simprints
every person counts

Impact Review 2024

3 million PEOPLE REACHED

I am incredibly proud to share that in 2024, Simprints surpassed **3 million biometric enrolments**, enabling each of those individuals to receive verified life-saving assistance, including critical vaccines, medicines, and healthcare access, supporting frontline workers to deliver services more efficiently, and equipping stakeholders with accurate real-time information.

Just recently, we marked Simprints' 10-year anniversary, and while this report focuses on our work over the last year, it's also a key moment to reflect back on a decade of impact:

- **52 projects in 17 countries**
- **5000+ Simprints ID users**
- **100+ global partners**
- **500,000+ duplicate records identified**
- **56% increase in linking women to HIV care (Malawi study)**
- **39% increase in maternal health coverage (Bangladesh study).**

In 2024 alone, Simprints delivered **seven projects in three countries** reaching **655,679** unique people through **1,362 trained** and equipped frontline workers actively using our technology. In Ethiopia, our research showed that the introduction of biometrics reduced service time by **over 50%**, delivering results in just **57 seconds**, compared to **1-3 minutes** with manual name searches or ID card look-ups. In a large-scale accuracy research in Ghana, Simprints technology was found to be **98.3%** accurate when using facial recognition, and **94.3%** accurate when using fingerprint recognition – an outstanding result given the the prevalence of worn and scarred fingerprints as a result of the widespread engagement in farming and manual work.

Over 2024, Simprints has continued to strengthen the way we monitor and evaluate the impact and cost effectiveness of our work in order to support our partners to deliver high-impact programmes. Our 2024 Impact Review highlights some of the achievements our team is most proud of this year, along with the learning and reflection that we intend to build on in 2025 and beyond to achieve our mission to transform the way the world fights poverty and disease.

Dr Toby Norman
CEO, Simprints

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The Challenge

1 in 10 people worldwide – more than 850 million people – lack any official form of identification (World Bank, 2022), and even more – at least **1.1 billion people** – have no digital record of their identity. This disproportionately affects those living in the Global South, with **1 in 3** people in Africa lacking formal ID. This lack of reliable identification systems makes it incredibly challenging to ensure that resources reach their intended recipients, children receive life-saving vaccinations, and individuals access essential services.

The consequences of inaccurate data, fraud and **inequitable service delivery** are widespread and damaging. Significant discrepancies exist between administrative vaccination coverage data and WUENIC (WHO/UNICEF) estimates.[1] It is common to see estimates of vaccine coverage differ by double digits between administrative and survey-based sources.[2] Less than half of the countries supported by Gavi, The Vaccine Alliance reported survey estimates of vaccine coverage that were within **10** percentage points of administrative figures.[3] It's hard to improve programs without accurate and real-time data. This is part of the reason why up to **29%** of global aid fails to achieve its intended outcomes, reflecting the wide array of challenges that arise from inefficiencies, fraud, and inequities in service delivery.[4]

Closing these gaps requires real-time, high quality data integrated into health systems, yet many systems remain paper-based and hampered by data quality issues.

Simprints Solutions

Simprints builds technology to radically increase transparency and effectiveness in global development. We've developed the world's first open-source biometric digital ID technology with privacy at its core. We support a diverse set of partners to overcome their biggest challenges, using tech innovation and providing technical assistance through a range of portfolios, including routine child vaccination in Ghana and Bangladesh, deworming treatment, and trachomatous trichiasis surgery in Ethiopia.

Simprints unique capacity in technology innovation, global health and impact analytics supports partners to address their challenges relating to health system digitalisation, data quality, client identification, and tracking health care provision at the individual level.

Simprints is committed to upholding and maintaining the trust of the communities we serve by prioritising data protection by design and default. High security standards are integrated into every aspect of our work, ensuring that personal data is safeguarded from the point of capture to storage through end-to-end encryption.

[1] WUENIC (WHO/ UNICEF estimates of national immunisation coverage).

[2] Numerous studies demonstrate the gap between administrative and coverage vaccine data including Galles et al. 2021; Sandefur and Glassman 2015; Miles et al. 2013; Burton et al. 2009; Dykstra et al. 2019.

[3] Gavi, The Vaccine Alliance 2022 2022c. "Data." https://www.gavi.org/typessupport/ health-system-and-immunisation-strengthening/data.

[4] Center for Global Development 2017,
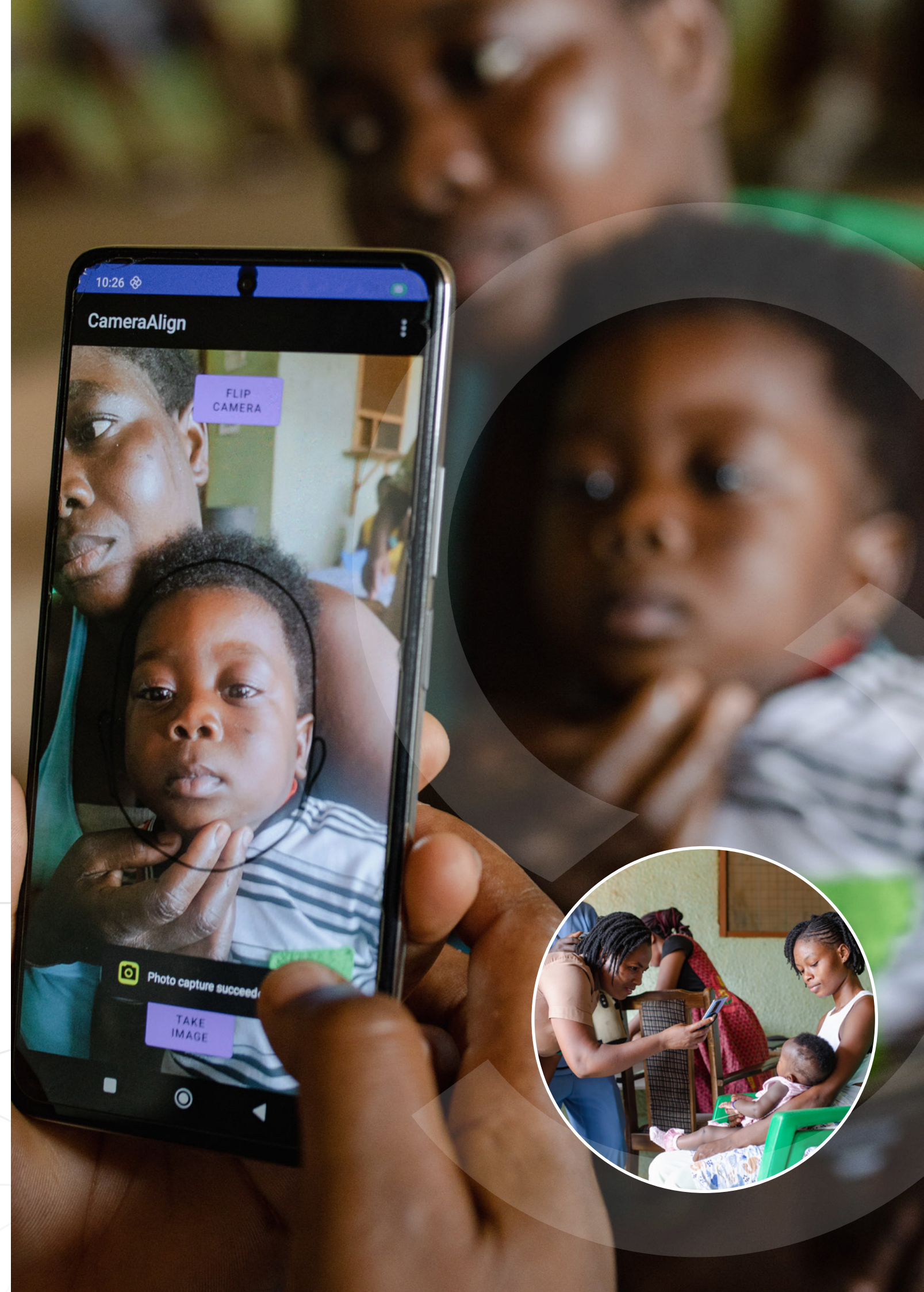
2024 Global Snapshot

In 2024, Simprints implemented seven projects in three countries: **Bangladesh**, **Ethiopia**, and **Ghana**

Achievements:

- **655,679** people biometrically enrolled.
- **551,024** people received at least one biometrically verified health service.
- **1,137** health workers trained over **29** different training sessions.
- **1,362** frontline workers actively using Simprints technology.
- Up to **200** devices distributed (including tablets, scanners, and phones).
- **95%** of the people approached agreed for their biometrics to be taken.

In **Ghana**, Simprints launched a project in collaboration with the Ghana Health Service and Gavi, the Vaccine Alliance, to introduce child biometrics for tracking malaria immunisation and other child and maternal health services across 586 health facilities in the Oti and Eastern regions of **Ghana**. Implementation is planned during 2026. With support from USAID, Simprints began to design a Randomised Controlled Trial to evaluate the project's impact on increasing malaria vaccine coverage.

Sector: Maternal and Newborn Child Health

- **7,598** people reached in 2024 and **41,924** since Simprints' work in Ghana began.
- **6,691** people received at least one biometrically verified health service.
- **120** health workers trained over four training sessions.
- **121** frontline workers actively using Simprints tech.
- **51** tablets and **29** fingerprint scanners distributed in the health facilities.

121
frontline workers actively using Simprints tech

100%
100% acceptance rate by the community in Ethiopia
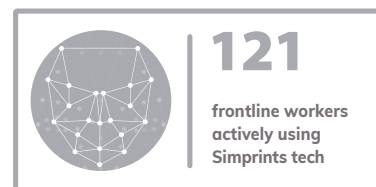
In **Ethiopia**, Simprints is continuing its partnership with the Federal Ministry of Health and NGO partners to enhance digital health systems for delivering primary healthcare, trachomatous trichiasis surgery, and verifying deworming campaign coverage. Through a new project implemented with the Endless Network and Leapfrog to Value, Simprints is further advancing the effectiveness of existing digital health systems by integrating performance-based incentives for community health workers and strengthening systems for performance measurement.

Sector: Health Information System Digitalisation

- **578,688** people reached in 2024 and **1,004,707** all-time.
- **527,696** health services biometrically verified including eye surgeries, maternal and child health services, and deworming medication.
- **1,035** users trained over **29** training sessions.
- **1,185** frontline workers actively using Simprints tech.
- **37** devices distributed.

In **Bangladesh**, we're piloting a toddler biometric solution to verify measles and rubella vaccine delivery at centers across Dhaka and Moulvibazar. In 2024, we obtained ethical approval from the Directorate General of Health Services to continue the pilot. Additionally, we completed research assessing how health centres can support access to social protection services.

Sector: Child Immunisation

- **7,370** people reached in 2024 and **19,400** all-time.
- **23,328** measles and rubella vaccines biometrically verified since the start of the project.
- **56** frontline workers actively using Simprints tech.

>23k
measles and rubella vaccines biometrically verfiied
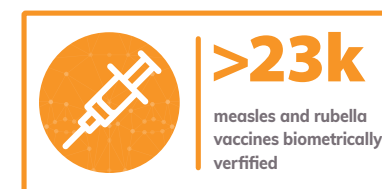
Delivering Results

Quality of Technical Assistance

- In 2024, Simprints trained **720** healthcare workers across Ethiopia and Ghana on biometric technology, resulting in an average knowledge increase of **29.4%**. In Ghana, **99%** of participants rated the training as good or excellent. Confidence in using biometrics as part of daily work was high, with **75%** feeling very confident.

- **77%** of users in Ethiopia expressed satisfaction with the supervision and technical assistance provided by Simprints.

Ease of Use, Improved Efficiency, and Reduced Duplication

- In Ethiopia, **81%** of surveyed IECWs (Integrated Eye Care Workers) felt motivated to use Simprints technology, and **76%** were satisfied with the ease of enrolling and identifying clients.

- In Ethiopia, **100%** of users had a positive attitude toward face biometrics for patient registration and **80%** felt very confident in using face biometrics.

- The majority of IECWs **(63%)** expressed that they would find it inconvenient if biometrics were unavailable because of how efficient they found the tools.

- Biometric identification reduced service time by over **50%**, delivering results in just **57 seconds**, compared to **1-3 minutes** with manual name searches or ID card look-ups.

- Deduplication reduced the number of duplicates in our partners' dataset from **27.8%** to **7.2%**, ensuring real patients receive treatment while eliminating fraudulent reporting.

"For me, the best part of this digital application is during our post-op follow-up of our patients. I simply scan the fingerprints of our patients and quickly locate their records within a few seconds. It was a cumbersome task when done manually from hundreds of lists in the TT registration book. It is an unbelievable technology."
[Interview with frontline health worker]

Community Acceptance

- In our Geshiyaro project in Ethiopia, from an initial refusal rate of **25%** when we first began in 2018, we have now achieved almost **100%** acceptance by the community. Effective community sensitisation increased biometric uptake significantly.

- Among community leaders, **96%** found the biometric technology beneficial for healthcare, and 85% had no concerns about adopting it within their communities.

"I never heard about Simprints before, but I know the community is comfortable with biometrics since they experienced it during mass drug administration many times."
[Community leader, Ethiopia]

"It will prevent fraud ... and ensure that the appropriate person is treated."
[Kebele administrator]

How the Technology Performed

Speed: We monitor session speed for all our projects to provide insights into user experience. During 2024, biometric enrolments took **18-62** seconds; identification of a client using biometrics took between **20-150** seconds and biometric verification took between **11-55** seconds.

Accuracy: Throughout 2024, Simprints collected two datasets to measure the technical accuracy of its biometric systems:

- **In Ghana**, a dataset of **~3,400** individuals was captured over a period of six months. The system was found to be **98.3%**[5] accurate when using facial recognition, and **94.3%** accurate when using fingerprint recognition, particularly high for populations where farming and other manual labour are predominant livelihoods, and thus fingerprints are worn and scarred.

- **In Ethiopia,** a dataset of **~320** individuals was captured over a period of two days. The system was found to be **100%** accurate when using facial recognition, and **92.8%** accurate when using fingerprint recognition.

Simprints also publicly released its first open-source facial recognition SDK (Software Development Kit). The SDK is based on an open-source machine learning model designed for low-spec devices that has proven to be **95%+** accurate on most publicly available datasets.

Stability: Throughout 2024, Simprints technology averaged a **91.12%** crash-free rate.

Cost Effectiveness

During 2024, we have been monitoring some indicative metrics to provide insight into the cost effectiveness of our solution; these include cost per user, per client, and per biometrically verified service.

The scope of our projects ranges from delivering a technology tool to our partners for them to integrate into their own digital platform to providing a full suite of technical assistance, project management, and broader digitalisation services. This means cost drivers vary significantly depending on partner requirements, the maturity of the technical system, and digital literacy levels. In our cost effectiveness analysis, we distinguish between the costs of delivering the technology itself and the support services.

- Cost per client/patient ranges from **$0.06** to **$2.14** for technology costs and from **$0.15** to **$21.71** for service costs.

- Cost per verified service (e.g. verification of each vaccine or surgery delivered) ranges between **$0.03** and **$0.43** for technology costs and between **$0.13** and **$9.95** for service costs.

- Comparing our smallest project to our largest, we see an economy-of-scale ratio of **0.74**, meaning that for every **1%** increase in the number of services verified, the average cost increases by only **0.74%**. This means the cost of solution reduces when working at a larger scale.

By 2026, we plan to develop a full return on investment model and integrate a comprehensive cost effectiveness analysis into our Randomised Controlled Trial research in Ghana.

[5] Accuracy metrics provided are True Match Rate (TMR) when the match threshold is calibrated to give a 1% False Match Rate (FMR).

2024
Spotlight

Impact Deep Dive: Improving Trachomatous Trichiasis Backlog Clearance in Ethiopia through Contactless Biometrics Integration

Operation Sight is a collaborative project implemented with the Children's Investment Fund Foundation (CIFF) funding in partnership with the Federal Ministry of Health (FMoH), Orbis International, and Simprints. The project aims to improve the identification and follow-up of patients undergoing trachomatous trichiasis (TT) surgeries by implementing biometric technology. Traditionally reliant on fingerprint biometrics, the project introduced a contactless face recognition pilot to enhance accuracy, efficiency, and user experience.

Simprints conducted an evaluation to assess the impact of the pilot project on healthcare workflows, community acceptance, and the technical performance of contactless biometrics. During the pilot, more than 600 TT surgeries and 457 follow-ups were recorded on the digital platform, with approximately 75% of reported surgeries biometrically enrolled. The pilot evaluation methodology integrates analysis of primary data collected through user surveys and interviews with building data models using backend data, and compared pre- and post-implementation phases, as well as control versus pilot groups. The study also showed:

User experience and efficiency

- **100%** of IECWs preferred face biometrics over fingerprint due to its speed, ease of use, and hygiene.
- Median session duration reduced from **202 seconds** to **115 seconds (43% improvement)**.
- The good scan rate (a measure of scan quality) increased to **95%** from **55%** in comparison with fingerprint biometrics.
- Users described face biometrics as a "transformative upgrade" in patient identification.

"Face biometrics is faster, more intuitive, and eliminates issues with worn-out fingerprints. It's a game-changer."
[Interview with frontline health worker]

Effectiveness and Community Acceptance
- Faster follow-ups and improved tracking of TT surgeries lead to better continuity of care.
- **100%** of IECWs reported that face biometrics reduced administrative burdens.
- **80%** stated it improved patient identification accuracy.
- Refusal rates dropped from **21%** in control groups to **13%** in treatment groups, indicating higher acceptance of face biometrics. Community trust improved after IECWs addressed privacy concerns, with the majority of community members citing hygiene and speed as key benefits.

Case study:
The Geshiyaro Project
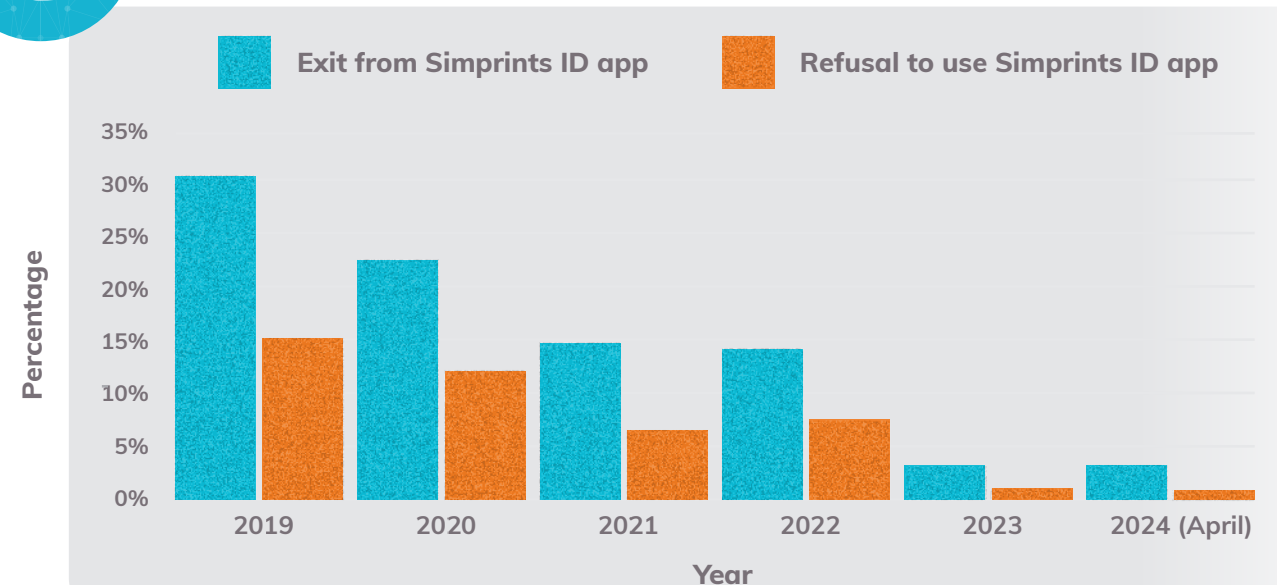### Strengthening efficiency, effectiveness and community trust

The Geshiyaro Project, launched in 2018, set out to develop a scalable and cost effective model to eliminate soil-transmitted helminths (STH) and schistosomiasis in Ethiopia. A critical challenge in mass drug administration (MDA) programmes is ensuring accurate treatment coverage and preventing reinfection. Simprints partnered with the Ethiopian Ministry of Health and Imperial College London to integrate biometric fingerprint technology into the project, improving patient identification, reducing duplicate records, and enhancing data accuracy.

Initially, biometric coverage was low, with less than **50%** adoption in 2019, and community resistance was high, with a refusal rate of **25%**. Through targeted community sensitisation and engagement with local leaders, acceptance rates have now reached nearly **100%**. Over six years, Simprints biometrically identified and supported the treatment of more than **532,000 people** across **48 woredas** in Ethiopia.

Biometric identification significantly improved efficiency, reducing patient identification time from **1-3 minutes** to just **57 seconds**. Additionally, deduplication efforts reduced duplicate records from **27.8%** in 2022 to **7.2%** in 2024, ensuring real patients received treatment and improving the quality of reporting. The introduction of biometric tracking has also demonstrated improved accuracy, with digitally-enabled woredas showing less than **5%** variance in reported coverage compared to **32%** in non-digital woredas.

Following deep sensitisation efforts, we've seen that community members are feeling happy to use Simprints technology. In 2024, refusal rates for the Simprints ID app were nearly 0%.

Legend: Exit from Simprints ID app (blue); Refusal to use Simprints ID app (orange)

Chart: Percentage vs Year (2019, 2020, 2021, 2022, 2023, 2024 (April))

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Our mission is to change the way the world fights poverty and desease. **Inspired?**

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