DigHealth

Micro-credentials in digital health for Ethiopia and Somalia

Project reference number: 101179425

Work Package 2

Deliverable D2.2: Report on Need and Competence Analysis in Somalia

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Digital Health in Africa and Somalia: Strategic Context and Implementation Landscape

Executive Summary

Digital health is transforming health service delivery across Africa by addressing longstanding structural challenges. With over 120 digital health initiatives as of 2024, the continent is rapidly adopting technologies such as telemedicine, electronic health records (EHRs), and AI-driven diagnostics. Somalia, in particular, is beginning to integrate digital health to strengthen its fragile health system, with notable pilot projects in mHealth, telemedicine, and health worker training. This report reviews Africa's digital health environment and provides an in-depth look at Somalia's healthcare system and emerging digital strategies.

Digital Health Landscape in Africa General overview

Digital health has become a pivotal force in Africa, aimed at overcoming limited healthcare access, workforce shortages, and data fragmentation. Governments, regional bodies, and international donors have embraced digital health as a pathway to Universal Health Coverage (UHC).

Key Drivers of Growth:

- Mobile Penetration: >70% penetration enables mHealth, SMS alerts, and telehealth.
- Youth Demographics: 60% of Africa's population is under 25, supporting digital adoption.
- Donor Support: Organizations like the EU, USAID, and Gates Foundation fund major initiatives.
- Academic Gaps: Lack of structured digital health training in African universities.
- Platform interoperability limitations.
- Weak infrastructure in rural areas.
- Fragmented policy frameworks and weak governance.

Notable progress in Rwanda, Ghana, and Kenya shows the value of national strategies, eHealth platforms, and strong leadership in digital transformation.

Somalia's Healthcare System and Digital Transformation Potential

Somalia's health system is underdeveloped, fragmented, and largely donor-dependent. The country ranks among the worst in global health indicators, facing high maternal and child mortality and limited access to essential services.

Key Features:

- 80% of care is provided by unregulated private providers.
- Weak public sector capacity outside major cities.
- Health system relies on international aid and diaspora support.
- Critical shortages in trained health professionals.

As for Somalia's health system, the country has put more effort into the rehabilitation of the health system that was disrupted during the conflict. According to a baseline study of Somalia's health sector, the country does not have an efficient and comprehensive health information system. Therefore, there is a lack of patient-based statistics that can inform decision-making, resource allocation, and planning in health services delivery. The Somali HMIS is characterized by enormous challenges in performance and capacity, as well as a lack of proper mechanisms to disseminate information used for decision-making. This weak health information system is also characterized by poor human resources databases and records in both the public and private health sectors.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Digital Health Initiatives in Somalia.,

Despite challenges, Somalia has begun piloting several digital health solutions, often with diaspora and NGO support:

- Erasmus+ Digital Health Micro-Credentials Project: EU-funded, aims to build capacity through modular training and university partnerships.
- Hagarlaawe mHealth (Puntland): SMS reminders for maternal and child health tracking.
- Telemedicine: Remote consultations in rural and specialist-deficient areas, driven by diaspora clinicians.
- EHR Systems: Pilots in urban clinics; scale and data standardization are ongoing concerns.
- DHIS2 Implementation: Supported by WHO and UNICEF to strengthen national health information reporting.
- Mobile Training Apps: Designed for community health workers in rural regions.

Barriers to Digital Scale-Up in Somalia

- Limited mobile/internet access in rural zones.
- Poor electricity and ICT infrastructure.
- Low digital literacy among health professionals.
- Lack of national eHealth policy and data protection standards.

Opportunities and Strategic Recommendations

- Develop a national digital health strategy, aligned with Africa CDC guidelines.
- Promote public-private telecom and health partnerships.
- Train health workers in basic digital skills.
- Strengthen legal and regulatory frameworks for health data.
- Mobilize the Somali diaspora and youth to innovate local solutions.
- Incorporate digital health into university health sciences curricula.

Conclusion

Digital health presents a scalable opportunity to address Somalia's health service delivery gaps. By investing in infrastructure, education, and governance, Somalia can accelerate its health system modernization and contribute to Africa's broader digital transformation.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Expanded Summary of the Somalia Telemedicine and Digital Health Education Survey Report

1. Introduction and Context

Somalia's healthcare system has endured decades of severe challenges, including prolonged conflict, political instability, and a lack of adequate infrastructure. These factors have critically weakened the health sector, resulting in widespread destruction or under-resourcing of health facilities. A significant shortage of qualified healthcare workers compounds the problem, with national estimates indicating only about 4 healthcare workers per 10,000 people—far below the World Health Organization's recommended minimum threshold of 23 per 10,000. This shortage is especially acute in rural and remote areas, where many communities lack reliable access to even the most basic medical services. The fragile state of the healthcare system has made traditional, facility-based healthcare delivery difficult, particularly amid ongoing civil unrest, internal displacement, and recurrent humanitarian emergencies.

In this context, digital health technologies, including telemedicine, present a promising opportunity to bridge critical gaps in healthcare access. Telemedicine can reduce the need for patients to travel long distances, connect remote patients with scarce specialists, and improve continuity of care, especially for chronic disease management. However, the successful deployment of telemedicine depends heavily on having a sufficiently trained healthcare workforce capable of using these technologies effectively. Recognizing this, the report focuses on assessing the current state of telemedicine use, attitudes, barriers, and training needs among healthcare professionals in Somalia.

2. Survey Methodology and Respondent Demographics

Between March and June 2025, an online survey was conducted targeting healthcare professionals across Somalia. The survey collected data on demographics, prior telemedicine experience, attitudes toward telemedicine, perceived benefits and barriers, digital skills, and preferences for future training. The responses from Somalia were 74 valid respondents after filtering out incomplete or duplicate entries.

The demographic profile of respondents reveals a relatively young and educated workforce. The majority (approximately 58%) are aged between 25 and 35 years, with the median age bracket being 25–30 years. Gender distribution is fairly balanced, with males constituting 54% and females 46% of the sample. Educational attainment is high, with nearly two-thirds holding a bachelor's degree and 23% possessing a master's degree or higher. Most respondents work in public hospitals (65%), followed by government clinics (15%), with smaller proportions in private clinics, private hospitals, and other public agencies. Experience levels vary, but over half have more than 10 years of healthcare practice, indicating a mix of early-career and seasoned professionals

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Table 1. Sociodemographic attributes of respondents.

Age	Mean (SD)	30,5 (10,3)
	Median (Interquartile range)	25 (10)
	Minimum	20
	Maximum	70
Gender	Female, N (%)	34 (45,9)
	Male, N ((%)	40 (54,1)
Highest educational qualification	High school, N(%)	1 (1,4)
	Bachelor of Science, N(%)	40 (54,1)
	Master of Science, N(%)	31 (41,9)
	PhD, N(%)	2 (2,7)
Years in practice	Mean (SD)	7,4 (7,9)
	Median (Interquartile range)	5 (5)
	Minimum	0
	Maximum	34
Current work setting	Academia, N(%)	8 (10,8)
	Health center, N(%)	10 (13,5)
	Hospital, N(%)	31 (41,9)
	Ministry of Health, N(%)	6 (8,1)
	Private Clinic, N(%)	10 (13,5)
	Other, N(%)	9 (12,2)
Profession	Diagnostic technologist	3 (7,9)
	Nurse	4 (10,5)

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

	Physician	20 (52,6)
	Pharmacist	3 (7,9)
	Allied Health Professional	5 (13,2)
	Other	3 (7,9)

3. Telemedicine Exposure and Understanding

Less than half of the respondents (43%) have used telemedicine in their practice, while 57% have never used it. Awareness levels vary: about 15% have never heard of telemedicine, 32% know what it is but have never used it, 30% have used it occasionally, and 23% use it routinely. This indicates a moderate level of exposure but also highlights significant room for growth in adoption and familiarity.

4. Perceived Benefits and Barriers

Respondents overwhelmingly recognize the benefits of telemedicine. The top perceived advantage, cited by 78%, is improved patient access in remote areas, reflecting the critical need to reach underserved populations. Other key benefits include reduced travel time and costs for patients (68%), improved follow-up and monitoring of chronic diseases (64%), enhanced collaboration among healthcare staff (50%), and faster specialist consultations (47%). These benefits underscore telemedicine's potential to improve healthcare delivery efficiency and equity in Somalia.

However, significant barriers hinder telemedicine adoption. The most frequently cited obstacle is unreliable internet connectivity, reported by 82% of respondents. This is a critical infrastructure challenge, especially in rural and remote regions. Other major barriers include insufficient training on telemedicine platforms (68%), limited access to necessary hardware such as computers and smart devices (58%), and patients' inability to use digital tools, particularly among elderly populations (51%). Additionally, unclear reimbursement and payment models for telemedicine services (39%) and concerns about data privacy and security (46%) further complicate implementation efforts

5. Attitudes and Digital Skills

The survey assessed attitudes toward telemedicine and digital skills through a series of Likert-scale questions grouped into positive, neutral, and negative clusters. A strong majority (77%) agree that telemedicine improves patient outcomes, and 66% would recommend it to peers. Most respondents also believe telemedicine saves costs long-term (69%) and reduces patient no-show rates (65%). Despite these positive attitudes, only 41% feel confident using telemedicine technology.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Perceptions and Readiness for Telemedicine among Health-Care Providers

Perceived Benefits (Q9–Q16)

Health-care providers in Somalia overwhelmingly recognize the value of telemedicine for enhancing care delivery and have expressed their attitude towards following questions:

- **Q9 ("Facilitate diagnosis and treatment")**: 67 % positive, only 17 % negative.
- **Q11 ("Increase communication among health care providers")**: 68 % positive, 18 % negative.
- **Q12 ("Telemedicine can reduce the number of visits to health care centers")**: 60 % positive, 25 % negative.
- **Q13 ("Reduce medical errors")**: 53 % positive, 27 % negative.
- **Q14 ("Improve clinical decisions")**: 63 % positive, 20 % negative.
- **Q15 ("Telemedicine provides more comprehensive healthcare services")**: 62 % positive, 22 % negative.
- **Q16 ("Provides more comprehensive care")**: 59 % positive, 22 % negative.

Overall, a clear majority sees telemedicine as beneficial across diagnosis (Q9), communication (Q11), decision-making (Q14), and service delivery (Q15–Q16).

Workflow Compatibility & Policy Support (Q17–Q22)

Providers were more ambivalent about everyday fit and institutional backing:

- **Q17 ("Telemedicine is compatible with all aspects of my work")**: only 41 % positive, 31 % Disagree/SD, 28 % Neutral.
- **Q18 ("Telemedicine is comparable with my current workflow")**: 57 % positive, 17 % neutral, 26 % negative.
- **Q19 ("Using telemedicine fits well into my work style")**: 46 % positive, 31 % negative, 22 % neutral.
- **Q22 ("There are clear policies and strategies that encourage telemedicine")**: 54 % positive, 27 % negative, 19 % neutral.

While benefits are clear, many remain uncertain about daily integration (especially Q17) and nearly a third feel policy support is lacking (Q22).

Perceived Effort & Barriers (Q23–Q26)

Concerns about effort and barriers showed mixed views:

- **Q23 ("Using telemedicine requires a lot of mental effort")**: 21 % Agree/SA vs. 48 % Disagree/SD, 31 % Neutral.
- **Q24 ("Learning to operate telemedicine is hard for me")**: 31 % positive, 48 % negative, 21 % neutral.
- **Q25 ("Telemedicine increases staff workload")**: 29 % positive, 44 % negative, 27 % neutral.
- **Q26 ("Telemedicine threatens information confidentiality and patient privacy")**: 44 % concerned, 31 % unconcerned, 25 % neutral.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Most do not find telemedicine overly taxing or hard to learn (Q23–Q25), but privacy concerns (Q26) remain substantial.

Willingness to Pilot & Visibility (Q27–Q33)

Strong enthusiasm for trialing telemedicine yet modest visibility on the ground:

- **Q27 ("Trying telemedicine applications is a great opportunity")**: 76 % positive, 15 % negative, 9 % neutral.
- **Q28 ("A trial is enough to see what telemedicine could do")**: 54 % positive, 17 % negative, 28 % neutral.
- **Q29 ("I would like to try telemedicine applications before using them")**: 67 % positive, 13 % negative, 20 % neutral.
- **Q32 ("I have seen what other hospital staff do with telemedicine technologies")**: 48 % positive, 45 % negative, 7 % neutral.
- **Q33 ("Telemedicine technology is very visible in my hospital")**: 43 % positive, 45 % negative, 11 % neutral.

High willingness to pilot (Q27–Q29) contrasts with lower firsthand exposure and visibility (Q32–Q33), underscoring the need for peer demonstrations and pilot showcases.

Self-Assessed Tele-Competencies (Q41–Q46)

Respondents report strong readiness across specific telemedicine tasks:

- **Q41 ("Using video consultation tools")**: 76 % positive, 15 % negative, 9 % neutral.
- **Q42 ("Navigating electronic health records remotely")**: 73 % positive, 20 % negative, 7 % neutral.
- **Q43 ("Managing remote monitoring devices")**: 66 % positive, 27 % negative, 7 % neutral.
- **Q44 ("Understanding legal implications")**: 78 % positive, 15 % negative, 7 % neutral.
- **Q45 ("Understanding ethical implications")**: 76 % positive, 17 % negative, 7 % neutral.
- **Q46 ("Communicating effectively in remote settings")**: 71 % positive, 22 % negative, 7 % neutral.

High self-reported competencies (especially legal/ethical understanding in Q44–Q45 and video tools in Q41) suggest that individual skills are not the main barrier to telemedicine adoption.

Implications for Telemedicine Scale-Up:

1. **Policy & Guidelines (Q22)**: Strengthen and widely disseminate clear SOPs, data-security protocols, and leadership directives.
2. **Workflow Integration (Q17–Q19)**: Offer targeted training and co-design sessions to align telemedicine with existing duties.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

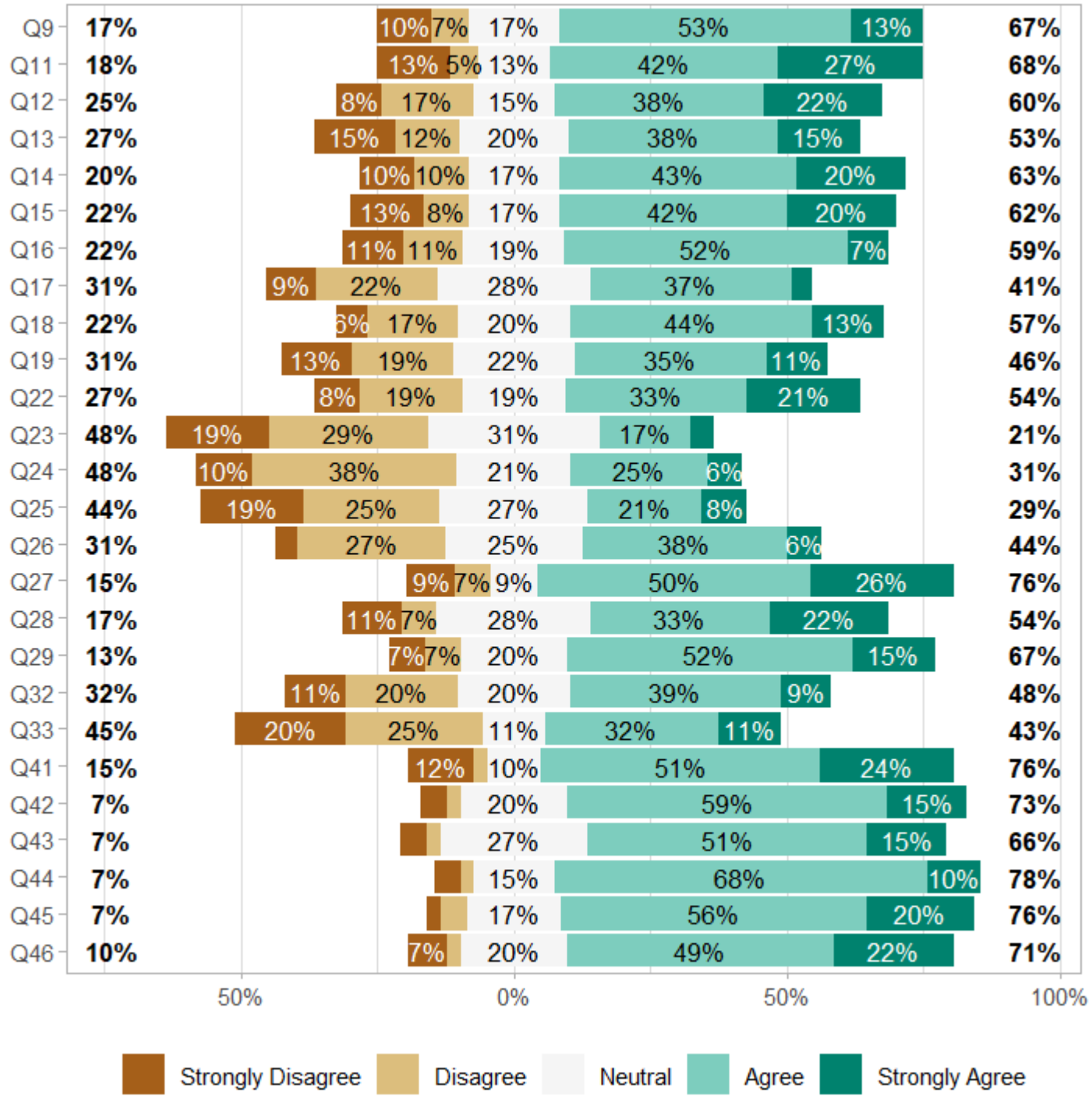
3. **Pilot Visibility (Q32–Q33)**: Showcase local success stories, set up demo sites, and facilitate peer-to-peer exchanges.
4. **Address Privacy (Q26)**: Implement robust confidentiality safeguards, continuous training, and transparent communication about data protection.

By tackling these organizational and environmental levers—rather than focusing solely on individual skill gaps—health systems in Somalia and Somaliland can transform positive perceptions into sustainable telemedicine practice.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Table 2. Agreement Levels on Survey Items (Q26–Q51) for Somalia (see appendix for exact mapping of questions)



Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

The report provides several key recommendations to enhance telemedicine adoption and digital health education in Somalia based on survey findings from healthcare professionals.

Recommendations on key skills to increase the impact of telemedicine:

1. Lead with benefits—quantify and humanise the "why."
    a. *Example:* A district hospital uses telecardiology consults to reduce patient transfers by 30 %, saving an average of 2 hours of ambulance time per case.
        i. *Point:* Show before/after metrics—referral rates, time-to-diagnosis, cost savings.
    b. **Patient success stories:**
        i. *Example:* A mother in rural Lower Shabelle receives remote neonatal follow-up, avoiding a 4-hour round trip and improving her baby's weight gain.
        ii. *Point:* Use short video or written vignettes to give a face and name to abstract "benefits."
    c. **Provider testimonials:**
        i. *Example:* "Since we started tele-dermatology, I've diagnosed 50 cases faster and learned new image-based techniques."
        ii. *Point:* Frame quotes around "I" and "we"—clinician voices build peer trust.
    d. **Cost-benefit infographics:**
        i. *Example:* Pie chart showing 25 % reduction in repeat visits, 40 % lower travel subsidies, 15 % faster decision-making.
        ii. Point: Simplify complex numbers into digestible visuals for policy-makers.
2. Co-design workflows & policy—embed telemedicine seamlessly.
    a. Workflow mapping workshops:
        i. Example: Bring nurses, doctors, receptionists together to chart the patient's in-clinic journey, then overlay tele-consult steps.
        ii. Point: Identify friction points (registration, consent, documentation) and co-create streamlined protocols.
    b. Standard Operating Procedure (SOP) templates:
        i. Example: A one-page SOP for "Remote Consultation Workflow" covering patient ID verification, consent script, session logging, follow-up scheduling.
        ii. Point: Hospitals adapt and brand templates—reduces legal/regulatory ambiguity.
    c. Policy briefings for leadership:
        i. Example: A half-day seminar for hospital board members explaining national telemedicine guidelines, reimbursement frameworks, data protection laws.
        ii. Point: Align institutional policies with national standards so providers see clear "rules of the road."
    d. Rapid-cycle pilot feedback loops:
        i. Example: After a two-week tele-cardiology trial, collect user logs and host a 1-hour "lessons learned" debrief to update the SOP.
        ii. Point: Fast iteration embeds telemedicine as an evolving, responsive process rather than a static system.
3. Demystify effort & privacy—target the one big lingering barrier.
    a. Hands-on privacy workshops:
        i. Example: A 45-minute live demo on encrypting call recordings, anonymising EHR screenshots, and secure file-sharing best practices.
        ii. Point: Show exactly which buttons to click—minimal theory, maximum practice.
    b. "Privacy by Design" checklists:
        i. Example: Laminated desk-side cards listing: use platform's built-in consent form; verify patient location; log out after each session; avoid public Wi-Fi.
        ii. Point: Quick references reduce cognitive load during busy shifts.
    c. Local "Privacy Champions":
        i. Example: Train 2–3 nurses or IT staff per facility to audit 5 random tele-sessions monthly, give peer feedback, and host mini refreshers.
        ii. Point: Builds ongoing accountability and insider support rather than one-off trainings.
    d. Myth-busting FAQ sheets:

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

i. **Example: Q: "Will video calls get hacked?" A: "All calls use end-to-end encryption; here's how to verify."**
ii. **Point: Address common fears head-on with plain-language answers.**

4. Boost visibility—turn willing interest into hands-on exposure.
   a. **Model Clinic site visits:**
      i. **Example: Organise monthly tours of a hospital already running tele-ICU rounds, including live observation and Q&A with staff.**
      ii. **Point: Seeing is believing—firsthand observation builds confidence faster than slides.**
   b. **Innovation days / mini-hackathons:**
      i. **Example: A 1-day event where teams pitch mobile teletriage ideas, build simple prototypes, and demo to peers.**
      ii. **Point: Crowdsources creativity and builds local ownership of solutions.**
   c. **"Try & Tell" micro-grants:**
      i. **Example: Offer $200 grants for clinicians to run a 2-week pilot (e.g., tele-psychiatry for five patients), then present outcomes at the next staff meeting.**
      ii. **Point: Low-risk, low-cost proof points that generate concrete data and testimonials.**
   d. **Peer-to-peer mentoring network:**
      i. **Example: Pair an "early adopter" physician in Mogadishu with a clinician in Baidoa for monthly shadowing and joint telecases.**
      ii. **Point: Builds an informal learning community and spreads best practices organically.**

5. Capitalize on competence—provide bite-sized, recognisable upskilling.

These recommendations aim to systematically overcome barriers such as unreliable internet, hardware shortages, and data security concerns, while leveraging the strong interest among healthcare professionals for telemedicine training and use. Implementing these steps can accelerate equitable access to quality healthcare, particularly for underserved rural populations.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Appendix

Appendix A: mapping of questions

QuestionID	Question Text
Q9	1. Facilitate diagnosis and treatment
Q11	2. Increase communication among health care providers
Q12	3. Telemedicine can reduce the number of visits to health care centers
Q13	4. Reduce medical errors
Q14	5. Improve clinical decisions
Q15	6. Telemedicine provides more comprehensive healthcare services
Q16	1. In my opinion, telemedicine is compatible with all aspects of my work
Q17	2. Telemedicine is comparable with my current workflow
Q18	3. Using telemedicine fits well into my work style
Q19	4. There is clear policies and strategies that encourage health providers to practice telemedicine
Q22	1. I believe using telemedicine requires a lot of mental effort
Q23	2. Learning to operate telemedicine is hard for me
Q24	3. I think telemedicine increases staff workload
Q25	4. In my opinion, telemedicine threatens information confidentiality and patient privacy
Q26	5. Cultural and social factors threatens potentials of health providers to use telemedicine
Q27	1. I believe to try telemedicine applications is a great opportunity
Q28	2. I believe, using telemedicine on a trial basis is enough to see what it could do
Q29	3. I would like to try out telemedicine applications before using it
Q32	1. I have seen what other hospital staffs do with telemedicine technologies
Q33	2. Telemedicine technology is very visible in the hospital where I work
Q41	1. Using video consultation tools
Q42	2. Navigating electronic health records remotely

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

QuestionID	Question Text
Q43	3. Managing remote monitoring devices
Q44	4. Understanding legal implications
Q45	5. Understanding ethical implications
Q46	6. Communicating effectively in remote settings

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.