



UNICEF'S
**DIGITAL
HEALTH &
INFORMATION
SYSTEM
ANNUAL
REPORT**
2024

unicef 
for every child

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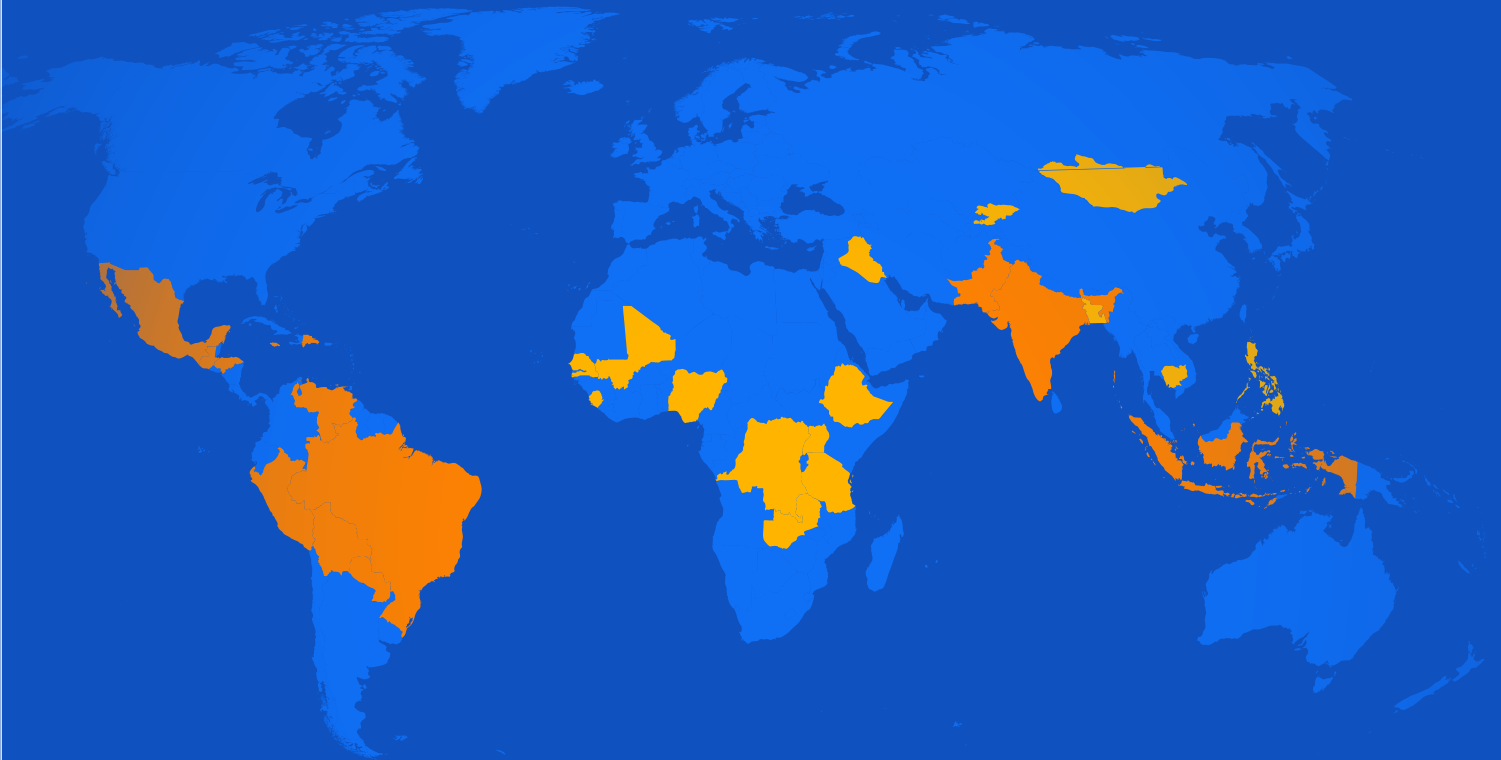
Foreword

The year 2024 marked an important phase for UNICEF's Digital Health and Information Systems (DHIS) unit as we expanded on our integrated Primary Health Care approach, worked to operationalize digital health strategies and supported countries to place children at the centre of their digital transformation efforts. As technology continues to reshape healthcare, we remain committed to ensuring that digital solutions are not only accessible but also effectively integrated into national health systems. Our work has contributed to improving service delivery, enhancing data-driven decision-making, augmenting human resource capacities and strengthening health programs, including those in fragile settings.

This report reflects our efforts in 2024, highlighting key initiatives, challenges, and opportunities. While the digital health field continues to evolve, challenges such as funding constraints, the need for greater capacity, and improving global coordination remain. To address these challenges, we will focus on strengthening partnerships, integrating digital health solutions within primary healthcare systems, and advocating with governments and relevant working groups to ensure that even remote and underserved communities have access to healthcare services. Looking ahead, we will focus on expanding digital interventions within primary healthcare, strengthening governance, and fostering partnerships to drive further progress. This report provides a comprehensive review of our work and outlines strategic priorities for the coming year.



Our work in numbers at the global level:



Strengthening National Digital Health Strategies



Supported 14 countries in developing and implementing national digital health strategies.



Assisted three countries in designing costed digital health roadmaps aligned with global standards.



Organized two digital convergence workshops to support policy alignment and strategy discussions.

Digital Tools for Health Service Delivery



Enabled 16 countries to integrate Geographic Information Systems (GIS) for optimized service planning.



Deployed real-time monitoring approaches for immunization efforts in six countries under the Big Catch-Up initiative.



Expanded digital messaging and eLearning platforms in four countries to improve health education outreach.

Global Initiatives and Partnerships



Led expansion of HealthConnekt to four countries under Africa CDC Digital Transformation Strategy.



Launched the Mastercard initiative with rapid assessments of Community Health Worker Registries in 12 countries.



Supported WCARO regional office putting over 400,000 zero-dose children on the map in five countries through the Reach the Unreached initiative.



Strengthening of regional digital health networks and regional partnerships in Asia (AeHIN and MORU tropical health network) and Africa (HELINA).



Actively contributed to the strategic steering of WHO Global Initiative on Digital Health (GIDH) as core member, including supporting G20 meeting in Brazil and GIDH interim task force meeting.

Advancing Digital Health Standards



Developed two digital health Standards document, the Health Facility Registry Target Software Standards (TSS) and Geo-enabled Microplanning Digital Adaptation Kit.



Launched Community Health SMART Guidelines and TSS for improved standardization of digital health tools.

Capacity Building and Knowledge Sharing



Delivered global capacity building courses on digital health to over 650 participants worldwide, including on the planning of digital health national systems, enabling health information systems with geospatial technologies, and strengthening health systems with civil registrations of births and deaths.



Published the Guidebook on Digital Platforms for Health Worker Trainings and SBC Messaging Campaigns.



Advancing National Digital Health Strategies and Policies



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UNICEF's DHIS unit provided essential technical support to 14 countries in developing and implementing national digital health strategies. These efforts included assisting three of these countries in designing costed digital health roadmaps aligned with global standards. In addition, four digital convergence workshops were organized to bring together government officials, healthcare providers, and technology partners to facilitate discussions on integrating digital health solutions into national policies. These workshops provided a space for key stakeholders to align priorities, identify challenges, and develop coordinated approaches to digital health implementation.

In Nigeria, Sierra Leone, and the Democratic Republic of the Congo, UNICEF facilitated the development of costed roadmaps, amounting to \$20.3 million, \$3 million, and additional funding, respectively, which were shared with the GAVI Alliance for implementation support. Furthermore, UNICEF supported Ethiopia in implementing its roadmap by enabling house-to-house enumeration using tools like ODK, identifying eligible children, and improving data collection for national catch-up campaigns. Eritrea strengthened its national and subnational data systems to ensure better access to routine immunization data, while Cambodia focused on strengthening digital enablers for immunization priorities. In the Maldives, UNICEF contributed to the development of the National Digital Health Blueprint, aligning efforts with WHO-supported governance mechanisms to streamline digital health policies and enhance primary healthcare access.

The integration of digital tools into health programs remained a priority. Geographic Information Systems (GIS) played an increasingly important role in service planning, with 16 countries utilizing GIS to optimize resource allocation and identify coverage gaps. In Bangladesh and Mozambique, the integration of geospatial mapping for microplanning of routine immunization services is being scaled with technical oversight fully in the hand of local offices or government agencies. Similar interventions were piloted in South Sudan, Malawi, and Uganda, where efforts are currently focused on resourcing the scaling phase and transferring technical oversight and capacity to local agencies. In Cambodia, Papua New Guinea and Madagascar, initial country engagement, and needs assessment were conducted to prepare for implementation, alongside the establishment of initial technical support. In Western and Central Africa, UNICEF supported the deployment of innovative machine learning and geostatistical solutions to enable five countries identify and map the distribution of zero-dose children for planning and targeting of vaccination services. In 2024, a total of 1.1 million children under the age of one (of which 440,450 were zero-dose) were mapped to have missed vaccinations in Cameroon, Côte-D'Ivoire and Guinea.

In 2024, six countries leveraged real-time monitoring (RTM) approaches to enhance programmatic decision-making (Cameroon, Kyrgyzstan, Madagascar, Mozambique, Somalia and Uganda). Under the Big Catch-up (BCU) initiative, UNICEF provided targeted technical assistance, including readiness assessments, integration of BCU age groups into national HMIS and routine immunization systems, and the development of a DHIS2 BCU module. Additionally, UNICEF developed RTM training materials for both in-person and self-paced eLearning courses to strengthen country capacity in data use for decision-making.



Additionally, several countries leveraged digital platforms for social behavior messaging and for learning to expand access to vetted, high quality health education, ensuring that frontline workers and communities remained informed about essential health interventions. Technical assistance was provided to various countries to either strengthen an existing learning management system or select a new digital platform to deliver training to the health workforce. Countries such as Papua New Guinea, Cambodia, Mongolia, Indonesia, Honduras and Venezuela expanded digital platforms used as a response during the COVID-19 pandemic to deliver continuous in-service trainings to their health workforce on topics such as routine immunizations, mental health, and interpersonal communication skills. UNICEF Uganda and Zambia are working with their ministries of health to develop a learning system for the health workforce hosted by the ministry. UNICEF India, Indonesia and Cambodia have been leveraging the WhatsApp platform to deliver health information to parents and caregivers about routine immunization services available as well as new vaccine information, such as HPV.

Health Management Information Systems (HMIS) and District Health Information Software 2 (DHIS2) were further strengthened in several locations, improving data collection and reporting capabilities. Technical assistance was provided to Sierra Leone towards configuring a scorecard and bottleneck analysis in DHIS2 and to Egypt in leveraging the DHIS2 long-term agreements to support primary healthcare data management. Support has also been provided to UNICEF Cambodia to enable the country transition from their current Health Management Information System to DHIS2. We supported high level conversations with stakeholders, including

Gavi and the Ministry of Health (MOH), that resulted in the MOH technical team undertaking a learning visit to the University of Oslo. Furthermore, two countries implemented community health worker registries to enhance workforce management, ensuring adequate staffing and resource allocation in underserved areas. Several steps were taken with the Mozambique Country Office to leverage their Electronic Community Health Information System (e-CHIS) "upSCALE" to routinely identify, track, and reach zero-dose and under-vaccinated children with immunization services in collaboration with primary healthcare facilities. At a global level, two webinars in English and French were facilitated with WHO for UNICEF and WHO colleagues in regional and country offices to expand their capacity in health and civil registration. Over 100 people from 39 countries attended the webinars.

UNICEF also played a significant role in regional initiatives. The HealthConnekt Flagship program, launched as part of the Africa CDC Digital Transformation Strategy, expanded its reach to four countries during this learning year. Through this initiative, UNICEF is working closely with national governments to improve digital health connectivity, aiming to eliminate the digital divide and ensure that digital health equitably benefits all people. HealthConnekt is set up, in collaboration with the Mastercard Foundation, to extend support to 13 countries in 2025, including rapid assessments of community health worker registries to provide insights into workforce distribution and capacity gaps. Meanwhile, UNICEF contributed to mapping efforts for zero-dose children through the Reach the Unreached initiative in five countries in Western and Central Africa, helping to identify and address immunization disparities.





Discovery, Development, and Use of Digital Platforms for PHC

UNICEF continued to advance efforts to develop and scale digital platforms that support primary healthcare services. A major milestone of the year was the publication of global digital health target software standards (TSS) and specifications, including the Health Facility Registry toolkit. These resources provided countries with structured guidelines for establishing interoperable digital health systems that align with international best practices. Additionally, significant progress was made on the first Geo-enabled Microplanning Digital Adaptation Kit and work began on the Community Health SMART Guidelines and TSS to further standardize digital health tools and improve integration across different health programs.

Collaboration with UNICEF's Office of Innovation played a crucial role in expanding the use of artificial intelligence (AI) for maternal, newborn, child, and adolescent health (MNCAH). AI-driven solutions were explored to enhance service delivery, streamline data collection, and improve predictive analytics for health interventions. In addition, UNICEF worked closely with the IA2030 Data Strengthening Working Group to develop monitoring guidance for the Big Catch-up initiative. This work contributed to the identification and reach of zero-dose and under-immunized children to restore immunization coverage to pre-pandemic levels. Furthermore, the [DHIS2 Big Catch-up \(BCU\) module](#), developed in

collaboration with the University of Oslo, enables seamless integration of immunization catch-up efforts into national HMIS. By embedding BCU age-group monitoring within routine immunization systems, the module supports long-term sustainability, allowing countries to track coverage gaps and implement targeted catch-up strategies as part of their Expanded Programme on Immunization (EPI).

UNICEF's achievements in Eastern Europe included the successful piloting of the e-Perinatal Referral System in Tajikistan, which improved maternal and newborn health outcomes by enabling real-time monitoring and referrals. The country now aims to expand the system nationwide, strengthening maternal and neonatal healthcare services. UNICEF also continued to support Tajikistan's Vaccine Stock Management System, ensuring efficient vaccine distribution and administration. In Kyrgyzstan, UNICEF collaborated with WHO, UNDP, and UNFPA under an SDG Fund joint program to expand telemedicine services, improving healthcare access in remote regions. Uzbekistan saw progress in the nationwide implementation of an interoperable electronic immunization registry (EIR) and vaccine logistics management information system (VLMIS), with over 1.1 million vaccinated individuals registered and 3 million vaccine doses administered.



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In East Asia and the Pacific, UNICEF provided technical support for digital microplanning in Mongolia, Papua New Guinea, and Cambodia to improve zero-dose child identification and help identify and measure children at risk. Additionally, Papua New Guinea transitioned from a legacy supply chain system to Open mSupply with UNICEF's assistance and Electronic Immunization Registries/Immunization Information Systems have been deployed and scaled to strengthen routine immunization.

In South Asia, UNICEF India supported the Ministry of Health in designing the RCH 2.0 portal, which enables longitudinal tracking of pregnancies and child health through the Ayushman Bharat Health Account (ABHA) ID. In Bangladesh, UNICEF played a key role in launching a blockchain-based supply chain platform for immunizations, increasing transparency and efficiency in vaccine logistics. In Sri Lanka, UNICEF collaborated with government partners to implement the Digital Health Blueprint, ensuring interoperability between existing health systems. Additionally, UNICEF organized a regional meeting in South Asia to advance digital health strategies for non-communicable diseases (NCDs), engaging Ministries of Health and key stakeholders to strengthen data systems and digital health governance.



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Shaping the Global Digital Health Agenda

UNICEF remained actively engaged in global digital health discussions and partnerships. As a core member of the WHO Global Initiative on Digital Health (GIDH), UNICEF contributed to high-level policy dialogues, including the G20 meetings in Brazil and the GIDH interim task force. These engagements allowed UNICEF to advocate for stronger global commitments to digital health investments and ensure that the needs of low- and middle-income countries were prioritized in global digital health policies.

Collaboration with the Africa CDC was formalized in the Joint Action Plan (JAP), which was announced on 29 February 2024, and included an integrated package of PHC and Community Health interventions, enabled through foundational digital health investments including health worker registries, capacity building and connectivity. UNICEF also played an instrumental role in shaping Gavi's 6.0 Health System Strategy, ensuring that digital health was included as both a dedicated pillar and cross cutting enabler of priority immunization interventions. UNICEF also was a key partner for Gavi as they continue to expand their focus on strengthening Human Resources for Health. UNICEF was a key contributor to the first ever Gavi Human Resources for Health Strategy.

This draft strategy has then leveraged to develop Pillar 2 of Gavi's 6.0 Health System Strategy. UNICEF actively contributed to various global health forums and technical working groups, including the Health Data Collaborative (HDC) Community Data Working Group. Additionally, DHIS has been a key contributor to the Gavi alliance Human Resources for Health Technical Working Group and led discussions at the Global Digital Health Forum, WHO Open Digital Health Summit, and other international events. These engagements reinforced our commitment to global cooperation and knowledge-sharing in digital health.



Knowledge Management and Capacity Building

To support the continued expansion of digital health expertise, UNICEF invested in knowledge-sharing and capacity-building initiatives. The Digital Health Community of Practice remained an important platform for facilitating discussions and exchanging best practices among experts and practitioners. Over 200 participants from 31 countries graduated from the Digital Health Planning National Systems Course, which provided essential training on digital health strategy development and implementation. Meanwhile, the Geo-enabling Health Information System webinar series attracted 350 attendees, further strengthening digital literacy among health managers specific to the building of institutional capacity for geospatial data, technologies and analytics. Likewise, UNICEF supported capacity building of the community health workforce, launching the first Gender and Digital Literacy Training for CHW, which will be replicated globally in 2025.

UNICEF also collaborated with GAVI, Health Enabled, and WHO to facilitate the Digital Health for Immunization Workshop, which advanced Gavi's Digital Health Information Strategy. Conducted alongside the WHO Open Digital Health Summit, the workshop provided participants with tools to prioritize and scale digital health interventions for immunization equity. Fourteen country teams assessed their digital health progress, identified top priorities, and developed actionable roadmaps integrating gender equity considerations.

In the Philippines, UNICEF co-organized the Digital Health Summit with the Asian Health Information Network and PATH, engaging 149 stakeholders in strategizing the country's digital health roadmap under the Department of Health's '8-Point Action Agenda.' The summit resulted in action plans for implementing digital health across the nation, reinforcing collaboration among policymakers, technology experts, and healthcare providers.

UNICEF also contributed to the development of key resources, including the Guidebook on Digital Platforms for Health Worker Trainings and SBC Messaging Campaigns, in both English and Spanish. Additionally, the DHIS team played a role in developing WHO digital health guidance documents that aimed to standardize digital health practices and provide countries with actionable frameworks for implementation. In terms of external communication, DHIS attended and led sessions in various international digital health conferences, including the Global Digital Health Forum and the Africa Health Tech Summit, and our LinkedIn page grew to over 13,000 followers.



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Challenges and Lessons Learned

Despite progress, several challenges persisted throughout the year. Limited government financing continues to pose a significant barrier to digitally transforming systems and scaling digital health initiatives, limiting the ability of countries to implement comprehensive digital solutions. Much donor funding continues to be projectized, resulting in challenges handing over to Government and with limited resources to strengthen underlying systems required for their long-term success. Digital capacity and expertise within traditional health roles, from Development Partners to Government, is contributing to challenges in appropriately integrating digital within health programmes and effectively scaling and sustaining initiatives.

National-level challenges, including competing policy priorities, political transitions, and leadership shifts, further complicated the execution of digital health programs.

Finally, engagement with WHO's GIDH highlighted the need for improved collaboration and coordination among global digital health stakeholders, contributing to a common national plan and budget.





Strategic Priorities for 2025-2026

UNICEF envisions a world where every child has access to equitable, safe, and high-quality health services. Through supporting governments and partners to digitally enable and transform these health services, we aim to bridge health disparities, protect children's rights, and empower communities to thrive in the digital age.

UNICEF will continue to advocate for shifts from vertical silos to integrated ecosystems, complementing individual interventions with a systems lens that recognizes and seeks to address underlying health system weaknesses. This shift includes ensuring that all digital interventions are incorporated into national plans and budgets, that digital health solutions are reused and that they support integrated health programming. The focus should not only be on supporting specific health interventions but rather in digitizing health system elements, such as digital literacy of health workers, that are cross-cutting. We will increase focus and investment in the digital health infrastructure that is essential to sustain digital health systems and applications to ensure that all children, especially those in underserved areas, have access to essential health services. This includes expanding access to connectivity and power, collaborating with partners like WHO to contribute to frameworks like the SMART Guidelines to ensure digital platforms maintain fidelity to health guidelines, and supporting last mile solutions such as telehealth.

UNICEF plans to publish Community Health Target Software Standards in the second half of 2025, which will be used to support countries to assess and strengthen their Community Health Information System platforms. Similar investments are planned in Health Workforce Registries and Digital Learning Platforms. UNICEF will continue to expand our work with frontier technologies, including AI and geospatial tools, including focusing on identifying and expanding services to zero-dose communities and children.

To protect children's rights in the digital space, we will continue to prioritize the implementation of stringent data privacy and security measures. This includes policies and regulations that safeguard children's personal health information and training healthcare providers on digital literacy and data protection, ensuring the safe and effective use of digital tools.



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