0%	10%	6.08%	10%	7.99%	15%	<i>The figure will be provided by home office</i>		N/A	<i>Average of FY22-FY24</i>	N/A	LHSS budget records	This indicator is for the Task Order AMELP (aggregated LHSS Activities) and it is not expected that all countries will meet the target. The figure will be provided (and % counted) after project close-out.
8	3	Number of IWG coordination meetings held <sup>(S&amp;T)</sup>	Op	0	3	3	3	1	3	2	9	6	66.6%	LHSS Activity reports, Minutes of the Meeting	The target was not achieved in FY23 due to the protracted process of approving the Telemedicine Strategy (July 2023) and to IWG membership and terms of reference	

#	No. in AMELP	Indicator	Type	Baseline	FY22		FY23		FY24		Total FY22 + FY23 + FY24		% Achieved (Achieved/Target)	Data Source/Collection Method	Comments
					Annual Target	Achieved	Annual Target	Achieved	Annual Target	Achieved	Total Target	Achieved			
9	4	Number of new USG-supported public-private partnerships (PPPs) formed <sup>(S&amp;T)</sup>	Op	0	2	5	5	1	N/A	1	7	7	100%	LHSS Activity reports	and MOH Records reformatting after the Strategy was approved. LHSS supported communication and PPPs between the MOH and international companies that offered telemedicine solutions as humanitarian aid, and seven partnerships resulted in a memorandum of understanding being signed (one of these companies signed MoU with the MOH, but has not started supplying yet).
10	5	Number of services provided with use of telecommunication technologies (such as teleconsultations) <sup>(S&amp;T)</sup>	Op	N/A	N/A	6,025,096	N/A	7,017,061	N/A	10,062,523	N/A	23,104,680	N/A	NHSU Records	Data are reported for calendar year (2021, 2022, 2023).
11	6	Number of health care providers trained in the utilization of donated telemedicine solutions <sup>(S&amp;T)</sup>	Op	0	N/A	695	1,300	1,259	1,500	2,436	1,500	2,436	162.4%	LHSS Activity reports	Target figure for FY23 (1,300) is cumulative for FY22 and FY23. Annual targets and achieved figures are cumulative starting from FY22 Q2 till the end of the project.
12	7	Number of health care facilities providing services through donated telemedicine solutions <sup>(S&amp;T)</sup>	Op	0	N/A	224	400	324	500	519	500	519	103.8%	LHSS Activity reports	Target figure for FY23 (400) is cumulative for FY22 and FY23. Annual targets and achieved figures are cumulative starting from FY22 Q2 till the end of the project.
13	8	Number of technical assistance interactions with health care providers on the use of donated telemedicine solutions <sup>(S&amp;T)</sup>	Op	0	N/A	648	1,000	1,404	1,500	5,143	1,500	5,143	342.9%	LHSS Activity reports	Target figure for FY23 (1,000) is cumulative for FY22 and FY23. Annual targets and achieved figures are cumulative starting from FY22 Q2 till the end of the project.
14	9	Number of services provided through donated telemedicine solutions <sup>(S&amp;T)</sup>	Op	0	N/A	992	N/A	7,090	N/A	28,063	N/A	28,063	N/A	LHSS Activity reports and health facility records	Annual achieved figures are cumulative starting from FY22 Q2 till the end of the project.
15	10	Cost of donated telemedicine solutions that are effectively utilized due to the Project LHSS Activity support <sup>(S&amp;T)</sup>	Op	0	N/A	\$1,451,800	N/A	\$3,676,900	N/A	\$3,676,900	N/A	\$3,676,900	N/A	LHSS, MOH, eHealth SOE Records	Annual achieved figures are cumulative starting from FY22 Q2 till the end of the project.
<b>USAID Reconnecting People to Care (RPC) indicators, incorporated in LHSS grant monitoring (FY24)</b>															
16	1	2.2.1 – Number of health workers trained to provide specific health services related to recovery efforts	Op	0	-	-	-	-	20	30	20	30	150%	Grant reports	30 psychologists were trained (Doctor Online - LLC NK Consulting Group)
17	2	3.1.1 – Number of people who received mental health services as a result of USAID support	Op	0	-	-	-	-	3,200	3,493	3,200	3,493	109.1%	Grant reports	Doctor Online services
18	3	3.2.2 – Number of facilities that provide health care using telemedicine	Op	0	-	-	-	-	2	2	2	2	100%	Grant reports	1) Doctor Online 2) CF Sheptytskyi Hospital

#	No. in AMELP	Indicator	Type	Baseline	FY22		FY23		FY24		Total FY22 + FY23 + FY24		% Achieved (Achieved/Target)	Data Source/Collection Method	Comments
					Annual Target	Achieved	Annual Target	Achieved	Annual Target	Achieved	Total Target	Achieved			
19	4	3.2.3 – Number of people accessing telemedicine services	Op	0	-	-	-	-	4,700	5,388	4,700	5,388	114.6%	Grant reports	1,895 services achieved by CF Sheptytskyi Hospital (target 1,500) 3,493 services achieved by Doctor Online (target 3,200)
20	5	4.1.1 – Number of people reached with USAID-supported health communications activities	Op	0	-	-	-	-	N/A	729	N/A	729	N/A	Grant reports	Posts about free telemedicine services reached 204 views in Facebook, 525 in LinkedIn (Doctor Online)
21	6	4.2.1 – Number of health facilities implementing new screening or diagnostic methods	Op	0	-	-	-	-	1	1		1	100%	Grant reports	1 – CF Sheptytskyi Hospital



## ANNEX E: CONTEXT INDICATOR TABLE

No.	Indicator	Baseline (FY22)	FY22	FY23	FY24	Data Source/ Collection Method	Comments	Comments-2 (to be deleted in EoA report)
C1	Physician density per 1,000 population	<b>2018</b> 4.42 (all facilities) 3.74 (only MOH system)	<b>2019</b> 4.43 (all facilities) 3.7 (only MOH system) <b>2020</b> 4,34 (all facilities) 3,56 (only MOH system)	<b>2022</b> 3.98 (all facilities) 3.36 (only MOH system) <b>2021</b> No data (all facilities) 3.51 (only MOH system)	<b>2023</b> 3.91 (all facilities) 3.25 (only MOH system)	MOH/PHC annual report on HRH <a href="http://medstat.gov.ua/ukr/MXXIII.html">http://medstat.gov.ua/ukr/MXXIII.html</a>	In FY 22, Year 2019 data 4.43 and 3.7 were reported both as a baseline and a figure for FY22 (due to closed databases in 2022 when full-scale war started). Now it is also possible to report figures about 2020 and 2021 as well as about 2018 as a baseline (one year before the first of the reported years).	
C2	Out-of-pocket health expenditure as a percentage share of total health expenditure	50.66% (2018)	51.12% (2019)	47.86% (2020)	46.33% (2021)	World Bank <a href="https://data.worldbank.org/indicator/SH.XPD.OOPC.CH.ZS?end=2021&amp;locations=UA&amp;start=2000">https://data.worldbank.org/indicator/SH.XPD.OOPC.CH.ZS?end=2021&amp;locations=UA&amp;start=2000</a>	In FY 22, Year 2019 data 51.12% were reported both as a baseline and a figure for FY22 (due to closed databases in 2022 when full-scale war started). Now it is possible to report 50.66% as a baseline (one year before the first of the reported years).	
C3	Proportion of population accessing essential package of health services	74.0% (2020)	78.5% (2021)	78.8% (2022)	78.1% (2023)	NHSU annual reports for 2020-2023 2020: <a href="https://health.gov.ua/nhsu-annual-report-2020-en-web.pdf">nhsu-annual-report-2020-en-web.pdf (e-health.gov.ua)</a> 2021: <a href="https://health.gov.ua/book-en.pdf">book-en.pdf (e-health.gov.ua)</a> <a href="https://health.gov.ua/book-en.pdf">book-en.pdf (e-health.gov.ua)</a> 2022: <a href="https://edata.e-health.gov.ua/storage/files/annual-report-2022-en.pdf?1695120490">https://edata.e-health.gov.ua/storage/files/annual-report-2022-en.pdf?1695120490</a> 2023: <a href="https://health.gov.ua/report-2023-en-print-final-compressed.pdf">report-2023-en-print-final-compressed.pdf (e-health.gov.ua)</a>	In Ukraine, every citizen is guaranteed access to an essential package of health care services defined by the PMG. The data for this indicator were determined by looking at the percent of the population that submitted declarations to PHC physicians, which is the entry point for patients seeking to gain access to most of these health care services. In FY 22, Year 2021 data 78.5% were reported both as a baseline and a figure for FY22 (due to closed databases in 2022 when full-scale war started). Now it is possible to report 74.0% as a baseline (one year before the first of the reported years).	