Transform Health

Digital Health Curriculum Reform in Indonesia

December 2024

Prepared by: One South

Prepared for: Transform Health

This report was commissioned by **Transform Health** through funding from **Foundation Botnar**.

The case study was carried out and authored by James Gathogo and Tariq Tobias Omarshah Ambrose.

The views expressed in this report reflect the independent assessment of the author and do not necessarily represent the views of Transform Health or its affiliates.

The study drew from a series of semi-structured interviews and focus group discussions with members of Transform Health Indonesia, conducted between October and December 2024.

The study was managed and facilitated by Danielle Mullings, Frank Smith, and Mandy Govender from Transform Health

For any questions related to this report, please contact:

Transform Health is a coalition of organisations that advocate for the equitable digital transformation of health to achieve health for all in the digital age.

Find out more: https://transformhealthcoalition.org/

One South is an international development consulting firm working to help organisations understand and deliver social change. Our vision is a world where social change is experimental, incremental, and driven by a shared experience.

Table of Contents

Acronyms and Abbreviations

Acronym	Full Name
AIPTKMI	Association of Public Health Higher Education Institutions
CACES	Council for Quality Assurance in Higher Education (Ecuador)
CEDIA	Ecuadorian Consortium for Higher Education
IAKMI	Indonesian Public Health Experts Association
IPTEKS	Science, Technology, and Arts (Indonesia)
MBKM	Independent Learning Independent Campus (Indonesia)
MoE	Ministry of Education (Indonesia)
MoH	Ministry of Health (Indonesia)
MSP	Ministry of Public Health (Ecuador)
THI	Transform Health Indonesia
UHC	Universal Health Coverage
WHO	World Health Organization
AeHIN	Asia eHealth Information Network

Executive Summary

Transform Health Indonesia is a coalition of 21 public and private organisations working to accelerate Indonesia's digital health transformation to achieve Universal Health Coverage (UHC) by 2030. Coordinated by the Indonesian Public Health Experts Association (IAKMI), the coalition brings together academic institutions, policymakers, and practitioners to support digital health integration.

Before the coalition's involvement, the Ministry of Health's (MoH) efforts to integrate digital health training into public health education were fragmented and lacked structured engagement with civil society and academia (Coalition member, 2024). Health workers had limited training in digital health, restricting their ability to adopt new technologies in healthcare settings.

In response to this need, Transform Health Indonesia developed and piloted an integrated digital health curriculum for public health, nursing, and medical students. The pilot reached 1,239 students across 26 institutions. According to internal data, the pilot resulted in an increase in digital health literacy, particularly in data management, privacy, and interoperability (Transform Health Indonesia, 2024).

Following the pilot, the curriculum was refined through a multi-stakeholder consultation, ensuring alignment with national and global standards. The Association of Public Health Higher Education Institutions (AIPTKMI), representing over 180 institutions, has committed to a nationwide rollout by the end of 2025. The Ministry of Health has also provided in-principle approval to integrate the curriculum into mandatory public health education.

This initiative is expected to enhance the digital health capacity of Indonesia's healthcare workforce, contributing to improved healthcare delivery and ultimately supporting the achievement of UHC by 2030. Building on this success, this case study examines how the national coalition contributed to the development and launch of the curriculum, aiming to draw lessons for future programming and cross-country learning.

Successful strategies

Several factors contributed to the coalition achieving its objectives:

- **Leveraging government momentum** – Capitalizing on the Ministry of Health's post-pandemic focus on digital health allowed the coalition to advocate for digital health workforce training and secure policy support.
- **Building on IAKMI's credibility** – Utilised IAKMI's network of 35,000 members to enable broad consultation and curriculum dissemination.
- **Strengthening multi-stakeholder engagement and creating a unified advocacy platform** – The coalition maintained alignment through regular consultations with government, civil society, and academia, ensuring curriculum relevance. The coalition consolidated stakeholders in a unified forum to coordinate digital health reform efforts and position it as a national priority.
- **Dividing leadership responsibilities** – AIPTKMI led curriculum development, while Transform Health Indonesia facilitated consultations to ensure technical and strategic alignment.
- **Ensuring an inclusive and adaptable process** – AIPTKMI's accreditation process allowed for timely curriculum revisions as well as for consultation to refine and validate content for nationwide rollout.

Key Impacts

The coalition developed a digital health curriculum, adding a new module to the undergraduate public health study program. This aligned well with the Ministry of Health's digital health transformation goals. Until 2023, no formal module existed for digital health, making this a critical addition. The curriculum was piloted in 26 institutions, reaching 1,239 students, and is now being adopted nationwide.

The curriculum development process strengthened stakeholder engagement, bringing together coalition members, universities, private sector actors, and the Ministry of Health. This collaboration deepened relationships with civil society stakeholders. With the curriculum's success, the Ministry of Health is expected to remain engaged, supporting future implementation, updates, and broader digital health initiatives.

Conclusion

We conclude that the process carried out to develop the digital health curriculum in Indonesia resulted in its intended objective of integrating digital health training into public health education by leveraging political momentum post the pandemic and establishing a platform for ongoing advocacy and strengthened relationships between the Ministry of Health and civil society. Linking the digital health curriculum development to existing government priorities, specifically the increased focus on digital health following the COVID-19 pandemic, garnered a broad base of support amongst civil society and government stakeholders for curriculum reform. This combined with Transform Health's partnership with IAKMI, a network representing over 35,000 public health professionals, created buy-in within the sector. Throughout the process, the coalition adopted a consultative, and inclusive approach which allowed for extensive consultation and refinement, validating content for the pilot and subsequent nationwide rollout.

This case study offers valuable lessons for other countries seeking to strengthen their healthcare workforce and advance digital health transformation.

Background

Indonesia's healthcare system has faced significant gaps in digital health training, particularly among health workers. Despite efforts to integrate digital health into public health services, the public health curriculum has lacked key content on health data management, privacy, electronic personal health records, and data protection. These gaps have limited the ability of future health professionals to use digital tools and comply with evolving regulatory frameworks effectively.

> "Before the involvement of the Transform Health Indonesia, digital health initiatives within the Ministry of Health were largely siloed, with efforts concentrated within different government units and lacking broader engagement with civil society and the academic sector. Health workers had limited digital literacy, as digital tools were primarily used for reporting rather than enhancing healthcare delivery. The coalition played a crucial role in bridging these gaps, fostering collaboration, and ensuring a more coordinated and inclusive approach to digital health integration." - Health Informatics and Research Cluster coalition member, 2024

A digital literacy assessment of primary health centre workers highlighted deficiencies in data management and the use of health technology tools. In response, the Ministry of Health initiated plans to enhance digital competencies among health workers, implementing strategies to address these literacy gaps.
To further these efforts, Transform Health Indonesia collaborated with public health higher education institutions to conduct a landscape analysis, confirming the urgent need for a structured digital health curriculum. This multi-stakeholder approach ensured input from academia, government, and civil society, leading to the curriculum's pilot implementation across public health institutions.

This initiative aligns with priorities established during a 2022 coalition-wide workshop, which identified key areas for digital health reform in Indonesia:

1. Developing a digital health curriculum for public health students.
2. Supporting the Ministry of Health (MoH) in enhancing the health workforce through research on primary health centre readiness.
3. Conducting research to inform digital health integration.
4. Assessing the digital literacy of health workers at primary health centres.

5. Reviewing electronic personal health records to provide recommendations to the MoH on developing effective electronic personal health records in Indonesia.

Developing the updated curriculum

Recognising the increased prevalence of digital technologies in healthcare, Transform Health Indonesia led efforts to update Indonesia's public health education, ensuring future healthcare workers gain essential digital skills. To equip future healthcare professionals with essential digital skills, the curriculum was developed to enhance digital competencies, improve patient care through digital tools, and address gaps in health data management, privacy, and regulatory frameworks. This initiative developed Indonesia's first digital health curriculum, aligning with national policies and global standards.

Recognising the need for a digital health curriculum: A landscape analysis commissioned by Transform Health Indonesia revealed significant digital literacy gaps

within the healthcare workforce. This analysis helped to build the evidence base and create consensus among key stakeholders as to the need for a digital health curriculum.

Building a collaborative partnership: A broad national coalition—including the Ministry of Health, Ministry of Education, public health institutions, healthcare professionals, students, private actors, civil society, and global organisations like WHO and AeHIN-played a vital role in shaping the curriculum. Their input helped align the curriculum with national policies and global best practices, ensuring students acquire skills that meet local and international healthcare needs. Transform Health Indonesia engaged these diverse stakeholders, fostering a sense of ownership and commitment and making implementation more feasible. IAKMI's established credibility supported strong cross-sector collaboration.

Developing and testing the curriculum: The Association of Indonesian Public Health Institutions (AIPTKMI) committed to integrating digital health into the undergraduate public health study program in 2021. The development process followed a structured approach, beginning with conceptualisation, module writing, and stakeholder consultations. A workshop held in March 2023, brought together experts to review and refine the first draft, ensuring the content was comprehensive and aligned with industry demands.

Transform Health Indonesia oversaw a pilot phase from November to December 2023 in 26 institutions, reaching 1,239 students. Pilot results showed a 20.27% increase in digital health knowledge, reinforcing the relevance of integrating digital health education into academic programmes. Training of Trainers (ToT) sessions prepared lecturers for effective curriculum delivery, while piloting and feedback collection provided insights for necessary revisions. The ToT was planned to standardise delivery across 200 public health schools. Feedback from students and lecturers highlighted the need for real-world case studies and stronger links to job market requirements. Structured surveys and testimonials guided refinements, ensuring the curriculum remained practical and applicable.

Validating and adopting the curriculum: The Association of Public Health Higher Education Institutions (AIPTKMI), which represents over 180 institutions, tested the curriculum and has committed to rolling it out across all public health schools in Indonesia by the end of 2025. The Indonesian government has provided in-principle approval to incorporate the digital health module into the mandatory curriculum for public health schools, paving the way for nationwide implementation by 2025.

Transform Health Indonesia facilitated a multi-stakeholder consultation to validate the curriculum, securing commitments from AIPTKMI, WHO, AeHIN, the Ministry of Health, and leading academic institutions. This validation ensured compliance with WHO digital health guidelines and strengthened the curriculum's credibility. The consultation also laid out a roadmap for full implementation, with a nationwide rollout planned by the end of 2025. Additionally, discussions focused on expanding the curriculum to include frontline healthcare workers, reinforcing its role in strengthening Indonesia's healthcare system. The Ministry of Education's policy allows for curriculum adaptation, further facilitating adoption across public health institutions.

Next steps: From 2025 to 2027, the curriculum is expected to reach 9,000–10,800 students. Transform Health Indonesia is also working with stakeholders to develop iterations of the curriculum for frontline healthcare workers and community health workers, ensuring broader adoption within Indonesia's healthcare workforce.

The development and adoption of the digital health curriculum by Transform Health Indonesia represent a milestone in Indonesia's education system. By addressing training gaps, engaging key stakeholders, and refining content through pilot studies, the curriculum is positioned for full implementation. With nationwide adoption expected by 2025, Indonesia is taking a significant step toward ensuring a digitally competent healthcare workforce prepared to navigate the evolving digital health landscape.

Key Approaches

The coalition made use of growing momentum for the digital transformation of health within the Ministry of Health following the COVID-19 pandemic to advocate for curriculum reform and to organise a wider civil society consultation.

Several stakeholders interviewed during the study highlighted the increased relevance of digital health since the COVID-19 pandemic and how this played a role in supporting the movement for digital health curriculum reform. Following the pandemic, there was widespread consensus on the importance of digitising the health sector, as this was shown to reduce barriers to health care access and engagement.

However, while there was existing momentum for reform, stakeholders reported that previous efforts to reform the digital health curriculum were siloed within the Ministry of Health and did not involve wider civil society consultation. The coalition brought together multi-stakeholder partners, including healthcare workers, medical students, universities, private actors, and community-based organisations representing key sub-population groups, to participate in the curriculum design and implementation process.

The coalition benefited from the long-standing reputation, credibility, and relationships of IAKMI.

> As a Public Health Lecturer explained, “Through the leadership from the Indonesia Public Health Association, the coalition built a multi-sectoral network among those concerned with furthering digital health in Indonesia and improving digital health literacy. Because of IAKMI’s relationships, this group was able to collaborate well with the Public Health Higher Education Institution Association which is responsible for more than 200 public health higher education institutions”.
>
> The module was subsequently adopted under the existing public health curriculum within the existing "health information system” module. More widespread adoption or changes will be considered in the next national curriculum reform process, but the entire module has already been included within this existing unit.

Organising regular meetings amongst diverse multi-stakeholder coalition members and partners was effective in building momentum and ensuring alignment.

Regular meetings amongst diverse multi-stakeholder coalition members and partners were instrumental in building momentum, ensuring alignment, and strengthening advocacy efforts. These meetings, well attended by Ministry of Health officials, kept stakeholders informed about curriculum developments and fostered engagement across different sectors. Including youth groups and students helped amplify outreach by leveraging digital tools and supporting implementation at the university level. By consolidating all interested parties into a single platform, the coalition enhanced coordination, made the case for digital health reform more compelling, and established a structure for future advocacy and implementation.

Recruiting experts to spearhead the writing, development, and facilitation of the curriculum design process mitigated for disagreements and ensured a product was delivered with a broad base of support from each stakeholder group.

Several stakeholders highlighted the relevance of recruiting experts to lead on the drafting of the curriculum as this freed up bandwidth and prevented inter-stakeholder conflicts and disagreements. Experts were tasked with drafting the curriculum based on the robust consultations and were able to facilitate these consultations in a way that no party felt unheard.

Annexes

Study methodology

Scope

This study examines the development of Transform Health Indonesia's digital health curriculum, documenting its design, implementation, and stakeholder engagement. The findings provide best practices and recommendations for future implementation and replication.

Study approach

1. **Case study method:** A case study approach was used to analyse Transform Health Indonesia's role in developing the digital health curriculum, focusing on stakeholder engagement, curriculum design, and implementation.

2. **Multi-source evidence:** The study draws from document reviews, stakeholder interviews, and secondary data. Key sources include strategy papers, national policies, MoH documents, and consultation reports. Two key informant interviews were conducted with a coalition member from the Health Informatics and Research Cluster and the coalition lead, providing first-hand insights into the curriculum development process.

Sampling and participants

A targeted sampling approach was used, focusing on key stakeholders directly involved in the digital health curriculum reform. The two interviewees played crucial roles in curriculum development and coalition leadership.

Coalition partner	Representative	Role	Contribution to curriculum development
IAKMI/AIPTKMI	Prof. Kemal N. Siregar	Ketua Health Informatic and	Provided technical expertise, policy recommendations, and research insights; facilitated stakeholder engagement and contributed to

Coalition partner	Representative	Role	Contribution to curriculum development
		Research Cluster	curriculum alignment with national digital health priorities
Transform Health Indonesia	Deddy Darmawan	Coalition Lead	Led coalition engagement and stakeholder coordination

Data analysis

Thematic analysis was conducted on interview responses, document reviews, and secondary data. Key themes included stakeholder collaboration, curriculum design, and implementation challenges. Insights were synthesised to assess Transform Health Indonesia's contributions and impact on digital health education.

Limitations

This case study uses a qualitative, non-experimental approach, which limits its ability to establish causation. Instead, it provides plausible conclusions based on thematic insights. Additionally, potential data gaps may exist due to limited access to certain stakeholders or incomplete documentation, which may affect the depth of some analyses. However, the multi-source approach mitigates these limitations by ensuring a comprehensive view of the national coalition's activities.

Comparing Ecuador and Indonesia's approach to digital health curricula development

This section compares the approaches taken by Ecuador and Indonesia in developing digital health curricula for health professionals. Both countries recognised the need to integrate digital health into education to enhance healthcare delivery and workforce readiness. However, they adopted distinct strategies in curriculum design, stakeholder engagement, and implementation. This comparison highlights best practices, challenges, and key lessons learned by analysing these differences and similarities.

1. **Policy framework and approval process**
    - **Ecuador:** The Ecuadorian Consortium for Higher Education (CEDIA) played a key role in coordinating curriculum reform, working with CACES (Council for Quality Assurance in Higher Education), which mandated digital health competency integration as a requirement for university accreditation.
    - **Indonesia:** The Ministry of Education (MoE) grants universities autonomy over curriculum development. AIPTKMI, which oversees public health institutions, recommended digital health curriculum adoption, and the Ministry of Health provided in-principle approval for national implementation.
2. **Curriculum structure and development approach**
    - **Ecuador:** Instead of designing a new standalone course, Ecuador integrated digital health competencies into existing university programs. The curriculum was structured around ten key subjects covering telemedicine, AI, cybersecurity, health data analytics, and digital health innovation.
    - **Indonesia:** AIPTKMI developed a standalone digital health module within the existing Health Information Systems course. This structured approach ensured consistency across universities and facilitated future scalability.
3. **Stakeholder engagement**
    - **Ecuador:** The curriculum was developed through a multi-stakeholder process involving public and private universities, healthcare providers, and policymakers. However, health service users were not directly engaged.
    - **Indonesia:** A broad consultation process was conducted, including universities, government agencies, civil society, and students. This multi-sectoral coalition

strengthened advocacy efforts and aligned curriculum goals with national digital health priorities.

4. **Pilot phase and implementation**
    - **Ecuador:** A pilot phase is set to begin in February 2025 while universities have the flexibility to incorporate digital health competencies into their courses incrementally.
    - **Indonesia:** A structured pilot was implemented across 26 public health institutions, reaching 1,239 students. Post-pilot evaluation showed a 20.27% increase in digital health literacy, leading to curriculum refinements before national rollout.
5. **Challenges encountered**
    - **Ecuador:** Faced infrastructure limitations, a lack of a national digital health strategy, and limited investment in health technology.
    - **Indonesia:** The primary challenge was ensuring university buy-in and sustaining implementation beyond the pilot phase.

Key lessons learned

- Indonesia's pilot approach provided measurable insights that Ecuador could adopt to refine its curriculum before nationwide rollout.
- Ecuador's flexible competency-based model allowed universities to adapt their curricula, which Indonesia could consider for broader integration beyond a standalone module.
- Both countries successfully leveraged government backing to support digital health education, demonstrating that national policies play a crucial role in institutional adoption.
- **Stakeholder engagement is key:** Ecuador benefitted from strong higher education engagement, while Indonesia's coalition approach fostered broader stakeholder buy-in.

Summary: Comparing Ecuador and Indonesia's approach to digital health curricula development

Category	Ecuador	Indonesia	Lessons Learned
Policy Mechanism for Curriculum Adoption	MoE allows universities autonomy in curriculum development but CACES, the national accreditor, mandated digital health competencies as an accreditation requirement.	MoE allows universities autonomy in curriculum development, and AIPTKMI recommends adoption.	Government buy-in is critical; accreditation bodies can facilitate faster adoption.
Curriculum Development Approach	Integrated digital health competencies into existing teaching modules. Universities could develop curricula based on these competencies.	Developed a standalone digital health module for public health education.	A flexible approach to curriculum integration helps navigate institutional constraints.
Stakeholder Engagement	Led by Transform Health Ecuador with CEDIA coordinating efforts; broad coalition including universities, government, and private sector.	Led by Transform Health Indonesia and AIPTKMI, involving MoH, universities, civil society, and private actors.	Multi-stakeholder collaboration strengthens curriculum adoption and implementation.
Pilot Phase	Pilot phase to begin in February 2025.	Pilot-tested in 26 institutions with 1,239 students; resulted in a 20.27% knowledge increase.	Piloting the curriculum allows for refinement and ensures relevance before full rollout.
Government Role	Ministry of Public Health was heavily involved in shaping competencies but no direct mandate for full integration.	The Ministry of Health provided in-principle approval for nationwide integration.	Strong government involvement ensures long-term sustainability.

Category	Ecuador	Indonesia	Lessons Learned
Implementation Strategy	Universities could adapt existing curricula without needing formal approval from CACES.	AIPTKMI recommends adoption, but individual institutions decide whether to implement it.	Autonomy of academic institutions must be considered when rolling out new curricula.
Long-Term Strategy	Focused on embedding digital health skills across multiple courses.	The stand-alone module is expected to reach 9,000–10,800 students (2024–2026), with plans to expand to other health worker training programs.	Both approaches can work, but embedding skills across curricula may ensure broader adoption.
Challenges Faced	Lack of digital health investment and infrastructure.	Limited participation in interviews, need for real-world case studies and job market alignment.	Ongoing monitoring and feedback loops help address gaps in curriculum design.