

CALL TO ACTION

STRENGTHENING DIGITAL HEALTH ECOSYSTEM IN ASIA



The National eHealth Strategy Toolkit, a collaboration between the World Health Organization (WHO) and the International Telecommunications Union (ITU), provides a comprehensive framework and method for developing a national eHealth vision, action plan, and monitoring framework. It can be applied by all countries regardless of their current level of eHealth advancement. Thus, the toolkit addresses the changing dynamics of eHealth vision and implementation in a country. It emphasizes the importance of convergence, continuous support, and guidance from different health and non-health stakeholders. It also highlights the need for establishing effective governance mechanisms and strategic contexts for eHealth in countries.

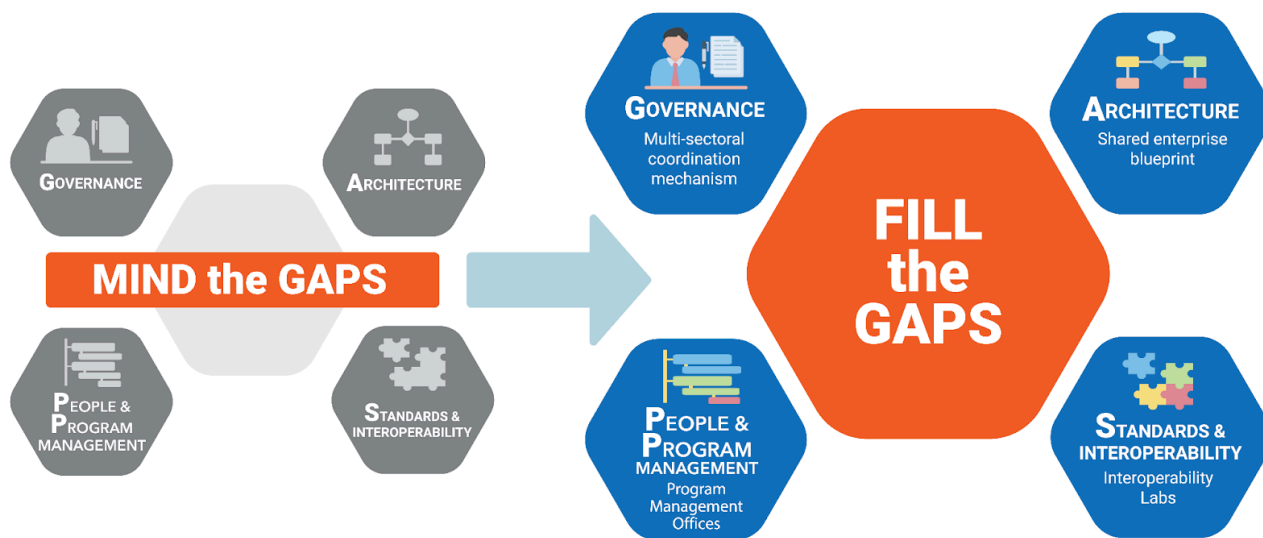
The recently launched Global Initiative on Digital Health (GIDH), a WHO-managed network, highlights countries' need for support to move from product-focused digital health initiatives to setting up a national digital health infrastructure with appropriate national competency. This shift is essential to adapt to changing needs that require trusted and quality-assured technical support in addressing national digital health priorities, with the government in the driver's seat.

After carefully considering the regional needs through various interactions and workshops with in-country stakeholders, AeHIN identified four key challenges that, if solved, could lead to adequate eHealth/digital health vision, strategy, implementation, and sustenance in countries. The challenges relate to the need for (1) **G**overnance, (2) **A**rchitecture, (3) **P**eople and Program Management, and (4) **S**tandards and Interoperability or **GAPS** to manage programs and projects. Guided by the National eHealth Strategy Toolkit and a series of capacity-building and convergence workshops held across Asian countries, AeHIN launched the 'Mind the GAPS and Fill the GAPS' framework (aka GAPS framework), a summarized systematic intervention for governments to build and strengthen their national digital health development process.

The rationale behind the GAPS framework is that a national health information system is complex and requires a governance framework to bring the components of the system together. The governance mechanism, in turn, empowers the architecture, which acts as a blueprint for a progressively stronger health information system. Further, the right people with sufficient capacity are needed to strengthen the system based on the blueprint. With proper standards, health data can be exchanged and health systems will be interoperable within the defined architecture.

Since 2012, AeHIN has crafted and organized activities to strengthen countries' capacity to develop robust digital health programs by addressing their persistent problems in governance, architecture, people and program management, and standards and interoperability. Continuing its mission to strengthen regional and countries' digital health strategies and implementation, AeHIN organized a two-day write-shop on 14-15 May 2023 at the National Institutes of Health, Institute for Clinical Research, Ministry of Health in Selangor, Malaysia. The AeHIN Governing Committee, Secretariat, and Working Council members from 14 countries in the region participated in the write-shop. The

participants, representing the countries in various capacities at the Ministry of Health, national digital health authorities, private sector, academia, and not-for-profit organizations, explored different country situations in crafting a digital health call to action for the governments, outlining specific steps based on AeHIN's 'Mind the GAPS and Fill the GAPS' framework.



AeHIN's Mind the GAPS and Fill the GAPS Framework

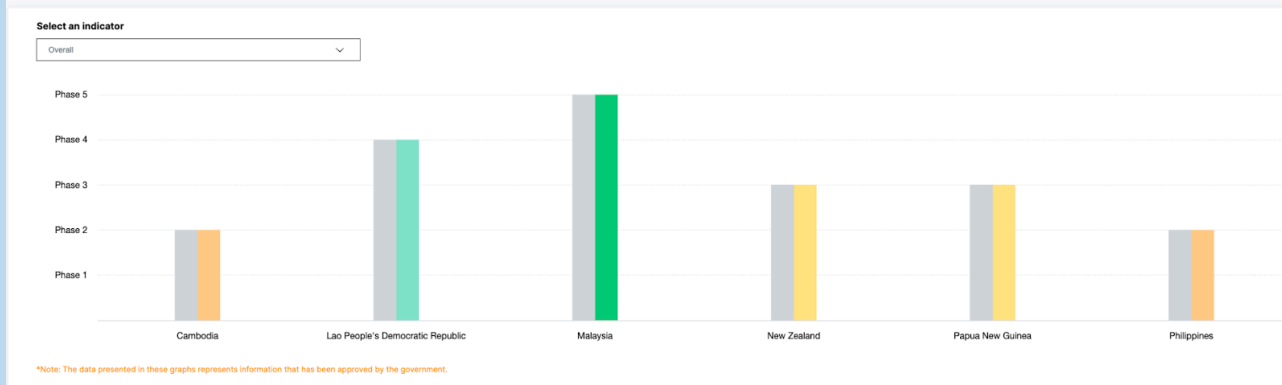
Exploring the regional situation

Asian countries have improved significantly and have achieved many milestones in designing and implementing digital health strategies. The region presents variations in digital health improvements, with countries like China, Singapore, Japan, Malaysia, Thailand, Taiwan, Hong Kong, and others having attained phenomenal success. Countries like the Philippines, Indonesia, India, and Sri Lanka have made significant progress in the last few decades. Countries like Bhutan, Nepal, the Maldives, Lao PDR, and Vietnam are gradually progressing to the next level. Other regional countries are also following the trend. Despite the progress, challenges continue to outweigh the improvements in digital health.

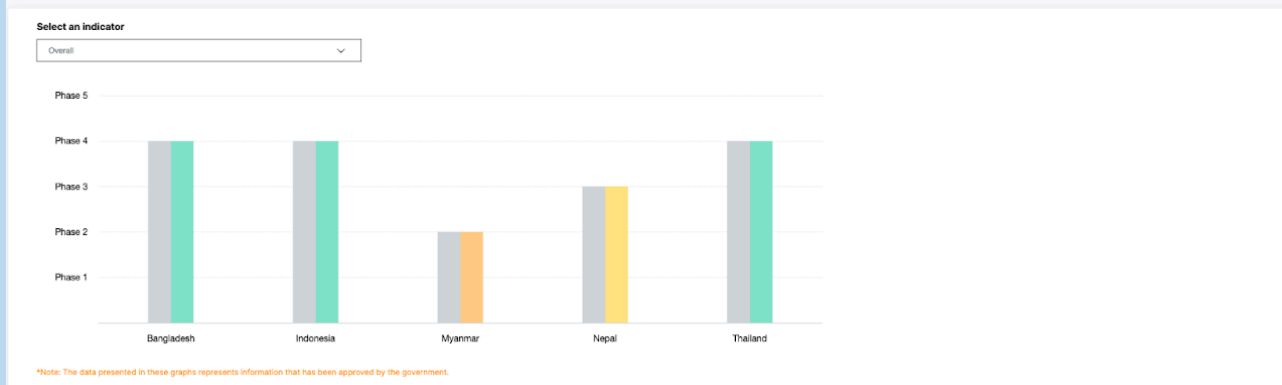
Putting the national vision and strategies into practice is a critical concern most countries face today. The situation shows the need for concerted efforts from different stakeholders across the GAPS framework's components. As the AeHIN working council members present some successful case studies in their respective countries, they also highlight the need for improvement across multiple areas and components of the digital health environment. Positively, most regional countries are taking initiatives in the right direction to attain digital health maturity.

In 2023, the Global Digital Health Monitor (GDHM) assessed the digital health maturity of participating countries across WHO regions, including the Western Pacific region (WPR) and South-East Asia region (SEAR), on standardized indicators based on WHO-ITU's seven national eHealth environment building blocks, with phase five (5) indicating the highest maturity level and phase one (1) as the lowest. GDHM's WPR and SEAR dashboards show that the participating countries are in the middle phase of their digital health maturity. In both regions, the standards and interoperability component is the least mature. Other critical aspects in strengthening digital health in the countries are the need for stronger funding and multi-stakeholder coordination, which could be improved through better governance and program management.

Western Pacific Regional Overview



South-East Asian Regional Overview



Source: Screenshots of the WPR and SEAR dashboards (2023) in the GDHM tool

The findings reinforce AeHIN's rationale behind crafting and implementing the GAPS framework. If diligently implemented, the GAPS framework has the potential to narrow the gaps, accelerate the change, and help countries attain digital health maturity, thereby improving equity in healthcare.



Call to action



High-Impact actions



Activity steps

CALL TO ACTION

This call to action is to encourage the region and regional countries to take impact-oriented steps that could improve the design and implementation of digital health strategies to propel the overall digital health maturity to the next stage, regardless of their current level of maturity. Stakeholders encompass the private, academic, and non-government sectors, including international development partners. If the call is acted upon proactively, countries can aim to onboard various health and non-health stakeholders and have a harmonized digital ecosystem that integrates digital health with the country's overall digital infrastructure. It will also ensure accountability for actions, build capacity and ownership among accountable people, promote multi-sector coordination, and enhance innovation.

The call to action is based on AeHIN's 'Mind the GAPS and Fill the GAPS' framework and organized as follows:



Call to action

Each component (Governance, Architecture, People & Program Management, Standards & Interoperability) has a main call to action.



High-impact actions

High-impact actions are targeted for each call to action, defining critical action items to address the call.



Activity steps

Steps are outlined per high-impact action item to guide the implementation of such actions.

It should be noted that this document is not targeted at any country and is flexible for the countries to edit and implement based on their current situation and emerging needs. While doing so, AeHIN expresses its availability to support the countries in custom-developing and implementing target-oriented strategies and actions.

1



Institutionalize a sustainable, inclusive, resilient, and collaborative digital health governance mechanism.

Internet and mobile phone penetration, along with advancements in digital technologies, have taken center stage in driving innovations, scalability, reach, efficiency, and effectiveness of interventions and programs across sectors. Digital health must be integrated into the national digital ecosystem and framework, including the country's overall development agenda. The inclusion of digital health in

the broader digital ecosystem will enable garnering support from multiple stakeholders with varied expertise, fulfillment of defined roles and responsibilities by the stakeholders, promote data sharing across the departments/agencies, and support the development of a digital architecture aligned with national health and digital priorities.

Above all, an accountable governing mechanism in digital health is needed to ensure that digital technologies contribute to facilitating health equity—making healthcare more accessible to people and communities and removing barriers to attain better health. Political commitment and ownership are critical for the success of digital health initiatives. This commitment should materialize in sustained resource allocation and investments for digital health. Such investments are essential for the development and maintenance of digital health systems, ensuring their effectiveness and sustainability.



Establish a governance mechanism that ensures equitable access to digital health through multi-stakeholder coordination and global collaboration.



- Advocate multisectoral coordination
- Decide on the level of representation from different stakeholders
- Engage with stakeholders from different sectors, agencies, and departments
- Advocate and promote data sharing
- Mandate active and continued coordination and operations

As governance mechanisms are established, improvements in oversight, accountability, and a mandate toward routine operations become increasingly imperative. Thus, the governance mechanism must be legally/legislatively mandated to enforce compliance and generate resources. The legal mandate is not just a formality but should allow continued government budgetary support and resource allocation. An independent governing body dedicated to digital health may be institutionalized based on the established governance mechanism. This body will lead the strategic directions of national digital health.



Institutionalize an independent governing body with a legislative mandate and defined structure and roles at national and subnational levels.



- Develop the organizational structure, mandate, and terms of reference for full time members of the governing body
- Develop policies and standard operating procedures
- Conduct public consultation
- Legislate
- Allocate resources
- Enable operations
- Ensure and delineate decision-making and monitoring functions
- Continued support and resource allocation to strengthen the governance mechanism

Digital health entails coordinated and synchronized resources and activities from various agencies like health, information and communication technology (ICT), finance, and insurance, among others. Thus, it is necessary to designate a Chief Information Officer (CIO) or a Chief Digital Health Officer (CDHO) to coordinate and anchor the governance mechanism and ensure transparent communication. As stakeholders may have competing priorities, the CIO/CDHO shall implement a standard set of principles acceptable to all stakeholders. The CIO/CDHO shall also work closely with the implementing organizations to reduce issues, mitigate risks, and optimize resources to maximize the returns on investments made in digital health. The CIO/CDHO is also expected to oversee the national digital health program management unit (see call to action on program management).



Designate a CIO/CDHO responsible for coordinating the establishment of digital health governance mechanism and overseeing the national digital health program management unit.



- **Develop the job description and terms of reference for the CIO/CDHO**
- **Form a selection committee**
- **Advertise for recruitment**
- **Select and appoint**



Implement an integrated, standardized, and costed digital health blueprint that is aligned with national health and digital vision and strategies.

2

The emerging globalization of healthcare demands integrated systems enabling data sharing within countries, global networks, and multi-lateral agencies. In this regard, the region and every regional country should emphasize local, national, regional, and global health priorities. Monitoring sustainable development goals (SDGs) and health system performance indicators at all levels has become a quintessential component of health systems in countries, especially in fast-tracking these priorities. Improving the quality of data generated and shared, therefore, is important to accurately analyze indicators and design evidence-based measures. Also, concepts like value-based healthcare are gaining importance globally, demanding a focus on improving patient outcomes, better patient experience, and reducing the cost of care. As the demand and supply gap for health services, facilities, and workforce is widening, countries must assess the health needs and design services and facilities to meet local, national, regional, and international needs, including for underserved and underprivileged populations, migrants, and refugees—ensuring that no one is left behind in the pursuit of better health.

All these can be accelerated when a country designs and implements a digital health blueprint that aligns with national and international health policies, strategies, priorities, and needs. Developing the blueprint and its components can be referenced from the WHO-ITU National eHealth Strategy Toolkit.



Develop a simple and easy to understand digital health blueprint aligned with national health strategies, policies, priorities, and needs.



- **Conduct local, regional, and international benchmarking of best practices and learnings**
- **Constitute a working group with a broader representation of stakeholders**
- **Develop/revise (if already developed) the digital health blueprint aligned with national and sub-national health priorities**
- **Conduct public consultation**
- **Enforce the blueprint as a policy/vision document**

The digital health blueprint should also be aligned with the country's digital/e-governance vision and strategy. Such an alignment will increase political support and willingness, stakeholder acceptance, and ease of legislative process to enforce the blueprint as a national mandate. It will also promote the use of shared infrastructure in a health sector enterprise architecture, thereby improving cost efficiency for different health information systems. For example, Ministries of Health in many countries work closely with the Ministry of Information Technology and National Information Centers to develop health applications and store data. This alignment will promote transparency and accountability through overarching policies and guidelines, defining privacy, protection and confidentiality, and data sharing.



Align and disseminate the blueprint widely along with the country's digital/e-governance vision/strategy.



- **Involve stakeholders from the national digital/e-governance vision and strategy development mechanism**
- **Identify shared areas of interest, infrastructure, and funding**
- **Align the digital health vision with the national digital vision/strategy**
- **Conduct public consultation**
- **Institute a clear, accessible, version-controlled document and dissemination process**

COVID-19 has stressed the need for integrated surveillance mechanisms on a one health/all-hazards approach to track and respond to health emergencies and pandemics, which would not be possible without collaboration and data integration among various stakeholders, agencies, and departments in the country. Critically, countries need scalable solutions that promote a collaborative work culture and reduce duplication of efforts and data collection. Many developed countries are now building integrated and interoperable data collection and analytical systems wherein one data variable, unless dynamic, is collected only once across the health system. Such systems allow for more efficient data management, reduce the risk of errors, and enable the integration of new and emerging healthcare

and technology needs aligned with the country's evolving digital vision. They also promote innovation in solving health system challenges.



Ensure that the digital health blueprint is integrated and interoperable with both health and non-health systems and the blueprint is future ready and updated periodically for emerging healthcare and technology needs.



- Enforce principles of one health in the digital health ecosystem and the digital health blueprint
- Decide on centralized/de-centralized approach as per the health system design and functions in the country
- Emphasize on data security, privacy, and protection
- Identify and integrate programmatic needs and data dependencies into the blueprint
- Promote private sector participation and innovation in designing new projects and new technologies to solve emerging health problems

As AeHIN states and believes, putting the digital health blueprint into action to achieve equity, accessibility, and affordability to health is a challenge for most countries, especially low- and middle-income countries. Thus, along with the digital health blueprint, every country should develop a time-bound, costed implementation plan that provides a clear pathway for implementation and achieving milestones in phases. The plan should define the total and phase-wise cost of the digital health program, quantify its impact/return on investment in health outcomes, and define ownership and accountability for implementation and monitoring. Globally, it has been observed that digital health projects aligned with the blueprint implementation plan are cost-efficient and can attract timely investments.



Develop a time-bound comprehensive costed implementation plan based on the blueprint.



- Ensure that a costed implementation plan (if needed in phases) is included as part of the digital health blueprint
- Ensure monitoring and evaluation mechanisms are in place within the costed implementation plan to track how activities contribute to the targeted outcomes



Establish a national digital health program management unit (PMU) or a digital transformation/collaboration office.

With the development of a digital health blueprint and the setting of a legislative mandate, it is essential to establish a national digital health program management unit (PMU) or a digital transformation/collaboration office to anchor the government's efforts in digital health. Such a PMU with defined roles, responsibilities, and key performance indicators will organize and accelerate the implementation of the digital health blueprint—a common challenge in most countries. The PMU is envisaged to strengthen workforce capacity to implement an integrated and standardized digital health blueprint aligned with national health and digital vision and strategies. Operating within the governance mechanism, under the leadership of the CIO/CDHO from the governing body, the office/PMU should be independent and empowered to make decisions on routine and non/mild strategic matters.

The PMU should be staffed by diverse professionals who bring the necessary technology, management, and health systems experience, thereby enabling cross-pollination of knowledge and expertise for successful implementation. This diversification would streamline and capacitate the PMU to provide digital health support to various programs, projects, activities, and initiatives. A common concern raised by digital health staff in the country includes the non-permanent nature of their contracts, unclear reporting structures, and lack of career growth. Establishing a structured PMU will also provide a clear pathway for the team and create career interest in digital health.



Institutionalize the national digital health PMU/digital transformation or collaboration office having diverse skilled professionals with defined terms of reference, organizational structure, and monitoring framework.



- Include the need for a PMU and its structure in the policy/strategy/legislative mandate document for the governance mechanism and in the digital health strategy implementation plan
- Define collaboration and communication mechanism with the digital health governing body
- Identify and engage a diverse range of in-house professionals from different programs within and external to healthcare, including policy-makers
- Create a roster of local, national, regional, and international experts as advisors and technical consultants for the PMU
- Develop a monitoring framework for the PMU

A critical gap found in most countries is the lack of skilled digital health staff and the lack of motivation among the staff working in digital health programs. In some countries, digital health programs are managed by contractual staff as external consultants or through an external agency. However, the digital transformation office/PMU must be in-house and have high-quality staff with varied skills. To make them available, governments should take initiatives like pre-service training to sensitize health professionals on the use and benefits of digitalization and induce their interest in taking up a career in digital health. Also, the PMU should implement in-service training to motivate the staff and create opportunities for career progression and continuous applied learning. It is apt to design the organizational structure of the PMU to promote youth participation and have a clear succession plan, ensuring continuity of efforts.



Adopt a digital competency framework to design and implement pre-service and in-service training on digital health and program management.



- **Include adoption of a digital health competency framework and training programs in the terms of reference of the PMU**
- **Engage and collaborate with private sector, academia, and national, regional, and global partners including coalitions and associations**
- **Design, develop, and implement the digital health competency framework and trainings based on the mandate and roles of the PMU**



Support primary healthcare advocacy by improving digital health literacy and the use of digital health services and applications by families and communities.

4

The success of digital initiatives should not be based on adopting digital tools for digitalization's sake. Digitalization should only play a supportive role in resolving pain points in health service delivery and promotion. Ultimately, it should be grounded on how the reach and quality of healthcare services are improved for families and communities, especially in marginalized sectors. On a larger scale, success should anchor digital health's impact in meeting the programmatic and health system objectives.

As generally observed and realized, digital health reduces the transaction cost of care in terms of time, effort, and resources; enables high-volume service provision; improves access to underserved areas; improves patient safety; ensures health information privacy, protection, and interoperability; and promotes private sector participation.

It is crucial that families and communities should be treated as primary stakeholders in digital health and not just 'recipients' of often siloed digital health projects led and implemented by governments and partners.



Undertake advocacy campaigns to promote the use of digital tools and solutions that are responsive to the needs of families and communities, creating a 'digital culture.'



- **Design and launch advocacy campaigns**
- **Bridge the digital divide by improving access to technology, internet connectivity, and digital skills training**
- **Address people and stakeholder concerns on trust and privacy by emphasizing the importance of data security, confidentiality, and informed consent**
- **Promote active engagement of families and communities in managing their health through digital tools and participate in their own care**
- **Improve digital adoption by removing language barriers, providing user friendly interface, and making the tools accessible**
- **Integrate the advocacy campaigns with overall digital/e-governance/digital infrastructure campaigns in the country**
- **Engage with academic and private sector organizations for promotion and campaigns, including at the point of service**

Significant factors contributing to digital adoption and continued use are the usability and user-friendliness of digital tools and solutions for healthcare providers and users. Governments should enforce policies and protocols and issue early guidance to improve users' digital literacy, ensuring appropriate and sustained use of tools for the continuum of care. Innovators and solution developers should be aware of the overall systemic and unique user needs to develop and implement the right solutions and tools for families and communities.



Enforce protocols for user-friendly digital health tools and education.



- **Publish a guidance document on the specifications for digital health tools based on consumer needs, digital literacy levels, and the digital health blueprint**
- **Include user-friendliness, digital literacy level requirements, alignment with the country's digital health blueprint, availability of easy to refer manual, and others in the digital tool evaluation framework and feedback mechanisms**



Achieve interoperability by adopting standards.

Interoperability between different health and non-health systems is a critical aspect of the digital health ecosystem in the country. The governance mechanism should emphasize the importance of standards and interoperability among the different systems to minimize silos, promote efficiency, reduce duplication of efforts, optimize investments, and improve analytical capabilities.

Moreover, the governance mechanism should assign an accountable team like a technical working group or committee (TWG/C) to develop and promote data standards for interoperability. This mechanism should promote collaboration at national, regional, and global levels.



Establish a TWG/C on national health data standards to develop standards and create an ecosystem for adopting and promoting standards.



- Identify and engage with national, regional, and global stakeholders
- Ensure that standards and interoperability are included and referred to appropriately in the digital health blueprint

A critical aspect of promoting interoperability is adopting and developing health data standards, minimum health data set, data dictionary, and the required middleware accepted and approved by all the stakeholders to establish a health data exchange and promote uniformity at all levels.



Adopt proven standardized health data, minimum health data set, data dictionary, and the required middleware.



- The TWG/C on national health data standards should develop the minimum data standards, coordinate the development of required middleware, and ensure the standards are scalable and flexible
- The TWG/C should engage with the private sector and all the other stakeholders for buy-in and use of standardized health data and middleware
- Implement training programs and education opportunities to healthcare providers and staff on the adopted interoperability standards

- Ensure that the adopted standards have a clear version control and are consistent across the different systems and healthcare organizations
- Modularize standard integration for easy tracking of versions, fixes, new additions, and improvements
- Mandate legacy data

Developing and promoting data standards and interoperability requires dedicated human resources and funding. The governments must focus on creating a cadre of skilled workforce and budget allocations to cover the costs, including the cost of standards and establishing a sandbox or a testing environment for information systems.



Create an interoperability fund to establish a sandbox and capacity building to promote standards.



- Incentivize the use and adoption of standards
- Motivate private sector and academic participation
- Establish regional and global collaborations and partnerships
- Develop national standards; if needed, adopt the 80% international and 20% local standards model
- Establish evaluation and certification schemes for standard compliance

The [Asia eHealth Information Network](#) is a collaboration of digital health advocates from South and South-East Asia to help Asian countries with national digital health development. AeHIN has over 2,400 members from 84 countries, committed to promote interoperability for better health. Over the years, AeHIN has been closely working with Ministries of Health and other stakeholders in building digital health foundations across the regional countries. AeHIN envisions achieving interoperable digital health systems in Asia for universal health coverage and health systems. To achieve this vision, its mission is to promote learning, resource sharing, and knowledge exchange to strengthen digital health through networking.

AeHIN's 'Mind the GAPS and Fill the GAPS' framework helps structure the network's capacity-building initiatives. Over the years, AeHIN has crafted and co-designed activities to strengthen multiple countries' capacity to develop national digital health programs and address the persistent problems plaguing interoperability.

With support from development partners, AeHIN helps governments gather ('converge') various stakeholders to support the national digital health program. These digital health convergence workshops aim to establish a multisectoral coordination mechanism for the national digital health program with the country's Ministry of Health as the lead agency.

To date, AeHIN has organized [convergence workshops](#) in 10 countries.

Contact AeHIN for any support at secretariat@aehein.net and webmaster@aehein.net.

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The Digital Health Convergence Workshop (CW) Toolkit v1.2 is a project that supports updates to the Digital Health Convergence Meeting Toolkit.

With support from UNICEF and Digital Square at PATH, AeHIN collaborated with partners to create three addenda to the existing convergence workshop toolkit:

- A. Country experience documentation of digital health convergence workshops in Lao PDR, Sri Lanka, and Indonesia
- B. Governance, Architecture, People & Program Management, and Standards & Interoperability (GAPS) 2.0: A call to action
- C. Use of Global Digital Health Monitor (GDHM) in digital health convergence workshops

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