SUMMARY OF THE PRINCE MAHIDOL AWARDS (PMAC) SIDE MEETING:
"IS AI A PANACEA FOR THE HEALTH SECTOR? NAVIGATING THE BARRIERS TO ADOPT AI TO STRENGTHEN HEALTH SYSTEMS AND EMPOWER LIMITED RESOURCE SETTINGS"

29 January 2025, 14:00PM - 17:30PM at Centara Grand & Bangkok Convention Centre CentralWorld

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Acknowledgements

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Introduction

The World Health Organization Country Cooperation Strategy (WHO-CCS) 2022–2026 for Thailand outlines key health priorities in collaboration with the Royal Thai Government, with a focus on strengthening the country's digital health landscape. A significant initiative within this strategy is the Convergence of Digital Health Platforms and Health Information Systems (ConvergeDH), which has one of prioritised areas on virtual hospitals and telemedicine to assess their current implementation and understand patient experiences. From 2022 to 2024, research efforts under ConvergeDH have provided valuable insights to inform telemedicine policies in Thailand. As this three-year initiative concludes and artificial intelligence (AI) becomes an emerging global priority, the WHO-CCS ConvergeDH committee has identified the need to shift focus toward AI.

Given its role as an international platform for knowledge exchange, Prince Mahidol Award Conference, PMAC, presents an ideal opportunity to initiate discussions on AI adoption and learn from other countries about the challenges and gaps in integrating AI into healthcare systems. While numerous barriers exist, the side meeting specifically examined three critical challenges relevant to decision-makers: data security and privacy, regulatory frameworks, and economic and infrastructure constraints. Addressing these issues is essential to ensuring AI can be effectively implemented to strengthen health systems, particularly in low- and middle-income countries (LMICs).

The side meeting titled *"Is AI a Panacea for the Health Sector? Navigating the Barriers to Adopt AI to Strengthen Health Systems and Empower Limited Resource Settings"* explored the transformative potential of artificial intelligence (AI) in healthcare. It focused on the unique challenges faced by low- and middle-income countries (LMICs) in adopting AI, with special attention to data security and privacy, regulatory frameworks, and economic and infrastructure barriers.

The objectives of the side meeting were to:

- Explore global insights and deepen understanding of the key challenges in adopting AI to strengthen health systems.
- Generate actionable steps for AI readiness initiatives.
- Foster a network of experts to drive forward AI adoption in resource-limited settings.

This session brought together experts from various sectors to share experiences, discuss innovative solutions, and propose recommendations to ensure AI adoption is inclusive, equitable, and contextually appropriate.

This report provides a summary of the proceedings of the session. The agenda and list of participants can be found in the Appendix 1 and 2.

Session Overview and Key Discussion Highlights

The session commenced with Mr. Manit Sittimart from HITAP, warmly welcoming the participants. He invited Dr. Surakameth Mahasirimonkol, Director of the Department of Thai Traditional and Alternative Medicine at the Ministry of Public Health (MoPH), Thailand to deliver the welcome remarks to set the stage for an engaging and insightful discussion on AI's transformative role in healthcare and challenges in LMICs.

Figure 1: Welcome and overview by Mr. Manit Sittimart

Figure 2: O*pening Remarks by Dr. Surakameth Mahasirimonkol*

In his remarks, Dr. Surakameth Mahasirimongkol shared examples of AI's transformative potential in healthcare, particularly in LMICs, while highlighting key challenges. AI has the potential to combat tuberculosis through early diagnosis with AI-powered chest X-rays, predictive algorithms for identifying high-risk populations, and monitoring treatment adherence. Big data, driven by AI, has the potential to improve healthcare at all levels, from community interventions to hospital systems, enhancing accessibility and care quality. AI also plays a crucial role in reducing road traffic injuries by enabling safer urban planning, accident prediction, and real-time traffic management. Additionally, AI is being used to address drug abuse by predicting substance use patterns and supporting targeted interventions for prevention and treatment. However, challenges such as limited infrastructure, data privacy concerns, and the need for ethical AI governance must be addressed to ensure fairness and equitable access. He concluded with a call to action to invest in AI infrastructure, talent development, and governance frameworks that are essential for sustainable and scalable AI solutions in healthcare, especially in LMICs.

Data Security and Privacy

Figure 3: Mr. Khachon Mongkonchoo delivered his presentation titled "Advancing healthcare with data security and privacy - insights from NHSO's innovative frameworks, Thailand"

Mr. Khachon Mongkonchoo, Director, Intelligent Data Innovation, National Health Security Office (NHSO), Thailand spoke on the topic of "Advancing healthcare with data security and privacy - insights from The National Health Security Office (NHSO)'s innovative frameworks". The NHSO is responsible for managing the Universal Coverage Scheme (UCS), which covers more than 45 million Thai people. The UCS relies on data and information to function effectively. Key data sources include registration and enrollment data, service data (such as outpatient and inpatient records), and Customer Relationship Management (CRM) data from the NHSO hotline (1330). Data sharing across various healthcare schemes is a key element of the NHSO's operations, enabling more coordinated care. NHSO collaborates with multiple organizations such as the Social Security Service, Civil Registration Office, and the Thai MoPH to deliver efficient healthcare services.

The NHSO's AI mission includes three main goals: 1. AI for Claims, 2. GenAI for citizens 3. GenAI for NHSO staff. The organization is also committed to ensuring privacy and security in all data-related activities.

Key Takeaways:

- *Data security and privacy are foundational for advancing AI in healthcare.*
- *Collaboration and patient empowerment play a vital role in improving healthcare systems.*
- *By ensuring secure data practices, we can build a resilient healthcare system capable of tackling future challenges.*

However, NHSO faces several challenges, including scalability issues across systems, the complexity of compliance with regulations, raising stakeholder awareness, and addressing emerging cybersecurity threats.

Prof. Nam-Kyong Choi, Chair, Department of Health Convergence, Ewha Womans University, Korea, spoke on the topic of "Using Korean Public Big Data". South Korea's healthcare system involves various organizations that collaborate to deliver services, manage claims, and provide coverage under the National Health Insurance (NHI) system. The claims data application method plays a crucial role in managing and utilising healthcare data for efficient service delivery, particularly in claims processing and healthcare management.

A key aspect of the system is its commitment to data privacy through stringent laws that protect personal and medical information. This is further supported by the National Big Data Platform, which integrates healthcare data to facilitate informed decision-making and improve service delivery.

Figure 4: Prof. Nam-Kyong Choi delivered her presentation on "Data security and privacy - Using Korean Public Big Data"

During the discussion, questions on building a system for data security and privacy protection. This is essential to ensure the trust of citizens in the system and safeguard sensitive information as the country continues to integrate more data-driven healthcare technologies.

The protection of health records, particularly for rare diseases, in South Korea was a topic of interest for participants. Strict regulations are in place to ensure that only data, not identifiable information, can be accessed. Researchers are not allowed to access sensitive data, preserving individuals' privacy. Similarly, the NHSO in Thailand collects medical records nationwide, but access for research and university purposes is restricted to anonymized and generalized data—identifiable information is not allowed for use in research.

The critical role of data security in the use of AI within healthcare was also addressed. It was emphasised that thorough data protection assessments are necessary, as well as regular risk assessments for AI applications to ensure the protection of sensitive health information. The meeting also touched on the secondary use of data, highlighting the need for careful management to avoid breaches and ensure ethical use while supporting healthcare advancements.

Regulatory Frameworks

Figure 5: *Dr. Patricia Mechael delivered her presentation on "State of Digital Health & AI Readiness: Regulatory & Equity Considerations"*

Dr. Patricia Mechael, Chief Executive Officer, health.enabled, spoke on the "State of Digital Health & AI Readiness: Regulatory & Equity Considerations". She presented the current state of policy, legislation, and compliance in the context of health data privacy and security, particularly in the age of AI. While some countries have enacted laws to protect health data, many are still behind in regulating medical devices, which remain a significant challenge in healthcare governance.

Gender equity in digital health and technology policies was highlighted as a critical issue, particularly the absence of women in clinical trials. For example, in the US, most heart disease studies have predominantly involved male participants, leaving the unique health needs of women under-researched. Addressing this requires research with a gender-intentional lens, ensuring that women's health issues are equally represented in clinical trials and studies.

Sub-Saharan Africa was identified as a region at high risk of being left behind in AI research and clinical trials, emphasising the need for a proactive approach to health equity. Developing metrics to measure equity in large language models (LLMs) and ensuring equity-focused AI and machine learning (ML) was seen as crucial for addressing this gap.

Key recommendations *included:*

- *Incorporating diverse and representative datasets to train AI models.*
- *Regularly auditing and reviewing biases in AI algorithms to ensure fairness.*
- *Prioritizing the development of AI solutions that integrate fairness measures and transparency.*
- *Establishing guidelines for the ethical collection and use of health data*

Economic and infrastructure challenges

Prof. Dr. Peeter Ross, Professor, Tallinn University of Technology, Estonia, spoke on "Addressing Economic and Infrastructure Challenges Case Study from Estonia".

Figure 6: Prof. Dr. Peeter Ross delivered his presentation on "Addressing Economic and Infrastructure Challenges Case Study from Estonia"

Dr. Peeter Ross discussed the digital health system maturity of various countries, showcasing Estonia's advancements in e-services. Estonia is highly advanced in terms of digital healthcare, with 99% of public services online, including a unique health information system that contains data from birth to death. The X-road platform, a secure internet-based data exchange environment, enables seamless data sharing across various sectors, including healthcare. This system allows for drug-drug interaction detection based on patient prescription data, and Estonia has successfully implemented zero paper prescriptions nationwide.

However, the system is still working in progress, particularly with the exchange of patient summaries across the European Union. Looking ahead, there are several opportunities for further development of the digital health platform, including the need to pay more attention to data quality and improve the integration of health, medical, and social care services—particularly through incorporating personal health apps and self-reported data.

The presentation also highlighted the main components of healthcare digitalization, with a focus on the importance of human capacity in successfully implementing these systems. In the Q&A session, it was noted that Estonia began its digital health efforts in 2005 and allocated 9.2 euros per person to fund the initiative in the year 2019. The open-source nature of X-road was also emphasised as a key aspect of its success, allowing for flexibility and accessibility across various organisations.

Panel Discussion

Figure 7: Mr. Mark Landry facilitated the discussion

Figure 8: The panel speakers participated in the open discussion

In the facilitated discussion with speakers and participants, moderated by Mr. Mark Landry, Programme Officer, WHO, the potential of AI in healthcare, particularly in LMICs, was

explored, along with the challenges and opportunities in integrating AI effectively. One of the key points discussed was whether AI is a panacea for healthcare. While AI presents significant opportunities, it was acknowledged that it is not a cure-all for the health sector. In resource-limited settings like Thailand, AI can enhance early diagnosis (e.g., tuberculosis) and improve the quality of care; however, its effectiveness depends on the context and its integration with existing systems. AI should be seen as a tool to complement, rather than replace, human expertise in healthcare.

The appropriate use of AI in LMICs was another critical theme. Thailand, for instance, is utilising AI to address gaps in human resources, particularly in early tuberculosis (TB) diagnosis. However, concerns were raised about who benefits from AI, who may be disadvantaged, and what happens if AI fails. Responsible implementation is crucial, requiring clear governance frameworks, especially since many LMICs still lack robust AI regulations. Public trust and transparency were also emphasised, as trust in AI-driven healthcare relies on ethical standards, stakeholder engagement, and community education. Data leak prevention tools (DLP) should be implemented to protect sensitive health information, and strong governance mechanisms must be in place to ensure secure data sharing systems.

Another key discussion point, raised by Mr. Jai Ganesh Udayasankaran, highlighted the importance of patient comfort with AI diagnostics, stressing the need to build trust in AI-driven healthcare. He emphasised robust data governance, warning that many countries lack clear health data regulations. He also noted that AI policies are often developed in silos, making integration challenging. Lastly, he pointed out that while developed nations have advanced AI regulations, most LMICs still lack adequate frameworks, posing risks for AI adoption and emphasised the importance of international cooperation in developing AI

Figure 9: Mr. Jai Ganesh Udayasankaran, a discussant, provides insights on regulations during facilitated discussion

regulations and processes in healthcare, particularly for countries that are still in the early stages of AI implementation.

The discussion also covered specific challenges and opportunities. Questions were raised regarding whether the Personal Data Protection Act (PDPA) applies to migrants, and it was confirmed that PDPA covers both citizens and migrants. In Estonia, gaps in patient history capture highlighted the need for improved data collection systems and linguistic equity in AI applications. Moreover, AI should not replace human expertise but should instead be used to support healthcare workers and improve the overall quality of care.

Key takeaways and recommendations included the necessity of establishing a secure data sharing system, alongside incentivising stakeholders to use AI responsibly. Ensuring equity in AI implementation, including linguistic and inclusive research considerations, was identified as crucial to preventing disparities. Countries should focus on the appropriate use of technology, ensuring that they have the necessary infrastructure in place before widespread AI adoption. A "learn by doing" approach was recommended, allowing stakeholders to gain insights and make iterative improvements in AI integration. Finally, data security, strong governance, and public trust were deemed fundamental pillars for building a resilient and sustainable healthcare system.

Closing Remarks

Closing remarks and conclusions, by Miss Saudamini Dabak, Head of International Unit, Health Intervention and Technology Assessment Program Foundation (HITAP).

Figure 10: *Ms. Saudamini Dabak concluded the session*

Conclusion and way forward

In conclusion, AI has immense potential to transform healthcare in LMICs, but its success depends on overcoming critical barriers. Addressing data security, regulatory gaps, and infrastructure limitations while fostering equity and public trust is essential. Continued collaboration, capacity building, and ethical AI practices will be key to unlocking AI's full potential in global health.

The meeting concluded with a reminder that AI is a powerful tool that must be used thoughtfully to improve healthcare outcomes. Continued education, transparent practices, and ethical AI development will help ensure AI's success in the health sector.

Under the WHO-CCS ConvergeDH initiative, the team will advance efforts to explore AI adoption in Thailand's healthcare system. This will involve a comprehensive assessment of the current AI implementation landscape, identifying critical enablers and barriers, and formulating strategic recommendations to ensure effective and equitable AI integration. By

fostering a deeper understanding of AI's potential in strengthening Thailand's healthcare infrastructure, this initiative will emphasise safe, ethical, and sustainable AI utilisation.

Appendices

Appendix 1: Side Meeting Agenda

Time	Topic	Description	Speaker(s)
14:00 – 14:10 (10 min)	Welcome and overview	• Welcome participants and provide an energetic opening to set the tone for the session. • Outline the session's objectives and agenda. • Ice breaking activity • Introduce the opening speaker	Mr. Manit Sittimart, Senior Associate, HITAP *(MC)*
14:10 – 14.20 (10 min)	Opening Remarks	Provide an overview of AI's transformative role in healthcare and challenges in LMICs.	Dr. Surakameth Mahasirimonkol, Director, Department of Thai Traditional and Alternative Medicine, Ministry of Public Health, Thailand *(keynote)*
14:20 – 15:00 (40 min)	MC - transition	• Address data security challenges in AI adoption, especially in LMICs like Thailand and in HICs like Korea. • Share best practices and innovative solutions for safeguarding patient data and ensuring privacy.	Mr. Manit Sittimart, Senior Associate, HITAP *(MC)*

Time	Topic	Description	Speaker(s)
	Data security and privacy 1. Advancing healthcare with data security and privacy - insights from NHSO's innovative frameworks, Thailand (15 mins)	1. Why does this barrier matter to us all? 2. What are we doing to tackle it? 3. What are the challenges? 4. How do we move forward together?	Mr. Khachon Mongkonchoo, Director, Intelligent Data Innovation, National Health Security Office, Thailand *(speaker)*
	2. Data security and privacy - Using Korean Public Big Data (15 min)	1. Why does this barrier matter to us all? 2. What are we doing to tackle it? 3. What are the challenges? 4. How do we move forward together?	Prof. Nam-Kyong Choi, Chair, Department of Health Convergence, Ewha Womans University, Korea *(speaker)*
	Mini discussion (10 min)	Q&A	Mr. Mark Landry, Programme Officer, World Health Organization
15:00 – 15:30 (30 min)	MC - transition	• MC to reflect on previous speaker: Highlight strategies for harmonizing regulations and fostering equity-focused governance. • MC to introduce next speaker	Mr. Manit Sittimart, Senior Associate, HITAP *(MC)*
	Regulatory frameworks 1. State of global regulatory frameworks for	1. Why does this barrier matter to us all? 2. What are we doing to tackle it? 3. What are the challenges?	Dr. Patricia Mechael, Chief Executive Officer, HealthEnabled *(speaker)* and moderated by Mr. Mark Landry,

Time	Topic	Description	Speaker(s)
	digital health and AI, including equity and gender-transformative approaches - insights from the Global Digital Health Monitor (15 min) 2. Mini discussion (15 min)	4. How do we move forward together?	Programme Officer, World Health Organization *(moderator)*
15:30 – 16:00 (30 min)	MC - transition	• Summarise key points from previous presentation • For next presenter, "Explore financial and infrastructural challenges in implementing AI in resource-limited settings."	Mr. Manit Sittimart, Senior Associate, HITAP *(MC)*
	Economics and infrastructure 1. Bridging the Gap - Addressing Economic and Infrastructure Challenges in AI-Driven Healthcare Transformation (Case study from Estonia) (15 min)	1. Why does this barrier matter to us all? 2. What are we doing to tackle it? 3. What are the challenges? 4. How do we move forward together?	Prof. Dr. Peeter Ross, Professor, Tallinn University of Technology, Estonia *(speaker)* and moderated by Mr. Mark Landry, Programme Officer, World Health Organization *(moderator)*

Time	Topic	Description	Speaker(s)
	2. Mini discussion (15 min)		
16:00 – 16:20 (20 min)	Break (25 min)		
16:20 – 17:20 (1 hour)	Facilitated discussion with speakers and participants (1 hr 5 min)	The discussion will focus on the three main challenges: data security and privacy, regulatory frameworks, and economic and infrastructure barriers, while addressing the key focus areas: appropriateness, equitability, and feasibility. Each challenge will explore how AI readiness in healthcare can be achieved in resource-constrained settings.	Mr. Mark Landry, Programme Officer, World Health Organization *(moderator)*
17:20 – 17:30 (10 min)	Closing remarks and conclusion (10 min)	• Summarize the key takeaways and outcomes of the session • Announce any next steps or follow-up actions • Thank the speakers and participants for their contributions.	Miss Saudamini Dabak, Head of International Unit, Health Intervention and Technology Assessment Program (HITAP) Foundation

Appendix 2: Participant List

Resource persons

NO	Name	Role	Organisation
1	Dr. Surakamet Mahasirimonkol	Speaker	Technical and Planning Division, Department of Thai Traditional and Alternative Medicine (DTAM), Ministry of Public Health (MOPH)
2	Prof. Peeter Ross	Speaker	Tallinn University of Technology (TalTech)
3	Prof. Nam-Kyong Choi	Speaker	Ewha Womans University
4	Khachon Mongkonchoo	Speaker	National Health Security Office
5	Dr. Patricia Mechael	Speaker	Health Enabled
6	Jai Ganesh Udayasankaran	Discussant	Asia eHealth Information Network (AeHIN)
7	Mark Landry	Moderator	World Health Organization
8	Manit Sittimart	Master of Ceremonies	Health Intervention and Technology Assessment Program Foundation (HITAP)

Participants

NO	Name	Organization
1	Asst. Prof. Dr. Rizma Adlia Syakurah	Universitas Sriwijaya
2	Zoia Zamikhovska	United States Agency for International Development (USAID)
3	Prof. Nathorn Chaiyakuanpruk	University of Utah
4	Toun Sokunvoleak	National Payment Certification Agency
5	Ly Phagnanoch	National Payment Certification Agency
6	Dr. Hein Minn Tun	Universiti Brunei Darussalam
7	Dr. Fonthip Watcharaporn	Thailand Development Research Institute (TDRI)
8	Kaittipoom Kuptawat	National Health Security Office (NHSO)
9	Aditya Tripathi	National Health Security Office (NHSO)
10	Dr. Vongsakorn Poonpiriya	National Science and Technology Development Agency (NSTDA)
11	Dr. Yukimasa Matsuzawa	Japan National Center for Global Health and Medicine (NCGM)
12	Chona Patalen	Department of Science and Technology (DOST), Philippines
13	Mony Sorithisey	National Institute of Public Health, Cambodia
14	Teguh Harmanda	INA Digital GovTech Indonesia
15	Petcharat Chompo	Khon Kaen University
16	Istiaomal	Rhode Island Department of Health (MOH RI)
17	Supida Komjukraphe	Ministry Of Public Health Thailand
18	Hye-Kyeong Kim	Ewha Womans University
19	Minah Park	Ewha Womans University
20	Rawihkhan Srihon	Mahidol University
21	Kalei Hosalca	University of California, Los Angeles
22	Panattaporn Tangguay	Ramathibodi
23	Dr. Nyan Linn	DLP
24	Patipan Prasertsom	Big Data Institute (BDI)
25	Supapan Wadhapn	Chulalongkorn
26	Quinter Lataire	Joint United Nations Programme on HIV/AIDS (UHAIDA)
27	Dr. Zoljargal Lkhagvajav	University of Washington

NO	Name	Organization
28	Begin Salumu	United States Agency for International Development (USAID)
29	Anna Kachan	United States Agency for International Development (USAID)
30	Dorothy Buyle	National University of Singapore (NUS)
31	Lim Zhi Zhen	National University of Singapore (NUS)
32	Matanee Radabutr	Boromarajonani College of Nursing Nonthaburi (BCNNON)
33	Therese Tsui	Health Intervention and Technology Assessment Program Foundation (HITAP)
34	Suyada Prommee	Health Intervention and Technology Assessment Program Foundation (HITAP)
35	Ryan Sitanggang	Health Intervention and Technology Assessment Program Foundation (HITAP)
36	Lapad Pongcharoenyong	Health Intervention and Technology Assessment Program Foundation (HITAP)
37	Zin Nwe Win	Health Intervention and Technology Assessment Program Foundation (HITAP)
38	Serah Carolyn Clarece	Health Intervention and Technology Assessment Program Foundation (HITAP)
39	Dr. Yot Teerawattananon	Health Intervention and Technology Assessment Program Foundation (HITAP)
40	Jidapa Planuson	Health Intervention and Technology Assessment Program Foundation (HITAP)
41	Thamonwan Dulsampuan	Health Intervention and Technology Assessment Program Foundation (HITAP)
42	Ammon Rodphant	Health Intervention and Technology Assessment Program Foundation (HITAP)
43	Aprujee Punkataewanupt	Health Intervention and Technology Assessment Program Foundation (HITAP)
44	Warinlada Mungmee	Health Intervention and Technology Assessment Program Foundation (HITAP)
45	Yin May Tun	Health Intervention and Technology Assessment Program Foundation (HITAP)
46	Nann Vongpuapan	Health Intervention and Technology Assessment Program Foundation (HITAP)

NO	Name	Organization
47	Pattranit Pohnatchariyagul	Health Intervention and Technology Assessment Program Foundation (HITAP)
48	Teerapol Phoosongchan	Health Intervention and Technology Assessment Program Foundation (HITAP)
59	Wittawat Chatchawanpreecha	Health Intervention and Technology Assessment Program Foundation (HITAP)

Organising Team

NO	Name	Organization
1	Papada Ranron	Health Intervention and Technology Assessment Program Foundation (HITAP)
2	Panchanok Muenkaew	Health Intervention and Technology Assessment Program Foundation (HITAP)
3	Saudamini Dabak	Health Intervention and Technology Assessment Program Foundation (HITAP)