

The Future of Virtual Health and Care

Driving access and equity
through inclusive policies

June 2022



Executive Summary

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Executive Summary

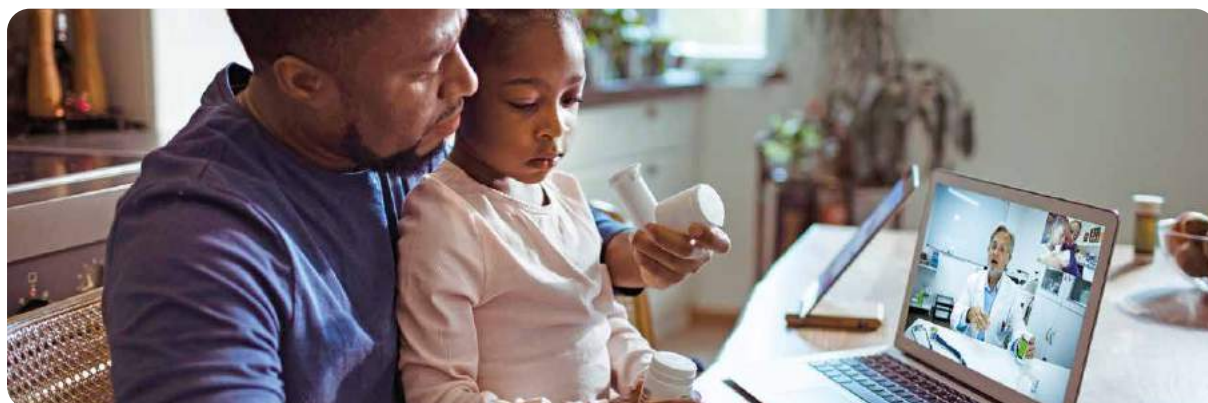
The COVID-19 pandemic has changed the way health and care are delivered. The past two years in particular have seen a boom in connecting patients and users with health and care providers remotely. **The delivery of health and care services remotely through digital means and technologies, commonly known as virtual health and care**, has enabled:

- proactive and preventive health management for individuals and populations through real-time notifications and reminders to prevent and manage health challenges,
- care navigation and support to ensure that patients are able to locate and access appropriate care,
- telehealth to streamline patient and provider communication and enable continuous remote monitoring, and
- smart diagnostics and digital therapeutics for data-led, evidence-based clinical decisions and actions.

The result: Patients and providers are complementing in-person face-to-face interactions with virtual delivery to increase access and take better-informed decisions about health and care.

The increasing trend of delivering several aspects of health and care virtually presents a clear opportunity for policymakers globally to act now and reap the benefits of digitization to achieve health and care equity and access for all.

The Broadband Commission's 2021 Working Group on Virtual Health and Care encourages inclusive policymaking that puts the individual at the center of care delivery and planning. The Working Group's report examines virtual health and care in context of the COVID-19 pandemic: the trends, forecasts, key role of policy in influencing adoption, challenges, and ways of overcoming them. Through a comprehensive analysis of global developments, the report charts a roadmap for countries to integrate virtual delivery in their national health and care systems. It recommends policies as well as key stakeholder actions to ensure virtual health and care solutions increase equitable access and outcomes for those facing the greatest barriers to obtaining services, resulting in improved health and care equity and faster achievement of universal health coverage.



Virtual delivery of health and care has gained importance since COVID-19 began



Virtual engagement has become common practice today in several walks of life, especially in health and care. Noticeable growth in several public as well as private sector **virtual health solutions – which integrate medical, social, and environmental factors to enable holistic well-being** – has empowered individuals and societies to efficiently manage health issues. For instance:

France:

COVIDTracker, a data visualization tool for public health decision-making, gained more than 700,000 users within a span of six months ending January 2021.¹

India:

Aarogya Setu, a contact tracing app, had 190 million downloads within a year, making it one of the most-downloaded COVID-19 tracing apps in the world as of June 2021.²

China:

Health Code, a color-code based tracking system for monitoring access to places, was used in more than 300 cities covering over 900 million people starting February 2020.³



Similarly, **virtual care – which focuses heavily on remotely managing medical conditions** – has seen impressive growth around the world. For instance:

150+ countries:

Ada Health, an algorithm-enabled, clinical literature-driven symptom checker, had 6 million users join in 2020, compared to 5 million in the previous eight years.^{4, 5}

Germany:

Hello Better, a digital therapeutic for stress, exhaustion, insomnia, and depression, had more users in the first quarter of 2021 than in 2015–2019 combined.⁶

Indonesia:

HaloDoc, a teleconsultation platform, saw a 101% gain in average daily active users between 2019 and March 2020.⁷

UAE:

vHealth, an international telehealth provider, reported a 500% increase in the usage of its app in the UAE between March–September 2020 and the same period in 2021.⁸

UK:

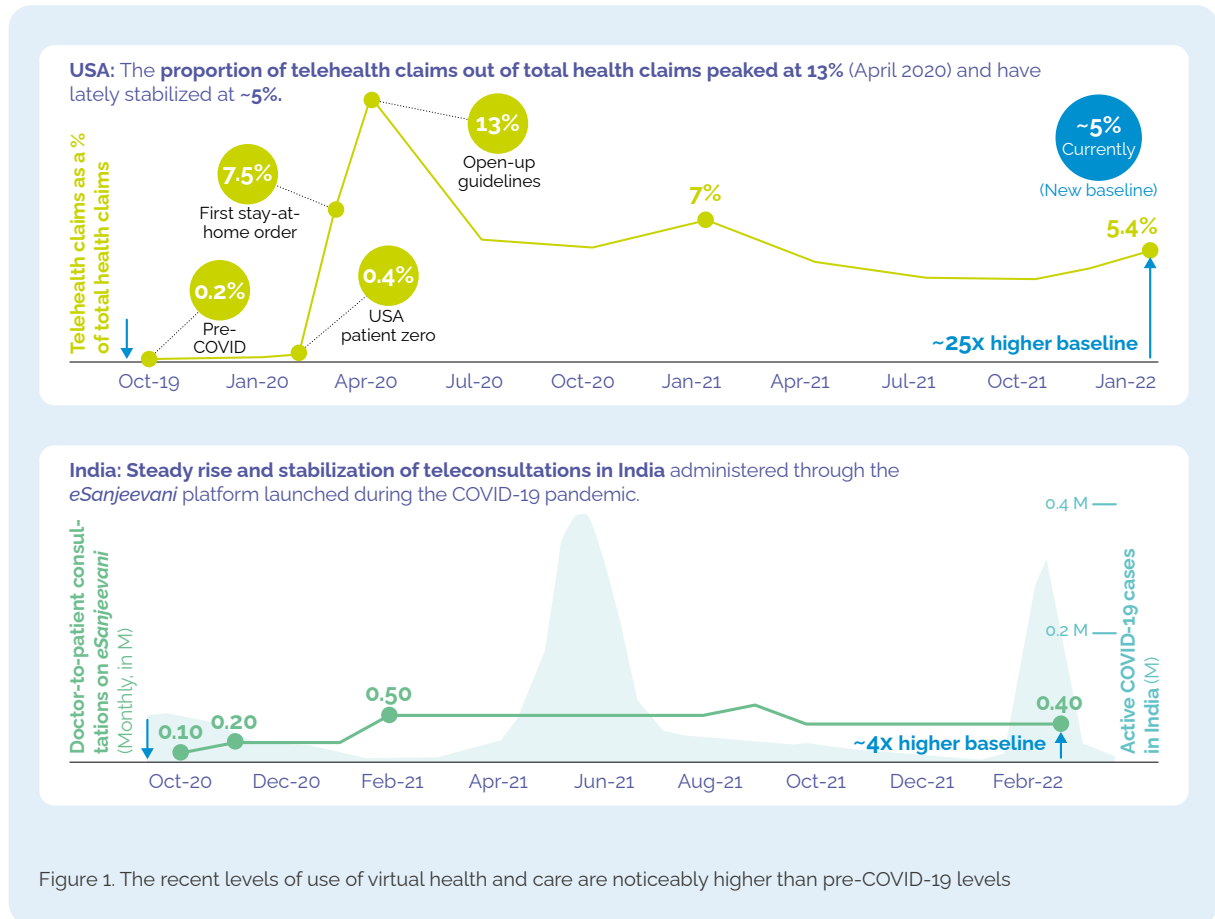
NHS Pathways, a triage and clinical decision support system, saw a surge of 1 million weekly appointments being attended to by general practitioners between 2020 and 2021.⁹

This increase in the use of virtual health and care during the early phases of the COVID-19 pandemic was in part driven by national actions to stop the virus' transmission through physical distancing measures. In its 2021 Global Pulse Survey, the World Health Organization reports that more than 50% of the 95 surveyed countries used telemedicine or home-based care to overcome essential service disruptions and recover quality services.¹⁰

As the world begins to reopen, a hybrid mode of life has become the norm. Virtual and in-person events are complementing each other in several walks of life. Thus, it is not surprising that the new levels of virtual health and care use are several times higher than what they were prior to the COVID-19 pandemic.

The percentage of telehealth claims out of total health claims in the **USA** were around 25 times higher in January 2022 compared to the pre-COVID-19 situation in October 2019.¹¹

The numbers of synchronous teleconsultations on **India's** national teleconsultation and e-outpatient service *eSanjeevani* were roughly 4 times higher in February 2022 than in October 2020.¹²



Although the increase and higher levels of use of virtual health and care are encouraging, **services are not reaching all in an equitable way**. Several forms of digital divides exist:

Gender:

Women and men have different levels of adoption of the internet and digital technologies. A 2019 global estimate shows this gender gap – only 48% of women use the internet as compared to 55% of men globally.¹³

Age:

Older people are less likely to use digital tools and the internet. A 2021 survey of adults in the USA shows that 25% of people older than 65 years do not use the internet, the highest among all adult age groups.¹⁴

Location:

Rural areas have less communication connectivity as compared to urban regions. 2020 data from India shows that rural internet access is roughly half that in urban localities.¹⁵

Income:

Low-income groups have lower internet access and speeds than high-income groups. 2021 data from Colombia shows a positive correlation between income levels and internet connectivity. High-income groups have almost 1.5 times better access and 4 times faster speeds than low-income groups.¹⁶

Social group:

Minority and tribal groups have lower access to internet and digital technologies. Recent data shows that the rate of premature excess deaths per 100,000 people in the USA for American Indians, African Americans, and Hispanics is three times that of Caucasians or Asians.¹⁷ Also, the number of African Americans that lack internet in the USA is almost twice the national average.¹⁸

Disability:

Over one billion people have some form of disability worldwide and a large proportion of them are left out of the digital society.¹⁹ A 2021 Swedish survey shows that people with disabilities have less access to digital devices and are less comfortable with using the internet to pay bills or shop online.²⁰

However, there is a silver lining. Specific recent use cases of virtual health and care have shown that it can be **effective in reducing the different types of health and care digital divides and advancing efforts towards equity for all.**

Gender:

Special programs and outreach for women covering all levels of health and care digitization can overcome exclusion by gender. For instance, in Uganda, *FamilyConnect*, an SMS-based service by the Ministry of Health's Community Health Suite of Tools, sends targeted messages to expecting and new mothers, male partners, and caregivers for ensuring optimal child and maternal health.²¹

Income:

Targeted services and direct outreach to low-income groups can increase access and overcome the income socio-economic divide. For instance, in Chile, telehealth providers *TytoCare* and *Vitaltec* use artificial intelligence-enabled handheld devices to provide primary care to underserved communities and low-income groups. This has increased the coverage and patient meeting frequency with only 30% of the total budget.²⁴

Age:

Training for older health and care workers can overcome exclusion by age. For example, in the UK, the National Health Service and Doctor Care Anywhere organized webinars, e-learning packages, and virtual drop-in clinics to train older doctors in new virtual health and care delivery models.²²

Social group:

Delivery mechanisms that consider the specific situation and needs of different sections of the society can overcome exclusion by social group. As an illustration, in the USA, *Heart Safe Motherhood* is an evidence-based program that uses text messaging to improve health outcomes and experiences of postpartum women with hypertension across all social groups. The program's approach to preventive care works to mitigate racial disparity, to the extent that white or black women are equally likely to engage with and benefit from the service.²⁵

Location:

Virtual delivery solutions based on basic digital communication protocols can reduce exclusion due to rural-urban socio-economic divides. For example, *My Teledoc*, a telemedicine service used by health and care workers in India, remotely connects to clinicians over low bandwidth connections to increase health and care services in remote rural areas.²³

Disability:

Targeted initiatives and improved accessibility features in virtual health and care solutions based on universal design principles can serve the unique needs of people with disabilities and facilitate their integration into the digital mainstream. For instance, in the UAE, *Sanad Card*, a governmental digital service, helps people with disabilities access specialized services such as electronic

nursing surveillance and home medical consultation.²⁶ Israel's OrCam offers *MyEye 2.0*, a wearable assistive technology that gives independence to the visually impaired and the blind by providing hands-free access to visual information on health and care via audio. It enables instant reading of text from any surface like a screen, which is essential for using virtual solutions such as care navigation and digital therapies.²⁷

These encouraging examples of trends and bridging the digital divides show that virtual health and care is gaining acceptance and trust. However, its future evolution and sustained use will be dependent on generating proof of its effect on equitable health and care outcomes.²⁸ Stakeholders are more likely to embrace virtual delivery if there is consensus on its efficacy in improving therapies, reducing treatment and associated costs, optimizing resource utilization under different use cases, and assuring similar quality of service to all.

Reproducible evidence generated using real-world data is required to establish the efficacy of virtual health and care in improving the quality of patients' lives.

Fortunately, this has become an area of focus for many solution developers and countries, and evidence is starting to become available. Recent studies have shown that population- and individual-level disease prevention, patient monitoring and treatment adherence, treatment optimization, behavioral and mental health, and user education can benefit from the virtual delivery of health and care.^{29, 30, 31, 32}

Going forward, **users as well as providers have shown clear intent** to continue using virtual health and care. 2021 surveys in the USA show that:

76% of patients want virtual care visits to be a standard part of their regimen.³³

83% of health and care providers intend to continue using virtual delivery of health and care after the COVID-19 pandemic.³⁴

Expectedly, the projected average compound annual growth rate of the global telemedicine market for 2019–2025 has risen by seven percentage points to 21.8% compared to what it was pre-COVID-19.³⁵

All these developments indicate that virtual delivery of health and care is here to stay, and we are headed towards a hybrid continuum of care in which virtual and in-person delivery complement each other to achieve better health outcomes for all.

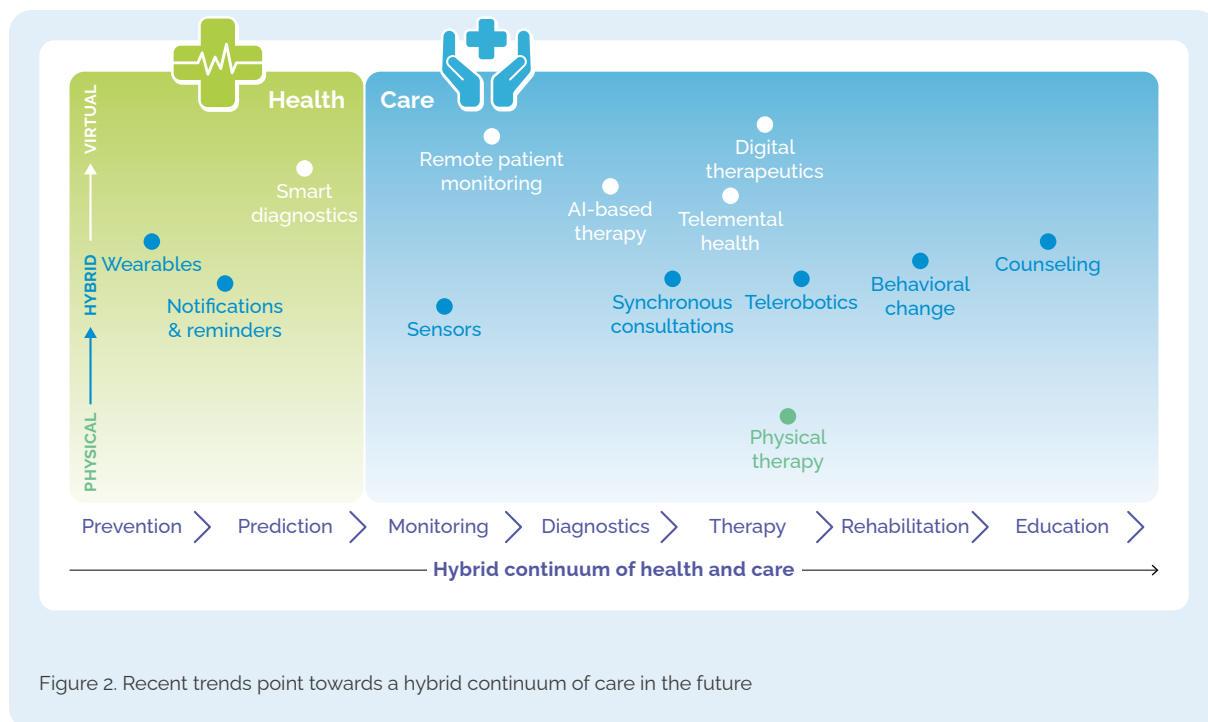


Figure 2. Recent trends point towards a hybrid continuum of care in the future

Recent policy developments in several countries have shown that when combined judiciously, in-person and virtual health and care together promise to be an effective solution for current and future health and care challenges.

Virtual health and care policymaking is gaining importance

Governments and policymakers recognize the changing situation and demands arising from the shift to a virtual mode of health and care delivery. Some countries were quick to realize the potential of virtual health and care and responded by enacting regulations to ensure continuity in the continuum of care, especially during the initial stages of the COVID-19 pandemic. Major policy changes included:

- allowing reimbursements for virtual delivery of health and care under existing insurance plans,
- permitting health and care providers to provide virtual services across borders, and
- improving virtual health and care data governance by strengthening user privacy.

Other countries are following suit. Policymaking is becoming an effective instrument to drive growth of virtual health and care and ensure that benefits reach all.

The global landscape of virtual health and care policy is rapidly evolving with countries eager to capture the benefits of virtual delivery of health and care.

Through a comprehensive analysis of the virtual health and care-related policies of 23 countries spread across geographies and income levels, several novel developments, best practices, and areas of regulation were uncovered.

Key policy developments across the examined countries include:

Policy element	Virtual health and care key policy development
Governance	Creation of local leadership teams for integrating digital health and virtual health and care in hospitals, clinics, communities, and households.
Regulation	Specification of virtual delivery use cases for various medical scenarios such as primary care, specialties, and outpatient care.
Licensing	Development of national health and care provider licensing mechanisms linked to reimbursements for virtual delivery of health and care.
Liability	Provisions for establishing liability in several use cases such as device malfunction, patient non-compliance, and misdiagnosis.
Quality assurance	Specification of requirements and conditions of quality for offering virtual delivery services.
Human- and equity-centric	Provisions and initiatives for inclusive representation of minority and tribal groups as well as remote, inaccessible regions.
Innovation	Emphasis on developing and demonstrating evidence-based virtual health and care solutions.
Health outcomes	Provisions for generating evidence using virtual health and care solutions within a specific time frame.
Infrastructure	Development of a uniform and distributed infrastructure for virtual health and care data.
Data governance	Specification of minimum data compliance requirements for protection of user health and care data.
Interoperability	Specification of standards for virtual health and care data management and governance.
Financing	Investment programs for delivering health and care virtually in rural and underserved communities.
Reimbursement	Payment mechanisms for virtual delivery of health and care based on an individual's socio-economic status.
Digital skills building	Special financial packages for workforce transformation in virtual delivery of health and care.
Collaboration	Creation of a virtual health and care maturity assessment toolkit aligned with national health and care goals.

Opinions of Broadband Commissioners, Working Group members, health and care policymakers, experts, innovators, industry, payers, think tanks, and the civil society have helped discover key recent developments and challenges and shape the findings and recommendations of this report. The result is a comprehensive reference for policymakers aiming to develop inclusive, sustainable policies for utilizing the benefits of virtual health and care. Key areas of policy intervention to improve access to health and care through virtual delivery include:

- Developing a person-centric, technology-agnostic, and inclusive policy vision to drive virtual health and care integration into the mainstream.
- Making policies based on inclusive principles through meaningful engagement of all sections of the society to ensure availability and achieve equity for all.
- Generating and using real-world data-based evidence to enable robust decisions.
- Addressing data privacy at each stage of delivery to gain user trust and drive adoption.
- Shifting from seeing virtual delivery as a supplement to an essential component of a comprehensive health and care strategy.

Together, the research and the conversations highlight several policy areas that are emerging as especially relevant for closing the gaps and increasing the adoption of virtual health and care.



A roadmap for maturity can ensure inclusive integration of virtual delivery

The landscape of global virtual health and care policies, when translated into a maturity roadmap, reflects a clear pathway for policymakers to follow as they strive to develop policies that both advance the uptake of virtual health and care, but also

its inclusivity. The roadmap contains fifteen policy elements across six policy pillars that build upon the maturity framework in the Broadband Commission's 2020 *Reimagining Global Health through Artificial Intelligence: The Roadmap to AI Maturity* report.³⁶

This framework for policy maturity in virtual health and care consists of six policy pillars containing fifteen policy elements. Three maturity levels per policy element aid countries in evaluating their progress on integrating virtual delivery into the mainstream.

Governance and regulatory

Provide essential administrative and regulatory structure through strategies, plans, and guidelines.

Policy elements: governance, regulation, licensing, liability, quality assurance

Design and processes

Encourage user-friendly solutions by focusing on the individual through research and development and effective use of data in decision-making.

Policy elements: human- and equity-centric, innovation, health outcomes

Data and technology

Ensure the flow of data by blending hardware with evolving software and delivery standards.

Policy elements: infrastructure, data governance, interoperability

Business models

Supply financing and coverage through different funding sources, sustainable investments, and innovative pricing models.

Policy elements: financing, reimbursement

People and workforce

Equip different stakeholders with the required know-how through trainings, continuing education, skill upgrades, and competency building.

Policy element: digital skills building

Partners and stakeholders

Bring together different players in the ecosystem through partnerships and teamwork.

Policy element: collaboration



Figure 3. A framework for policy maturity in virtual health and care



Governance and regulatory

This pillar provides the necessary administrative and regulatory structure that formulates and implements strategies, plans, and guidelines for virtual health and care.

Policy element	Maturity vision
Governance	People-centric, technology-agnostic, and inclusive policy frameworks to overcome existing and long-term health and care challenges.
Regulation	Clear and flexible rules that consider feedback from all stakeholders regularly to ensure balanced and equitable distribution of virtual health and care services.
Licensing	Efficient and periodically revised health and care provider and system authorization to ensure proficient and equitable distribution and availability of medical expertise.
Liability	Clearly defined responsibilities for all stakeholders (health and care providers and organizations; payers, financiers, and insurers; private sector and startups; advocacy groups; INGOs, civil society, and implementers) under different use scenarios to establish accountability.
Quality assurance	Progressive standards of health and care that are integrated into health and care delivery to simultaneously guarantee availability and quality.



Design and processes

This pillar encourages user-friendly solutions by laying focus on the individual through research and development and effective use of data in decision-making for virtual health and care.

Policy element	Maturity vision
Human- and equity-centric	A human-first approach that utilizes the right virtual health and care solution at the right place and time to increase access and ensure equitable distribution of health and care services.
Innovation	Continuing improvements in all aspects of virtual health and care solution design to promote the well-being of all.
Health outcomes	Reproducible, real-world evidence that guides decision-making at all levels to improve care, provision the right health and care solutions, and increase access.



Data and technology

This pillar makes available the right architecture that ensures optimal flow of virtual health and care data by blending hardware with evolving software and delivery standards.

Policy element	Maturity vision
Infrastructure	Robust, periodically upgraded architecture and hardware to ensure health and care delivery.
Data governance	Clear data governance structures and standards driven by a core set of equity and rights-based principles for data use, access, and authorization throughout the delivery chain to secure individual privacy and establish trust.
Interoperability	Privacy-driven data transfer mechanisms based on technical standards like FHIR and patient data standards, such as the WHO's classification of health interventions to open health and care data silos by systematically developing, deploying, and continuously improving virtual health and care solutions for allowing data-led decision-making in health and care, and creating additional value for all stakeholders.



Business models

This pillar supplies financing and coverage through different funding sources, sustainable investments, and innovative pricing models to ensure that virtual health and care reaches all sections of the society.

Policy element	Maturity vision
Financing	A strategic investment roadmap driven by investment from multiple sectors and stakeholders (public and private) to support an overall health strategy that includes clear provisions for developing and promoting virtual health and care solutions.
Reimbursement	Fair payment mechanisms based on the service being delivered to increase adoption and promote access.

People and workforce

This pillar equips different stakeholders with the required know-how through trainings, continuing education, skill upgrades, and competency building to build a competent workforce able to expand the reach of virtual health and care.

Policy element	Maturity vision
Digital skills building	Regular trainings and upgrades of workforce skills to utilize new technologies and delivery modes such as virtual delivery for achieving health and care goals efficiently.

Partners and stakeholders

This pillar brings together different players and stakeholders in the ecosystem through partnerships and teamwork to increase the adoption of virtual health and care.

Policy element	Maturity vision
Collaboration	Health and care for the people, by the people, and from the people to cultivate ownership, establish trust, and ensure widespread adoption and uptake of virtual health and care solutions.

Having originated from a study of actual policies, the roadmap provides a practical way to assess progress on all policy elements essential for integrating virtual delivery into mainstream health and care. Its flexible and modular nature means that countries can adapt it to their national health and care goals.

Actionable recommendations can ensure inclusive policies

Policymakers across the globe have an opportunity to advance maturity in virtual health and care. By taking practical steps to achieve the maturity vision for each policy element, policymakers can ensure a seamless integration of virtual delivery into mainstream health and care. Developed for each policy pillar of the maturity framework, the policy recommendations promise a robust set of policies built upon inclusive principles. In general, they apply to other digital health solutions as well. As each country is in its own stage of its journey, it should use the recommendations most suitable

for its context to ensure overall progress towards a health and care system built upon complementary ways of using in-person and virtual delivery to ensure access for all.

Practical recommendations and calls to action equip policymakers with the required know-how to take advantage of leading practices and create inclusive policies that advance virtual health and care. Specific actions for stakeholders ensure that the efforts of all actors reinforce one another.



Governance and regulatory

- Outline a **strategic integration roadmap** for virtual health and care linked to the national digital health strategy to achieve health and care equity.
- Establish **intersectoral policymaking** mechanisms such as between health, IT, finance, and education ministries for efficient, timely development and implementation of policies.
- Develop a hierarchical policy development framework across health and supporting sectors to **reduce overlapping policies** and establish legal clarity in delivering services virtually.
- Adopt a **data-led, outcomes-based policymaking approach** to evaluate and integrate new health and care technologies in line with national health and care goals.
- Establish mechanisms for **assessing returns on investments** – population and individual health indicators, quality of life, community health metrics, etc. – made to integrate virtual delivery into mainstream health and care.



Design and processes

- Ensure **inclusive representation** (gender, social groups, persons with disabilities, and other marginalized sections of the society) **and meaningful engagement** at every stage of policy development, implementation, and feedback to encourage ownership, promote adoption, and ensure that policies are aligned with population needs.
- Create **knowledge-sharing frameworks** that can ensure transfer of best practices between the private sector and the public system to promote innovation and research and development in virtual health and care.
- Promote **innovation to achieve better health and care outcomes** using virtual delivery.

Data and technology

- Establish a **national health and care information system** – if one does not exist already – that acts as a single source of information to reduce uncertainty over data ownership.
- Develop a **comprehensive health and care data strategy** based on respecting privacy and preventing misuse to build user trust and maximize the public benefits of health data for all.
- Align virtual health and care data security and privacy policies with the **national cybersecurity strategy** to ensure all-round security considering the changing nature and sources of data generation.
- Encourage **interoperable standards in the design and implementation** of virtual health and care solutions to simplify the user experience through novel insights generated by health and care sector players and policymakers.
- Create **frameworks for data sharing**, so that relevant health data is securely accessible for authorized stakeholders while ensuring individual privacy and security.
- Build **infrastructure based on open standards** that can be reused to facilitate adoption of new technologies and optimize resource utilization (onsite or cloud).

Business models

- Encourage **innovative modes of financing** such as collaborations and partnerships with the private sector and donors to reduce dependency on a singular funding source (usually public financing).
- Provide **incentives** like tax rebates and subsidies to innovators and virtual solution providers who address public and community health priorities identified by country leadership and communities themselves.
- Develop a **strategic funding program** to integrate virtual delivery into the mainstream through an intersectoral (finance, reimbursement, health and care, ICT, etc.) authority.

People and workforce

- Strengthen **national capabilities** for virtual delivery of health and care across primary, secondary, tertiary, and community care levels through pre- and in-service trainings and upskilling to ensure that the complete health and care delivery structure is connected to the virtual mode.
- Create a **diverse, inclusive, and competent workforce** through special training and integration initiatives to ensure equitable representation and adoption of virtual health and care across all sections of the society.
- Increase **digital literacy** across all sections of society with special emphasis on older people and underserved segments to promote acceptance and utilize the full potential of virtual delivery.
- Encourage meaningful engagement of the **younger population** to develop future-ready, sustainable, and impactful policies for integrating virtual health and care.

Partners and stakeholders

- Collect **periodic, multi-stakeholder feedback** on different aspects of policy development and implementation as a principle for effective policymaking to streamline the policymaking process, promote acceptance of policies, and increase adoption of virtual delivery.
- Explore **co-creation** as a mechanism for long-term, strategic policies to ensure ownership, increase trust, and secure policy continuity.

Policymakers alone cannot advance virtual health and care in an inclusive way. It takes the collective actions of health and care providers, payers, the private sector, advocacy groups, civil society, and researchers to complement policymaker actions and ensure effective policy development and implementation.

Health and care providers and organizations

- Engage with **users** to familiarize them with virtual delivery of health and care solutions and promote acceptance.
- Develop ways to **continuously improve** the process, techniques, and integration of virtual delivery of health and care to increase the quality of care delivered.
- Align the organization's **health data strategy with national data governance** policies to uphold the rights and privacy of users.
- Offer **expert guidance** to policymakers to periodically refine and improve virtual health and care policies.
- Implement **workforce training** to increase technology adoption and operationalize the new modes of health and care delivery.

Payers, financiers, and insurers

- Integrate **virtual and in-person payment mechanisms** to enable continuity in the delivery of health and care and to simplify the experience for users.
- Participate in **policymaking** to enable strategies that ensure virtual delivery of health and care and quality of service through fair pricing strategies and regular provider assessments.
- Consider adjusting **insurance premium payments** based on the socio-economic status of users to achieve health and care equity.
- Revise the **coverage plans periodically** based on evidence of the effectiveness of virtual or in-person delivery for different medical conditions when such evidence becomes available to ensure best possible user experience.



Private sector and startups

- Design and develop **interoperable solutions** and products based on open standards to uncover health and care data silos for integration with national health information exchanges and the possibility to develop better virtual health and care solutions.
- Adapt and innovate considering **immediate and future national and global health and care priorities** to improve the likelihood of adoption and uptake by governments, health and care providers, and payers.
- Collaborate with **other stakeholders** such as health and care providers, payers, communities, and policymakers to ensure that innovation is inclusive and in sync with their requirements.
- Make available **data repositories** for public health benefits to expand the potential of virtual delivery for achieving better health outcomes and improving health systems.
- Consider developing products based on **familiarity and relevance** principles – users are more likely to use a new product or solution that has some elements (e.g., look, feel, etc.) of what they are already familiar with and what they actually need – to ensure faster acceptance.



Advocacy groups

- Bring together different stakeholders and interest groups to support the **integration of virtual delivery** of health and care solutions into the mainstream.
- Aid the transfer of **global best practices** and novel health and care delivery solutions aligned with a country's health and care priorities to achieve national goals speedily and efficiently.
- Promote **inclusive policymaking** by highlighting digital divides (existing or potential), identifying gaps in policy aims and actual results, and suggesting appropriate solutions.
- Establish **observer groups** to enable third-party, independent monitoring of governance and regulatory compliance and to highlight responsibility for ensuring policies and innovations respond to the health needs of all communities, especially those still left behind.
- Work together with **local and regional stakeholders** to promote virtual delivery of health and care, especially for cases where countries are lagging.



INGOs, civil society, and implementers

- Highlight digital divides and **work with policymakers** to efficiently utilize virtual delivery of health and care for bridging these inequities.
- Promote virtual delivery of health and care by **educating citizens** about its benefits, safe use, and complementarity to traditional, in-person service delivery.
- Act as a **channel between communities and all other stakeholders** to highlight areas of need and improvement in policy, solution, pricing, and implementation.
- Advocate to ensure equitable availability and access, same quality, and free at the point of use health and care to all sections of the society, especially when strategic use of virtual delivery can overcome several equity gaps.
- Encourage adoption by actively engaging with **local and regional stakeholders** to customize virtual health and care solutions to local needs and preferences.



Academia and researchers

- Work together with other stakeholders to **identify gap areas for evidence generation** for clinical and policy decisions.
- Generate and **make available evidence** required for assessing the efficacy of virtual health and care in different clinical and non-clinical use cases.
- Offer cutting-edge, **expert advice and support** to other stakeholders to improve the virtual health and care delivery chain and establish a hybrid continuum of care.
- Create **scientifically robust solutions** for improving the delivery of health and care virtually.
- Develop periodically revised **curricula, training programs, certifications, and competency models** to update the skills of the workforce in using new technologies in virtual health and care.

The undercurrent running through these recommendations and calls to action is the critical need to recognize the ongoing change in the delivery of health and care to a virtual mode. User experiences, on-the-ground developments, and recent policy actions strongly suggest that virtual delivery is going to become an integral part of health and care in the coming years. It promises to permanently reshape today's systems by enabling delivery of quality health and care as close as possible to where people live and work.

Thus, the future of virtual health and care depends upon how we use virtual delivery to ensure that all can benefit from it. As the report shows, inclusive policymaking can be the glue that binds and takes forward everyone together to close equity gaps in health and care access and outcomes and achieve universal health coverage.

References

- 1 Par Robin Richardot (2021). Guillaume Rozier, prodige des data sur la piste du Covid-19. Available at: https://www.lemonde.fr/m-le-mag/article/2021/01/22/guillaume-rozier-prodige-des-data-sur-la-piste-du-covid-19_6067147_4500055.html (Accessed March 2022)
- 2 Ashok Upadhyay (2021). How many contacts Aarogya Setu app has traced in fighting Covid-19? RTI story. Available at: <https://www.indiatoday.in/india/story/how-many-contacts-aarogya-setu-app-traced-fighting-covid-rti-story-1856217-2021-09-23> (Accessed March 2022)
- 3 Fan Liang (2020). COVID-19 and Health Code: How Digital Platforms Tackle the Pandemic in China. Available at: <https://journals.sagepub.com/doi/full/10.1177/2056305120947657> (Accessed March 2022)
- 4 Natasha Lomas (2021). Ada Health closes \$90M Series B led by Leaps by Bayer. Available at: <https://techcrunch.com/2021/05/27/ada-health-closes-90m-series-b-led-by-leaps-by-bayer/> (Accessed March 2022)
- 5 Ada (2022). About us. Available at: <https://ada.com/about/> (Accessed March 2022)
- 6 HelloBetter (2021). HelloBetter: Becoming the European Category Leader in Digital Mental Health. Available at: <https://hellobetter.de/en/company/insights/category-leader-digital-mental-health/> (Accessed March 2022)
- 7 Vikram Kapur and Alex Boulton (2020). Covid-19 Accelerates the Adoption of Telemedicine in Asia-Pacific Countries. Available at: <https://www.bain.com/insights/covid-19-accelerates-the-adoption-of-telemedicine-in-asia-pacific-countries/> (Accessed March 2022)
- 8 Ahmed El Sherif (2020). More than half of UAE expats highly likely to use telehealth services. Available at: <https://www.healthcareitnews.com/news/emea/more-half-uae-expats-highly-likely-use-telehealth-services> (Accessed March 2022)
- 9 Nick Bostock (2021). NHS England plans to 'embed total triage' in general practice post-pandemic. Available at: <https://www.gponline.com/nhs-england-plans-embed-total-triage-general-practice-post-pandemic/article/1711145> (Accessed March 2022)
- 10 World Health Organization (2022). Global pulse survey on continuity of essential health services during the COVID-19 pandemic. Available at: <https://www.who.int/publications/m/item/global-pulse-survey-on-continuity-of-essential-health-services-during-the-covid-19-pandemic-Q4> (Accessed April 2022)
- 11 FAIR Health (2021). Monthly Telehealth Regional Tracker. Available at: <https://www.fairhealth.org/states-by-the-numbers/telehealth> (Accessed February 2022)
- 12 COVID19 India (2021). Available at: <https://www.covid19india.org/> (Accessed February 2022) and Accenture research
- 13 Broadband Commission for Sustainable Development (2021). The State of Broadband: People-Centred Approaches for Universal Broadband. Available at: https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-BROADBAND.23-2021-PDF-E.pdf (Accessed March 2022)
- 14 Andrew Perrin and Sara Atske (2021). 7% of Americans don't use the Internet. Who are they? Available at: <https://www.pewresearch.org/fact-tank/2021/04/02/7-of-americans-dont-use-the-internet-who-are-they/> (Accessed March 2022)
- 15 Kantar (2021). Internet Adoption in India. Available at: https://images.assettype.com/afaqs/2021-06/b9a3220f-ae2f-43db-a0b4-36a372b243c4/KANTAR_ICUBE_2020_Report_C1.pdf (Accessed March 2022)
- 16 Ministerio de Tecnologías de la Información y las Comunicaciones (2021). Boletín Trimestral De Las Tic Cifras Cuarto Trimestre de 2020. Available at: https://colombiatic.mintic.gov.co/679/articles-172261_archivo_.pdf.pdf (Accessed March 2022)
- 17 Nambi Ndugga and Samantha Artiga (2021). Disparities in Health and Health Care: 5 Key Questions and Answers. Available at: <https://www.kff.org/racial-equity-and-health-policy/issue-brief/disparities-in-health-and-health-care-5-key-question-and-answers/> (Accessed March 2022)
- 18 Derick Simmons, et al. (2021). Building toward equity: A working model for digital health. Available at: <https://rockhealth.com/insights/building-toward-equity-a-working-model-for-digital-health/> (Accessed March 2022)
- 19 World Health Organization (2021). Disability and health. Available at: [who.int/news-room/fact-sheets/detail/disability-and-health](https://www.who.int/news-room/fact-sheets/detail/disability-and-health) (Accessed March 2022)
- 20 Stefan Johansson, et al. (2021). Disability digital divide: the use of the Internet, smartphones, computers and tablets among people with disabilities in Sweden. Available at: <https://link.springer.com/article/10.1007/s10209-020-00714-x#Sec11> (Accessed March 2022)
- 21 United Nations Children's Fund Uganda (2018). FamilyConnect: Connecting women and children to health care services. Available at: <https://www.unicef.org/uganda/what-we-do/familyconnect> (Accessed March 2022)
- 22 Leontina Postelnicu (2020). UK company offers free remote consultation training programme for NHS GPs. Available at: <https://www.mobihealthnews.com/news/emea/uk-company-offers-free-remote-consultation-training-programme-nhs-gps> (Accessed March 2022)
- 23 Intelehealth (2021). Incorporating Telemedicine at Health and Wellness Centers (HWC) in Morbi, Gujarat under Ayushman Bharat Yojana. Available at: https://intelehealth.org/wp-content/uploads/2022/01/MorbiCaseStudy_2.pdf (Accessed March 2022)
- 24 Leila Hawkins (2021). How a telehealth company delivered vital care in rural Chile. Available at: <https://healthcare-digital.com/telehealth-and-covid-19/how-telehealth-company-delivered-vital-care-rural-chile> (Accessed March 2022)
- 25 Jill Harkins (2019). Texting To The Rescue. Available at: <https://thephiladelphiacitizen.org/heart-safe-motherhood-penn/> (Accessed March 2022)
- 26 Community Development Authority (2021). Take Pride in Your Privileges. Available at: <https://www.cda.gov.ae/ar/socialcare/PeopleWithDisabilities/Documents/CDA-Sanad-Card-Leaflet-EN-April-2021.pdf> (Accessed March 2022)

References

- 27 Eden Prairie (2020). Starkey and OrCam Partner to Provide Groundbreaking Assistive Technology to Hearing and Visually Impaired People. Available at: <https://medicalalley.org/2020/10/starkey-and-orcam-partner-to-provide-groundbreaking-assistive-technology-to-hearing-and-visually-impaired-people/> (Accessed March 2022)
- 28 Nature Editorial (2021). Telehealth is here to stay. Available at: <https://www.nature.com/articles/s41591-021-01447-x#citeas> (Accessed March 2022)
- 29 Elham Monaghesh and Alireza Hajizadeh (2020). The role of telehealth during COVID-19 outbreak: a systematic review based on current evidence. Available at: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-020-09301-4> (Accessed February 2022)
- 30 Nyssa Z Bulkes, et al. (2022). Comparing efficacy of telehealth to in-person mental health care in intensive-treatment-seeking adults. Available at: <https://pubmed.ncbi.nlm.nih.gov/34799124/> (Accessed March 2022)
- 31 Richard D. Hammer, et al. (2021). A digital tumor board solution impacts case discussion time and postponement of cases in tumor boards. Available at: <https://link.springer.com/article/10.1007/s12553-021-00533-x> (Accessed March 2022)
- 32 Karoliina Paalimäki-Paakki, et al. (2022). Effectiveness of Digital Counseling Environments on Anxiety, Depression, and Adherence to Treatment Among Patients Who Are Chronically Ill: Systematic Review. Available at: <https://pubmed.ncbi.nlm.nih.gov/34989681/> (Accessed March 2022)
- 33 Oleg Bestseny, et al. (2021). Telehealth: A quarter-trillion-dollar post-COVID-19 reality? Available at: <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/telehealth-a-quarter-trillion-dollar-post-covid-19-reality> (Accessed February 2022)
- 34 Sasha Guttentag (2021). The State of Telehealth, According to Healthcare Providers and Patients. Available at: <https://www.goodrx.com/healthcare-access/telehealth/state-of-telehealth-survey-2021> (Accessed February 2022)
- 35 Accenture Research based on publications (2017–2020)
- 36 Broadband Commission (2020). Reimagining Global Health through Artificial Intelligence: The Roadmap to AI Maturity Available at: <https://www.broadbandcommission.org/download/2738/> (Accessed June 2022)

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