Key messages

- Telehealth has the potential to address many challenges to the primary health care (PHC) delivery system. These are related to accessibility, accountability, cost, quality, information exchange, and utilization of services.
- Telehealth holds promising opportunities to strengthen health systems in the Region through capacity-building of the health workforce, enhancing competencies, facilitating early referrals and ensuring a continuum of care. In addition, it generates health data that support the application of frontier technologies, including artificial intelligence (AI)-based clinical decision support systems, novel diagnostics, measurement of clinical outcomes, and adherence to evidence-based interventions such as rational use of antimicrobials.
- Comprehensive national digital health strategies to maximize the potential of telehealth must be prioritized by scaling it up for delivering care.
- User acceptance and satisfaction is critical for re-aligning and expanding telehealth to augment routine delivery of health services.
- While current regulatory frameworks in most countries in the South-East Asia (SEA) Region have been favourable, several barriers still remain to realizing the full potential and patient benefits of telehealth.
- Data governance, standardization, interoperability, data privacy and security warrant the embracing of comprehensive digital architecture and frameworks to ensure trust, reliability and scalability of telehealth in the SEA Region.

Background

This policy brief is based on a systematic review of telehealth initiatives for enhancing the delivery of primary health care (PHC) services across the WHO South-East Asia (SEA) Region. The identified initiatives were mapped with the specific health system needs that these interventions were aiming to address (Table 1). While many telehealth interventions exist across the SEA Region, most are generally either in pilot phase or are implemented on a small scale.

Telehealth interventions can address PHC delivery challenges related to efficiency, availability, quality, utilization, and accountability. These also have the potential to address many of the priority needs of strengthening PHC, and increase progress towards universal health coverage (UHC).
Telehealth interventions and health system components in countries of the SEA Region

| Telehealth intervention (DHI Classification*) | Targeted client communication (1.1) | Untargeted client communication (1.2) | Health workers’ decision support (2.3) | Teledicine (2.4) | Health workers’ training (2.8) |
| Health system challenge Addressed | Information, utilization, accountability | Information, utilization | Accountability, quality | Availability, quality, efficiency | Availability, quality |

| Indicative examples from the Region | Promoting antenatal and postnatal care in Timor-Leste | Untargeted SMS for behaviour change and communication via mHealth in Sri Lanka | Community-based risk screening in Indonesia | Telemedicine (rural health-care provider to specialist) services in rural and remote areas in Bangladesh, Bhutan, Nepal, India, Thailand, Sri Lanka, Indonesia | Training community workers in India and Nepal |

| | Medication adherence apps in India | Bi-directional call support system for tuberculosis patients in Thailand | Bi-directional mCessation programme in India | Decision support system for nurse care coordinator in India | Community-based risk assessment in Indonesia (rural and remote areas) |
| | | | | | Decision support system for nurse care coordinator in India |


Introduction

In 1978, the Alma Ata Declaration announced the agenda of achieving “Health for All” through cost-effective PHC. The 2018 Astana declaration revitalized PHC as a cost-effective strategy to achieve UHC and accelerate progress towards the Sustainable Development Goals (SDGs). Rising inequalities in access to health care persist in the SEA Region. Competing priorities, rapidly evolving demographic and epidemiological shifts, rising burden of noncommunicable diseases (NCDs) and ageing populations in the Region further challenge the effective delivery of PHC. Critical shortage of infrastructure and health workforce also persist in low- and middle-income countries (LMICs). Access to essential health-care services and availability of competent health professionals in rural and remote settings in the Region continue to be a challenge.

Perceptions of poor quality of care, understaffing, low level of competencies, and lack of community engagement contribute to the underutilization of PHC systems in the Region. The appropriate use of digital health interventions, including telehealth, can effectively address these challenges to the PHC delivery system.

Role of telehealth in strengthening primary health care

Telehealth can be used for diagnosis and treatment, remote monitoring and counselling, for continuing health workforce training, and for health information dissemination. Telehealth has a critical role to play in LMIC contexts as access barriers can effectively be addressed through telehealth.

Compelling evidence exists on the economic benefits of PHC through its effects on health outcomes (all-cause, maternal and child mortality), health systems efficiency (by reducing total admissions, avoidable admissions and emergency hospitalizations) and health equity (in access and utilization). While telehealth is likely to reduce out-of-pocket costs such as travel and loss of wages, systematic evaluation of the cost–effectiveness of telehealth in the health systems context needs further research. The operational framework for PHC by WHO identifies digital interventions, including telehealth, as one of the operational levers for PHC delivery. By empowering individuals and communities, the digital revolution provides a unique opportunity to improve people’s health.

Telehealth during COVID-19

Quarantine measures and travel restrictions during the pandemic resulted in disruptions in health services delivery across the SEA Region. In the Region, 90% of countries faced disruption in health services, with LMICs reporting significant disruption based on data from two rounds of the WHO national pulse survey on continuity of essential health services during the COVID-19 pandemic (March–June 2020 and January–March 2021). Further, about 50% of routine health services were disrupted in 2020 (and over 30% in 2021) in the Region due to this pandemic. Routine immunization, diagnosis and treatment of NCDs, outreach services, diagnosis of malaria, tuberculosis, and surveillance and monitoring of other communicable diseases were particularly affected.

Outpatient attendance reduced in the Region. On the demand side, fear of transmission, lockdowns restricting transportation, and financial challenges due to loss of wages were decisive; on the supply side, cancellations of elective surgery, redeployment of medical staff for COVID-19 relief, interruptions in medical supply chains, and the closure of many private health facilities played a critical role in this reduction as well. Existing gaps in health systems capacity were amplified, requiring governments to reconsider strategies to ensure a continuum of care. Triaging to identify priorities, shifting PHC delivery and outpatient department (OPD) services to virtual consultations, and strengthening public health communications were among the most advocated solutions to deal with the pandemic. Digital technologies used for surveillance, rapid case identification, contact tracing, public communication, and clinical care supported the health-care delivery system in augmenting its capacity to the surge in demand.

Clearly, countries in the SEA Region leveraged telemedicine technology during this pandemic and are well on their way to scaling it up. Public and private sector actors are active in developing virtual health-care service delivery platforms.

Technical barriers in implementing telehealth

The introduction and uptake of telehealth has remained low across the globe and in the SEA Region, despite the availability of telemedicine services since the 1960s as documented by the scholarly literature. In particular, until the COVID-19 pandemic jointly health-care delivery systems, scant attention was paid to focused strategies for implementing telehealth. Evidence suggests there are a number of technical barriers to telehealth implementation. These can be grouped into four categories, depending on the level of intervention required (Fig. 1). The barriers that need to be addressed through policy intervention include licensing requirements, reimbursement policies, and a regulatory framework. At the organizational
level, the effectiveness of a telehealth intervention depends on the availability of a trained workforce, sustainable funding, technological infrastructure, and processes aligned with the use of technology. At the level of technology, poor internet connectivity, data standards, interoperability, lack of data integration, and lack of data privacy and security hinder widespread diffusion of telehealth. Finally, at the individual level, for both health-care providers and patients, the perceptions related to usefulness, ease of use, liability, and security concerns need to be addressed.

**Challenges and lessons from the pandemic and the way forward**

The COVID-19 pandemic created an unprecedented need for ensuring continuity of patient--health-care provider consultation and relationship through the use of information and communication technology (ICT). By facilitating timely and quality care, increased patient participation, and reaching the unreached in rural and remote areas, telehealth is a potential "force multiplier" for strained health managers with tight budgets in the context of the COVID-19 pandemic and otherwise. While large-scale implementation of telehealth is capital intensive, its long-term benefits cannot be ignored by merely referring to the cost argument, since efficiency gains in health-care delivery via telehealth are enormous in well-planned implementation of telehealth. By addressing technology infrastructure gaps, and ensuring interoperability between multiple segmented systems and the issues of digital divide, governments can and must think of ways to incentivize technology penetration as evenly as possible. Interoperability and seamless integration across clinical processes requires strong regulatory frameworks, data protection, and privacy laws. Only actors such as governments can leverage existing regional consortia for implementation of telehealth/telemedicine and adopt global minimal standards for telehealth modalities and interventions.

A stronger digital health ecosystem is a sine qua non for ensuring the sustainability of telehealth initiatives. Countries must engage in developing a skilled and competent workforce with specific training imparted for health services delivery through telehealth interventions. Once a country has addressed the gaps in the existing technology infrastructure, regulatory frameworks, and skilled and competent human resources in the use of telehealth, the next step is to design telehealth systems by factoring in multi-stakeholders’ needs, localization and contextualization, and long-term planning for technology risks.

Fragmented telehealth modalities must be coherently integrated in existing health-care delivery models for greater efficiency gains and increasing the public health impact on their populations. The use of technology in health-care delivery is expanding but barriers remain at all levels, including at the policy, organizational, technology and individual levels. At the policy level, identified barriers in the SEA Region include licensing requirements for providers as well as modalities, lack of strong regulatory frameworks, and lack of well-defined payment and reimbursement guidelines. During the COVID-19 pandemic, several countries in the Region introduced novel telehealth implementation models, including private providers servicing the public health service delivery interface for non-COVID conditions. Further evaluation of the sustainability of these novel approaches in the Region are under way.

At the organizational level, sustainable funding, lack of trained staff, technological barriers among others, hinder the sustainability of telehealth interventions. At the technology level, issues of interoperability, poor Internet connectivity, lack of data security, and lack of data integration are among the major barriers. The perceived usefulness and perceived ease of use, and preferences for face-to-face consultation explains the lower adoption of telehealth at the individual level. Governments need to be apprised of these barriers and adopt mitigation strategies accordingly. Comprehensive guidelines and implementation frameworks on models of telehealth, including telehealth-supported models of strengthening facility-based delivery of primary health services requires urgent attention.

A strong digital health ecosystem is non-negotiable. This means organization of the digital infrastructure such that a digital environment for the seamless flow of the appropriate information is created for networked organizations. Training on the use of telehealth modalities must be part of the medical curriculum; biomedical informatics also needs promotion. Contextualization and localization along with addressing multi-stakeholders’ perspectives for ensuring greater acceptability and thus widespread diffusion of technology, can drive positive changes. Technological surprises – whether unintended or maladvised – can cause disruptions and unintended consequences on the health-care system. Such ramifications must be acknowledged and, from the design phase, carefully thought through and counter-strategies envisioned along the lines of worst-case scenarios. These must be incorporated at each possible level.

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