



Building Zimbabwe's Health Data Commons

Harnessing Digital Public Goods for
an Inclusive Health System

Author: Zacharia Grand, Ph.D

Date: November 2025

Executive Summary

Digital public goods (DPGs), such as open-source software (for example, District Health Information Software 2 (DHIS2), OpenMRS, and CommCare), open data standards, and AI models, have proven effective in improving disease surveillance, logistics management, and maternal health monitoring.

In Zimbabwe, this open-source software already forms part of the national health information system, but its implementation remains fragmented with limited interoperability between systems used by the Ministry of Health and Child Care (MoHCC) and donor agencies and NGOs.^[1] In addition, there is inadequate investment in digital infrastructure, particularly in rural clinics; a shortage of digital skills among health workers and data managers; and an absence of open data policies and local innovation incentives stifles private-sector partnership.



As the health sector embraces Smart Health under the Smart Zimbabwe 2030 Master Plan^[2], there is a timely opportunity to build an integrated, interoperable, and inclusive digital health ecosystem powered by DPGs. **The Ministry of Health can leverage DPGs to:**

1

Enhance health surveillance and reporting through interoperable platforms linking community clinics, laboratories, and national databases in real time.

2

Reduce procurement and operational costs by migrating to open-source logistics and health records systems.

3

Improve accountability and transparency via digital dashboards accessible to provincial and national managers.

[1] [WHO Global strategy for Digital Health, 2020-2025](#)

[2] [Zimbabwe Smart Health Master Plan 2030](#)

4

Strengthen community participation through mobile platforms for citizen feedback and health rights reporting.

5

Promote local innovation and data sovereignty by supporting domestic developers to adapt DPGs to Zimbabwe's health priorities.

The following actions are critical to achieving these goals:

Table 1: Action Areas for Zimbabwe's Digital Health Transformation (2025-2030)

Action Area	Practical Steps (2025–2030)	Lead/Partners	Expected Outcomes
1. National Digital Health Commons Strategy	Establish a dedicated MoHCC Digital Public Goods Unit to coordinate open-source health data systems; align with the Smart Zimbabwe 2030 plan and AU Digital Health Strategy.	MoHCC, Ministry of ICT, WHO, UNDP	Integrated governance of health data and technology standards.
2. Interoperability & Data Integration	Consolidate disparate donor systems into a single, MoHCC-led National Health Information Exchange (NHIE) using open-source APIs.	MoHCC, CDC Zimbabwe, PEPFAR, GIZ	Reduced duplication and enhanced efficiency
3. Governance & Ethics	Revise and update the Health Data Protection and Ethical Use Policy (aligned to Cybersecurity and protection of Personal Information Guidelines, 2021).	MoHCC Legal Services, Parliament Portfolio Committee on Health	Strengthened trust and compliance with data privacy.
4. Capacity Development	Introduce digital health trainings for provincial health officers; integrate DPG training modules at local universities.	MoHCC HR Directorate, Universities, WHO	Skilled workforce in digital health management.
5. Infrastructure & Connectivity	Expand internet connectivity in rural health facilities; integrate DPG-compatible Wi-Fi routers and DHIS2 mobile data tools.	Post and Telecommunications Regulatory Authority of Zimbabwe, TelOne, Econet, UNICEF, MoHCC	Improved data reporting and telemedicine coverage.
6. Local Innovation & Partnerships	Partnerships with companies like Google to establish a Zimbabwe Health Innovation Hub to support open-source app development for e-pharmacy, surveillance, and maternal health.	MoHCC, Innovation Fund, private sector	Local start-ups contribute to national health solutions.

Source: Author's construction

Key Policy Message

DPGs are the new infrastructure for public health governance.
Like clinics, roads, and water systems, DPGs must be treated as public goods, built, owned, and governed by the state, with open participation from civil society and innovation partners

2. Research Context

Zimbabwe's health sector is in the midst of a gradual digital transformation, shaped by Vision 2030 and the Smart Zimbabwe Master Plan (2019–2030), which outline a national vision for a connected, knowledge-driven economy. Within this broader digital agenda, the Ministry of Health and Child Care (MoHCC) is pursuing the integration of information and communication technologies (ICTs) to enhance efficiency, data use, and equity in health service delivery.

The National Health Strategy (2021–2025) underscores digitalisation as a critical enabler of Universal Health Coverage (UHC) and improved governance in the health sector^[3]. Digital tools are increasingly embedded in public health operations, from disease surveillance to logistics and patient management. The national digital health landscape now includes platforms such as the District Health Information System 2 (DHIS2), OpenMRS Electronic Logistics data-driven planning and performance monitoring.^[4]

Zimbabwe's policy frameworks reflect growing recognition of digital health as a driver of resilience and sustainability. The Smart Zimbabwe Master Plan envisions a unified approach to digital transformation across government, and the health sector has begun aligning with this vision through the adoption of interoperable, standards-based systems^[5]. These efforts support improved coordination, transparency, and the use of real-time data to strengthen health outcomes.

Emerging concepts such as Digital Public Goods (DPGs) provide new opportunities for Zimbabwe to consolidate its digital health architecture under open, locally governed, and cost-effective models. DPGs, defined by the UN Secretary-General's Roadmap for Digital Cooperation, promote principles of transparency, privacy, and accessibility, ensuring that digital systems contribute to equitable and sustainable development.

[3] [National Health Strategy-2021-2025](#)

[4] [Zimbabwe Smart Health Master Plan 2030](#)

[5] [Ibid](#)



Zimbabwe's digital health efforts, both regionally and globally, align with a broader policy momentum. The African Union's Digital Transformation Strategy for Africa (2020–2030), the SADC Digital Cooperation Agenda (2021), and the Africa CDC's Digital Health Blueprint (2022) all advocate for interoperable, DPG-based health information systems.^{[6][7][8]} These frameworks encourage member states to develop National Digital Health Architectures (NDHAs) grounded in open standards such as DHIS2, OpenHIE, and FHIR.

When Zimbabwe aligns its national priorities with these continental and global initiatives, it has the potential to build an integrated digital health ecosystem that strengthens health system performance, enhances regional collaboration, and positions the MoHCC as a proactive participant in Africa's evolving digital health landscape.

3. Structural and Governance Barriers to Zimbabwe's Digital Health Transformation

Zimbabwe envisions a digitally connected, knowledge-driven health system. However, progress towards this goal remains limited due to policy fragmentation, donor dependency, weak infrastructure, human capacity gaps, and inadequate institutional oversight^[9]. Their combined effect is a digital health landscape that is active but uncoordinated, technologically advanced in pockets yet institutionally fragile.

[6] SADC Digital Transformation Strategy and Action Plan 2021-2025

[7] Africa CDC Digital Plan, 2023

[8] African Union Digital Strategy

[9] Global health monitoring and evaluation partnerships as contested spaces in Zimbabwe: Local partner resource and power rationalisation strategies

Table 2: Structural and Governance Barriers to Zimbabwe’s Digital Health Transformation

Barrier Category	Description	Implication for Health Governance
Policy & Regulation	Lack of Digital Health Commons Framework; unclear mandates between MoHCC and ICT bodies	Fragmented systems and weak interoperability
Donor Dependency	Multiple non-integrated platforms and agreements	Duplication, inefficiency, and data silos
Governance & Financing	Inactive leadership structures; no unified digital budget	Weak accountability and misaligned investments
Infrastructure	High data costs, limited connectivity, unreliable electricity in rural areas	Unequal access and delayed data reporting
Human Capacity	Low digital literacy and limited open-source skills	Weak system ownership and data use

Source: Author's construction

3.1 Fragmented Policy and Institutional Frameworks

Zimbabwe’s digital health ecosystem operates without a unified DPG Framework to define open standards, interoperability, and ethical data governance. The eHealth Strategy (2012–2017) has lapsed, and neither the Smart Zimbabwe Master Plan nor the Cyber and Data Protection Act (2021) provides sector-specific guidance for health data sharing or patient consent.^{[10][11]} The result is a proliferation of siloed systems that reflect programme-specific priorities rather than national coherence.

For instance, the DHIS2 underpins routine data reporting across all 63 districts, yet it does not interface with the Electronic Logistics Management Information System (eLMIS), OpenMRS (used for HIV care), or CommCare, a mobile platform for maternal health. Each operates under separate donor custodians like PEPFAR, USAID, UNFPA, and WHO, with incompatible data standards and governance structures.^[12]

[10] [Implementing e-Health initiatives in Zimbabwe's public health sector](#)

[11] [Global-observatory-on-digital-health - Zimbabwe ehealth](#)

[12] [Ibid](#)

This fragmentation prevents patient data from flowing seamlessly across services: for example, antenatal data captured via CommCare are not linked to DHIS2, meaning a mother's clinical journey from pregnancy to postnatal care cannot be tracked. These silos not only weaken evidence-based planning but also inflate operational costs. A World Bank review found that Zimbabwe could save US\$3-5 million annually by consolidating DHIS2 and eLMIS under a unified architecture—resources that could otherwise strengthen frontline services.^[13]



3.2 Donor Dependency and Parallel Systems

While international partners have been instrumental in supporting Zimbabwe's digital health initiatives, the proliferation of vertical, donor-managed platforms has created a patchwork of incompatible systems. PEPFAR's DATIM platform, for example, collects HIV/AIDS data separately from MoHCC's DHIS2, while Go.Data (for outbreak management) operates independently under WHO oversight.

Each platform is governed by distinct data-sharing agreements, which are often hosted on external servers, undermining national data sovereignty. This model has produced a paradox: significant donor investment has expanded access to digital tools but simultaneously weakened local coordination and domestic innovation.

The result is a digital landscape where the MoHCC is the primary beneficiary but not the primary owner.

Neighbouring countries offer contrast. Rwanda consolidated donor systems into a single, government-led digital health architecture and now saves over US\$1.2 million annually in maintenance costs while maintaining data control.^[14] The Kenyan Ministry of Health co-developed DHIS2 modules with local universities, reducing reliance on foreign consultants and fostering sustainability.^[15] Zimbabwe's fragmented model, by comparison, continues to externalise costs and expertise.

^[13] [Zimbabwe Health Sector Public Expenditure Review for 2021 Fiscal Year](#)

^[14] [Africa-cdc-annual-report-2022](#)

^[15] [A model for post-implementation evaluation of health information systems: The case of the DHIS 2 in Kenya](#)

3.3 Weak Governance Oversight and Accountability

Governance weaknesses are the underlying thread connecting these systemic challenges. The Digital Health Steering Committee, established in 2018 to coordinate digital initiatives, has remained largely inactive. There is no central dashboard to monitor digitalisation progress, nor a unified budget line for health ICT investments. Procurement regulations still favour proprietary vendors, reinforcing lock-ins with external service providers.

This governance vacuum limits transparency and strategic direction. Without a defined accountability mechanism, digital initiatives are implemented in isolation, and there is no institutional mechanism to evaluate return on investment or data integrity. The absence of a Health Data Governance Framework further exacerbates public mistrust: under the Cyber and Data Protection Act (2021), health data protection remains generic, lacking sector-specific consent and sharing protocols.

Such a governance lapse has broader implications. It prevents Zimbabwe from aligning effectively with regional frameworks like the African Union's Digital Transformation Strategy (2020–2030), the SADC Digital Cooperation Agenda (2021), and the Africa CDC Digital Health Blueprint (2022), initiatives designed to promote interoperable digital infrastructures across the continent. As a result, Zimbabwe remains a marginal participant in regional health data exchanges, missing opportunities for epidemic preparedness, cross-border surveillance, and regional policy influence.



3.4 Human Capital and Capacity Deficits

The sustainability of DPGs depends on a digitally literate workforce and a supportive innovation ecosystem. Yet Zimbabwe faces acute human resource gaps in both areas. Fewer than 25% of district health officers have received formal training in data analytics or digital health management.^[16]

Provincial ICT units are understaffed, often with no dedicated personnel for open-source software deployment or systems maintenance.

At the innovation end, local universities and developers such as those from the Harare Institute of Technology (HIT),

^[16] [Migration management and health service delivery: A case of the Zimbabwe public health](#)

the University of Zimbabwe, and the National university of Science and Technology (NUST) possess relevant expertise but lack access to structured partnerships or innovation grants. Consequently, digital solutions are frequently imported or externally maintained, increasing costs and reducing local ownership.

Experience from past donor-funded projects illustrates this fragility. Digital tools introduced for malaria surveillance and maternal health collapsed once donor funding ceased, primarily due to inadequate maintenance and technical transfer^[17]. This pattern has entrenched a dependency cycle: when external support phases out, the systems follow.

3.5 Infrastructure Gaps and Digital Exclusion

Digital infrastructure remains a major determinant of who benefits from digital transformation. The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) Annual ICT Report (2023) shows that while 62% of Zimbabweans are online, only 34% of rural households have stable connectivity, and mobile broadband penetration stands at 49%. Rural facilities in provinces such as Masvingo, Matabeleland North, and Mashonaland Central often operates without reliable electricity, forcing staff to revert to paper-based registers.^[18]

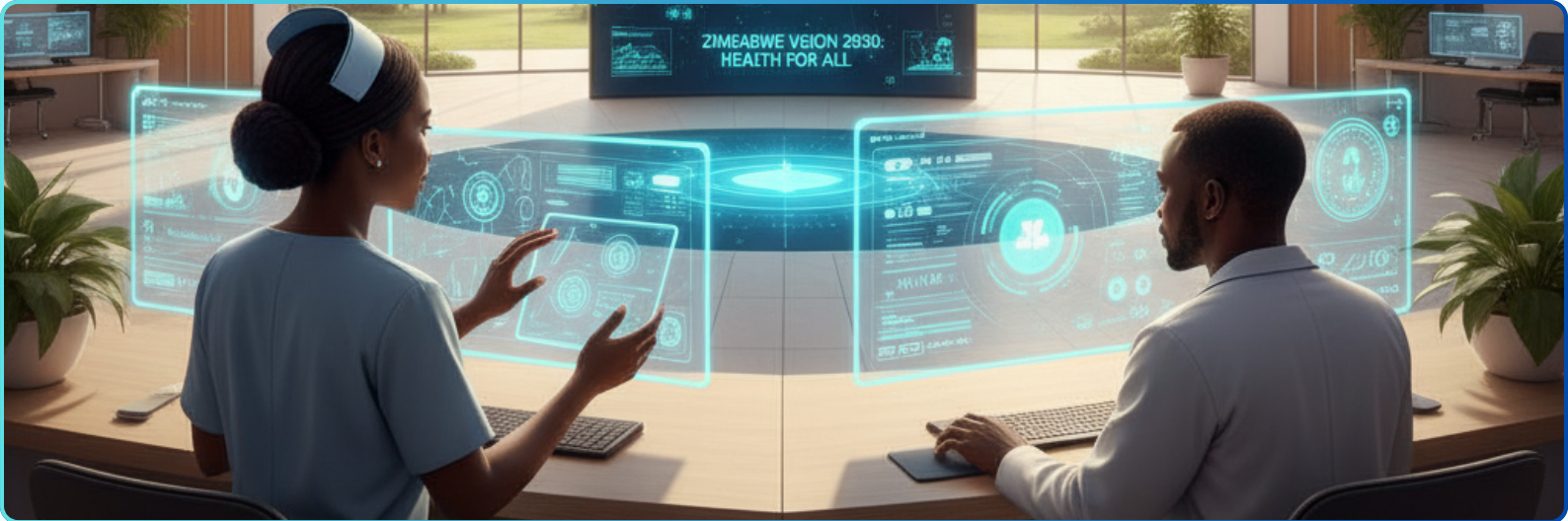
Health workers in these areas routinely use personal mobile data to upload reports to DHIS2 or CommCare, a practice that not only introduces inequity between well-funded urban hospitals and rural clinics but also threatens data timeliness. With mobile data averaging US\$10 per gigabyte, among the highest rates in Africa, digital participation becomes economically prohibitive.^[19]



This infrastructural gap is not merely a technical limitation; it translates directly into health inequities. Facilities that cannot submit real-time data are excluded from national dashboards, delaying outbreak detection, vaccine stock tracking, and maternal death audits. Rural communities where disease burdens are highest thus remain disconnected from innovations meant to improve their care.

[18] [POTRAZ-Annual-Sector-Report-2024](#)

[19] [ITU Facts and Figures 2024](#)



4. What is at Stake?

The cumulative effect of the structural barriers noted in the previous sections is a fragmented and inequitable digital health landscape. Policy gaps create institutional confusion; poor infrastructure excludes rural populations; human capacity deficits stall innovation; donor dependency limits sovereignty; and weak governance undermines accountability.

This fragmentation limits Zimbabwe's ability to deliver on Universal Health Coverage (UHC), slows pandemic response, and drains scarce public resources. Each disconnected system represents not just duplication but lost opportunity: opportunity for data-driven policymaking, for local innovation, for youth employment, and for regional leadership.

Empirical evidence from across Africa shows the benefit of integrated digital health systems. For example, Rwanda's consolidated architecture improved pandemic surveillance and deepened digital health capabilities^[20].

Kenyan academic–government collaborations on open-source platforms have fostered greater sustainability and local capacity^[21]. By contrast, Zimbabwe's continued reliance on fragmented donor-led systems perpetuates inefficiencies and limits access for rural and marginalised groups. Without a coordinated Digital Public Goods Strategy for Health, Zimbabwe risks deepening its dependence on external technologies that compromise sovereignty, entrench inequality, and erode fiscal efficiency. DPGs are not simply ICT tools; they represent core public infrastructure essential for governance, inclusion, and national resilience.

Treating digital health systems as public goods, open, secure, and collectively governed, would align Zimbabwe's transformation agenda with its development vision. More importantly, it would redefine digitalisation not as a donor-financed project but as a state-led investment in equity, efficiency, and sovereignty.

[20] [WHO case-study- Rwanda-leveraging-existing-digital-infrastructure-for-the-covid-19-vaccination-response](#)

[21] [Implementing an Open Source Electronic Health Record System in Kenyan Health Care Facilities: Case Study](#)

Digital Public Goods are the new infrastructure for public health governance.

Like clinics, roads, and water systems, DPGs must be treated as public goods, built, owned, and governed by the state, with open participation from civil society and innovation partners

5. Policy Recommendations (2025–2030)

The proposed policy recommendations include broadly building an integrated, inclusive, and sovereign Digital Public Goods (DPG) ecosystem that strengthens Zimbabwe's health governance and service delivery. The following are specific recommendations

Table 3: Policy Recommendations for Zimbabwe's Digital Health Transformation (2025-2030)

Strategic Area	Key Action Steps	Key Partners	Expected Outcomes
National Digital Health Commons Strategy	• Formulate and adopt a Digital Health Commons Policy (2025). • Integrate DPG principles into the next National Health Strategy (2026–2030). • Establish the MoHCC Digital Health and Innovation Directorate.	MoHCC, Min of ICT, Cabinet Office, WHO	Unified governance of digital health systems and policy coherence
Interoperability & Data Governance	• Develop ZimHIE based on OpenHIE standards. • Mandate open-API compliance for donor systems. • Draft Health Data Ethics Bill.	MoHCC, WHO, Africa CDC, Parliament	Seamless data exchange & privacy protection
Infrastructure & Connectivity	• Deploy broadband and Wi-Fi for district hospitals. • Negotiate zero-rated health data with telcos.	POTRAZ, Econet, TelOne, UNICEF	100 % of district facilities online by 2028
Human Capital & Innovation	• Launch Digital Health Fellowships for 100 provincial officers. • Set up Health Innovation Hub (linked to HIT & UZ). • Provide small grants to local developers.	MoHCC, HIT, NUST, Private sector	Skilled workforce & local solution ecosystem
Regional Integration & Resilience	• Align with the SADC Digital Health Framework. • Link Go.Data and DHIS2 to regional surveillance nodes. • Host the SADC Digital Health Knowledge Hub in Harare.	MoHCC, Africa CDC, SADC Health Desk	Cross-border surveillance & policy leadership

Source: Author's construction

Key Policy Takeaway

Digital Public Goods are the infrastructure of health governance.

By 2025–2030, Zimbabwe’s MoHCC can reduce digital inequality, save costs, and strengthen health resilience if it treats DPGs as public assets: planned, funded, and governed with the same priority as hospitals and clinics

Acknowledgements: This paper was developed through the Africa’s Data Future Fellowship, a CSEA initiative that builds expert capacity for evidence-based data policy in Africa. The Fellowship is part of CSEA’s wider data governance programme, supported by the William and Flora Hewlett Foundation. The author gratefully acknowledges the project team’s guidance and collaboration.

Disclaimer: The views expressed here are the author’s own and do not necessarily reflect the positions of CSEA, the Fellowship, or the Hewlett Foundation. This work contributes to policy dialogue on data governance and ethical digital transformation in Africa.