National Telehealth Guideline for Bangladesh

Directorate General of Health Services (DGHS)

Table of Contents

I. FORWARD 3

II. ACKNOWLEDGEMENTS 4

EXECUTIVE SUMMARY 5

III. ACRONYMS 6

INTERNATIONAL CLASSIFICATION OF DISEASES, TENTH REVISION, CLINICAL MODIFICATION 6

IV. DEFINITIONS 8

1.BANGLADESH CONTEXT 9

1.1 PROSPEROUS BANGLADESH AND TELEHEALTH 9

2.TELEHEALTH 11

2.1 UNDERSTANDING OF TELEMEDICINE AND TELEHEALTH 11

2.2 TELEHEALTH (THE TERM IS USED INTERCHANGEABLY WITH "TELEMEDICINE" IN THESE GUIDELINES) 12

3. VISION OF THE NATIONAL TELEHEALTH GUIDELINE 13

3.1 PURPOSE 13

3.2 VISION 13

3.3 MISSION 14

4. SCOPE OF THE GUIDELINE 14

5. GUIDING PRINCIPLES 15

6. STRATEGIC ACTIVITIES AND GUIDING PRINCIPLES 16

i. Forward

Telehealth guidline will be the important component of mordern transformation of health, to develop modern health system for prosperous Bangladesh.

ii. Acknowledgements

Executive Summary

The National Telehealth Guidelines of Bangladesh aim to address the relevant components for the delivery of Telemedicine services by healthcare providers through eightactions and guiding principles: “Leadership and Governance”, “Tele-health Innovation, Research and Partner Ecosystem”, “Services and Applications”, “Standards and Applications”, “Infrastructure” and “Legislation, Policy and Compliance”, “Workforce” and “Strategy and Investment”. These Guidelines are meant to ensure patient and provider safety and to provide a holistic approach to execute the delivery of Telemedicine services in Bangladesh. Each domain's material is further broken down into subsections.

The purpose of these Guidelines is to provide a body of knowledge that will help Bangladeshi healthcare professionals, patients, and caregivers better understand and accept the delivery of healthcare services via telehealth, as well as avert any concerns they may have regarding clinical practice, human resources, organizational structure, and technological issues. Since Bangladesh's telehealth ecosystem is still developing, the Guidelines are currently general and generic. The National telehealth Guidelines should be adapted by each specialty to fit the demands of their particular fields. The National telehealth Guidelines will be revised often to remain relevant.

The use of technology in the delivery of healthcare services through telehealth can occasionally make it challenging to understand ideas that are straightforwardly comprehended in the traditional form of healthcare service delivery. One such idea is the standard of care, which must be understood both at the "transactional" and "systems" levels. A multitude of interactions, such as those taking place in multiple places and involving a number of healthcare experts, come together at the "systems" level to provide high-quality treatment to a person. Individual encounters may be thought of as transactions, and each of these transactions must uphold a specific standard of care. The clinical environment, the clinical aims, and the suitability of the technology to achieve those clinical objectives all influence whether it is reasonable to provide a certain healthcare service via telemedicine.

The National Telehealth Guidelines are offered merely as a broad reference, and while using them, providers must take into consideration their particular circumstances and environment. When offering Telemedicine services, providers are still completely responsible for adhering to all legal and ethical obligations and are expected to use caution. It is acknowledged that many healthcare specialties in Bangladesh may be at early stages in the adoption of telehealth (with telehealth serving as an adjunct to traditional modes of healthcare delivery) while some specialty areas have reached a level of maturity to enable Telemedicine to substitute for traditional modes of healthcare delivery in specific situations.

Nature, and not to unduly constrain the development of Telemedicine in Bangladesh. The National Telemedicine Guidelines have been recommended/aligned by the following professional body: Bangladesh Medical and Dental Council (BMDC) And Bangladesh Medical Association (BMA).

iii. Acronyms

AI	Artificial Intelligence
AR	Augmented Reality
BDHA	Bangladesh Digital Health Architecture
BMDC	Bangladesh Medical and Dental Council
BNMC	Bangladesh Nursing and Midwifery Council
BMA	Bangladesh Medical Association
Covid-19	Coronavirus disease of 2019
CC	Community Clinic
CT scan	computerized Tomography scan
DGHS	Directorate General of Health Services
DHS	Digital Health Strategy
DHIS2	District Health Information System
ECG	Electrocardiogram
4IR	Fourth Industrial Revolution
GDP	Gross Domestic Product
HPSP	Health and Population Sector Program
HPNSP	Health Population and Nutrition Sector Program
HRIS	Human Resource Information System
HDI	Human Development Index
HR	Human Resource
HMIS	Health management Information System
ICD 10 CM	International Classification of Diseases, Tenth Revision, Clinical Modification
ICT	Information and Communication Technology
IOT	Internet of Things
ITU	International Telecommunication Union
IT	Information Technology
KPI	key Performance Indicators
MoLGRD&C	Ministry of Local Government, Rural Development & Co-operatives
MIS	Management Information System
MOH&FW	Ministry of Health and Family Welfare
MRI	Magnetic Resonance Imaging
NDA	Non Declaration Agreement
NDHIE	National Digital Health Information Exchange
NLP	Natural Language Processing
LDC	Least Developed Countries
LOINC	Logical Observation Identifiers, Names and Codes – is a universal code system for tests, measurements, and observations.
MNOs	Mobile Network Operators
NGO	Non-Governmental Organization
OOP	Out-of-pocket
PPPs	Public-Private Partnerships
RDTF	Remote Diagnostic Testing Facility
SaaS	Software as a Service
SDG	Sustainable Development Goal
SLA	Service Level Agreement
SeHR	Shared Electronic Health Record

SMS	Short Message Service
SNOMED CT	Systemized Nomenclature of Medicine – Clinical Terms.
TMC	Telemedicine Center
UHC	Universal Health Coverage
VR	Virtual Reality
WoG	Whole of Government
WHA	World Health Assembly
WHO	World Health Organization
UN	United Nations
UHC	Universal Health Coverage
5G	Fifth Generation of Wireless Technology

iv. Definitions

Telehealth: Telehealth technology gives physicians access to real-time patient data and enables patients to participate in their care and contact with physicians outside of regular business hours.

Telemedicine: Telemedicine is the therapeutic part of telehealth, which can be considered as "the exechange of health information from one place to another through electronic communication to improve the health status of the patient". In the guidelines, telehealth also includes telemedicine.

Call centre: A sizable office where staff members of a corporation speak with clients on the phone to answer questions, provide remote services of the firm.

Telemedicine-Marketplace: An IT-based platform regulated by the Finance Government where telemedicine service providers can register apps, bots, web and IoT platforms to provide telemedicine services. On the other hand, citizens will get all types of telemedicine services from all service providers at the same place and can receive necessary services and purchase medicine, medical equipment, medical devices, etc. from the desired service provider.

Prescribed: means prescribed by rules or regulations, or by order published in the Official Gazette, by the Government or by an authority designated by the Government until such rules or regulations are made.

Registered: means registered and approved under these guidelines for provision of telemedicine services. Other cases are registered as described in these guidelines or as per the laws prevailing in respective jurisdictions eg registration of BMDC in case of doctors.

According to rules: Rules, instructions, notifications etc. made by the government on finance related matters.

Shared Electronic Health Record: Means shared electronic health record as described in Bangladesh Digital Health Strategy 2023-2028.

1.Bangladesh Context

1.1 Prosperous Bangladesh and Telehealth

In 1998, Bangladesh initiated the HPSP program along with output component – Support Services: MIS, under the umbrella of the Ministry of Health and Family Welfare (MoH&FW). Innovative use of ICTs, e-Health and Telemedicine is one of the core principles and strategies of Bangladesh since the National Health Policy 2011. The National Information and Communication Technology (ICT) Policy 2018 also outlined the application of ICT in health sectors. To improve health care, ICT policy recommended using ICTs as electronic medical records, telemedicine, medical and health education. It is also mentioned that "all public hospitals and medical research centers shall be linked by a computer network with the medical center of excellence as the central hub in order to make expert services available throughout the country". The National ICT Policy 2018 identified in total 26 strategic action areas for ensuring good Health for each citizen using ICT.

The Digital Health Strategy 2023-2028 states the telehealth goals as "Building a secure and robust telehealth system capable of meeting the needs of all citizens of Bangladesh, whether at home or abroad; And creating a trusted health advisory service". Under this strategic objective are some other specific objectives namely: to build the institutional base of telehealth management so that trained physicians and their associates are able to provide quality consultation to service seekers; Equipping all Community Clinics (CC), Union level public facilities; Upazila and district level hospitals, tertiary hospitals and specialized hospitals with tele-medicine facilities; and assisting non-governmental organizations and private healthcare providers to join telemedicine networks; Develop robust tele-medicine software with all necessary modules and launch it as 'Software as a Service' by linking with 'NDHIE'; Creating a trusted health and family welfare advisory service available anytime anywhere through digital platforms and mobile apps. Appropriately prepare such systems using technological infrastructure to manage large-scale outbreaks such as the Covid-19 pandemic.

With the emergence of 4IR (forth industrial revolution) technologies and furthered by the ongoing COVID pandemic, the development and application of digital tools and technologies in healthcare delivery are advancing at a pace unprecedented. Some research findings predict telemedicine technologies to save $21bn costs by 2025 globally.

TELEMEDICINE- "The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities" (3).- WHO

During this Pandemic, a great cultural change took place silently where very senior doctors of our country started providing service through Voice calls, Video calls, Chat,

Document sharing through social media like Facebook messenger, WhatsApp, etc. to deliver medical advice. Some are using electronic prescriptions and most of them share a snapshot of handwritten prescriptions. More and more doctors now using this form of service provisioning to supplement their personal chamber practice. A good number of third-party Apps now facilitate teleconsultation between doctors and patients. Some of the apps now developed integrate audio, video, and chat consultation between patients and doctors together with tele laboratory, teleradiology, e-commerce for medical goods and medicines along a payment gateway. Telehealth or telemedicine technology mostly in the forms of Apps now proliferating the market.

The weaknesses are lack of framework containing policy regimes and regulatory framework, changing the mindset of service seekers,lack of governing organization, absence of guided telemedicine/telehealth governance framework to facilitate, inadequate human resource capacity, inadequate utilization of existing public sector telemedicine facilities, inadequate ICT infrastructure (internet connectivity, power, localized networks) in health facilities, lack of an investment plan and budgets for resource mobilization in Telehealth and Telemedicine services.

The opportunities are emergence of startups in telemedicine area, growing customer demand for Telehealth/Telemedicine, growing stakeholder interest, doctors and institutional providers opting for telemedicine service, ongoing effort of the government to connect rural smartphones 5G rollout, increased number of smart phones users.

The challenges are inadequate regulations and capacity to regulate the market, enforce cyber security, data protection and privacy.

While Bangladesh felt the necessity of a telemedicine system to enhance access to quality healthcare services for its citizens consecutively iterated through National Health Policy 2011, National ICT Policy 2018 and Draft Digital Health Strategy 2023-2028, Ministry of Health and family welfare accordingly established 94 telemedicine centers, a call center called 'Shastho Batayon' having number 16263. On the other hand, govt initiated 999 for emergency services including ambulance service, and 333 for public service including clinical advisory, in pursuit to materialize those policy directions. While organized government call centers are giving medical advice to millions almost all the major hospitals in the public sector offer patients specialist medical advice through mobile phones.

Bangladesh is relentlessly pursuing its prosperous Bangladesh agenda. Telemedicine/Telehealth is included in the national ICT Policy 2018 in an elaborative way together with the implementation plan. National Health policy 2012 also includes eHealth embracing telemedicine. Continuous persuasion of mordern Bangladesh vision, making available online services, connecting the unconnected and in various way making citizens empowered to attract vertual services, helping growing number of people become computerized literate. The Ministry of health and family welfare started adopting telemedicine in the country in 2012.

2.Telehealth

2.1 Understanding of Telemedicine and Telehealth

The terms, “Telehealth” and “Telemedicine” are used interchangeably in the last few decades, but it has gained popularity during the management of COVID-19 throughout the world, as a method of delivering healthcare at a distance. Despite the facts that they are used interchangeably, yet they have different connotations. Telehealth can be described as the delivery of healthcare at a distance using telecommunication technologies. Telehealth contains both preventive and curative aspects of healthcare delivery. Telemedicine, on the other hand, is the curative or the clinical part of Telehealth and can be described as 'the process of exchanging medical information from one site to another via electronic communications to improve a patient's clinical health status'. The basic concept in all Telemedicine applications is that a patient or health-care professional obtains an opinion/advice from someone at a distance with more expertise in the relevant field using telecommunication to exchange Clinical information. The information can be transferred in real-time synchronously or pre-recorded and forwarded later. In summary, telemedicine offers remote clinical services, but the broader term of telehealth also encompasses additional nonclinical online services such as continuous medical education, professional training etc.

Sometimes telehealth is best understood in terms of the services provided and the mechanisms used to provide those services. Telehealth is an emerging technology enabled service so the list continues to grow:

- Primary care and specialist referral services: may involve a primary care or allied health professional providing a consultation with a patient or a specialist assisting the primary care physician in rendering a diagnosis. This may involve the use of live interactive video or the use of store and forward transmission of diagnostic images, vital signs, and/or video clips along with patient data for later review.
- Remote patient monitoring, including home telehealth: The telehealth provider uses devices to remotely collect and send data to a doctor, health service agency or a remote diagnostic testing facility (RDTF) for interpretation. Such applications might include a specific vital sign, such as blood glucose orECG, or a variety of indicators for homebound patients. Such services can be used to supplement the use of visiting doctors or nurses.
- Consumer medical and health information includes the use of the Internet and wireless devices for consumers to obtain specialized health information and online discussion groups to provide peer-to-peer support.
- Medical education provides continuing medical education credits for health professionals and special medical education seminars for targeted groups in remote locations.
- E-commerce agencies will provide services through online pharmacies and medical supplies.

As the National Telehealth Guidelines provide guidance on safe and secured Telemedicine interactions, and all other telehealth services so far illustrated. However, for the purpose of this guideline, telemedicine and telehealth are synonymous and used interchangeably. Five elements are germane to telemedicine:

1. Its purpose is to provide clinical support.
2. It is intended to overcome geographical barriers, connecting Telehealth users who are not in the same physical location.
3. It involves the use of various types of ICT.
4. Its goal is to improve health outcomes.
5. It could be visible to both patients and service providers through the use of the SeHR (shared electronic health record) application.

2.2 Telehealth (the term is used interchangeably with "Telemedicine" in these Guidelines)

"Telehealth in these guidelines refers to the systematic provision of healthcare services over physically separate environments via Information and Communications Technology (ICT) and distinguishes between seven main dimensions/domains of Telehealth as follows:

(1) **Tele-collaboration**, which refers to interactions between (facility-based or mobile) onsite and remote healthcare professionals for clinical purposes e.g., referral, co-diagnosis, supervision or case review. The distinguishing feature is that healthcare professionals are involved at both ends of the interaction and a patient may or may not be involved in the same Telemedicine interaction e.g., radiologist-clinician as well as consultant-junior-with patient situations. Tele-collaboration is used in many forms of remote specialty consultations e.g., Tele-radiology and Tele-pathology in current practice.

(2) **Tele-treatment**, which refers to interactions between remote healthcare professionals and patients/caregivers for the purposes of direct clinical care e.g., triage, history, examination, diagnosis and treatment from a remote location. The distinguishing feature is that a patient or caregiver is involved directly at one end of the interaction and this creates (or presupposes the existence of) a professional-patient relationship. Tele-treatment is used in the remote delivery of primary care and many forms of specialty care.

(3) **Tele-monitoring**, which refers to biomedical and other forms of data collection directly from patients (or through caregivers) by remote systems, which are used by healthcare professionals for clinical purposes such as vital signs monitoring and home nursing. Tele-monitoring is used in remote chronic disease management e.g., management of hypertension (blood pressure), diabetes (blood glucose) and coronary heart disease (weight, ECG). The distinguishing feature is that a healthcare professional or organization is engaged at one end i.e., excludes self-monitoring where the patient or the caregiver collects health data but does not have a healthcare

provider involved at the other end as part of an organized arrangement. Another feature of Tele-monitoring is that it need not create (or presuppose the existence of) a professional-patient relationship even though the healthcare organization as a whole might owe a duty of care to the patient.

(4) Tele-support, which refers to the use of online services for non-clinical (i.e., educational, administrative, Consumer medical and health information) purposes to support the patient, and caregiver. Provides continuing medical education credits for health professionals and special medical education seminars for targeted groups in remote location. Consumer medical and health information includes the use of the Internet and wireless devices for consumers to obtain specialized health information and on-line discussion groups to provide peer-to-peer support.

(5) Tele-diagnostics, which not only refers to tele-radiology where radiology images are shared online with an expert to evaluate and diagnose. But also, Remote patient monitoring, including home telehealth where devices are used to remotely collect and send data to a doctor, health service agency or a remote diagnostic testing facility (RDTF) for interpretation.

(6) Tele-laboratory, A high quality pathological collecting patients' blood and other pathological samples from home or onsite from patients appointing trained phlebotomist and lab reports are remotely shared with patient and the directing physicians and uploaded into patients shared health record.

(7) AR, VR, Medical Bots (AI) and robots, Emerging technology where medical advise is generated using AI and Bigdata analytics, augmented reality, virtual reality, machine learning etc. to support a medical practitioner. A medical practitioner can use AR, VR technology and take help of all the technologies to remotely treat a patient. It may use NLP technologies to input user data and summarizes texts connecting ICD 10 CM, SNOWMED CT, LOINC etc. or any other globally recognized systems. It will have a big Impact on Tele diagnostics including tele radiology where images are evaluated using AI and Bigdata analytics.

3. Vision of the National Telehealth Guideline

3.1 Purpose

Develop a robust telehealth eco-system leading to Proliferation of safe and secured telemedicine technologies, paving the path for evolution of innovative telehealth services; enabling citizens remote access to health services in a convenient way as per their needs and choices through internet using various communication devices; equipping service providers and health professionals with knowledge and digital tools to deliver quality health services.

3.2 Vision

Bangladesh transforms its telehealth eco-system to set an example in the world, reaches every citizen everywhere with health services by accelerating the adoption of Telehealth ecosystem reducing OOP (Out of Pocket) Expenditure and alleviating pains of citizens.

3.3 Mission

Develop a robust safe and secure telehealth eco-system in a pluralistic environment that benefits most the citizens of Bangladesh.

4. Scope of the guideline

Telehealth guideline aims at creating a safe and secure environment for telehealth in its broad spectrum. BMDC registered doctors will be practicing telemedicine to treat patients bearing the same responsibilities as they are subject to the legal bindings of in person practice formulated by BMDC. But the technology, audio, video, text, chat, email, data sharing etc. need to be done in a safe and secured environment ensuring quality of care, minimizing possibility of error, protecting data privacy of patients. Third party Systems, Apps, Webs and Platforms need to be licensed as they are managing or developing technology that is related to people's life. Technology is ever evolving, Apps are coming with tele pharmacy which is in another way e-Commerce, not only Pharmacy third party apps are integrating medical goods marketplace in the telemedicine app. Tele-monitoring Apps integrate IOT (Internet of Things) devices, wearables to collect health data. Withinthebroadparadigmoftelemedicine.

These guidelines will be published in accordance with National ICT Policy, Bangladesh National Digital health strategy and the BMDC Act, 2010. These guidelines are designed to serve as an aid and tool to enable registered medical doctors to effectively leverage telemedicine to enhance healthcare service and access to all. Third party Apps, Platforms, Telemedicine and Telehealth systems are going to play a vital role in tele-health eco-system of Bangladesh. The guidelines cover linkage with digital health strategy 2023-2028, especially linking with National Digital Health Information Exchange (NDHIE), data fetching to shared electronic health record (SeHR) as per specification provided in NDHA, also outlining norms and standards of the medical physicians to consult patients via telemedicine.

In short, this guideline applies on:

I. Physicians treating patients remotely using Telemedicine/ telehealth technologies.
II. Physicians to Physicians professional consultation and collaboration.
III. Licensing of telemedicine Apps, Web Application, BOTs of different types, onsite telemedicine facilities providing remote consultation including second opinion of overseas specialist consultation.
IV. Transmission and retrieval of shared health record data including radiology and imaging data and lab reports by telehealth technology.
V. Development of Telemedicine marketplaces.
VI. Telemonitoring of patients using IOT, mobile phones etc.
VII. Tele Radiology, tele diagnostics and tele-gadgets.
VIII. Licensing telemedicine service providing entities.
IX. Virtual Out Patient Delivary (OPD) consultation organized by overseas and in-country hospitals and follow up services.
X. Costing list of different health services through Telemedicine and Telehealth.

XI. Standards and Interoperability of services and tele-gadgets.
XII. Organizations and health care professionals providing Telehealth services.
XIII. Standard clinical care for telemedicine services.

5. Guiding Principles

1. Government to establish Strong leadership and governance mechanism to create a safe and secured environment for a functional telehealth eco system in Bangladesh.
2. The licensing regime is designed to mainstream the use of tele-health in health service delivery in a disciplined environment and adding value towards enhanced access, easing HR shortage and bringing down health expenditure.
3. Telehealth guideline follows the same principles of country capacity development emphasized in digital health strategy so that both private and public sector collaborates in a win-win situation to reap the benefits that is best for the citizens of Bangladesh.
4. Priority shall be given to the establishment of Public-Private Partnerships (PPPs), coordination and collaboration between Government, cooperating partners, and stakeholders at different levels to allow open innovation of digital technology in delivering health services.
5. Ensure patient information rights, integrity, security, confidentiality, and privacy in line with emerging public health access needs.
6. Privacy and security of personal information stored in personal devices shall be ensured, Any Apps or other tele health technologies should collect unnecessary data from users' devices, Data that is necessary and collected in the APPs, Webs, Voice, Text or any other forms in no way should be shared, Security and privacy of records at entity level shall be ensured both in storage and transmission. Health data must be seated within the territorial jurisdiction of Bangladesh. Cybersecurity will be a priority.
7. Give emphasis on Mobile first policy to ensure services to everyone everywhere.
8. Tele-health system/applications must adopt the e-health standards available and recommended internationally (also adopted in BDHA). All system should be guided by national telemedicine guideline 2023 or later.
9. Telehealth technology should be user-friendly, cost effective to promote social inclusion.
10. Use of overseas cloud hosting is prohibited unless if the cloud system has at least one data center of sufficient capacity and computing power located with in Bangladesh. The hosting company should ensure that no Bangladeshi patients data will be shared with any foreign entity or government.
11. Tele-gadgets should be human health safety standards compliant and compliant to data security requirements.
12. In addition to the provisions of these guidelines registered medical practitioners are subject to the provisions of all the existing laws, rules and regulations, and directives of BMDC regarding medical practice while practicing in telehealth domain.
13. Nurses and other allied health care professionals involved in Telemedicine services from

or

Within Bangladesh must be registered and licensed with the respective regulatory and licensing

Body of Bangladesh and must follow all the existing laws, rules and regulations.

14. Telehealth services will never be a substitute for traditional medical care.

6. Strategic activities and guiding principles

Bangladesh Digital Health Strategy 2023-2028 (DHS) is based on eight building blocks. Telehealth guidance will be used as a tool to implement the directions of the Digital Health Strategy. So it needs to be built on the same foundation as DHS so that it can be integrated with DHS. The activities, activities and specific guidelines of each of the eight building blocks are given in the table below.

I. Leadership and Governance		
Activities	**Actions and specific guidelines**	**Responsible**

1. Strengthen leadership and governance for Tele-health	1.1 Establish Telehealth Governance and Licensing Regime under Ministry of Health and Family welfare. 1.2 The government will make arrangements to run the telehealth ecosystem under the telehealth guidelines formulated by the Ministry of Health and Family Welfare. 1.3 The government may establish a three-member telehealth governing body with one representative from thedirectors, hospitals and clinics, and one representative from the directors, MIS and line-director, HIS and e-Health, taking into account the immediate needs of the telehealth/telemedicine administration. 1.4 Roles and Responsibilities: a. The Director, MIS and Line-Director, HIS & e-Health, will be responsible for providing IT approval for all telehealth/telemedicine services to be registered. In short: Provide technical clearance of registration. b. The Director is in charge of approving the medical science and patient care aspects of the telehealth/telemedicine services provided by the hospitals and clinics that will be registered. The Director will also provide logistical support for the Council as it carries out the tasks assigned to it. 1.5 A. The Council will be headed by the Director General, Directorate of Health and will conduct its activities in accordance with the procedures laid down by the Council meetings. B. The Council will target the value of telehealth services so that telehealth services are within the reach of people living in remote areas and below the poverty level.	MOH&FW;
2. Clinical Standard for Licensing Telemedicine Services	2.1 Standards of Clinical Care a. The "duty of care" must be established in all Telemedicine encounters to clarify any and all ongoing responsibility(s) for the patient/caregiver as well as the roles and responsibility of other health care professionals involved. b. Any telemedicine service must be performed as part of a structured and well-organized approach, and the overall quality of services performed in this manner shall not be lower than those that do not involve telemedicine. c. Prior to commencing Telemedicine services to a patient, the healthcare provider must be satisfied that the patient is suitable for a Telemedicine interaction and that the standard of care delivered via Telemedicine is reasonable considering the specific context. d. Healthcare professionals should be trained in the use of the technology and equipment, and of appropriate behaviors and communication skills required in a Telemedicine interaction.	Licensing Authority and onsite TMC organizer

	e. If technical and environmental limitations affect the quality of a Telemedicine consultation such that minimum standards cannot be met, the consultation must be terminated and alternative technologies or rescheduling/postponement of the consultation must be considered. f. Healthcare organizations should have special training programs in place to educate the staff involved with Telemedicine about proper protocols, technology, equipment, behavior, and communication. g. The healthcare provider should discern whether a patient is a suitable candidate for a Telemedicine interaction. h. Patients and caregivers must be familiarized with telemedicine procedures before health care providers engage in telemedicine services. i. Healthcare organisations should provide avenues for feedback from patients, caregivers, and healthcare professionals to regularly refine and improve the quality of the Telemedicine encounter. 2.2 Privacy, Confidentiality and Inform Consent a. Healthcare organisations must ensure that patient information and records are protected by having a confidentiality policy in place. Healthcare providers must comply with the applicable existing legislation and regulations to ensure that the patient's healthcare information is protected. b. Applicable to certain health care service programs Before commencing any service or activity following the code of conduct, health care providers must obtain informed consent (which may be implied or expressed) after providing all necessary information to the service recipient. c. Healthcare providers should share relevant information with the patient and caregiver, as appropriate, before the beginning of any Telemedicine interaction. 2.3 Health workforce & workplace a. Healthcare organisations providing Telemedicine services should ensure the right supply of appropriately-trained staff, based on the needs of the programme. b. Organisations providing Telemedicine services should have policies and procedures to ensure that all staff involved in Telemedicine have the necessary qualifications and competencies to practice Telemedicine safely. c. Organisations providing Telemedicine services should ensure that the workplace is ready for Telemedicine prior to implementation. d. Healthcare organisations should clearly define roles and responsibilities, and delineate accountabilities for those involved in the delivery of Telemedicine services.	

	2.4 Organizational Accountability a. Organisations providing Telemedicine services must have policies and procedures in place to protect the confidentiality of information. Telemedicine security policy and procedures should be integrated with those for electronic health records, whenever possible. b. Healthcare organisations providing Telemedicine services should take steps to manage risks within the Telemedicine program ensuring that they have a documented risk management plan in place. c. Where relevant, healthcare organisations should have policies and procedures in place to guide inter-jurisdictional services that takes into account cultural differences and expectations, geographical and time zones differences, liability insurances, technology infrastructure interoperability and compatibility, and other relevant issues. d. Healthcare organisations must apply their safety procedures and protocols to Telemedicine services, as applicable, and ensure that the use of Telemedicine does not compromise patient safety. e. Healthcare organisations providing Telemedicine should implement a continuous and ongoing quality improvement program and continually monitor the quality of Telemedicine services. f. Telemedicine services should be integrated, as much as possible, into existing health care services as well as existing administrative policies, guidelines and procedures. g. Healthcare organisations offering multiple Telemedicine services should have mechanisms in place to facilitate coordination of the Telemedicine services including management of the equipment and physical space. When two or more healthcare organisations are involved in Telemedicine service delivery, an agreement between the healthcare organisations should be established that addresses detailed protocols for data preparation, transmission, receipt, mutual responsibilities and the identification/management of liabilities.	
3. Licensing Regime for telehealth systems and technologies	3.1 Licensing of onsite telehealth centers 3.1.1 Specific guidelines for licensing an onsite TMC a. The premise should be safe, secure, women, children, adolescent and differently able people friendly. b. Premise should be compliant to fire safety regulations and Bangladesh building code. c. The TMC must ensure the privacy and confidentiality of patient data. d. TMC shall be operated by a registered Doctor or Dentist. A registered Nurse or Midwife / other health professionals	Licensing Authority and onsite TMC organizer

	approved by the director general health services could participate to assist patient and service provider at TMC. e. The remote telemedicine service provider shall be a physician registered with BMDC. f. In cross border practice, the overseas physicians are required to have a license to practice medicine in Bangladesh. g. The TMC must have an HMIS with electronic Health record ensuring that the physician is able to access sufficient patient information prior to prescribing. h. The onsite service provider must ensure that valid informed consent for telemedicine is obtained from the patient. i. The TMC must ensure that the patient knows the physician's identity, qualifications, and where he is providing the service from. j. The TMC must have an authentication system that is able to confirm the patient's identity, the remote physician and operators' identity. k. Limitations of telehealth methodology should be properly notified. l. Records of telemedicine should be retained. Data should be uploaded to shared electronic health record as required by the Ministry of Health and Family welfare. m. Onsite TMCs require a license issued by appropriate authority entrusted by the MOH&FW to operate. 3.2 Licensing Web Application for providing Tele-health services 3.2.1 Specific guidelines for licensing tele-health web applications a. Web application that provides clinical services and health education shall be considered under this category. b. The Web application must ensure the privacy and confidentiality of patient and learners' data as the case may be; cybersecurity will be a major concern. c. Web technology must have built-in mechanisms to ensure the identity of the provider and the recipient of both. The web technology should have minimum modules for doctor and patient authentication as well as registration, appointment, prescription engine, electronic health record and personal electronic health record on patient's smart phone. The patient should be able to upload and print medical record-related documents using a smart phone app. d. The content delivered through the web application shall be supported by medical science. e. The web application provider shall be responsible for smooth and secured operation of the technology, medical practitioners conducting clinical services using the web application shall be directly responsible for the medical and	

	clinical advice/ prescription given through the web technology. f. Web application integrated into telehealth market place do not need licensing but the web delivering services independently shall have to be licensed as per guideline by the government. g. Clinical telehealth services can only be delivered by BMDC registered doctors; nutrition and dietary guidance can be given by a nutritionist with a bachelor's degree. Only registered professionals can provide mental health advice through the app. 3.3 Telehealth mobile APPs 3.3.1 Specific guidelines for Telehealth mobile APPs a. Telehealth Mobile APPs permitted to integrate into National Telemedicine Market Place do not need licensing. b. Independently operating tele-health APPs need licensing. c. Telemedicine clinical services can be provided by a BMDC registered doctor only; Diet and nutrition advisory can be provided by a graduate nutritionist only, mental health advisory through app shall be provided by registered professional only. d. The APP must be having minimum modules for registration and appointment with authentication of doctors and patients, prescription engine, electronic health record, and personal electronic health record to be installed on patient's smart phone with document uploading down loading and printing capabilities. e. The app should not collect unnecessary data and ask for access to customers phone. f. The APP must ensure the privacy and confidentiality of patient data. g. In cross border practice through app, the overseas physicians are required to have a license to practice medicine in Bangladesh. h. The APP must be connected with electronic Health record ensuring that the physician is able to access sufficient patient information prior to prescribing. i. The App service provider must ensure that valid informed consent for telemedicine is obtained from the patient. j. The App must ensure that the patient knows the physician's identity, qualifications, and where he is providing the service from. k. The App must have an authentication system that is able to confirm the patient's identity, the remote physician and other service providers identity. l. Limitations of telehealth methodology should be properly notified. m. Records of telemedicine should be retained. Data should be uploaded to shared electronic health record as required by the Ministry of Health and Family welfare.	

	n. The App provider shall be responsible for smooth and secured operation of the technology, medical practitioners conducting clinical services using the App shall be directly responsible for the medical and clinical advice/ prescription given through the App. 3.4 Telehealth call centers 3.4.1 Specific guidelines for Telehealth call centers. a. Call center agents and managers can manage the calls received and initiate calls but shall not be allowed to provide any sort of medical or clinical advice. b. Only BMDC registered Doctors and Dentists can provide medical advice and SMS based prescriptions. Diet and nutrition advisory can be provided by a graduate nutritionist only, mental health advisory through call centers shall be provided by registered professional only. c. Medical Practitioners should apply their judgements on an ethical basis to choose the range of service to be provided via voice calls. d. The call center network should be secured enough and to be compliant with PCI guidelines. The call center shall have an effective firewall and router, also implement an internal process that will provide an additional layer of protection. Call center agents and doctors should be trained properly to keep all calls 100 percent compliant. In short to ensure peoples' privacy and data security the call center will focus on People, Process and technology. e. Call center should have a recorded announcement stating that incoming calls may be recorded for the improvement of customer services and future reference. It must also be clear that in order to opt out they should hang up. f. Call centers in no circumstances share customer data, especially customer's health data with any third party except those required by the government regulatory requirements. Despite this, data transmission to NDHIE and SeHR through API is mandatory. g. Call center must be equipped with necessary technology and software to commensurate with transparency and accountability. An audit trail in compliance with patients' privacy and accountability shall ensure any requirement for future inspection of particular patients case incase anything goes wrong.	
Activities	**Actions and guiding principles**	**Responsible**
4. Partnering has to create value for allinvolved,	**4.1 Tele-health Innovation, Research and Partner Ecosystem development** **4.1.1** Creating an enabling environment for partnerships	MoH&FW, DGHS, DGFWS, ICTD,

research to bring in new technologies and identify barriers to be removed, making the system cost effective, foster innovation to shift the paradigm solving peoples problem and advance tele-health to new reality	Action: Partneringto increase the scale andimpact of tele-health eco system bycombining expertise, ideas, assets andother resources of different stakeholders Specific guidelines: a. Government undertakes responsibility fortele-health system planning and management,public health IT infrastructure andfinancing with a view to mainstream tele-health in Bangladesh health System. b. Government especially prepare community clinic to tertiary hospitals and health workforce education and training institutions for delivering services using tele-health solutions in addition to their present capability. c. Financers, including development partners andothers (may be insurers in future), who are financing health system bring financing for tele-health eco system including emerging technologysolutions to mainstream telehealth and foster innovation. d. Health providers partner with third party telemedicine providers sharing medicalexpertise and deliverycapacity, partnering with innovations contributing to sustainable tele-health eco system. e. Suppliers, such as: 1. Mobile network operators (MNOs) that bring digital communicationinfrastructure, go-to-marketexpertise and customer relationships shall facilitate tele-health systems enhanced accessand create especial services for remote communities and hard to reach population, BTRC may put regulatory tools in place to enable facilitation of recognized systems; 2. Technology companies that deliverICT systems and digital healthsolutions, go-to-market expertise andsometimes regional or global reach, partner with government, health providers, research community and universities for solutions to citizensand foster innovation; 3. NGOs and private society will ensure that the target population receives services in a reliable manner and build capacity to reach those who need to be reached but are not yet reached. 4.1.2 Telehealth Research eco-system Action: A collaborative research environment created Guiding Principles: a. The government has introduced new telehealth systems and will encourage public and private universities, groups, businesses, and people to engage in cooperative or independent research projects to advance. b. Health service providers, data repositories and government agencies are encouraged to make available de-personalized health data for research and innovation with the permission of Government of Bangladesh;	PT&TD, BTRC, MNOs, Telehealth providers, Universities, Venture Capitals

	c. Government may allocate fund for focused research on telehealth technology and effectively enhancing peoples access. 4.1.3 Fostering Innovation in telehealth Action: Systematically encouraging innovation in telehealth	
II. Services and Applications		
Activities	**Actions and guiding principles**	**Responsible**
5. Telehealth marketplace	5.1 Development of Telehealth Market Place Action: A telehealth market place developed by the DG health to integrate telehealth service providing Apps, Web, and IOT platforms. **Specific guidelines:** **a.** To promote the advantages of an integrated information infrastructure or a common heath platform across health sectors a Tele Health Market Place seeking to align around a common set of functionalities and standards, creating easy access to a plethora of telehealth services providers/ technologies for the citizens of Bangladesh and promoting inter connection of those technologies shall be created. Market place shall publish compliance requirements for eliminating licensing requirements so that App developers can easily integrate their applications into the market place by establishing an information- and application-architecture blueprint and roadmap. C. As a general health platform, the telehealth marketplace should have the following functionalities: **b.** The marketplace will become the preferred place for citizens to purchase remote healthcare services such as telemedicine, pharmaceuticals and telehealth products such as IoT devices. **c.** The App and Web applications must fulfill the requirements for licensing to be eligible to integrate into the marketplace. **d.** The market place to accommodate telehealth apps and technologies shall be fully compliant to the standards.	DGHS
6. Shared Electronic Health record	6.1 Adoption of Shared Electronic Health record Action: Connect all telemedicine technologies with shared electronic health record. Guiding principles: a. Shared Electronic Health Record developed under digital health strategy shall be used. b. All telemedicine technology shall connect to the SeHR via NDHIE or any such other platform developed for telehealth technologies to connect.	DGHS

7. Develop/adopt robust telemedicine software with all necessary modules connected with NDHIE and make available as SaaS;	**7.1 Develop a telemedicine software and make available as SaaS** Action: Software development. **Specific guidelines**: a. Develop a BDHA and licensing requirement compliant robust telemedicine software, including all necessary modules required for telemedicine service, to make available as SaaS. b. Enable all public and private hospitals, entities, private medical practitioners, and citizen patients to access the service. c. Develop an e-prescription engine as a module of the software with a capability to make it available to all medical practitioners to use it for teleconsultation.	DGHS
8. Integration of payment gateways	8.1 Integration of payment gateways Action: enabling the marketplace to conduct financial transactions Guiding Principles. **a.** The marketplace integrates all the secured and compliant payment gateways to pay for services received, medical goods purchased etc.	DGHS
IV. Standards and Interoperability		
Activities	**Actions and specific guidelines**	**Responsible**
9. Standards and interoperability	9.1 Standards and interoperability Action: Adopt standards and interoperability developed or adopted under DHS of Bangladesh to support safe, accurate, and effective exchange of clinical and related health information among all telehealth service providers to allow different telehealth ICT systems, software applications and devices to communicate and exchange data. Specific guidelines: a. Bangladesh National Digital Health Architecture (BDHA) is to be followed while developing telehealth technology like Apps, web applications and platforms. b. Adopt the standards for identity management, data transport and messaging, clinical terms, and anonymization developed under DHS. c. Adopt the standards for identity management, data transport and messaging, clinical terms, and anonymization developed under DHS.	MOH&FW

	d. Adopt the agreed standards for Individual, System and Entity Identification developed under DHS. Adopt agreed standards for secured data transport service including standards for metadata, Application layer, Transport Layer, Network/Internet layer, Data Link Layer and physical layer developed under DHS. e. Adopt the same standards of clinical terminologies developed under DHS. f. Adopt the same data transmission, Data Privacy and data security principles developed under digital health strategy for de-identification and aggregation enabling the transmission and publication of data for secondary use.	
10. safety and security of patients and service providers	10.1 Develop or adopt standards for medical devices/IOTs and home monitoring devices for ensuring Action: Develop suitable standards to ensure telehealth gadgets/IOT devices used for telemedicine/ telehealth purpose. Specific guidelines: a. Government constitutes a specialist committee consisting of renowned scientists of the country to develop specifications and guidelines of safe telehealth gadgets and IOT devices which shall be used by appointed authority to certify such gadgets and devices. b. Bangladesh will also accept internationally recognized device certification, and the government will publish a list of them.	MOH&FW
V. Infrastructure		
Activities	**Actions and specific guidelines**	**Responsible**
11. Standard for Telemedicine services infrastructures	11. A. The organization should follow set policies and practices mentioned in DHS when developing infrastructures for Telemedicine services and buying or otherwise procuring Telemedicine equipment. B. Organizations should follow the set policies and practices developed under the Digital Health Strategy and under these guidelines when building the infrastructure for telehealth services and purchasing or otherwise procuring telehealth equipment.	Licensing Authority and onsite TMC organizer
VI. Legislation, Policy and Compliance		
Activities	**Actions and specific guidelines**	**Responsible**

12.1 Data-protection regulations	12.1.1 Ensuring medical data protection and patients privacy. Action: appropriate regulations for medical data protection and protecting individual's privacy. Specific guidelines: a. Data protection mainly consists of two dimensions: data security, to protect data from unauthorized access, and data privacy, to protect data from being used without prior consent. b. Enabling use of data for research and innovation, bringing in new services, Data for decision making, building predictive and analytical system complying with data privacy and security requirements by the government and Bangladeshi companies. c. Any medical and patient information shall be limited within the geographical boundaries of Bangladesh, subject to Article 5. The instructions in Sub-paragraph No. 10 of the Management Policy shall be followed. Preference will be given to providers of cloud services and hosting services only through data centers located in Bangladesh, subject to compliance with the conditions of sub-section 10. Global clouds setting up datacenters in Bangladesh can also be used to provide such services but they must have specific NDAs and SLAs and The guidelines of sub-paragraph 10 of the policy must be precisely followed. d. Method of depersonalization of data to be shared with global agencies engaged in research and innovation with prior approval of the government shall be guided under Digital Health Strategy of Bangladesh.	Licensing Authority and onsite TMC organizer
12.2 Telemedicine/ Telehealth gadgets and IOT Device Regulations	12.2.1 Telemedicine/Telehealth gadgets and IOT Device definition: Medical devices that remotely connect to a platform or a hub using telecommunication technology to collect patient data or store in its built-in memory for later download, such as telemedicine/telehealth gadgets or IOT devices shall be addressed here. 12.2.2 A reference to medical device can be used to identify telemedicine/telehealth and IOT devices, "Medical device" means any instrument, implant, software or reagent (for in vitro use) that is intended by the manufacturer to be used for human beings for the purposes of diagnosis, prevention, monitoring, the treatment or alleviation of disease, or the investigation, replacement, modification or support of the anatomy or of aphysiological process". 12.2.3 All the devices used for the telehealth services purpose should be compliant to safety standards declared by the government. 12.2.4 Telehealth service providers preferably use a desktop pc or laptopor a mobile device as per minimum specification declared by the licensing authority.	Licensing Authority and onsite TMC organizer

12.3 Telehealth practitioners licensing	12.3.1 Telehealth providers if they are medical practitioners require a BMDC registration. If provider is assisted by a nursing & midwifery professional, they need a BNMC registration. a. Any healthcare provider providing Telemedicine services to patients residing in Bangladesh, must adhere to and meet licensing requirements under this guideline. b. Through telemedicine, the clinical service provider cannot be paid more than what he would have been paid if he did the work except telehealth.	
12.4 Telehealth service pricing	12.4.1 Standardizing telehealth service pricing. Action: In the context of this guideline each provider shall declare apricelist of telehealth servicesit will be providingduring licensing or integration into the market place. Subject to the approval of the licensing authority this pricelist may be published and updated time to time. Specific guidelines: a. Telehealth technologies bring in enormous opportunities to enhanced access to health care and health education services. These systemscan flourish with a fee for service. On the other hand, pricing can be an obstacle to access.So, a calculated pricing for private sector providers and a very low cost or no cost service delivery by public sector healthcare delivery and health education providers will be help full to enhanced access. b. Telehealth services providers declare the services available through their onsite, Web applications and mobile Apps. Full specification of each services and the standards of care followed in delivering each of the services should be declared in the technology. According to the quality of service a price list should be approved by the licensing authority. Price shall be published as per approved list.	
12.5 Health Id Regulation	Telehealth service providers shall use health ID of the patient as per Government decision formulated under digital health strategy. The record shall contain Health ID, NID/BRN number and registered mobile number for search options.	
12.6 Service declaration regulation	All sorts of Telehealth service providers whatever platform they use should clearly declare the services they are going to provide and price of those services.	

VII. Workforce		
Activities	**Actions and specific guidelines**	**Responsible**

13. Develop a telehealth workforce plan to mainstream telehealth in all spheres of health service delivery.	13.1 Develop a health workforce development and deployment plan to mainstream telehealth in health service delivery. Action: Development of health workforce development and deployment plan inconformity with digital health strategy to ensure adequate supply of appropriately trainedtelehealth professionals/ medical professionals capable of delivering telehealth services. Specific guidelines: a. Telehealth mainstreamed in health workforce education and training; b. A concise human resource plan and policy should be developed according to operational requirements; c. Human resources responsible for telehealth services should be trained inMedical ethics to be practiced for treating a patient over telemedicine. d. Each Telemedicine Platform should have properly trained staff specific to the platform. e. Telemedicine HR Policy should be integrated into the existing human resource policy of the organization. f. Human Resource Plans and policies should be reviewed over a specific period to accommodate changes, removal or modifications according to the requirement of the evolving nature of this field. g. Healthcare professionals providing Telemedicine services should have the necessary education, training/orientation and ongoing professional development needed for the safe provision of quality health services. The formality and degree of training provided should be commensurate with the complexity of the Telemedicine service to be provided. h. Healthcare organizations should have in place orientation and structured On-the-Job Training (OJT) programmes as required to ensure that staff involved in Telemedicine possess the necessary skills and competencies for the safe provision of quality health services. The training records should be properly maintained for audit purposes. i. Organizations providing Telemedicine services should link training and job performance evaluation, and encourage feedback on Telemedicine training sessions.	

VIII. Strategy and Investment		
Activities	**Actions and specific guidelines**	**Responsible**

14. Strategy and investment	14.1 Strategy for mainstreaming telehealth in healthcare service delivery. Action: Both the divisions of Ministry of health and family welfare prepare strategy to mainstream telehealth Specific guideline: a. Bangladesh is running shortage of doctor nurses and other health service delivery professionals. As a policy health service providing public and private facilities and private practitioners can start delivering quality telehealth services to meet the gap; b. Government revisit health sector programmes and projects or develop new program or project to equip all sorts of health care delivery institutions in public sector for providing telehealth services; c. Government invest in training program for health service providers to be able to deliver quality telehealth service d. Government re-visit its investment plan and budgetary framework incorporating investment need for telehealth, e. Government develop appropriate incentive devices for encouraging private sector health service providers to adopt telehealth. f. Private investment can be encouraged by providing economic measures and registration facilities.	

15. The telehealth guidelines have been developed as a means of implementing the strategic guidance of Bangladesh Digital Health Strategy 2023-2028. These guidelines are to be followed for everyone involved in the planning, organizing, facilitation and implementation of telehealth services in Bangladesh.

16. Considering the urgency of making the guideline operational government assigns Director General Health Services as the Governing agency of these guidelines. Director General health services will make necessary arrangements for making the guidelines operational immediately.

17. All the existing tele health services in Bangladesh in the form of APP, Web, Callcentre, SMS services, virtual OPD, onsite telemedicine services etc. need to be licensed withinthree months of publication of these guidelines.

18. These guidelines will come into effect immediately after publication of the notification by the government.