

Preliminary draft, for validation

WHAT MAKES GHANA AN EXEMPLAR?

GHANA HAS MADE CRITICAL DIGITAL INVESTMENTS TO STRENGTHEN ITS PRIMARY HEALTH CARE SYSTEM, through its focus on enhancing the enabling environment and prioritization of government-led digital health interventions to ensure equitable access to primary health care for all.

GHANA'S HEALTH SYSTEM CONTEXT

Ghana has a decentralized health system. The Ministry of Health (MoH) provides strategic policy direction and Ghana Health Services (GHS), an agency within MoH, operationalizes policy and manages health service delivery at the national and subnational-levels. The National Health Insurance Authority (NHIA) manages the national health insurance scheme (NHIS). Ghana has seen critical improvements in universal health coverage (UHC) over the past two decades, with UHC doubling from 24% in 2000 to 48% in 2023.

FIGURE 1:
Service coverage gains per UHC effective coverage index, 2000-2021 (WHO)

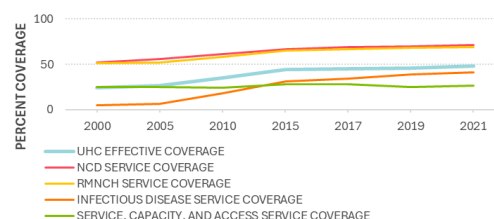
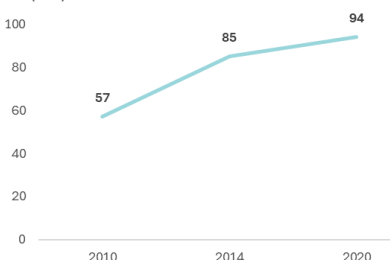
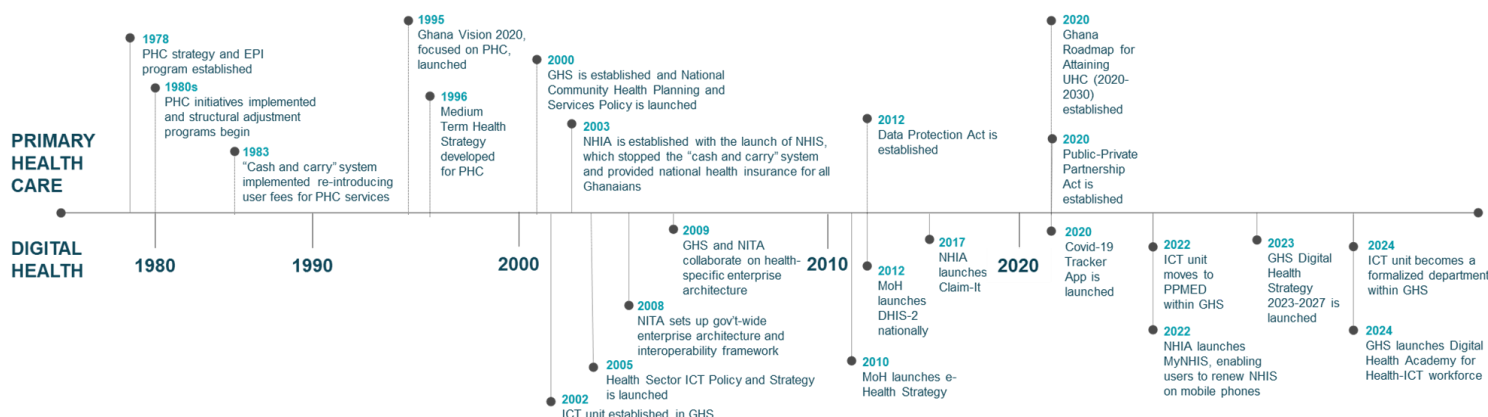


FIGURE 2:
Ghana household mobile phone ownership, % population, 2010-2020 (DHS)



TIMELINE AND EVOLUTION OF DIGITAL TRANSFORMATION OF PRIMARY HEALTH CARE IN GHANA

Starting in the late 1990s to early 2000s, critical health sector reforms have paved the path for improvement of Ghana's primary health care (PHC) system and opportunities for digital transformation. Recognizing the role of ICT in advancing and understanding health needs, key governance structures and policies were established - notably, the launch of an ICT unit within GHS in 2002, strategic ICT related policies for health in the mid-2000s, the foundational e-Health architecture in 2009, and scaling of digital health interventions (DHIs) to improve operational efficiencies of the health system.



GHANA'S APPROACH TACKLED CHALLENGES OF FRAGMENTATION AND SCALE

GHANA'S APPROACH	CHALLENGES
1 Clear and dedicated governance mechanisms to manage digital health transformation	Fragmented, siloed investments resulting in multiple DHIs implemented with limited regulation and governance
2 Increased government investment and prioritization of digital health within budgets	Donor-dependent financing linked to specific health programs and DHIs, exacerbating fragmentation and its sustainability
3 Strategic multi-sectoral, intra-governmental, and public-private partnerships to drive infrastructural improvements	Digital infrastructure in rural, hard-to-reach areas continues to impact issues of adoption and scale of DHIs in low connectivity contexts
4 Development of formalized pre- and in-service digital health training opportunities	Digital literacy and capacity of the workforce is constrained as digital training was primarily linked to specific DHIs and vendors
5 Government-led DHIs that demonstrate impact, steered by meeting user needs	Improving operational efficiency of PHC programs to drive data use for decision-making and meeting health system needs

Keep up to date with findings!

To learn more about Digital Health Exemplars, Ghana and to keep up with upcoming reports and outputs, scan the QR code. This research is led by the University of Ghana School of Public Health, the Johns Hopkins Center for Global Digital Health Innovation, and the Center for Digital Health and Implementation Science at the University of Gondar.



WHAT ARE THE DRIVERS OF DIGITAL TRANSFORMATION WITHIN GHANA'S PRIMARY HEALTH CARE SYSTEM?

1. Clear and dedicated governance mechanism to manage digital health transformation.

Ghana's MoH, GHS, and NHIA drive digital transformation in Ghana. In 2023, the GHS launched the Digital Health Policy and Strategy 2023-2027. It coordinates the sub-national management of digital health transformation through strategic management committees and the recently formalized ICT department in 2024.

2. Increased government investment and prioritization of digital health in budgets.

Investments in digital health are aligned and driven by government priorities and strategies. GHS is working on the development of a financial sustainability plan to reduce donor dependency by integrating digital health-specific financing within national budgets. Review of government budget allocations indicates increasing anticipated investments in digital health with over USD \$6M allocated between 2020-2024 - focused on the implementation of specific DHIs, integration of information between DHIs, management of health information systems, facility ICT maintenance, among others.

3. Strategic multi-sectoral, intra-governmental, and public-private partnerships to drive infrastructural improvements.

Ghana has a mobile internet data penetration rate of 80.3% (April 2025) and total population access to electricity was 89.4% (2024). Although this coverage is relatively high, it remains concentrated in urban/semi-urban areas. Through the Ghana Digital Acceleration Project (GDAP) and the Ghana Investment Fund for Electronic Communications (GIFEC), Ghana is making advances in improving connectivity and infrastructure for health. Within GDAP, a USD\$200M project with the World Bank and the Ministry of Communications and Digitalization (MoCaD), GHS is working with MoCaD to improve connectivity at 745 public health facilities. GIFEC, which operates under MoCaD, requires the private telecommunications sector to invest funds to support rural connectivity infrastructure.

4. Development of formalized pre- and in-service digital health training opportunities.

Robust efforts are underway to improve digital literacy of the health workforce as well as bridging the gap between the ICT and health workforce. GHS recently introduced a basic ICT course within the pre-service training for the health workforce, established the Digital Health Academy to bolster leadership, management, and digital health competencies for the ICT-health workforce, and is pioneering the equitable redistribution of ICT-health workforce to ensure skills at all levels of the health system.

5. Government-led DHIs that demonstrate impact, steered by meeting user needs.

In Ghana, PHC programs have leveraged digitization to improve operational efficiencies. An analysis of Claim-It and GhiLMIS, two nationally-scaled DHIs, demonstrated significant improvements in driving operational efficiency. Key drivers that facilitated adoption of these DHIs included direct alignment with the government's strategic priorities, national mandate for adoption amongst facilities, intentional design that met user and workflow needs, context-relevant infrastructure, sufficient training, and fostering a culture of data use.

DIGITAL DRIVES IMPROVEMENTS AND IMPACT FOR PHC

CLAIM-IT

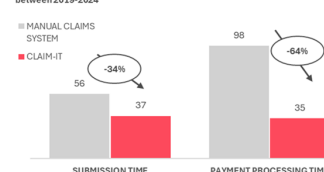
Description: a digital claims management system launched by NHIA to manage NHIS claims.

Scale: used by 5,537 facilities (75.7% public, 17.6% private)

Impact: 2019-2024 evaluation comparing it to previously used manual system found significant improvements in NHIS efficiency, seeing:

- **34% decrease** in average number of days to submit claim
- **65% decrease** in average number of days to process reimbursements
- **23% reduction** in annual operating costs

FIGURE 3: Impact of Claim-It on claims submission and payment processing times between 2019-2024



GhiLMIS

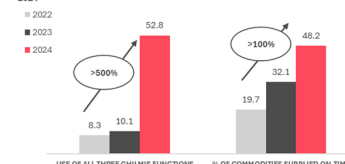
Description: a digital logistics management information system for Ghana's health supply chain.

Scale: used by 4,793 facilities (52.3% public, 9.8% private, 30% other)

Impact: 2022-2024 evaluation found improvements GhiLMIS utilization and operational efficiency:

- **52.8% of facilities** using GhiLMIS to order and record receipt and consumption of commodities in 2024
- **48.2% of facilities** receive orders on-time in 2024
- **7% reduction** in annual operating costs

FIGURE 4: Improvements in GhiLMIS utilization and operational efficiencies, 2022-2024



KEY RECOMMENDATIONS



Stronger intra-governmental coordination

Although there is strong governance around digital transformation of PHC, there is need for more structured coordination between MoH and GHS, as well as with other ministries, to facilitate alignment on investments and implementation.



Sustainable financing

Donor dependency on financing digital transformation can impede sustainability, as if the donor leaves, it interrupts service provision and impacts care outcomes. The development and fidelity to a sustainability plan is of critical importance.



Clear role and regulation of the private sector

Recent shifts in government policies have impacted how the private sector has previously participated in Ghana's public health system, underscoring a need for a structured framework for collaboration and regulation of the private sector.



Need for an interoperability framework

Although discussions of interoperability began in the 2010s, it has not seen much progress and was not fully operationalized within the health sector. There are currently efforts underway to ensure better integration and alignment of DHIs, but there is still a need for stronger guidance on data standards and an interoperability framework.