THE GLOBAL SOUTH EHEALTH OBSERVATORY

IDENTIFY • BRING TOGETHER • SUPPORT

FONDATION PIERRE FABRE
Recognised as being of public utility
THE MISSIONS OF THE EHEALTH OBSERVATORY

To identify, document, promote and help develop eHealth initiatives that improve access to quality healthcare and medicines for the most disadvantaged populations in resource-limited countries.

- 150 initiatives documented and listed
- 76 beneficiary countries
- 29 award winners supported
- 40 field surveys
- 17 health topics targeted
- 4 annual international and connected conferences

Fields of application covered:

- 24% Patient and medical-data monitoring
- 19% Telemedicine (remote diagnosis and consultation)
- 24% Training healthcare professionals
- 25% Information, education, and behavioural change
- 4% Financial access to healthcare, microinsurance
- 5% Other

To identify, document, promote and help develop eHealth initiatives that improve access to quality healthcare and medicines for the most disadvantaged populations in resource-limited countries.
Identifying high-potential initiatives

The Observatory acts as a development lever for eHealth.

Béatrice Garrette, Director General of the Fondation Pierre Fabre

It is with the ultimate goal of understanding, analysing, sharing and encouraging digital innovations that would improve the health of the poorest in society that Fondation Pierre Fabre set up the Global South eHealth Observatory (ODESS) in 2016, with support from the French Development Agency and the Agence Universitaire de la Francophonie (the worldwide association of French-speaking universities).

Four years later, the Observatory has identified some 150 initiatives, conducted 40 field surveys, provided 29 award winners with financial and technical support and hosted 4 international conferences.

The Observatory is a multifaceted resource centre accessible to everyone via the odess.io website, but it is also a think-tank, a global monitoring and information sharing hub, and a network of digital health experts and stakeholders across Africa and Asia. Our field survey and evaluation work, our monitoring and upscaling of the most relevant initiatives, and the work done by our own experts have also helped us to identify and highlight major eHealth developments and challenges in countries with limited resources.

Providing training for healthcare professionals and senior health ministry staff in these countries has emerged as one of the essential preconditions for enabling digital technology to transform healthcare systems and ensure the inclusion of those in society least well served in terms of healthcare. It is for this purpose that Fondation Pierre Fabre has extended its active involvement through the creation of an Innovation Centre - Digi-Santé-Mali - at the Science, Technical and Technologies University in Bamako under the leadership of Professor Cheick Oumar Bagayoko, and in 2019, introduced an eHealth IUD (Inter-University Diploma) in conjunction with the universities of Bamako, Dakar and Abidjan. The aim of this course is to make a further contribution to move beyond simply the ability to use hi-tech tools in order to develop the expertise essential for ensuring the coherent and consistent development of eHealth strategies and tools in ways that improve patient care, provide equitable access to care and optimise health-related expenditure.

"The Observatory acts as a development lever for eHealth."

Béatrice Garrette, Director General of the Fondation Pierre Fabre
Listing of initiatives on the platform

“The Observatory is a facilitator of justice that introduces the principle of fair access to treatment and healthcare services in the countries of the South by encouraging initiatives that promote this principle and bring the benefits of healthcare to those who need it most.”

Cheick Oumar Bagayoko, Associate Professor in Medical Informatics and a member of the Observatory expert committee

Following a predefined calendar, the Observatory identifies eHealth initiatives with the potential to deliver long-term improvements in public health. The process begins when project leaders complete an online form to submit their initiatives directly on the Observatory website at www.odess.io. The resulting data are entered into a database made available to all stakeholders.

THE GLOBAL SOUTH EHEALTH OBSERVATORY EXPERT COMMITTEE

With 7 permanent members and one award member appointed for the year, the expert committee monitors and reviews the missions of the eHealth Observatory, and is actively involved in selecting the laureates, awarded at the annual conference.

- Cheick Oumar Bagayoko, Associate Professor in Medical Informatics, Director of the Centre d’Expertise et de Recherche en Télémédecine et E-Santé (CERTES) and General Coordinator of the Réseau en Afrique Francophone pour la Télémédecine (RAFT).
- Mehdi Benchoufi, physician and head of clinic at the Hôtel Dieu (Paris), expert in digital technologies and founder of the Club JADE think tank.
- Jean-Luc Clément, a university professor who is now Research Advisor at the Delegation for European and International Relations and Cooperation (DREIC) at the French Ministry of National Education, Higher Education and Research.
- Demba Diallo, founding partner of consultancy firm Innhotep, which uses innovative solutions to accelerate company growth.
- Jai Ganesh Udayasankaran, an expert in health and telehealth information technologies, and a member of the Asia eHealth Information Network (AeHIN) governing committee.
- Catherine de Rohan Chabot, a pharmacist by training, and now a health sector communication specialist.
- One award winner appointed annually.

The Observatory annual calendar

CALL FOR APPLICATIONS

OCTOBER

APPLICATIONSSubmitted via WWW.ODESS.IO

FEBRUARY

REVIEW OF PROJECTS SUBMITTED

MAY

SUITE PROJECTS LISTED

JULY

FIELD REPORTS

PRE-SELECTION OF PROJECTS FOR FIELD SURVEYS

SELECTION OF AWARDE WINNERS

ANNUAL CONFERENCE AND AWARDS CEREMONY

An important annual highlight in the life of the Observatory, this one-day event provides a forum for interaction between eHealth ecosystem stakeholders and potential partners. It is also an opportunity to promote and facilitate the expansion of eHealth initiatives.

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These reports generate additional information about the real-life operation of the initiatives previously selected. Although field reports provide some basis for analysis, it is essentially a journalistic exercise and is not intended to audit the projects concerned.

Award winners receive a full year of support from Fondation Pierre Fabre and its partners.
The Observatory database

<table>
<thead>
<tr>
<th>NUMBER OF PROJECTS BY HEALTH TOPIC</th>
<th></th>
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<tbody>
<tr>
<td>Primary healthcare</td>
<td>72</td>
</tr>
<tr>
<td>Maternal and child health</td>
<td>72</td>
</tr>
<tr>
<td>Sexual and reproductive health</td>
<td>52</td>
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<tr>
<td>Nutrition</td>
<td>44</td>
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<tr>
<td>Chronic diseases</td>
<td>38</td>
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<tr>
<td>Vaccination</td>
<td>38</td>
</tr>
<tr>
<td>Infectious diseases</td>
<td>38</td>
</tr>
<tr>
<td>Malaria/Paludism</td>
<td>37</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>36</td>
</tr>
<tr>
<td>Access to quality medicines/pharmacy</td>
<td>34</td>
</tr>
<tr>
<td>Emergency care</td>
<td>31</td>
</tr>
<tr>
<td>Other</td>
<td>28</td>
</tr>
<tr>
<td>Cardiovascular diseases</td>
<td>27</td>
</tr>
<tr>
<td>Dermatology</td>
<td>27</td>
</tr>
<tr>
<td>Cancer</td>
<td>25</td>
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<tr>
<td>Mental health</td>
<td>20</td>
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<tr>
<td>Ophthalmology</td>
<td>20</td>
</tr>
<tr>
<td>Oral health</td>
<td>16</td>
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<table>
<thead>
<tr>
<th>TARGET AUDIENCES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Health professionals and institutions</td>
<td>115</td>
</tr>
<tr>
<td>The general population</td>
<td>62</td>
</tr>
<tr>
<td>Pregnant women</td>
<td>53</td>
</tr>
<tr>
<td>Young children (0-5 years)</td>
<td>52</td>
</tr>
<tr>
<td>Patients</td>
<td>51</td>
</tr>
<tr>
<td>Patients' families and friends</td>
<td>39</td>
</tr>
<tr>
<td>Children and teenagers (6-18 years)</td>
<td>33</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
</tr>
<tr>
<td>Dependent / disabled persons</td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STAGE OF PROGRESS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongoing / operational project</td>
<td>58%</td>
</tr>
<tr>
<td>Not available</td>
<td>3%</td>
</tr>
<tr>
<td>Pilot project</td>
<td>38%</td>
</tr>
</tbody>
</table>

For more information, visit the Observatory online database at www.odess.io
A conference that brings eHealth stakeholders together

On completion of the initiative identification, data analysis and field report phase, the selected award winners are invited to present their solutions and receive their awards at the Observatory conference, which brings international experts together with potential partners.

Taking a closer look at this annual meeting of eHealth stakeholders: every July, Fondation Pierre Fabre hosts its annual International Observatory Conference at its headquarters in En Doyse (Lavaur, France). Throughout this one-day event, international experts share their analyses, while projects’ leaders present their winning initiatives and receive their Observatory awards. Delegates represent international organisations, ministries, NGOs, healthcare institutions and companies.

This conference provides a unique opportunity to share knowledge, expertise and experience gained in the field, but it also facilitates virtual and/or physical interaction between eHealth stakeholders and potential partners during panel discussions, keynote speeches, presentations and demonstrations. Every year, some fifteen digital campuses of the Agence Universitaire de la Francophonie play an active role in the conference via live streaming of the event in Africa and Asia. Having come together for the occasion, students, academics and institutions make a direct connection between eHealth and education by submitting their questions and taking part in videoconference discussions.

“There’s no doubt that innovation in health does exist, but we don’t always perceive its reality. The Conference has generated a profusion of ideas made tangible through structurally important projects and projects that promise much for the future. So we can go away saying to ourselves that it’s possible, it exists and it’s within our grasp!”

Anne-Marie Antchouey Ambourhouet, Gabon’s Director General of Health

In 2019

- 18 speakers from 14 countries represented
- 14 AUF digital campuses connected live
- 1,283 logins to the conference live stream

Conference themes

2019

- Capacity building and data sharing for efficient and sustainable eHealth

2018

- Local expertise for global development

2017

- Towards the integration of eHealth into public health systems

You can watch the video coverage of these conferences on the Fondation Pierre Fabre YouTube channel.
In the days following the Observatory Conference, the Foundation hosts a series of eHealth workshops led by highly qualified experts. These group sessions are part of the financial and technical support provided by the Observatory to its award winners, and are also open to selected stakeholders and partners to extend their eHealth skills and introduce them to new topics. Offered in both French and English, these workshops provide a unique opportunity to think about, and work on, strategies for the development, upscaling and sustainability of eHealth programmes during interactive sessions led and facilitated by international experts.

WORKSHOPS
- Digital health resources for a shared language, upscaling, monitoring and evaluation – World Health Organization (WHO)
- Consideration and methodological evaluation of the priority needs of award winners and results anticipated during the year ahead – Asia eHealth Information Network (AeHIN)
- eHealth challenges in the face of limited resources: identifying key challenges and concerns, African-Asian dialogue – Centre d’Expertise et de Recherche en Télémédecine et E-Santé (CERTES), Mali
- Stages of Continuous Evaluation for Health Information Systems using the HIS Stages of Continuous Improvement Toolkit (HIS SoCI) – MEASURE Evaluation
- Introduction to Artificial Intelligence in a massive data environment – Université du Québec à Montréal (UQAM)
The majority of projects receiving awards at the annual conference are managed by stakeholders from the Global South: NGOs, startups, social enterprises and public organisations. The Observatory award provides them with access to a full year of financial support (total annual financial envelope of €100,000), support services (mentoring, networking, etc.) and the opportunity to attend skills building workshops led by international experts. Here are all the award winners since 2016:

2019 AWARD WINNERS
- IEDA • Burkina Faso
- Khushi Baby • India
- MHealth • Burkina Faso
- Promoting Proper Management of Zoonotic Diseases • Tanzania
- Smartphone Tele-Dermatology Service • Mongolia

2018 AWARD WINNERS
- Africa Cardiac Care • Cameroon
- Blood Safety Strengthening Programme • Lesotho
- Guinea Epilepsy Project • Guinea Conacry
- Mosquit • India
- Operation Asha • Cambodia
- Traumalink • Bangladesh

2017 AWARD WINNERS
- Amakomaya • Nepal
- Community Telehealth • Nepal
- Hope • Senegal
- Karangué • Senegal
- Khushi Baby • India
- Mira Channel • India — Uganda — Afghanistan
- PEEK Vision • Botswana
- The Safe Delivery App • Ethiopia

2016 AWARD WINNERS
- Connect + Pharmacy • Philippines
- Djantoli • Mali — Burkina Faso
- Doctor Gratis • Indonesia — Nigeria — India
- E-Diabète • Côte d’Ivoire
- Giftedmom • Cameroon
- Jokkosanté • Senegal
- Medtrucks • Morocco
- Mosan • Burkina Faso
- Opism's Vaccin • Côte d'Ivoire

29 award-winning projects supported since 2016
INTEGRATED E-DIAGNOSTIC APPROACH (IeDA)

TERRE DES HOMMES, Burkina Faso

THE PROBLEM
Almost 1 child in 10 dies before the age of five in Burkina Faso, most of them from preventable and/or treatable diseases, despite implementation of the IMCI protocol which provides health workers with guidance on caring for sick children under the age of five. The low level of health worker adoption and application of this protocol – on the basis that it is considered being too lengthy – results in poor quality care being received by children and stands in the way of reducing infant mortality.

THE SOLUTION
To significantly improve the performance of primary health workers, IeDA offers them the support of a digital app designed to guide them and facilitate diagnosis. As well as providing support during examinations and consultations, IeDA plays another role as a training resource that helps to boost the quality of service delivered. Now functionally integrated into the Burkina Faso health information system, IeDA uploads real-time staff performance and patient health data to a central database.

“We now cover 40% of health centres in Burkina Faso, and by 2020, we expect the coverage of our app to have risen to 62%.”
Sonia Ancellin-Panzani, Health Programme Manager Africa at Terre des Hommes

Improving the quality of medical consultations for children in primary healthcare centres.

Health topics targeted
• Mother and child health
• Primary healthcare
• Nutrition
• Malaria
• Access to quality medicines/ pharmacy
• Vaccination

200,000 users per month
Available off-line
Open source

Open source

Targeted health areas:
1 Mother and child health
1 Primary healthcare
1 Nutrition
1 Malaria
1 Access to quality medicines/ pharmacy
1 Vaccination

ieda-project.org – @IeDATerredeshommes
PROMOTING PROPER MANAGEMENT OF ZOONOTIC DISEASES

SACIDS FOUNDATION FOR ONE HEALTH AT SOKOINE UNIVERSITY OF AGRICULTURE, Tanzania

“AfyaData has allowed us to make a real impact by increasing the rate of sick patient detection, and therefore the opportunity to treat them successfully.”

Eron Karimuribo, SACIDS, Sokoine University of Agriculture, Tanzania

**THE PROBLEM**

Approximately 75% of emerging human diseases are of animal origin. This is largely the result of increased interaction between animals and humans as both populations grow, the expansion of agricultural systems, the expansion of global trade and urbanisation, as well as climate change.

**THE SOLUTION**

Based on the One Health concept, AfyaData is an app for managing animal-related epidemics. The documentation of symptoms in conjunction with GPS coordinates and uploaded photos provides health professionals, livestock owners, vets and national park rangers with accurate information about the suspected disease and what to do next. This operational research project provides valuable real-life support for epidemic management across all front line actors and decision-makers.

afyadata.sacids.org – @SACIDS – @sacids

Reducing the burden of communicable diseases between animals and humans.

Health topics targeted

- Primary healthcare
- Infectious diseases

700 app-using professionals

Available off-line

Open source


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**THE PROBLEM**

In 2010, the Burkina Faso Ministry of Health implemented a project to accelerate the rate at which maternal, neonatal and child mortality was falling. A 2013 evaluation of the protocol highlighted a large number of persistent challenges, including the scarcity and poor quality of case treatment data, very frequent discontinuities in supplies of drugs, and inadequate supervision of community-based health workers.

**THE SOLUTION**

Using a mobile app to improve the quality of health data in the northern region of Burkina Faso

**THE SOLUTION**

Introduced by the Ministry of Health, mHealth is an SMS text messaging and Android platform developed to allow health workers to upload health data from the rural north of the country to local and national health authorities. This programme is designed to strengthen the national information system and facilitate health authority decision-making.

To overcome the low Internet coverage in rural areas, the project uses SMS text messaging technology to transmit data between community level health workers and health centre managers.

mHEALTH

MINISTRY OF HEALTH, Burkina Faso

mhealthburkina.org

**Health topics targeted**

- Mother and child health
- Primary healthcare
- Nutrition
- Malaria
- Infectious diseases
- Access to quality medicines/pharmacy
- Integrated management of childhood illnesses at community level

4,500 app-using community-based health workers

Available off-line

Open source


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4,500 app-using community-based health workers

Available off-line

Open source

Khushi Baby aims to address the challenges of immunisation in early childhood, data collection and awareness information delivery. Patients are given a pendant containing an NFC chip that stores data about their health. This data can then be accessed by health workers using a mobile app and by health authorities via a dashboard interface. The pendants are waterproof, need no batteries, and cost less than a dollar to produce. The device is fully compatible with local custom, because the black wire used is similar to that of the necklaces babies in this part of India commonly wear to ward off the evil eye. After a year of support from the Observatory, Khushi Baby has requested further support to scale-up the initiative.

The Problem
In India, 500,000 children under the age of five die every year from vaccine-preventable diseases. Mothers can lose their vaccination cards, and many of them are unaware of the importance of vaccination for their children.

The Solution
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SMARTPHONE TELE-DERMATOLOGY SERVICE

Dermatology Department of the National University of Medical Sciences, Mongolia

The Problem
Despite having a population of just 3 million, Mongolia covers a vast area of 1.5 million square kilometres. Half of Mongolians have very limited access to specialist medical services, such as dermatology, as a result of low family incomes and distance from medical facilities.

The Solution
This dermatology tele-consultation programme targets people living in the remote rural communities of Mongolia. Village doctors can now use the smartphone-based DERMA app for guidance during patient examinations, and upload relevant information and photos of skin conditions to a secure platform accessed by dermatologists across the country. These specialists respond to local family doctors with their diagnoses and recommendations as part of improving the diagnosis and treatment of dermatological conditions in remote areas, and reducing costs and waiting times for patients. Supported by the National University of Medical Sciences, this system is also making a valuable scientific contribution to medical training, because the cases uploaded are used for students specialising in dermatology.
HIGHLIGHTS OF 2019

UPSCALING KUSHI BABY
During the period of support provided by Fondation Pierre Fabre, the number of users benefiting from Khushi Baby has grown from 5,000 in 2017 to 25,000 today. Its 2-year randomised controlled trial involving 3,200 mothers demonstrated a 12% increase in the vaccination rate and a 4% decrease in acute malnutrition. In addition, the time taken to upload health data to the Indian health authorities – previously around 30 days – has been cut by Khushi Baby to an average of 4 hours. In 2019, Fondation Pierre Fabre decided to provide increased support to Khushi Baby in order to successfully scale it up to cover the rural district of Udaipur by extending its scheme to more than 1,000 villages – half of the district of Udaipur – by the end of 2019, and to the entire district by the end of 2020 (3 million inhabitants). The Khushi Baby Health Center module will allow healthcare professionals working in referral centres and hospitals to access a patient’s medical history, update it and ensure that no data is lost from the time treatment in a healthcare facility begins through to post-admission outpatient care.

SIGNIFICANTLY EXTENDING THE REACH OF OPERATION ASHA
The support provided in 2018 by Fondation Pierre Fabre made it possible to improve the eCounselling app, translate it into Khmer, and train 500 government health workers in using these educational videos. Following its official launch in May 2019, the Director of Cambodia’s National Tuberculosis Control Programme requested that eCounselling be extended to all 5,000 government health workers. This was the reason behind the Fondation Pierre Fabre decision to support the training of a further 2,000 eCounselling users to serve 1,000 more villages in 26 provinces of Cambodia, and to roll out the app to all Operation ASHA services in the Baray district, thereby reaching 262,841 more people. Together, these two support initiatives will extend the coverage of this project to a total of 3.46 million people, which equates to around 22% of the Cambodian population, rather than the previous 14%.

CREATION OF THE EHEALTH IUD
Working in collaboration with three universities in Mali, Senegal and Côte d’Ivoire, the Fondation Pierre Fabre has supported the creation of a French language African Inter-University Degree in eHealth for public and private sector stakeholders, including healthcare professionals, engineers, political decision-makers and researchers. With 100 hours of training in the conceptual and methodological basics and a classroom workshop, the IUD is designed to expand the knowledge of students in ways that encourage the design of structured digital solutions and ensure their integration into national health systems. Hosted in Bamako, the first IUD intake took the course in 2019.

OPENING OF THE FIRST CENTRE FOR INNOVATION AND DIGITAL HEALTH
The ‘Digi-Santé-Mali’ centre for innovation and digital health opened in 2019 at the Science, Technical and Technologies University in Bamako thanks to a funding from Fondation Pierre Fabre. As the first dedicated eHealth research centre in sub-Saharan Africa, its goal is to encourage and facilitate education in digital health technologies, promote the development of resources appropriate to the technological and economic realities found in the countries of the global South, and support health authorities to put their strategies into action. It has also welcomed students from the first intake of the eHealth IUD.

2018 AWARD WINNERS

Left to right: Mridul Chowdhury (President of TraumaLink and CEO of mPower), Jon Moussally (Co-founder of TraumaLink and emergency doctor), Lakshmi Panat (Co-Director of the Centre for the Development of Advanced Computing), Ronwyn Cornell (Programme Manager at NGO Jembi Health Systems), Fode Abass Cisse (Neurologist, epileptologist, physician and university lecturer), Farrah Mateen (MD, PhD, neurologist and professor), Arthur Zang (Engineer, researcher and inventor of the CardioPad) and Shelly Batra (Gynaecologist, Obstetrician and President of Operation ASHA).
**AFRICA CARDIAC CARE**

**HIMORE MEDICAL – SOCIAL ENTREPRISE, Cameroon**

**THE PROBLEM**
There is a serious blood shortage in sub-Saharan Africa due to a combination of flawed donor recruitment strategies, component testing and production procedures, and information management.

**THE SOLUTION**
The Blood Safety Strengthening Programme focuses on development and implementation of an open-source, low-cost blood safety information system (BSIS). BSIS is designed to manage blood-donor information and promotes product safety, patient safety and reduced shortages. This solution, which is operational in blood transfusion centres in Lesotho, Ghana and Ethiopia, supports the African Blood Transfusion Society’s certification process and international best practices in transfusion safety.

jembi.org

**BLOOD SAFETY STRENGTHENING PROGRAMME**

jembi HEALTH SYSTEMS NPC – NGO, Lesotho

**THE PROBLEM**
Isolation, poverty and cost of cardiac exams avoid Cameroonians in the most remote areas from completing their exams.

**THE SOLUTION**
Africa Cardiac Care provides access to cardiology monitoring for low-income people with chronic diseases in Cameroon. A smart card gives patients unlimited access to four types of cardiovascular examinations in Africa Cardiac Care affiliated centres. Patients can choose the centre closest to where they live. Low-cost electrocardiograms are performed using a CardioPad and the ECG EXAMS application, which sends the data to the cardiologist. The cardiologist can then remotely diagnose and monitor the patient using the mobile network.

africacardiaccare.com

**GUINEA EPILEPSY PROJECT**

Massachusetts General Hospital Global Neurology Research Group – Research Group, Guinea conakry

**THE PROBLEM**
Epilepsy, a misunderstood and often stigmatised disease, affects 60 million people worldwide, most of whom do not have access to medical care (poverty, shortage of healthcare professionals, mobility issues due to seizures, etc.).

**THE SOLUTION**
The Guinea Epilepsy Project helps people with epilepsy take advantage of diagnosis and treatment services at the Ignace Deen Hospital in Conakry. The ‘M-EEG’ solution (mobile electroencephalography) makes it possible to take brain recordings with EasyCap cups with electrodes and is currently undergoing scientific study. The recording, storage and analysis of the collected data are achieved using an application called the Smartphone Brain Scanner 2 (SBS2), available in open source. The application means all records can be remotely emailed to an epileptologist.

massgeneral.org/neurology/research

**MOSQUIT**

C-DAC – Public Body, India

**THE PROBLEM**
Malaria is the source of many challenges for the Indian healthcare system, especially in India’s rural and remote areas. Problems include disseminating information, coordinating healthcare entities, monitoring epidemics and managing medication stock.

**THE SOLUTION**
MoSQuIT targets malaria screening, diagnosis and monitoring for people in India’s rural and remote areas. Accredited Social Health Activists collect health data on the application, laboratory technicians confirm diagnoses on the platform, and the Indian Council of Medical Research sends epidemiological reports to the health authorities. This system helps improve drug stock planning, implementation of emergency measures and development of appropriate public policies.

mosquit.rb-aai.in
THE PROBLEM
Screening and monitoring people with tuberculosis in the shantytowns, villages and tribal areas of India and Cambodia present great challenges. Estimates report that 20% of patients do not complete treatment.

THE SOLUTION
The programme targets the poorest and most isolated communities in India and Cambodia to “deliver the last mile”. Accredited Social Health Activists (ASHAs) improve TB detection, treatment, education and awareness through three applications: e-Detection facilitates screening, biometric tracking technology, eCompliance, promotes patient compliance with treatment and combat antibiotic resistance, and eAlert sends medical analysis results by text message to the patient and authorised caregivers.

opasha.org

TRAUMALINK
NGO, Bangladesh

THE PROBLEM
Road accidents, responsible for a total of 23,000 deaths and more than 3.4 million injuries each year, represent a major growing problem for Bangladesh.

THE SOLUTION
TraumaLink is an emergency service for road-accident victims in rural regions. The programme entails an emergency phone number and an interactive platform with geolocated accidents. Once the information is entered, the software automatically generates an SMS to send an appropriate number of volunteers, all trained in basic trauma care, to the scene of the accident. First aid supplies and equipment are provided by TraumaLink and stored in locations with 24-hour access. An electronic log ensures patients are properly tracked and transported to the nearest appropriate medical facilities.

traumalink.net
THE SOLUTION
Amakomaya provides informative video content on foetal development, practical tips, and messages for the rest of the family. The goal is to help increase understanding of the changes that occur and the proper care that is required, while emphasising the need to see a doctor during pregnancy. A second application designed for medical staff allows community health workers to register pregnant women in the system and auxiliary midwives to access patient information during their clinic visits. The data are compiled, allowing real-time monitoring of health indicators.

amakomaya.com – amakomaya2012

THE SOLUTION
Working in conjunction with the Botswanan government’s Expanded Program on Immunisation (EPI), Peek Vision has introduced systematic screening for schoolchildren through a comprehensive national ophthalmic health programme. Peek uses a visual-accuracy application on mobile phones. The information is automatically sent to the ophthalmic health services to provide treatment (glasses, eye drops etc.) when necessary or to refer children for specialised care.

peekvision.org – med.upenn.edu/botswana – peekvision – @peekteam

THE PROBLEM
39 million people in the world are blind, though blindness could be prevented in more than 80% of cases.

THE PROBLEM
People living in the mountain villages of Nepal are very isolated and have limited access to medical information and pre- and postnatal follow-up.

THE SOLUTION
Healthcare services are primarily located in urban areas, meaning people living in mountain villages must travel great distances, at great expense, to access them.

THE SOLUTION
ICTs make it possible to provide health, vocational-training and education programmes in remote rural communities. C.H.E.S.T. offers healthcare and development programmes in hard-to-reach areas through a teleconferencing system. Dermatology teleconsultations are offered by the DI Skin Hospital and Research Center (DISHARC), the first dermatology hospital in Nepal.

disharc.org – DISHARC (DI Skin Health And Referral Center)
Karangué is an innovative alert system based on calls in local languages and text messages, two days and one day before vaccinations and pre- and postnatal appointments. The call language is based on the region, using national languages (Wolof, Pulaar, Sera, Diola, French, etc.), with messages recited by some of the country’s iconic voices (Baba Maal, Simon Sene, Marie Ngoné, El Hadji Ndiaye, etc.). Karangué also provides practical advice for pregnant women and information on periodic epidemics. Karangué also makes it possible to schedule hospital appointments via USSD/SMS.

**THE SOLUTION**

MIRA Channel is an integrated mobile phone service to provide health communication and information tools and to connect healthcare services with disadvantaged and isolated women using mobile phones. It is an interactive discussion tool to communicate with semi-literate women. MIRA offers many value-added services, such as decision-making stories and “serious games” to raise awareness and encourage new behaviours. The platform connects women to public health clinics and generates data to assist health authorities.

**THE SOLUTION**

HOPE is a network of interconnected blood donors connected to blood banks through a digital platform that uses text messages, voice calls in local languages and IT tools. HOPE helps blood-transfusion structures create interconnected networks of blood donors to expand the country’s transfusion activity, particularly in the case of urgent blood needs. HOPE also serves as an interface to raise awareness about blood donation among diverse groups of people.

**THE SOLUTION**

mMom. Thai Nguyen provides health information through mobile phones to improve health-related knowledge and behaviour of ethnic minority women. The programme was the subject of a research project and the authorities of Thai Nguyen Province took over its implementation. The model is expected to be replicated in other districts.

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**THE SOLUTION**

2S TECHNOLOGIE – START-UP, Senegal

**THE PROBLEM**

In remote areas of India, poor health indicators are primarily caused by lack of communication on maternal and child health, coupled with impediments to accessing medical infrastructures and services.

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THE SOLUTION

e-Diabète is designed to improve the quality of diabetes care through an online education platform available through low-speed internet, offering continuing education for healthcare professionals, including by holding international interactive classes. The tool also incorporates Diabdata, patient-tracking software to improve diabetic patient care.

OPISMS is designed to increase immunisation coverage by through SMS reminders on vaccination dates and to raise awareness of the importance of this medical intervention. The solution also makes it possible to obtain a virtual vaccination card.

By virtue of a mandate from the Ministry of Health and Public Hygiene, the system has led to creation of a vaccination database in Côte d’Ivoire, making real-time statistics available.

e-diabete.org – @opisms.rappelvaccin

inspci.org – unfm.org/unfm
**THE PROBLEM**
In West Africa, the leading causes of death are the preventable complications of a disease. In Burkina Faso and Mali, people resort to health care too little or too late when their children fall sick, for cultural, educational, geographical and/or financial reasons.

**THE SOLUTION**
Djantoli’s mission is to reduce infant mortality by facilitating access to preventive, long-term healthcare services for families through an inexpensive monthly subscription. This service combines health insurance that reduces medical costs for families, a home-monitoring network that carries out regular health check-ups on young children to rapidly detect childhood diseases, and an education programme on prevention and proper health practices. The association has also developed an “electronic health record” to facilitate monitoring, screening and early warning in case of illness. The data are collected in a mobile application by the Health Care Mediators and can be viewed by health centres.

**THE PROBLEM**
The scarcity and unequal geographic distribution of health services means it is difficult to access health care, such as the monitoring necessary for chronic diseases.

**THE SOLUTION**
Medtrucks supports healthcare entities by operating mobile treatment units. Medical trucks include real-time mapping and route-mapping tools to ensure effective implementation. Identifying beneficiary groups and service points helps combat medical deserts by delivering care to the right place just when it is needed.

**THE PROBLEM**
There are established pre- and post-natal care recommendations, but insufficient means of communication to convey this information, which leads to delays in women consulting healthcare services.

**THE SOLUTION**
GiftedMom is an SMS and voicemail platform that sends notifications to women to remind them of the date of their next pre-natal appointment or their child’s immunisation, as well as educational messages about pregnancy and post-natal care. The service also gives women the means to express their concerns and receive answers directly from health professionals. In collaboration with the Cameroon Ministry of Public Health, more than 29,000 pregnant women and mothers have been monitored in partnership with 28 healthcare facilities and more than 40 community health workers.
**DOCTOR GRATIS**

**HEALTH2I – STARTUP**, Indonesia – Nigeria – India

**THE PROBLEM**
The problem: When lacking access to medical personnel, individuals have difficulty obtaining reliable and appropriate health information.

**THE SOLUTION**
Doctor Gratis is a mobile application that allows free initial contact with a doctor, via instant messaging, in Indonesian, English or French. The objective is to reassure patients and possibly refer them to a specialist if in-person consultation is needed.

[doctorgratis.org](http://doctorgratis.org) – @DoctorGratis

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**MOSAN**

**CENTRE DE RECHERCHE EN SANTÉ DE NOUNA, PUBLIC BODY**, Burkina Faso

**THE PROBLEM**
Some health services are underutilised due to geographical and financial impediments to access, lack of health-related information and illiteracy.

**THE SOLUTION**
The Mosan initiative (a portmanteau for mobile-santé, mobile health), implemented in 26 villages of the Nouna Health District, was designed to improve the health conditions of pregnant women, mothers of children under age five and people living with HIV. Mosan promotes access to adequate, affordable, equitable health services, along with targeted information on health facilities. Through computers and mobile phones, community entities and health workers are connected to a patient-tracking platform, and a local-language vocal server has been installed at five health centres to raise awareness and generate appointment reminders.

[crsn-nouna.bf](http://crsn-nouna.bf) – @CRSNouNouN

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**JOKKOSANTÉ**

**SENSYS SOLUTIONS – STARTUP**, Senegal

**THE PROBLEM**
Medicines are one of the major healthcare expenses, making access to them inequitable. The use of expired products and the illegal sale of medicines both constitute substantial health risks.

**THE SOLUTION**
JokkoSanté is a secure web and mobile application that offers more impartial access to medicines. Users drop off unused medicines at affiliated health centres in exchange for points on the mobile application. The points can be applied to obtaining other medicines by prescription, or can be exchanged or purchased. JokkoSanté gives companies the opportunity to improve their social impact by funding medicines for the population segments of their choice: the beneficiaries are notified by SMS.

[jokkosante.org](http://jokkosante.org) – @JokkoSante

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[crsn-nouna.bf](http://crsn-nouna.bf) – @CRSNouNouN

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[jokkosante.org](http://jokkosante.org) – @JokkoSante

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Monitoring tuberculosis treatment in Cambodia using the eCompliance app developed by Operation ASHA.
The AFD is France’s inclusive public development bank. It commits financing and technical assistance to projects that genuinely improve everyday life, both in developing and emerging countries and in the French overseas provinces. In keeping with the United Nations Sustainable Development Goals, the AFD works in many sectors – energy, healthcare, biodiversity, water, digital technology, professional training, and others – to assist with transitions towards a safer, more equitable and more sustainable world: a world in common.

Through a network of 85 field offices, it currently finances, monitors and assists more than 2,500 development projects in 108 countries. In 2016, AFD invested €9.4 billion in projects in developing countries and French overseas territories.

The Fondation de l’Avenir for applied medical research was created in 1987 by the Mutualité Française and became state-approved in 1988. Driven by a commitment to the public interest and its role in the social economy, the Foundation serves as the link between the mutual-benefit movement and public health entities. Through its actions, recommendations and publications, it actively takes part in improving our healthcare system. It helps researchers move forward with their research projects and move beyond the fundamental stage to benefit humankind.

The Agence Universitaire de la Francophonie (AUF), an international higher-education association created more than 50 years ago, encompasses more than 840 universities, prestigious higher-education institutions, scientific networks and research centres around the world. As coordinator of one of the world’s largest higher-education networks, AUF assists universities in their structuring, expansion and involvement in local and global development. The agency’s teams are present the world over and provide follow-up and advice for project design and management.

The AUF offers initial technical and financial support and helps in the search for new partners. It also develops and manages large-scale multilateral projects in all fields of higher education and social development.

Set up by the WHO in 2012 to support the region’s countries in developing eHealth systems, the Asia eHealth Information Network (AeHIN) of more than 1,000 healthcare professionals from 25 countries includes senior civil servants from Health and ICT ministries, state health insurance schemes, universities and non-governmental contributors. The missions of AeHIN are:
- To upgrade health information, health statistics and patient data record systems
- To promote standards and interoperability within and between countries
- To strengthen leadership and sustainable governance, as well as supervision and assessment
- To boost mutual assistance and knowledge sharing using an effective network.

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Officially recognised in France as an institution of public interest since 1999, Fondation Pierre Fabre works to provide the people of the Global South with better access to quality drugs and therapies. Its five action areas are: training of drugs specialists, combating sickle cell disease, dermatology, access to high-quality healthcare and eHealth. In 2019, the Foundation conducted more than 32 programmes in 18 countries of Africa, Southeast Asia, Lebanon and Haiti.

fondationpierrefabre.org
contact@fondationpierrefabre.org
Domaine d’En Doyse – Route de Saint Sulpice
81500 Lavaur – France