

Question:

What biometric solutions are being used in health in low-resource settings?

Trisha Finnegan works at Biometrac in biometric identification in health using electronically-scanned fingerprints to identify individuals and track health data (epidemiology, clinical research, interventions, health care, vaccinations, etc). She wanted to know of groups other than OpASHA, VaxTrac and Biometrac using biometrics in low-resource settings?

As part of our question answering service, HealthEnabled sponsored mHealth expert Yuval Brodsky from TinTree International to compile an answer on this topic.

Answer:

The problem of identity theft and fraud is very prevalent globally, and particularly in low-resource settings. This is partly due to the hardships of survival and obtaining basic necessities, such as healthcare, and also due to the ease of committing this type of fraud in places where identification systems are simple. The social and economic repercussions of this activity are severe and very costly to governments and private sectors.

Biometrics offer a robust solution, and are being implemented Africa-wide across a number of different sectors, including healthcare and insurance, and for ePassports, identification, and eDrivers' licences.

This report includes examples of projects using biometrics for healthcare and almost exclusively in Africa. Other geographic regions and thematic sectors are excluded.

It is worth remarking that VaxTrac, OpASHA, and Biometrac were omitted from this report as per the briefing for this report. Many references to these projects have been found, and they are good examples of successful projects using biometrics in low-resource settings. Finally, numerous other projects have been excluded where the information available was too sparse, or they were in a conceptual phase deemed too early to be relevant.

Projects using biometrics

SECURIPOINT BIOMETRIC IMMIGRATION CONTROL SYSTEM	
Key organizations	Securiport
Size	Multinational
Region	7 countries in West Africa
Launch date	2014
Status	Active/being implemented (region-dependent)
As of	02 January 2015
Key issues addressed	Ebola (and spread of other infectious diseases)

Timeline	Currently implemented in Sierra Leone, Senegal, Equatorial Guinea. Implementations in Liberia and Guinea are pending activation.
Cost to users	Free to the local governments
Description	An intelligent biometric system with data analytics for the identification, tracking, and monitoring of people across borders. This implementation has been undertaken by Securiport in order to help empower governments to stop the spread of Ebola across national borders and help contain the virus.

KENYA HIV PATIENTS' BIOMETRIC REGISTRATION

Key organizations	Government of Kenya
Size	National
Region	Kenya, starting with Homa Bay and Mombasa counties.
Launch date	January 2015
Status	Planned
As of	15 September 2014
Key issues addressed	Patient retention, double registration, patient verification, patient record synchronization
Funding sources	Kenyan Government
Timeline	Implementation is to start in January 2015 in Homa Bay and Mombasa counties, with all other counties following in March 2015.
Description	The Kenyan government has mandated that all HIV/AIDS patients in participating regions are registered biometrically. This will be used to address the key issues above, ultimately improving patient outcomes and reducing the prevalence of the disease.

BIO-SNAPON

Key organizations	Catholic Health Services (CHS) Namibia; M2SYS Technology
Size	National
Region	Namibia
Launch date	2009
Status	Active
Key issues addressed	Patient identification, authentication, identity and records management
Description	Patients have a file that is linked to their fingerprint and contains all their patient information. They are identified at healthcare centres by scanning their finger in a fingerprint reader.

Impact	Prior to the use of this system, numerous patients were given incorrect prescriptions or treatment based on the accidental substitution of even a single letter. Bio-SnapON eliminates patient misidentification and mistreatment, increases efficiency, and helps stop the spread of disease.
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Lumidigm fraud elimination ZA

Key organizations	Lumidigm; Bytes System Integration; National Department of Health (NDoH) South Africa
Size	National
Region	South Africa
Launch date	TBD
Status	Planned
Key issues addressed	Healthcare fraud, patient misidentification, streamlining access to data and EHRs
Description	Lumidigm is intent on addressing the problem of healthcare fraud in ZA with Bytes System Integration and NDoH. Lumidigm has experience with system implementation in Africa with the VaxTrac programme in Benin. The intention is to install biometric sensors in pharmacies and healthcare facilities across South Africa.
Impact	Estimates show that 10% of medical claims in South Africa are fraudulent, costing the healthcare sector between R15-22 billion per annum. Use of biometrics for patient identification would eliminate this problem.

Namibia fraud elimination

Key organizations	Namibia Health Plan (NHP); Nammed and Renaissance Health LifePoint; Muvoni Biometric and Smartcard Solutions (MBSS)
Size	National
Region	Namibia
Launch date	Unknown
Status	Implementation phase
As of	26 September 2013
Key issues addressed	Healthcare fraud, patient misidentification, streamlining access to data and EHRs, data security
Description	3 Namibian medical schemes are working on implementing biometric patient identification, with the primary objective of reducing identity theft and fraud. The system will consist of fingerprint biometric sensors at Point-of-care and point-of-sale, along with a cloud-based user management and identification system and can interface with medical schemes' administrative systems, payment systems, and clinical practice management systems.

Impact	Healthcare funds are losing vast sums of money annually due to fraudulent claims using identity theft. Furthermore, the consequences of patient misidentification and treatment are driving this initiative and are slated to improve substantially following its implementation.
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GABON NATIONAL HEALTH FUND

Key organizations	Gemalto; National health insurance and social security fund in Gabon (CNAMGS)
Size	National
Region	Gabon
Launch date	2009
Status	Access to healthcare for poor populations, healthcare fraud
As of	Funding sources Gabonese parliament passed a law obliging 3 mobile operators to commit 10% of their revenues to financing this health insurance program. 1.5% of fast money transfers are also used. State adds some funding (unclear how much).
Key issues addressed	
Timeline	
Cost to users	
Description	This project was initiated by government in order to provide healthcare to the poorest in the nation and reduce healthcare fraud. The goal is to cover the country's entire population, affording basic medical coverage to all, and higher level services at a fee. The patient identification system is based on polycarbonate cards, fingerprint scans, and other biometrics. Patients can be identified upon entering a health centre with a fingerprint scan or the polycarbonate card, and often both are used for cross-validation.
Impact	1.5 million healthcare cards issued (nearly the entire population)

Malian national health insurance fund

Key organizations	Gemalto Caisse nationale d'assurance maladie (Canam) Société Bakary Nimaga et Fils (SBNIF)
Size	National
Region	Mali
Launch date	
Status	
As of	

Key issues addressed	Access to healthcare for poor populations, healthcare fraud
Timeline	
Cost to users	
Description	Modern health insurance cards with embedded biometric data are being issued to Malians to reduce healthcare fraud and to ensure that the poor echelons of the population have equal access to healthcare. This also reduces misidentifications, leading to wrongful prescriptions and treatment.