PRECISION PUBLIC HEALTH ASIA 2025 CONFERENCE

In partnership with:

Ministry of Health Malaysia

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HILTON PETALING JAYA
MONASH UNIVERSITY MALAYSIA

LEADERSHIP FORUM 2025 REPORT

BUILDING SYNERGIES FOR DIGITAL HEALTH TECHNOLOGIES AND GENERATIVE AI TO REALISE PRECISION PUBLIC HEALTH IN SOUTH EAST ASIA

Organised by:

MONASH University
JEFFREY CHEAH SCHOOL OF MEDICINE AND HEALTH SCIENCES

PRECISION PUBLIC HEALTH ASIA SOCIETY

World Health Organization
Western Pacific Region

Ministry of Health Malaysia

FOREWORD

Following the success of the Precision Public Health Asia Conference and the Leadership Forum in 2023 in Singapore, we were excited and eager to continue the movement and conversation in 2025 in Kuala Lumpur, Malaysia with our partners Monash University Malaysia, the Ministry of Health Malaysia, and the World Health Organization's Western Pacific Regional Office.

The planning for the Leadership Forum took close to a year – navigating the curated invitations to the countries' policymakers, health sector leaders and regional experts. We took time to debate and deliberate on the agenda and selected priority issues that we needed to progress as a region. We were clear that the rapid rise of Artificial Intelligence (AI), and the potential it had to change and improve health outcomes was something we needed to discuss. It also builds nicely on the discussions we had in 2023, on the topics of Digital Health, Big Data, Precision Medicine, and Population Health.

On the flip side of this optimistic future turbocharged by AI, we were genuinely concerned about the digital divide that is emerging, one that could worsen the health disparities in the region and within countries. Hidden, easily ignored, but clearly there when you wish to see it. We will shine a light on this issue. Not to be alarmist, but for us to be calmly aware of this, to put our heads together to consider this, think about this, and collectively find solutions to address this. Health disparities made worse by AI developments is not an issue to be resolved, but a tension to be managed.

We were encouraged by the rich discussions and debates at this Leadership Forum, grateful for the participants who travelled to Kuala Lumpur and gave generously of their time, experience and expertise, and warmed by the eagerness of the Forum to continue the conversations and explore ways to progress Precision Public Health beyond the event. The insights from the conversations were nothing short of amazing, and the rapporteurs have done a great job in capturing the essence of the discussion in this very succinct report. To the reader, I wish you a journey of discovery and connection. If this work resonates with you, please join our movement to progress Precision Public Health, in Asia first, then the world.

Dr Clive Tan *MBBS, MPH, FAMS, PPA*

President, Precision Public Health Asia Society

LEADERSHIP FORUM 2025: KEY TAKEAWAYS

1 Collective shift from tech-centric to **problem-, person-, and population-centric** is imperative.

Early AI initiatives were often technology-led and disconnected from health system priorities. Participants stressed starting with clearly defined problems i.e. clinical bottlenecks, population-level prevention or patient experience gaps, so AI solutions integrate into workflows and deliver meaningful impact.

2 Countries should **tailor their AI strategy** based on their level of AI readiness and digital maturity.

AI readiness and digital maturity varies widely across South East Asia, from advanced EMR ecosystems to paper-based systems. Strategies must be tailored from lightweight mobile tools for lower-resource settings to predictive analytics for data-rich contexts, rather than adopting one-size-fits-all solutions.

3 Greater **investment and innovative funding approaches** are needed in public health & healthcare operational AI solutions.

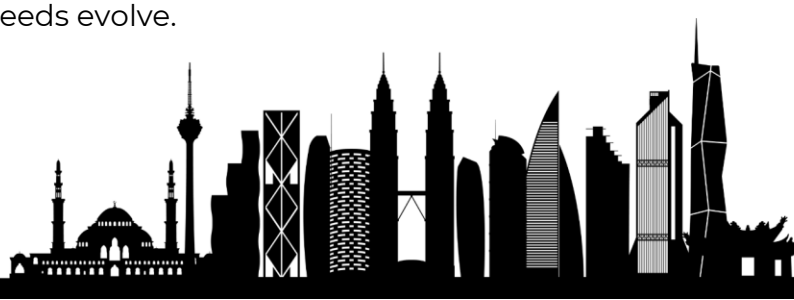
Clinical applications dominate current use, yet public health and healthcare operational AI hold untapped potential for improving prevention, surveillance and system efficiency. Targeted investment and innovative funding approaches in these areas could strengthen resilience, build sustainability and equity beyond hospital settings.

4 Public-private partnerships are critical for countries to **'subscribe' to solutions** instead of building de novo.

Countries are increasingly choosing to subscribe to proven AI tools rather than building them from scratch, a shift that speeds implementation and reduces costs. Partnerships with universities, startups and global technology firms are central to accessing expertise and scaling AI innovations sustainably.

5 **Multidisciplinary teams** are needed for effective & sustainable implementation.

Deploying AI in health requires collaboration across clinicians, data scientists and policymakers, as well as other key partners such as public health specialists, implementation experts, private sector innovators and community representatives. These multidisciplinary teams address trust, safety and regulatory issues while enabling continuous adaptation as technologies and health system needs evolve.



PROGRESSING PRECISION PUBLIC HEALTH

Background

In 2023, the inaugural Precision Public Health Asia (PPHA) leadership forum brought together health sector leaders across South East Asia to discuss "Progressing Precision Public Health" in the region. The forum concluded on three key themes: renewing regulations and addressing infrastructure gaps; fostering public trust whilst managing data access; and enhancing regional cooperation. There was a collective understanding that the discourse on these themes must continue to progress Precision Public Health[1] across the region.

In the ensuing two years, the World Health Organization's (WHO) Western Pacific Regional Office (WPRO) has published a guiding vision for "Weaving Health for Families, Communities and Societies" for the region (2025-2029). Under the vision, they put forth the vertical strand of action, "Technology and innovation for future health equity" as a critical workstream – and urged for member states to be future-ready in responding to the rapid pace of new technologies and social shifts. WPRO had set this as a clear regional priority and urged for regional health sector leaders to continue discussions and planning on this topic.

In these two years, we have also seen strategic landscape shifts in the forefront of Precision Public Health, such as:

(A) The persistent gap in operationalising digital health solutions, especially in low-resource settings – which reveals the challenge of implementation and the difficulty of translating high-level visions into locally relevant and practicable operational plans.

(B) The acceleration and rapid rise in generative artificial intelligence (GenAI) has created immense potential for transforming healthcare, but this promising development simultaneously outpaces regulatory frameworks, leading to potential algorithmic bias and widening inequities.

[1] "Precision Public Health is the use of technology and the principles of public health to advance the health system and population health goals," as defined by Dr Clive Tan and Dr Jeremy Lim in https://knowledge.csc.gov.sg/ethos-issue-26/getting-ready-for-precision-public-health/

To further the regional conversations on Precision Public Health, progress on WPRO's regional priority for "Weaving Health for Families, Communities and Societies", and bridge the gap between policy discussions and on-the-ground implementation, Monash University Malaysia, Precision Public Health Asia Society, Ministry of Health Malaysia and the WHO Western Pacific Regional Office jointly convened and hosted the Leadership Forum 2025 on 15 July 2025, with the theme of "Building Synergies for Digital Health and Generative AI to realize Precision Public Health in South East Asia".

Objectives

The objectives of the Leadership Forum were:

- To **build a common understanding** of how Digital Health technologies and GenAI can support Precision Public Health.
- To **facilitate an open, progressive and forward-looking dialogue** among stakeholders on identifying and overcoming challenges in the application of digital health technologies, AI, and GenAI for Precision Public Health and better health outcomes in South East Asia countries.
- To **discuss and identify initial, context-specific pathways** for integrating GenAI solutions in countries.

Acknowledging the region's unique challenges and varying stages of developments with the use of digital health technologies and GenAI, the roundtable focused on challenges and corresponding solutions for applying GenAI for progressing Precision Public Health in lower-middle-income countries (LMIC), and identifying opportunities for regional cooperation to overcome implementation challenges such as AI model fine-tuning, robust regulatory processes and oversight for responsible AI, and environmental impact mitigation.

Global and Regional AI trends

Setting the stage for the Leadership Forum

The Stanford Institute for Human-Centered Artificial Intelligence published its 2025 AI Index report which tracks and interprets critical trends shaping the field. Three key findings from this report that were especially relevant to Precision Public Health were shared with the Leadership Forum.

(1) Global AI optimism is rising. The report lists Asian countries like China (83%), Indonesia (80%), and Thailand (77%) seeing AI products and services as more beneficial than harmful (see **Figure 1**). In contrast, optimism is lower in other countries, with most scoring between 40% to 70%. While many countries report an increase in AI optimism in the most recent survey done in 2024 (Australia, Canada, China, France India, Singapore, South Korea, Thailand, United States of America), some countries have also seen more caution and a decline in optimism (Brazil, Spain, Malaysia).

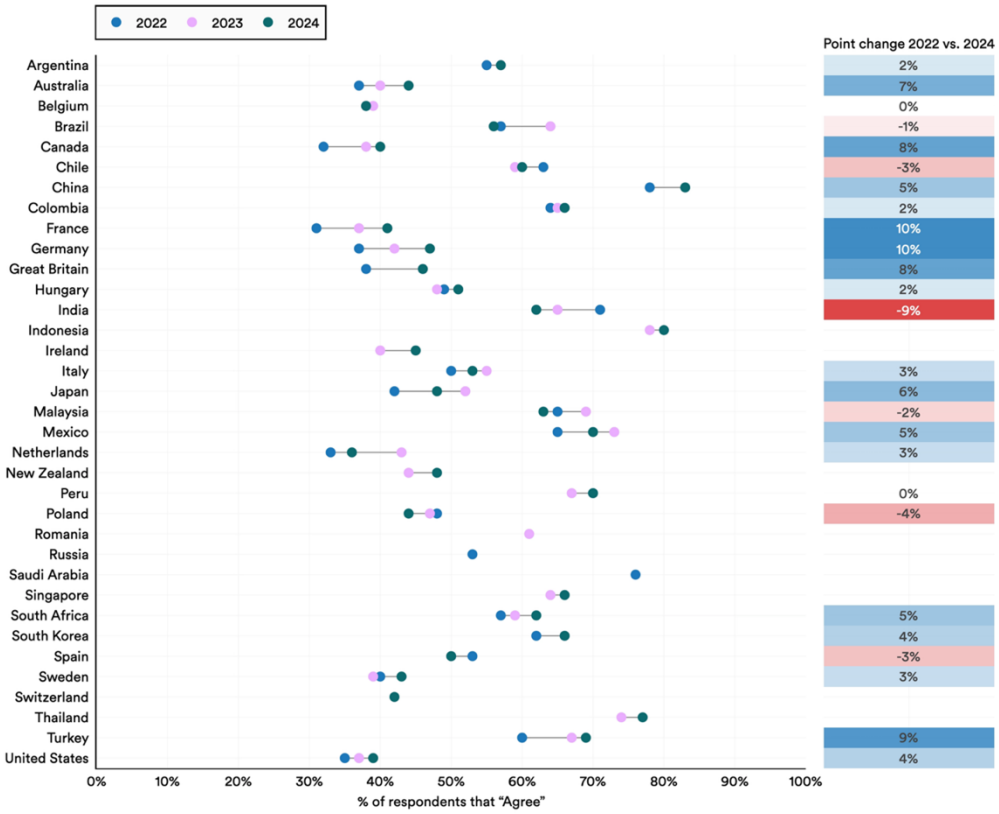


Figure 1. 'Products and services using AI have more benefits than drawbacks,' by country (% of total), 2022-24 [Source: 2025 AI Index report]

(2) AI is increasingly embedded in everyday life. From healthcare to transportation, AI is rapidly moving from 'bench to bedside'. For example, the US Food and Drug Administration approved 223 AI-enabled medical devices in 2023, up from just six in 2015.

(3) Foundational models come to medicine. In 2024, a wave of large-scale medical foundation models were released ranging from general-purpose to specialised models (e.g. for echocardiology, radiology).

Within the region, governments demonstrate varying levels of readiness in delivering AI-based public services. The 2024 Government AI Readiness Index by Oxford Insights ranked Singapore, Malaysia, Thailand, Indonesia and Vietnam high on government AI readiness, whilst Timor-Leste, Myanmar, Laos and Cambodia scored comparatively lower. These disparities across South East Asia were highlighted and discussed during the Leadership Forum to promote awareness on regional challenges and disparities and identify opportunities for collaboration.

Four key principles from the WHO Science Council Report

The WHO Science Council draft on "Advancing the responsible use of technologies in global health" will be launched in a few months. Four key principles from the WHO Science Council report were shared and presented at the Leadership Forum:

(1) **Connect**. Advocates a unifying approach to digital health focused on person-centred care, continuity of care, and communication of public health information.

(2) **Educate**. Advocates measures for a health workforce that is better trained and equipped, financed, and incentivised to use digital technologies in patient care and public health, complemented by a general public that is also able to engage in the safe and effective use of digital health services.

(3) **Invest**. Directs governments, development partners, and private sector corporations to make larger, sustained and coordinated investments in digital infrastructure, focused on greater and more equitable access to health services and information.

(4) **Evaluate**. Promotes learning from experience, with systematic and on-going implementation, impact, and economic evaluation of support systems that can be used to change and optimise investments.

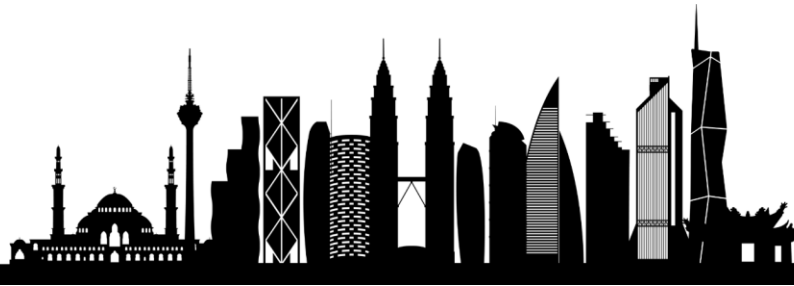
AI ADOPTION ACROSS SOUTH EAST ASIAN COUNTRIES

Overview

AI and digital health adoption in South East Asia are uneven but rapidly evolving, shaped by diverse health system capacities, data ecosystems and policy environments. Discussions at the Leadership Forum underscored how countries are pursuing different entry points for AI innovation; some leveraging robust hospital datasets for diagnostic tools, others experimenting with lightweight mobile solutions to extend care to underserved populations. This diversity reflected both the variation in AI maturity across country income levels and a growing willingness to adapt novel technologies to local contexts rather than importing them wholesale. A defining feature across the examples shared was localisation: successful models were those trained on context-specific datasets, responsive to local languages and workflows, and integrated with national health priorities. While many innovations remain at pilot stage, their rapid diffusion into clinical and population health settings signals a regional shift from experimentation to implementation and lays the groundwork for potential cross-border collaboration.

Emerging AI Use Cases Across Three Scopes

Most AI tools target **clinical care**, reflecting the greater availability of hospital-based data, easier access for private sector investments and clearer pathways to scale. This positive observation also reflects the need for greater investment in applications for **public health** and **healthcare operations**, where the appetite for private sector investment is lower and where AI's potential remains under-explored. Together, these three scopes capture the breadth of innovations discussed at the forum, ranging from tools that support individual diagnosis and treatment to those that strengthen population-level prevention and system-level efficiency. Cross-cutting AI models such as mammography interpretation, diabetic retinopathy screening and conversational chatbots demonstrate strong adaptability across diverse income settings, suggesting opportunities for regional scale-up. The following sections examine examples from each scope, with a consolidated summary provided in **Table 1**.

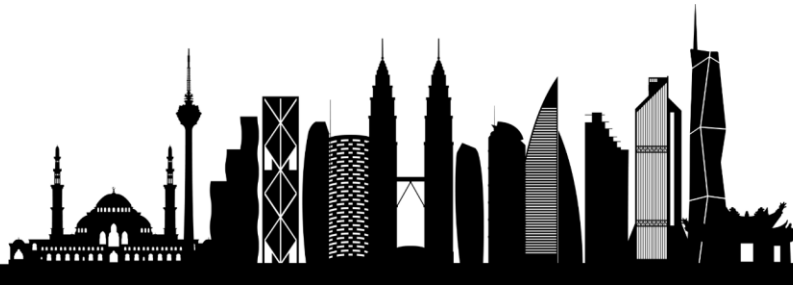


Public Health Use Cases: Community Health Potential

Public health AI applications remain nascent compared to clinical AI tools, but they highlight an important broadening of focus from individual care to population-level prevention. In high-income countries, we see the potential of AI applications in public health being developed – dashboards and geomapping systems have been developed and used to enable longitudinal tracking of at-risk groups and more precise targeting of cardiovascular interventions, including medication adherence monitoring to inform community outreach strategies. Among LMIC, developments of AI in public health have been slow but encouraging – we see innovations such as youth lifestyle chatbots which leverages on behaviour change strategies for diet and physical activity. Beyond South East Asia, Google has worked with countries to develop and implement a population level diabetes risk prediction model; this demonstrates how predictive analytics can inform national prevention policies when anchored in robust datasets. Together, these examples suggest that public health AI in the region is moving from isolated pilots toward data-driven population strategies, with growing potential to reshape prevention and health promotion at scale.

Clinical Use Cases: Diagnostic AI Leading Uptake

AI applications in the clinical domain dominate, turbocharged by both the abundance of annotated imaging datasets and the pressing demand to address diagnostic bottlenecks in the region. These tools span multiple modalities – from radiology and ophthalmology to endoscopy – and are increasingly being adapted to primary care settings. In high-income countries (HIC) like Singapore, clinical AI has been fully integrated into mature health IT ecosystems. Examples include AI-assisted mammography and diabetic retinopathy screening embedded within polyclinics, and chatbots that personalise patient health messaging. These deployments benefit from seamless EMR connectivity and robust regulatory frameworks that enable rapid scaling. Upper-middle-income countries (UMIC) such as Malaysia and Thailand adopt a more modular approach: AI mammography and chest X-ray interpretation tools are layered onto existing systems, alongside fundoscopy-based screening in primary care and triage algorithms to manage emergency department flow. A noteworthy trend is the early experimentation with large language models to support clinical guideline interpretation, signalling a pivot from narrow-task AI to broader decision support.



LMIC are leapfrogging legacy infrastructure by deploying lightweight, mobile-first AI tools for primary care. These include diabetic retinopathy screening devices, chatbots for self-management of type 2 diabetes mellitus, and endoscopy tools for early cancer detection. Many of these solutions are offline-capable and tailored for low-connectivity environments, demonstrating frugal innovation pathways. Finally, global entrants like Google's MedGemma, a multimodal foundation model for imaging interpretation, creates an opportunity for the region to engage with frontier AI technologies that could further expand diagnostic capabilities.

Healthcare Operations Use Cases: Silent Enablers of System Efficiency

AI tools for healthcare operations, though less visible to patients, play a crucial role in improving efficiency and optimising health system functions — from data flow to logistics and error reduction. In HIC, unified platforms that stream electronic medical record (EMR) data enable real-time analysis and targeted interventions, while AI-driven prescription handling systems reduce human error and improve patient safety. Among UMIC, initiatives such as the WHO SMART Link for Hajj pilgrims facilitate seamless digital access to health screening records across borders, and integrated radiology reporting systems improve continuity of care across hospital networks. Discussions at the Leadership Forum reveal that to date, operational AI has been largely concentrated in HIC and UMIC, with limited examples emerging from lower-resource settings. Its potential to streamline supply chains, strengthen referral pathways, and improve service reliability in LMIC remains significant and represents a promising frontier for regional health system innovation and future investments.

Cases Illustrating Diverse Applications of AI Across Health Systems

The following cases highlight one example from each scope (clinical, public health, and healthcare operation) and show how AI tools are being adapted to different health system contexts across South East Asia.

Public Health Use Case: Portable AI Chest X-ray for Tuberculosis Screening

Tuberculosis (TB) is a major public health issue in remote and underserved communities in South East Asia, where limited access to healthcare personnel and diagnostic laboratories contributes to underdiagnosis, delayed treatment and ongoing transmission. To address this gap, portable AI-enabled chest X-ray tools have been deployed in Vietnam, Philippines and Cambodia to support community-based TB screening. The AI model interprets chest X-rays offline and enables early TB detection without requiring onsite radiologists. These tools are deployed through mobile outreach efforts and are integrated into local screening campaigns, expanding coverage to populations previously beyond reach. This initiative is supported by the WHO and academic partners, who continue to conduct research to improve clinician trust and acceptance of AI-assisted diagnostics. While the tool has improved detection rates, resistance from physicians remains a challenge due to the lack of an agreed-upon clinical governance framework.

"The tool catches what we miss, but without a radiologist onsite, it is hard for some to trust the results even though the accuracy is high."

- LDF Forum Participant

Image taken from speaker's presentation at Leadership Forum 2025

Clinical Use Case: Antimicrobial Resistance Prediction Model, Cambodia

Cambodia faces a significant antimicrobial resistance (AMR) burden, with an estimated 3,200 AMR-related deaths in 2019. Limited diagnostic capacity has driven empirical antibiotic prescribing, contributing to resistance patterns. To address this gap, the Cambodian Academy of Digital Technology developed a machine learning model (Advent-AI) that predicts the AMR patterns before laboratory results are available. Trained on local hospital and pharmacy datasets, the tool enables earlier optimisation of antibiotic use and is deployed on both smartphones and desktop platforms for frontline clinicians. Integrated into the national AMR surveillance system, it strengthens data visibility and antimicrobial stewardship efforts, while building local capacity in machine learning. Sustaining this innovation requires ongoing investment in local expertise and periodic model retraining and updates as resistance patterns evolve.

"We trained the model on our own data to build something that really works for us."

- LDF Forum Participant

Healthcare Operations Use Case: Emergency Call Triage, Singapore

Ambulance call volumes in Singapore have risen by 5 to 10% annually over the past decade, placing pressure on non-medical call handlers to triage accurately and respond quickly. To complement existing medical protocols, local universities partnered with the Singapore Civil Defence Force to develop an automatic speech recognition model where the system transcribes calls in real time, extracts key details such as address and symptoms, and provides multi-lingual prompts in English, Mandarin and Malay with suggested questions and triage cues. The solution analyses caller tone and breathing patterns to support priority scoring and faster decision-making. By providing objective and timely decision support, the tool has improved triage speed and accuracy and is now being expanded to other countries and include more languages, in collaboration with WHO WPRO. High development costs and ensuring real-time processing remain important challenges, but the model shows potential for regional scale-up in multilingual emergency settings.

"It gives us the right prompts at the right time so we can focus on the caller instead of worrying about what to ask next."

- LDF Forum Participant

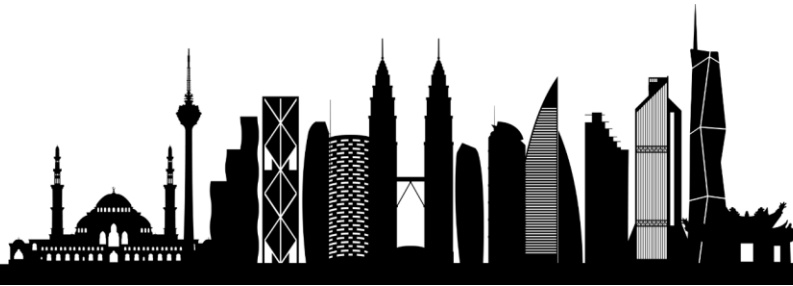


Table 1. Summary of AI Use Cases Categorised by Country Income Level and Application Scope

	Clinical Cases	*Public Health Cases*	*Operational Cases*
High-Income Countries (HIC)*	• **CHAMP chatbot** to provide personalised health messaging and follow-up prompts to patients • AI **mammography** supporting early breast cancer detection and reporting • AI-assisted **diabetic retinopathy screening** enabling earlier referral from PHC to specialists	• **Dashboards** to identify at-risk populations for interventions and provide longitudinal tracking • **Geomapping** of patient medications to improve cardiovascular risk management	• **Unified EMR data streaming platform** to support analysis and interventions • AI-assisted **emergency call triage** to enhance efficiency and optimise resource allocation • Outpatient **prescription handling** to reduce human error
Upper-Middle-Income Countries (UMIC)*	• AI **mammography** and **chest x-ray** interpretation tools for early detection of breast and lung diseases • **Fundoscopy-based AI screening** for eye diseases in PHC • AI-based **pre-ED triage system** to prioritise patients before arrival at hospital • Rule-based, **predictive algorithms in EMR** to guide treatment decisions • **LLM** used for interpreting and applying **clinical guidelines** for decision-making		• WHO SMART Link providing Hajj pilgrims with **cross-border access** to digital health screening records • **Integrated radiology reporting systems**, harmonising imaging reports across hospital networks
Lower-Middle-Income Countries (LMIC)*	• AI-assisted **diabetic retinopathy screening** for rural clinics • **AMR prediction** using ML tool to optimise early antibiotics prescription • **Diabetes chatbot** to support self-management of T2DM patients • **Endoscopy imaging tool** to detect gastrointestinal polyps and tumours • **Clinical decision support tool** to assist doctors in remote PHC clinics	• **Lifestyle chatbot** promoting healthy diet and physical activity among youths • AI-assisted **community TB screening** using portable chest x-ray interpretation in remote communities	
Others	• **Google's MedGemma**: multimodal foundation model to support diagnosis via imaging interpretation	• Google is working with countries on Population-level AI model to **predict diabetes risk** and influence behavioural change	

Abbreviations: AI, artificial intelligence; AMR, antimicrobial resistance; ED, emergency department; EMR, electronic medical records; LLM, large language models; ML, machine learning; PHC, primary healthcare; T2DM, type 2 diabetes mellitus; TB, tuberculosis.

* HIC – Singapore and Brunei; UMIC – Malaysia and Thailand; LMIC – Vietnam, Cambodia, Laos, Philippines and Timor Leste

COUNTRY-LEVEL IMPLEMENTATION CHALLENGES AND SOLUTIONS

Participants from across the region shared challenges their countries and health systems face in the application of digital health technologies, and the unique solutions devised to address them. An adapted framework from Peter Durlach and colleagues was presented, describing six domains essential for successful long-term AI deployment: Culture, Governance, Information Architecture, Business Implementation, Value, and Maintenance & Operations.[2] We classified challenges and solutions from the forum into these domains, and additionally recognised Funding as a domain given its relevance to the application of digital health and AI in South East Asia. Challenges were most prominent in the domains of Culture, Governance, Information Architecture, and Funding.

Culture: Overcoming Resistance through Trust and Validation

Across South East Asia, forum participants described resistance at multiple levels – end-users, providers, and organisations. End-user resistance stemmed from a preference for human interaction over AI or digital platforms. Healthcare providers were frequently highlighted as a significant roadblock across many countries, resisting the adoption of digital health innovations into care pathways and not participating in data sharing. Both public and private organisations were also known to exhibit resistance to data sharing.

Solutions to resistance focused on fostering trust and demonstrating tangible benefits to stakeholders. Trust could be developed through transparent processes, engaging stakeholders actively in product development, and assuaging end-users by implementing blended AI-human workflows where technology complements rather than replaces human capabilities. Participants noted that healthcare providers were less resistant to technology when the tangible benefits and safety of tools could be demonstrated, especially if focused on reducing provider workload and

[2] Durlach P, Fournier R, Gottlich J et al. The AI Maturity Roadmap: A Framework for Effective and Sustainable AI in Health Care. *NEJM AI* 2024.

simplifying daily tasks. Private organisations could also be convinced to share data if the market value of innovation and collaboration can be clearly quantified and documented. Discussions also suggested framing the 'cost of inaction' as a compelling argument for adopting technology.

Image taken from speaker's presentation at Leadership Forum 2025

The other major challenge countries faced was in end-user accessibility – particularly when relating to digital literacy and minority languages that are unsupported by available software. To improve digital literacy and dispel fear of innovation, community engagement must employ accessible and simplified language. In overcoming language barriers, participants suggested integrating AI software into locally available technologies and working closely with stakeholders to improve language accessibility. An example of success comes from EquiTech, a social enterprise that worked on the challenge of providing GenAI-driven clinical decision support (CDS) to community general practitioners in Timor-Leste. They faced a technical challenge because the local language was not recognised on Google Translate. However, through engagement with stakeholders and support from Google, the local language was added, improving the CDS tool's accuracy from 40 to 90%.

Governance: From Ambiguity to Stewardship

Forum participants described governance and regulation of digital health and AI as generally ambiguous, especially in LMIC. Ambiguity surrounding the governance and regulation of digital health and AI in healthcare led to several challenges. These include an unclear assignment of accountability, inconsistent and inappropriate application of digital health in the ecosystem, and insufficient guidance on safe clinical trial execution. Recommended solutions include having national and sectoral governance approaches with clear and separate responsibilities, developing contextualised ethical guidelines, and building communities of practice to guide usage of new technologies. This is also an area where the opportunity for regional collaboration was highlighted.

In UMIC and HIC, concerns surrounded data privacy, to which forum participants suggested establishment of dedicated national offices to oversee this issue, alongside developing relevant guidelines and regulations. Participants also proposed contracting trusted third-party partners to store and manage data securely. Sustainability of governance in a rapidly evolving digital landscape was also of concern to these countries, to which participants suggested co-designing policies and regulations with private sector partners and the use of innovative regulatory tools. In Singapore, for example, the ministry employs sandboxing to iteratively co-develop regulatory solutions with stakeholders whilst managing risks and has developed living guidelines that are regularly updated to inform facilities on deploying AI safely, transparently, and with accountability.

Information Architecture: Building Towards AI Readiness

The Leadership Forum participants listed challenges with information architecture that differed across country income levels. LMIC surfaced challenges with outdated infrastructure and a lack of high-quality standardised data, whilst UMIC cited the latter in addition to having fragmented EMR systems and facing bias in AI algorithms. National digital infrastructure was recognised by participants as a necessary criterion for developing high-quality standardised datasets, which was in turn required to optimally train AI algorithms to be locally contextualised. Therefore, the specific challenges encountered by countries served as markers of their stage in the natural progression of national AI maturity (see **Figure 2**).

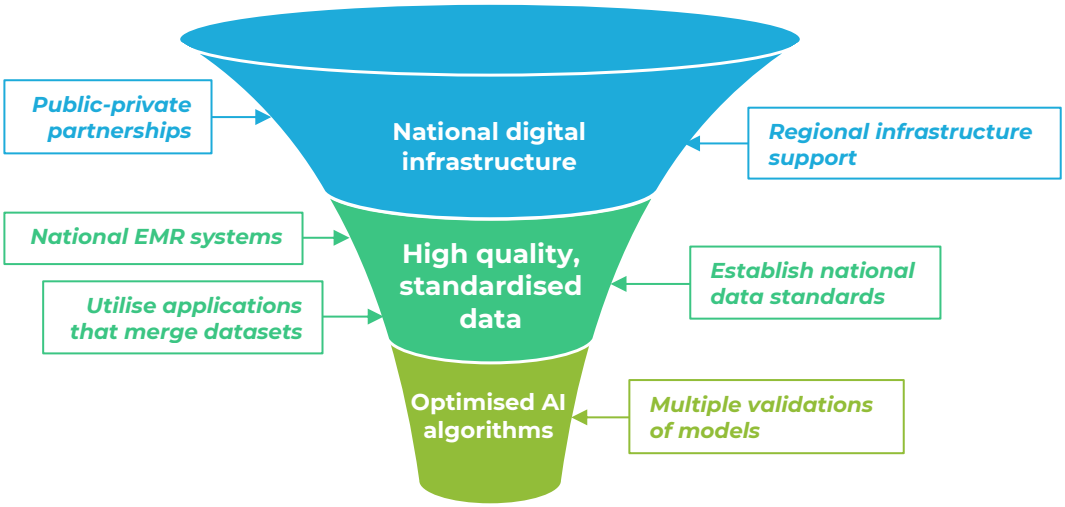


Figure 2. Information architecture funnel for AI optimisation

Potential solutions likewise corresponded to the country's stage of maturity. Countries facing challenges in developing digital infrastructure would benefit from public-private partnerships and could receive support from regional partners with mature ecosystems. High-quality standardised datasets require the establishment of national standards but also benefit from nationalised EMR systems and applications that merge big datasets. Lastly, countries optimising AI algorithms should use standardised population datasets for robust local model validation.

Funding: Leveraging Innovation and Partnerships for Sustainability

The lack of funding was a commonly cited challenge as health systems face competing priorities for health expenditure. Participants suggested public-private partnerships, such as open technology stacks which offset local innovator's development costs and 'subscribe to software' models which are more feasible than building software from scratch. Others suggested bundling AI solutions with prioritised initiatives, such as Malaysia's ongoing national EMR rollout, to lower implementation costs.

Participants from LMIC also raised challenges in working with funding organisations and managing grant conditions. One example was a project in Vietnam involving the development of an AI-driven chatbot that collected youth health data during the COVID-19 pandemic. However, it was prematurely halted due to grant expiry and rigid timelines, rendering the collected data unutilised till another grant could be secured. To address these challenges, innovative funding approaches, such as flexible funding mechanisms or capital stacking, to support long-term development were proposed. Participants also suggested that grant successes and extensions were more likely when applicants demonstrated project legitimacy by using clinical trial checklists (e.g. SPIRIT-AI) and calculating return on investments. Another approach would be to reduce reliance on grants, whereby organisations provide early internal block funding for projects in early development to bridge the gap until external grant funding is secured.

Synthesis and Key Insights

Other challenges and solutions listed below in **Table 2** were also touched upon in the Leadership Forum discussion. The weightage of the discussions

suggested that the region is still nascent in its digital health journey – we see that there is a stronger focus on introducing and piloting innovations, and less discussions on the later-stage issues of Business Implementation, Value, and Maintenance & Operations. Another key insight was that funding-related challenges emerged as the most significant obstacle relative to other domains. Addressing this important issue, it was encouraging to have stakeholders from the private sector, non-governmental organisations, and philanthropic funds actively involved in and offering promising solutions and approaches for countries to explore.

Table 2. Country-level challenges & solutions framed using seven domains of AI maturity

	Challenges	*Solutions*
Culture	• **Resistance** to adoption and data-sharing • **Accessibility** of tools by end-users	• **Demonstrate benefit and safety** of innovators • **AI to complement** but not replace human capability
Governance	• Data **privacy & security** • **Clarity on governance & accountability** • **Sustainability** of governance	• **Third-party platforms** to clean & organise data • **Locally contextualised guidelines** • **Co-designing with private sector** policies & regulations • **Innovative regulatory tools**: Sandboxing, "living" guidelines
Information architecture	• **Lack standardised datasets** • **Fragmented** systems of care	• **Standardisation** of data architectures • Establishing **national data standards** • Develop **applications to merge datasets**
Funding	• **Lack** of funding • **Inflexible** grant timelines & requirements	• **Innovative funding** mechanisms (e.g. agile funding, ringfencing) • **Evaluations** to inform investment planning & return on investment • Leverage **open tech stacks** with private partners • **Subscribe to software** instead of developing from scratch • **Bundling AI solutions** with prioritised initiatives (e.g. rollout of national electronic medical records systems)
Business implementation	• **Aligning** on a unified vision and objectives • Building & maintaining **appropriate talent mix** • Attracting **private sector collaborations**	• **Identify stakeholders early** for engagement • Develop **national masterplans or strategies** • **Collaborate with academics and private sector**
Value	• Showing **proof of sustainability** • **Value of big datasets**	• Conduct **cost-benefit analyses** • **Convert data into insights** using tools like AI
Maintenance & operations	• **Delays in vetting AI output**	• Use **focused models with higher computing power** • Build **communities of practice** to fast-track assessments

Abbreviations: AI, artificial intelligence.

REALISING REGIONAL OPPORTUNITIES

The forum highlighted the critical importance and growing relevance of regional collaboration to accelerate the responsible and effective adoption of AI and digital health innovations across South East Asia. While countries in the region are at varying stages of digital health maturity, the forum identified several cross-cutting opportunities for regional action to bridge gaps, foster innovation, and ensure equitable progress.

This section synthesises the key regional opportunities discussed, structured around three pillars:

1) **Bridging gaps** through regional data and infrastructure sharing,
2) **Fostering communities of action** to strengthen AI readiness, and
3) **Activating a shared marketplace** to connect capital with AI developers.

Bridging Gaps Through Regional Data & Infrastructure Sharing

Opportunities

A recurring theme throughout the forum was the potential for regional data and infrastructure sharing to address disparities in technological readiness and accelerate the development and deployment of AI solutions. Many LMIC in South East Asia face significant barriers to building the necessary digital infrastructure and technical capacity to develop AI models independently. By leveraging shared resources, these countries can leapfrog traditional development pathways and avoid duplicative efforts.

- **Bridging technological gaps**: Regional data and infrastructure sharing within ASEAN will enable South East Asian countries with less developed digital health ecosystems to access high-quality datasets and advanced computational resources (e.g. GPUs), which are often expensive to acquire and maintain individually.

- **Facilitating co-development**: Shared access to data and infrastructure supports the co-development of public health

solutions, allowing countries to pool expertise and resources, and to adapt proven models to local contexts rather than reinventing the wheel.

- **Avoiding duplicative efforts**: Sharing AI models and best practices across the region can reduce redundant investments and accelerate the translation of innovations with local adaptation, from HIC to LMIC.

Solutions

- **Establishing regional standards for data sharing and interoperability**: There is a pressing need to develop and adopt common standards for data collection, storage, and exchange. This includes harmonising data dictionaries, adopting international coding systems (e.g. ICD-11, SNOMED), and ensuring interoperability across EMR systems. Regional bodies such as ASEAN, WHO WPRO, and technical consortiums can play a convening role in setting these standards.

- **Achieving consensus on shared infrastructure**: The region should work towards agreements on the shared use and sustainable cost sharing models of computational infrastructure, such as cloud-based platforms and GPU clusters. This could involve the creation of regional data centres or compute hubs, with clear governance frameworks to ensure equitable access, sustainable cost models, data privacy, and security.

- **Piloting regional data sharing initiatives**: Starting with small-scale, high-impact projects (e.g. regional AMR surveillance), countries can build trust and demonstrate the value of data sharing, paving the way for broader collaboration.

> *"AI won't replace humans, but those who use AI will replace those who don't."*
>
> - LDF Forum Participant, citing Ginni Rometty, Former CEO of IBM

Fostering Communities of Action to Strengthen AI Readiness

Opportunities

The forum recognised that technical solutions alone are insufficient; building communities of action is essential to accelerate AI adoption and ensure responsible governance. Regional collaboration can facilitate the exchange of best practices, regulatory models, and governance approaches, thereby shortening the AI model development and deployment life cycle.

- **Accelerating learning and scale-up**: Regional communities of practice enable peer learning, allowing countries to benefit from one another's successes and failures. This is particularly valuable for LMIC, which can adapt proven approaches from countries which are further along their AI and digital health journey.

- **Benchmarking and evaluation**: Consortiums or regional groupings can serve as platforms for benchmarking AI models, sharing validation data, and developing common evaluation frameworks. This supports the safe and effective scale-up of AI solutions across diverse health systems.

- **Regulatory harmonisation**: By sharing regulatory experiences and co-developing living guidelines, countries can align on ethical standards, safety requirements, and risk management strategies, reducing barriers to cross-border deployment of AI tools.

Solutions

- **Establishing regional multi-disciplinary communities, groups and consortiums**: The creation of regional networks (government agencies, academia, industry, associations and civil society) can drive collective action. These multi-disciplinary communities can coordinate benchmarking studies, facilitate technical assistance, and support the adaptation of AI models to local contexts.

- **Facilitating peer learning and sandboxing**: Regional platforms should promote peer learning through mechanisms such as regulatory sandboxes, pilot projects, and living guidelines that are

iteratively updated based on real-world experience. This approach enables rapid validation and refinement of AI tools, while managing risks in a controlled environment.

- **Supporting capacity building**: Regional communities can coordinate training programmes to build digital and AI literacy among healthcare workers, policymakers, and regulators, ensuring that all countries are equipped to participate in and benefit from the digital health transformation.

Activating a Shared Marketplace to Connect Capital with AI Developers

Opportunities

A major bottleneck identified was the fragmentation of funding and the disconnect between AI developers and potential funders. A shared regional marketplace can bridge this gap, providing end-to-end support for innovation, accelerate the journey from prototype to scale with the potential for leapfrogging, and improve health equity and access to these new technologies and solutions.

- **Connecting users, funders and developers**: A regional marketplace can serve as a network connector, curating AI proposals and matching them with appropriate users, funding sources, including philanthropic grants, venture capital, and public sector investments.

- **Accelerating commercialisation and scale**: By providing a platform for due diligence, impact measurement, and knowledge exchange, the marketplace can help promising innovations navigate the complex path to commercialisation and regional deployment.

- **Unified product development**: The marketplace can also serve as a conduit for collaborative product development, enabling joint ventures and partnerships that leverage the strengths of multiple stakeholders.

Solutions

- **Establishing a regional marketplace platform**: Building on existing initiatives (e.g. AVPNs's ImpactCollab), the region should work

towards developing a dedicated platform for Precision Public Health and AI solutions. This platform could potentially help to curate proposals, facilitate matchmaking with funders, and provide resources for capacity building and technical support.

- **Promoting unified product development and deployment**: The marketplace should prioritise and encourage the development of solutions that are designed for scalability and cross-border applicability, with clear pathways for regulatory approval and market entry in multiple countries.

- **Leveraging the marketplace for policy and advocacy**: By aggregating data on funding flows, project outcomes, and impact metrics, the marketplace can inform regional policy, identify gaps, and advocate for sustained investment in digital health innovation.

In summary, the forum's discussions underscored that no single country can address the challenges and opportunities of AI in public health alone, and that we can be stronger together. Regional collaboration, through data and infrastructure sharing, communities of action, and a shared marketplace, offers a pragmatic and equitable pathway to harness the full potential of Digital Health and AI technologies for health. By working together, South East Asian countries can bridge readiness gaps, accelerate innovation, and ensure that the benefits of digital health transformation are shared across the region.

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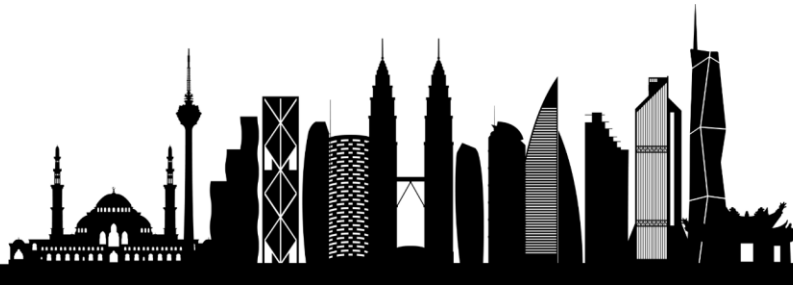

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