

INNOVATOR CASE STUDY



October 30, 2026

Building Digital Public Infrastructure for Health
at the Last Mile for Countries in Africa and Asia

The Global Health Innovation Grants (GHIG) program focuses on fostering the growth and scale of health-focused innovations and social entrepreneurs in low- and middle-income countries (LMICs) through one-year grants. Since 2016, liH has worked with grantees to identify metrics that align with their project objectives and activities. Analyzing this data, liH provides an assessment of the portfolio in each cohort, as well as over time, to identify areas for improvement for the program. *This case study is one of six from the GHIG9 grantee cohort.*



1. Company and Innovation Overview

Simprints is a nonprofit technology company that has worked in 19 countries to date to bring **biometric identification to last-mile health settings**. It was founded in 2015 when Toby Norman and Alexandra Grigore, Simprints' co-founders, observed the problematic link between unreliable paper-based patient health record-keeping and verification of health service delivery in Bangladesh. They sought to provide patients with a **secure digital identity** with the goal of ensuring that every vaccine, every dollar, and every public good reaches those who need them most. To support patient identification and verified service delivery, Simprints **developed the first open-source biometric ID platform**. Through an impact-driven model, its work advances Sustainable Development Goal 3 (SDG 3,



Industry/ Sector	Public Sector/Nonprofit
Geographic Focus	Afghanistan, Bangladesh, Côte d'Ivoire, Democratic Republic of the Congo, Ghana, Ethiopia, India, Mozambique, Kenya, Kiribati, Malawi, Nepal, Nigeria, Somalia, South Sudan, Tanzania, Uganda, Zambia, Zimbabwe.
Year Founded	2015

Business Type	Nonprofit
Headquarters	Cambridge, United Kingdom
AI Innovation	AI-powered biometric identification designed for low-resource, last-mile settings.



Caregivers, patients and children wait to receive healthcare services.
Photo credit: Simprints.

Good Health and Well-being), with links to SDG 2 (Zero Hunger), SDG 10 (Reduced Inequalities) and SDG 17 (Partnerships for the Goals).

As a recipient of the 9th Global Health Innovation Grant (GHIG9), Simprints shows how an **AI-powered digital health ID can become digital public infrastructure through verified service delivery, clear costs, and government partnerships.**

! 2. Problem Definition and Context

According to the World Bank (2025), around 800 million people worldwide still lack official identification, and **2.8 billion lack access to digital ID.**¹ This problem disproportionately affects low- and middle-income countries (LMICs) in sub-Saharan Africa and South Asia. The lack of reliable identification systems poses **significant challenges to healthcare delivery**, leading to inequitable access to essential care, services, medicines, and vaccines. Moreover, healthcare data is predominantly paper-based, with data quality concerns. Without real-time data and digital tracking systems, administrative vaccination coverage data can diverge from WHO/UNICEF estimates by more than 10% in over half of the Gavi-supported countries.² This **systemic gap leads to a cascade of inefficiencies, fraud, and waste** in healthcare resources and ultimately costs lives.

Yet the identity gap only scratches the surface. It points to a **structural gap: the absence of a digital public infrastructure (DPI)** in healthcare in low-resource regions. DPI refers to the foundational digital systems that support both public and private service delivery. In healthcare, common DPIs include digital identity, digitized health records, online payment systems, and communications networks.³ Within this infrastructure, reliable digital identity and health records form a base layer. Biometric technology enables a connected patient identity, ensuring that an individual is linked to a single longitudinal health record across different programs. Without a unified system to establish this connected patient identity, **data remains fragmented and service delivery stays siloed**, with **weakened accountability** mechanisms. As a result, each vertical program, whether focused on vaccines, nutrition, or maternal health, constructs its own partial representation of the patient, leaving the broader health system without an integrated, person-centered view.

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3. The Solution

To address these gaps, Simprints developed the **world's first open-source biometric digital ID** that has now been deployed across the public health sector and non-governmental organizations in up to 19 countries. Its **core value proposition is verified delivery**, which is the ability to prove that a specific health service reached a specific individual at the last mile. By triangulating biometric, biographic, Global Positioning System (GPS), and timestamp data, Simprints provides the "single source of truth" in low-resource settings where accurate data tracking is absent.

Unlike other commercial biometric systems that are primarily built for Western populations, **Simprints' AI-enabled technology is trained on custom datasets from marginalized populations** it intends to serve. This approach significantly enhances the system's accuracy in low-resource settings, including rural areas where fingerprints might be worn out due to manual labor, or for individuals with diverse skin tones. To better reach the last mile, the AI tools are **built to operate offline on low-cost smartphones**.

Specifically, Simprints provides biometric identification through an integrated offering:

- **Simprints ID**, an open-source, interoperable biometric ID application with no vendor lock-in. It can be integrated with a wide range of existing data collection platforms and can run on multiple biometric algorithms.
- **Biometric algorithms**, which are mathematical engines that process and match biometric data to a person's identity.
- **Flexible data hosting**, including secure cloud backend or on-premises deployments, is paired with built-in analytics and data visualization capabilities.

Simprints tailors its ID solution by customizing both the biometric technology and digital workflow to fit each partner's operational needs. Reflecting this adaptive approach, Simprints has transitioned away from hardware fingerprint biometrics toward contactless modalities,



Frontline health worker captures biometrics to verify individual patients in Ghana. Photo credit: Simprints.

primarily facial biometrics, while actively developing contactless face, ear, and foot modalities for infants from birth. Beneath these capture tools, Simprints powers real-time M&E and data analytics services, including defaulter tracking, deduplication, and data-driven diagnostic loops. By verifying individual patients at the point of care, **enhanced data accuracy** provides partners with a true map of verified coverage. With visibility on who has been reached and who has been missed, Simprints enables health systems to **precision-target** those who are missed, ultimately helping to transform verified coverage into increased coverage.

Underlying these tools is a **rigorous data protection protocol**. Since Simprints works with highly sensitive biometric data, the organization complies with strict data-protection laws, including General Data Protection Regulation (GDPR; a comprehensive data privacy law enforced by the European Union), and maintains security through encryption and data-siloing. It has also invested in setting standards for the field,

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Impact at a Glance

4.5M+	Individuals biometrically enrolled across 19 countries
10x	Faster patient identification vs. manual search
12:1 ROI	Every USD\$1 invested yields almost USD\$12 in social benefits
28%	Increase in birth plan completion among pregnant women
65 percentage-points	Increase in data completeness (from 27 to 92%)
6,699	Frontline users to date

partnering with the International Committee of the Red Cross on biometric template protection,⁴ and co-publishing a [Responsible Biometrics Handbook](#)⁵ with IBM and Oxfam.

Simprints provides **biometric patient identification that is up to ten times faster than a manual search**, and has reached more than 4.5 million individuals across 19 countries. Simprints' efforts have led to a 65-percentage-point increase in data completeness in Ghana and a 28% increase in birth plan completion among pregnant women in Bangladesh. The technology is **designed for scale**, with the average cost per enrollment falling by about USD\$0.50 for every 10% increase in enrollments. To date, 6,699 frontline health workers have adopted Simprints' solution to deliver services at the last mile.^{2,6}



4. Implementation Strategy

To deploy the solution, Simprints operates through two complementary partnership pathways. Under its business-to-government (B2G) model, it **works directly with Ministries of Health** with the support of multilateral funders such as Gavi and UNICEF. Through its business-to-business (B2B) model, the organization provides

tools to international NGOs and implementation partners delivering nutrition and vaccine programs. Simprints follows a hybrid operational model that is centralized in its technology and decentralized in its delivery. While the core algorithms are originally developed in the UK, Simprints provides user-centered solutions tailored to the unique operational contexts they serve. Before deploying the service in a new program or country, the organization actively engages with frontline health workers who will use the system and conducts surveys and user-acceptance testing to ensure that the tools align with the service delivery needs. Instead of replacing existing systems, Simprints adds a complementary identity layer that improves local workflows and **builds on existing digital health systems**.

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In practice, through its B2G pathway, Simprints partnered with the Ghana Health Service to integrate its tools into their national health information system (DHIS2), aligning its work with Ghana's national Digital Health Strategy. In Ethiopia, Simprints worked with the Ministry of Health to align with the Federal Government's "Information Revolution" agenda, driving the rollout of eCHIS, the electronic community health information system that Simprints now works directly on to help scale.



5. Challenges Faced

For Simprints, the challenges in scaling do not lie in AI or technology development, but in the implementation gap between the tool and the health system, from the clinic bench to the national budget. The **lack of digitized systems in LMICs** presents the first challenge. Simprints' tools are designed to integrate with existing digital infrastructure, yet in many regions that foundational infrastructure is thin or absent.



Frontline health worker captures biometrics to verify individual patients in Ghana. Photo credit: Simprints.

This leaves health facilities insufficiently digitized for the technology to integrate and function as intended. When the technology is successfully integrated, health systems are often not yet prepared to fully rely on digitized records. Many clinics continue to require frontline workers to complete paper-based registration by hand. As a result, the digital registry becomes an added workload rather than a relief, counteracting the intended benefits gained from adopting a digitized database.

Governance and data ownership create the second challenge. Given the sensitivity of biometric data, Simprints operates within an already stringent regulatory environment, spanning the [United Kingdom's GDPR](#) and the data-protection laws of each country in which it works. In addition, governments are increasingly seeking stronger ownership and control over their citizens' data. This encourages Simprints to re-engineer for local, in-country hosting instead of its centralized cloud architecture.

Beneath these operational and regulatory challenges lie questions of financing and

sustainability. To date, Simprints' funding has been structured primarily as grants. Most grants in global health run for 1 to 3 years. Building identity infrastructure inside a national health system takes longer than that, and a project that ends at Year 2 stops before the cost per person has fallen far enough for a ministry to absorb it. Roughly 87% of Simprints' funding came from large multilateral organizations, with about 11% from smaller foundations and 2% from corporate partners. While **incorporation into Ministry of Health budgets remains a goal**, the current grant-based funding structure exposes Simprints to **financial risk amid ongoing budget cuts** across the global health sector.



6. How Challenges Are Overcome

Simprints addresses infrastructure, data sovereignty, and sustainability challenges by building the necessary digital foundations where they are lacking and aligning its tools with national priorities. In Ethiopia, Simprints is partnering with the Ministry of Health to establish digital health infrastructure at scale. In Ghana, Simprints is working with the Ghana Health Service to minimize parallel paper reporting, recognizing full digital adoption will require the removal of redundant paperwork. To meet data sovereignty requirements, Simprints is **exploring local hosting options**, viewing these growing requirements as opportunities to develop customized, replicable solutions for each country.

For long-term financial sustainability, Simprints is diversifying its funding base and building evidence to support transparent pricing. The organization is developing **per-child and per-verification costing** and exploring a **software-as-a-service model**, aiming to empower Ministries of Health to directly budget for these services instead of relying solely on grant funding.

In Ghana, at the point of care, a child's facial biometrics are captured on the health worker's tablet device.

Photo credit: Simprints.



Overall, Simprints does more than deploy tools—it helps build and reinforce the foundational systems that enable successful integration. By addressing infrastructure, data sovereignty, and financing holistically, Simprints demonstrates how AI-enabled patient identification can serve as digital public infrastructure.



7. Government Adoption and Public Sector Role/Sustainability

Simprints is integrated into the Ghana Health Service's national DHIS2 e-Tracker, in line with Ghana's Digital Health Strategy, and has now piloted linking the biometric patient record with national credentials, forming an additional verification layer. Ethiopia's Ministry of Health is embedding it in eCHIS, the national community health information system. Government **adoption of new infrastructure follows a sequence.** Ministries integrate a system into national workflows before they budget for it, and they budget for it once the cost per person is known and the return is demonstrated. Simprints is at the integration stage in Ghana and Ethiopia. Simprints' Randomised Controlled Trial (RCT) in Ghana, reporting in 2026, is designed to produce the cost-effectiveness evidence that procurement decisions require.

While ministries are beginning to integrate Simprints' services into national systems, most

governments do not yet finance these services from their own budgets. Simprints is **developing per-child and per-verification pricing** so that ministries can enter these services into their own budget lines rather than route them through grants.



8. Business Model

As a nonprofit organization, Simprints sustains its work through a diversified revenue model spanning philanthropic, multilateral, and corporate sources. These sources are allocated strategically across implementation and research. Support from The Pfizer Foundation, Gavi, ARM, and ClIFF is driving national scale-up in Ghana and Ethiopia. Corporate partners tend to fund research and development, such as the organization's work on AI-driven infant biometrics. **Building sustainable digital health infrastructure requires patient capital.** While short grant cycles are vital for early innovation and project-level momentum, high-risk R&D demands multi-year, embedded backing so that technology, local health systems, and policy frameworks can mature together.

The economic case for patient capital is clear: data across seven projects shows that Simprints' **unit costs drop sharply as deployments scale** over time. The average cost per biometric enrollment falls by about USD\$0.50 for every 10% increase in enrollments, and the cost per output drops by

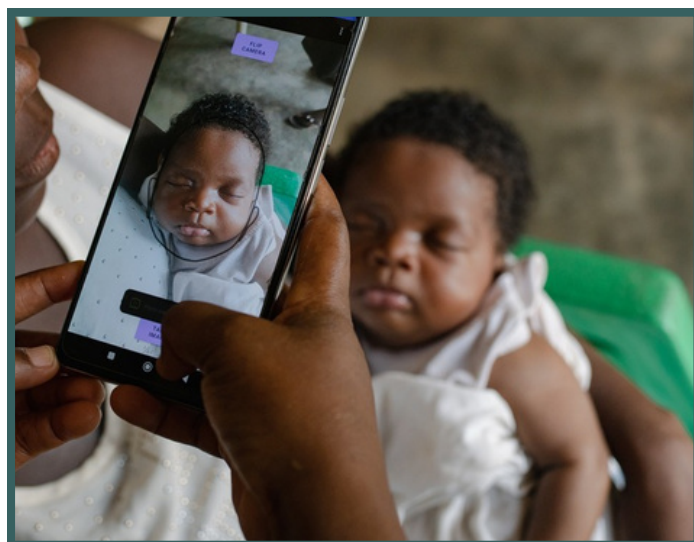
90–95% between a project’s Phase 1 and Phase 3. This cost-effectiveness is particularly evidenced for vaccines that require multiple doses. For instance, the RTS,S malaria vaccine needs four doses; without reliable identification and follow-up, children default and do not complete their courses, reducing the effectiveness of vaccine protection and the overall investment spent on vaccines. Simprints’ technology ensures that resources spent on vaccines translate into fully immunized children. **Multi-year commitments allow deployments to push past initial set-up costs** into the cost-effective Phase 3, laying the foundation for transparent per-child and per-verification costing that provides Ministries of Health the certainty needed to take on the solution permanently.

Nevertheless, the model’s long-term financial viability remains unresolved. **Simprints still depends heavily on donor funding**, and the central question is whether governments will move from integration to procurement. Simprints’ RCT in Ghana will generate evidence on vaccine coverage gains, cost-effectiveness, and data accuracy to drive government adoption, national scaling, and long-term public health funding. By demonstrating clear health and operational ROI, it will provide governments with the justification needed to fund Simprints directly through a permanent national budget line item.

9. New Areas to Explore

Looking ahead, Simprints will focus on three aims:

- Strengthen its B2G pathway through deeper integration into national digital public infrastructure as countries scale their own national identity systems.
- Expand its B2B customer base by developing a software-as-a-service (SaaS) model that would allow partners to access specific components of the platform at a lower cost.
- Invest in AI-driven infant biometrics to ensure that, from birth, children are not lost to the health system.



As part of Simprints’ technical development of infant biometrics, a frontline health worker captures images of the foot, ear, and face. Photo credit: Simprints.

As Gemma Kippax, Simprints’ Partnership Associate, highlights, developing accurate and inclusive biometric models “requires sustained time and investment to ensure they can scale reliably across diverse populations.” Building systems capable of reaching those at the last mile, and identifying infants who have historically been the hardest to connect with care, is **fundamentally a long-term initiative**. But it is precisely where Simprints is focusing its efforts.

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Through the journey of navigating impact and sustainability, Simprints has learned that **the future of AI-enabled biometric identification ultimately depends on how it is financed and governed**. Simprints has shown that patient identification supports more reliable service delivery and clearer accountability for who is reached. The next phase turns on procurement. Simprints has shown that patient identification can work as public infrastructure, and the question now in front of Ministries is how to fund it from their own budgets. ★

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AI Disclosure

During the preparation of this case study, the authors used Zoom's built-in AI transcription to transcribe interviews and Claude Opus 4.8 to improve the readability and flow of the manuscript. The editor used Canva AI tools to edit maps. After using these tools, the authors and editor reviewed the content as needed to ensure accurate representation of the information.

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