

SUCCESS STORIES OF WHO IN THE AFRICAN REGION

**Delivering Achievements and
Making an Impact**



**World Health
Organization**

REGIONAL OFFICE FOR **Africa**

SUCCESS STORIES OF WHO IN THE AFRICAN REGION: DELIVERING ACHIEVEMENTS AND MAKING AN IMPACT

© World Health Organization Regional Office for Africa, 2018

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services.

The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO).

WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization.

Suggested citation. WHO success stories in the African Region: Delivering for Results and Impact . Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris>.

Sales, rights and licensing. To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

Printed in South Africa

TABLE OF CONTENTS



LARGEST CHOLERA VACCINE DRIVE IN HISTORY TO TARGET SPIKE IN OUTBREAKS

07



MILLIONS OF CHILDREN TO RECEIVE MEASLES VACCINE IN NORTH-EASTERN NIGERIA

19



WINNING THE WAR AGAINST YELLOW FEVER

23

On the trail of lassa fever in southern Nigeria

01

A little black box for detecting and tracking outbreaks

03

Largest cholera vaccine drive in history targets spike in outbreaks

07

Encounters with plague: tracing and preventing illness

11

Making health services a safe place for women: Uganda steps up to support women subjected to violence

13

Treating diabetes takes more than insulin: Senegal mobile phone project promoting public health

15

More women are receiving preventive medicine for malaria during pregnancy in Africa

17

Zambia improves real-time tracking of vaccines, reduces stock outs

19

Millions of children receive measles vaccine in north-eastern Nigeria

21

Winning the war against yellow fever

23

WHO strengthens South Sudan's disease detection and response

27

Partner with us

29



ON THE TRAIL OF LASSA FEVER IN SOUTHERN NIGERIA



Nafissa Ikerodah is both a detective and diplomat of sorts. On a Saturday morning in early March, the Disease Surveillance Officer in Edo State area rushes to a household where a man has just died of Lassa fever.

The young father left behind two sons who show symptoms of the infectious disease. Nafissa wants to get the children to a hospital as quickly as possible. One boy is so weak he can barely stand.

She must also identify all the people who recently came into physical contact with the deceased father so they can be monitored for signs of the viral haemorrhagic fever.

Both jobs are difficult in a community reeling from a recent death and fear for their own lives.

“The first time you visit and tell them you are a disease surveillance officer, they are always scared,” says Nafissa.

Faith Ireye, the World Health Organization’s Edo State Coordinator, accompanies Nafissa. They arrange for an ambulance to pick up the boys and

ask the family to provide the names of the deceased patients' contacts within the community.

“Contact tracing is the bedrock of infectious disease outbreak control. If contact tracing is not done, people who come into contact with Lassa fever patients stay in their homes, become symptomatic, infect more people, and make the outbreak bigger and bigger,” says Faith.

Nafissa visits every identified contact of the deceased father. She records names, telephone numbers, and the date of their last encounter with the patient. She gives each a thermometer for personal temperature checks and arranges to call on the contacts daily for the next 21 days to note their temperature. If anyone is suspected of having Lassa fever, they will be taken to hospital for a confirmatory test and, if positive, provided with care in a special isolation unit.

By 18 March, 3675 contacts of the 376 confirmed Lassa fever cases in Nigeria had been identified and more than three-quarters had completed their 21 days of monitoring.

In Edo state – where the outbreak has been spreading particularly fast – WHO, the Nigeria Centre for Disease Control (NCDC) and the local government are reaching out to communities with a large-scale awareness raising campaign.

Sensitization sessions will aim to reach nearly 9,000 community leaders, town announcers, headmasters, herbalists, healthcare workers, clinicians, church leaders, and women who work in local markets.

The Lassa virus is transmitted to humans mainly through handling infected rats, food or household items contaminated by the rats' urine and faeces. The virus can spread between people through direct contact with the body fluids of a person infected with Lassa fever, as well as contaminated bedding and clothing.

Community members are being advised of a range of preventive measures including washing hands regularly, storing food in containers with lids, keeping their homes clean and tidy to discourage rats from entering and cooking foods thoroughly.

Garri, which is made from cassava tubers, is a staple food in this part of Nigeria. Traditionally, families have left the crushed cassava outside in the sun to dry out. During the sensitization sessions, participants are encouraged to dry garri through frying over a hot stove, rather than in the sun.

After one awareness raising session, primary school teacher Mary Enaholo says she has learnt important hygiene lessons that she will share.

“I will take the information that I learnt today to my pupils so they will take these messages back to their homes,” she says.

But changing behaviours is no easy task.

In one house, Faith and her team find a basket full of rats being kept as pets by a boy. Nearby, garri is being dried in the sun. Faith quickly advises the household to cover the food.

WHO is working with communities to deliver messages that will encourage preventive actions and ultimately save lives.

A LITTLE BLACK BOX FOR DETECTING AND TRACKING OUTBREAKS



One of the toughest tasks in responding to a major public health emergency is getting accurate information about infectious disease outbreaks. “EWARS in a box” contains all the equipment needed to establish surveillance and response activities, particularly in difficult and remote field settings without reliable internet or electricity.

Infections can spread even more quickly than rumours, particularly when there is a lack of reliable, up-to-date information to detect, track and respond to outbreaks.

Without a rapid response, infectious diseases are more likely to spread in humanitarian settings, putting people’s lives at risk and costing more money and resources in the long run.

WHO’s answer to this problem is in a rugged-looking black suitcase, known as “EWARS in a box”. It’s the product of the Early Warning, Alert and Response System project.

Inside the anonymous looking box is all the equipment needed to set up a disease surveillance system in difficult or remote field settings, within

24 hours. What's more, it has been configured to work in places without reliable internet or electricity connections.

Flip the locks and, encased in protective grey foam, are two layers of equipment. On top is an ordinary laptop computer, a DataHub about the size of a box of chocolates, and 60 Android mobile phones, all preloaded with some simple, customized software.

Underneath this equipment are all the necessary connectors and batteries.

A second, smaller case contains hand-held solar chargers so that the system can run without electricity.

The kit has been specifically designed for maximum mobility. Its size and weight mean that it can be handled by one person and checked in as personal airline baggage.

"The equipment needs to be very simple so we can set the system up as quickly as possible after an emergency occurs," says Dr Chris Haskew, an epidemiologist who was part of the team that created the EWARS box.

"Each phone goes to one health clinic. We assume that each health facility has a catchment of 10 000 people, so one EWARS kit can cover half a million people, which is a significant emergency affected area or displacement camp."

Once an EWARS box is on-site, the first job is to create an account and customize it for the specific emergency – language, locations, users, diseases to be monitored, data required, reporting frequency, etc.

The customized form is then automatically loaded onto the mobile phones that are given to local health workers, who can immediately begin collecting information. Data gatherers can also use their own Android phones by downloading the app from the Google Play Store. Completed forms are automatically sent back via mobile signal to the DataHub, which is kept at the nearest emergency

operations centre.

This box allows the system to run entirely offline, so WHO and Ministry of Health staff are rapidly alerted to potential outbreaks. The system crunches the numbers into automated reports that can be shared almost in real time with partners in the field, and sent to WHO offices anywhere in the world.

The system does more than just collect data, Dr Haskew explains. "There are three parts to EWARS. For the early warning, it collects weekly data and publishes it as a bulletin. Another function is to generate and manage alerts, which are then verified and, where necessary, escalated to rapid response teams who assess the level of risk.

The third element is outbreak response. If an alert is confirmed as a real outbreak, then we need to collect more detailed data on individual cases. This can be done through the same app by configuring and issuing another form directly to the phones of our frontline users."

For example, with highly-infectious diseases like measles, one case triggers an alert. Other diseases like malaria have a moving average. Once an alert is triggered, phone notifications are sent, and verification and risk assessment procedures are set in motion.

The app enables health responders to access and operationalize WHO guidance in the field, such as assigning a level of risk to an alert based on a recommended risk matrix. The system also works in remote locations, where there is no mobile coverage.

"There are places, such as in South Sudan, where you walk for a day to get the information. There, you may not be on a mobile network. But the phone stores the data and, as soon as it finds a connection, perhaps from the top of a hill, then it automatically syncs."

In addition to internet and mobile phone coverage, the other major hurdle the EWARS creators faced was patchy power connections. So, the field equipment – the phones – can use solar chargers.

The EWARS kit was first deployed in South Sudan in 2015, and it is “still running well”, despite the tough conditions, according to Dr Haskew. “We used to see completeness rates of 20-30% in the previous system, which also faced lengthy delays in receiving and analysing reports at the central level. So far in 2017, overall completeness of reporting is over 70% and we are able to publish bulletins automatically each week.”

Since then it has been used in Chad, Ethiopia, Fiji, Nigeria and Yemen, with more deployments planned in Iraq, northern Syria, the Solomon Islands and Vanuatu. Each kit costs around US\$15 000.



“EACH PHONE GOES TO ONE HEALTH CLINIC. WE ASSUME THAT EACH HEALTH FACILITY HAS A CATCHMENT OF 10 000 PEOPLE, SO ONE EWARS KIT CAN COVER HALF A MILLION PEOPLE, WHICH IS A SIGNIFICANT EMERGENCY AFFECTED AREA OR DISPLACEMENT CAMP.”



LARGEST CHOLERA VACCINE DRIVE IN HISTORY TARGETS SPIKE IN OUTBREAKS



Two million people in five African countries protected against cholera. A spate of cholera outbreaks across Africa has prompted the largest cholera vaccination drive in history, with more than two million people across the continent set to receive oral cholera vaccine (OCV).

The vaccines, funded by Gavi, the Vaccine Alliance, were sourced from the global stockpile and are being used to carry out five major campaigns in Zambia, Uganda, Malawi, South Sudan and Nigeria. The campaigns, which will be completed by mid-June, are being implemented by the respective Ministries of Health supported by the World Health Organization (WHO) and partners of the Global Task Force on Cholera Control (GTFCC), and mostly in reaction to recent cholera outbreaks.

In the 15 years between 1997 and 2012 just 1.5 million doses of cholera vaccines were used worldwide. In 2017 alone almost 11 million were used, from Sierra Leone to Somalia to Bangladesh. In the first four months of 2018 over 15 million doses have already been approved for use worldwide.

“This is an unprecedented response to a spike in cholera outbreaks across Africa,” said Dr Seth Berkley, CEO of Gavi, the Vaccine Alliance. “We have worked hard to ensure there is now enough

vaccine supply to keep the global stockpile topped up and ready for most eventualities. However with more and more people now succumbing to this terrible, preventable disease, the need for improved water and sanitation – the only long-term, sustainable solution to cholera outbreaks – has never been clearer.”

Through its Regional Office for Africa, WHO regularly provides technical and operational support to countries often affected by cholera in Africa. In particular, since the beginning of 2018 WHO has led on providing technical expertise and guidance, working closely with Ministries of Health in the five countries to plan and implement the campaigns with different partners. This is part of a global push to reduce cholera deaths by 90 percent by 2030.

“Oral cholera vaccines are a key weapon in our fight against cholera,” said Dr Tedros Adhanom Ghebreyesus, WHO Director-General. “But there are many other things we need to do to keep people safe. WHO and our partners are saving lives every day by improving access to clean water and sanitation, establishing treatment centres, delivering supplies, distributing public health guidance, training health workers, and working with communities on prevention.”

The burden of cholera remains high in many African countries. As of 7 May many countries are facing cholera outbreaks, with at least 12 areas or countries reporting active cholera transmission in sub-Saharan Africa. Recent developments in the use of OCVs show that the strong mobilisation of countries and partners can effectively tackle the disease when tools for prevention and control are readily available.

“Every rainy season, cholera springs up and brings devastation to communities across Africa,” said Dr Matshidiso Moeti, WHO’s Regional Director for Africa. “With this historic cholera vaccination drive,

countries in the region are demonstrating their commitment to stopping cholera from claiming more lives. We need to build on this momentum through a multisectoral approach and ensure that everyone has access to clean water and sanitation, no matter where they are located.”

The five African campaigns are:

NIGERIA

1.2 million doses will protect around 600,000 people to contain an emerging cholera outbreak in Bauchi state, where more than 1700 cases have been reported.

MALAWI

One million doses of cholera vaccine will protect over 500,000 people in Lilongwe to combat an outbreak which has infected more than 900 people across the country.

UGANDA

360,000 doses of cholera vaccine have been shipped to Uganda to protect 360,000 people in Hoima District, Western Uganda, after an outbreak in Kyangwali refugee camp hospitalized more than 900 people. The country is also now engaging in long-term cholera control planning to vaccinate over 1.7 million people in the coming months.

“EVERY RAINY SEASON, CHOLERA SPRINGS UP AND BRINGS DEVASTATION TO COMMUNITIES ACROSS AFRICA,” SAID DR MATSHIDISO MOETI, WHO’S REGIONAL DIRECTOR FOR AFRICA. “WITH THIS HISTORIC CHOLERA VACCINATION DRIVE, COUNTRIES IN THE REGION ARE DEMONSTRATING THEIR COMMITMENT TO STOPPING CHOLERA FROM CLAIMING MORE LIVES. WE NEED TO BUILD ON THIS MOMENTUM THROUGH A MULTISECTORAL APPROACH AND ENSURE THAT EVERYONE HAS ACCESS TO CLEAN WATER AND SANITATION, NO MATTER WHERE THEY ARE LOCATED.”

SOUTH SUDAN

113,800 doses have been shipped as a preventative measure ahead of the war-torn country’s rainy season. These extra doses will complement doses remaining from previous campaigns to target Panyijiar. Over 2.6 million doses of OCV have been administered in South Sudan since 2014.

Oral Cholera Vaccine is recommended to be given in two doses. The first gives protection for six months, the second for three to five years. All five campaigns should have completed their second round of vaccinations by mid-June.

A resolution on cholera will be proposed by Zambia and Haiti at the (71st) World Health Assembly, calling for renewed political will and an integrated approach to eliminate cholera, including investment in clean water, sanitation and hygiene (WASH).

The global cholera vaccine stockpile is managed by the Global Task Force on Cholera Control (GTFCC), which decides on OCV use in non-emergency settings, and the International Coordinating Group (ICG), which decides on outbreak response and features representatives from WHO, UNICEF, the International Federation of the Red Cross and Red Crescent Societies (IFRC) and Medecins Sans Frontières (MSF). The stockpile is funded in full by Gavi, the Vaccine Alliance, which is a GTFCC partner and has an observer status on the ICG.

ZAMBIA

667,100 doses of cholera vaccine are being delivered as part of the second round of vaccination to the Lusaka slums after a major outbreak infected over 5700 people, killing more than 100. Zambia is also engaging on long term cholera control and planning vaccination in additional hotspots.



ENCOUNTERS WITH PLAGUE: TRACING AND PREVENTING ILLNESS



In Madagascar, where a severe plague epidemic has unfolded since August 2017, the number of new infections is finally in decline. WHO is supporting health authorities to respond to the outbreak, from setting up specialized plague treatment units in health centres, to distributing medicines across the country.

A particularly effective action has involved training teams to find people who have been in contact with a pneumonic plague patient – a system known as “contact tracing” – to help ensure these contacts are protected from falling sick themselves.

A SUDDEN SICKNESS

Rakoto,* a 17-year-old man from Antananarivo, began feeling sick one day in October. Although he was coughing and spitting up blood for several days, Rakoto was reluctant to go to a health centre. The plague outbreak was in the news every

day, and his family was concerned that he might be infected. When he eventually collapsed while visiting his aunt, Rakoto's father took him to a clinic.

Clinical analysis confirmed that Rakoto was indeed sick with plague. He was infected with the pneumonic form, which affects the lungs and can spread to other people if they come into contact with infected sputum. He was put under treatment.

Understanding Rakoto's movements before his arrival at the clinic became of primary importance. The fact that he was symptomatic for several days increased the number of people who may have become exposed.

RETRACING STEPS

Health workers spoke to Rakoto and his family to get exact details on where he had been in the week leading up to his admission to the clinic. They learnt that he had been mostly at home, but had visited relatives. He had also been to church for a healing ceremony as he searched for relief from his symptoms.

The health workers passed the information along to the contact tracing team in their area, headed by WHO epidemiologist Harena Rasamoelina. They worked together to build a list of people who had been in close contact (i.e. under 2 metres) with Rakoto while he was symptomatic. These people became "contacts" who would need to take medication to ensure they did not fall sick as well.

In Madagascar's capital, Antananarivo, there are nine teams of contact tracers headed by WHO epidemiologists. The teams work with two community health workers in each of the city's roughly 900 sectors. At the peak of the outbreak, these teams and similar ones in other districts followed over 1 000 contacts each day.

Since WHO began supporting the Ministry of Health to establish the system in October, over 7 000 people have been identified as close contacts. Some 99% of them were provided with counselling and sufficient antibiotics to eliminate the plague bacteria in their system in case they had been infected. Follow-up teams visited them twice a day for a week to ensure

they were still feeling well, that they were taking medication, and to answer any questions they might have.

"It is encouraging that out of the over 7 000 contacts identified across the country, only 11 developed symptoms," said Dr Ngoy Nsenga, who leads the WHO team responding to the plague outbreak. "This is because we found them quickly and they received preventive treatment right away. Pneumonic plague can spread between people in close proximity. Contact tracing is one of the best tools to stop transmission in its tracks."

TRAINING TO TRACE

As the plague epidemic was spreading quickly through September, WHO identified contact tracing as one of its most urgent interventions. By mid-October, nearly 4 000 contact tracers and team supervisors had been trained across the country.

"The Ministry of Health teams were overwhelmed. They did not have enough staff to follow up on all the cases to identify contacts," said Freddy Banza, WHO's regional field coordinator for Antananarivo. "We needed to expand the pool of contact tracers."

WHO developed a training course to explain how contact tracing works, and the specifics of a pneumonic plague outbreak. WHO then rolled out the training across the affected regions.

"We trained as many community workers as we could because we do not know where the disease would strike next," said Dr Nsenga. "We now have increased capacity for the next plague outbreak, or for any disease where contact tracing may be required in the future."

On average, for each patient ten contacts should be traced and provided with preventive treatment. Because Rakoto moved around so much while he was symptomatic, there were over 20 contacts to follow. Of these, none had developed symptoms by the end of their treatment.

MAKING HEALTH SERVICES A SAFE PLACE FOR WOMEN: UGANDA STEPS UP TO SUPPORT WOMEN SUBJECTED TO VIOLENCE



Violence against women is a global public health problem. In Uganda, more than half of all women have experienced violence at least once in their life, most likely from an intimate partner, leaving them feeling unsafe in the place they should feel the safest – their home.

“Violence against women is everywhere in Uganda,” says Dr Olive Sentumbwe, National Professional Officer, WHO Uganda. “Women from all parts of society experience repeated abuse, which takes a toll on their physical and mental health.”

Violence often remains hidden, as survivors fear for their safety or are stigmatized. Very

few women seek any help. Those that do seek professional help are likely to turn to their local health facilities since they can address their immediate physical or mental health needs, such as treatment for injuries or access to emergency contraception.

Women who have experienced violence are more likely to contract sexually-transmitted infections

including HIV, suffer injuries, have an alcohol use disorder, experience depression, attempt suicide, or suffer other health consequences, so the health system is a key player in supporting survivors.

WORKING TO ELIMINATE A COUNTRY-WIDE ISSUE

To address the issue, the Ugandan Ministry of Gender, Labour, and Social Development, along with the ministries of health, justice and education, among others, have developed the National Action Plan on the Elimination of Gender-based Violence. The Action Plan focuses on implementing the country's laws and policies on domestic violence and marital rape, providing health services for survivors, raising awareness and training police and health workers on how to respond.

In 2015, WHO worked with the Ministry of Health to update its national gender-based violence training manual. This manual is now used alongside WHO's clinical and policy guidelines and its clinical handbook on responding to intimate partner violence and sexual violence in weeklong workshops to train health care providers, community leaders and workers in the judicial system on how to deliver services to survivors of violence.

To date more than 400 health workers have been trained across the country, helping to build a network of people committed to addressing violence against women.

One nurse who attended a training session in 2016 said, "The clinical handbook has empowered me with skills to identify that one is a victim to violence, and I am now able to examine, give proper treatment and refer whenever need arises."

Health facilities in the country are equipped to provide a minimum initial package of care to survivors of rape, including emergency contraception, HIV post-exposure prophylaxis and mental health support – as recommended by WHO guidelines.

WHO has also developed an advocacy toolkit and launched a gender-based violence champions group in 2014 to sensitize policymakers and advocate for a stronger government response.

"There are now more incidents of violence disclosed to professional services throughout the country, which is a good sign that we are making progress," says Dr Abdoulie Dodou Jack, Acting WHO Representative in Uganda. "We don't know yet if behaviour is changing or whether incidence has dropped, but we do know that media coverage of the issue has increased, further raising community awareness."

A GLOBAL ISSUE

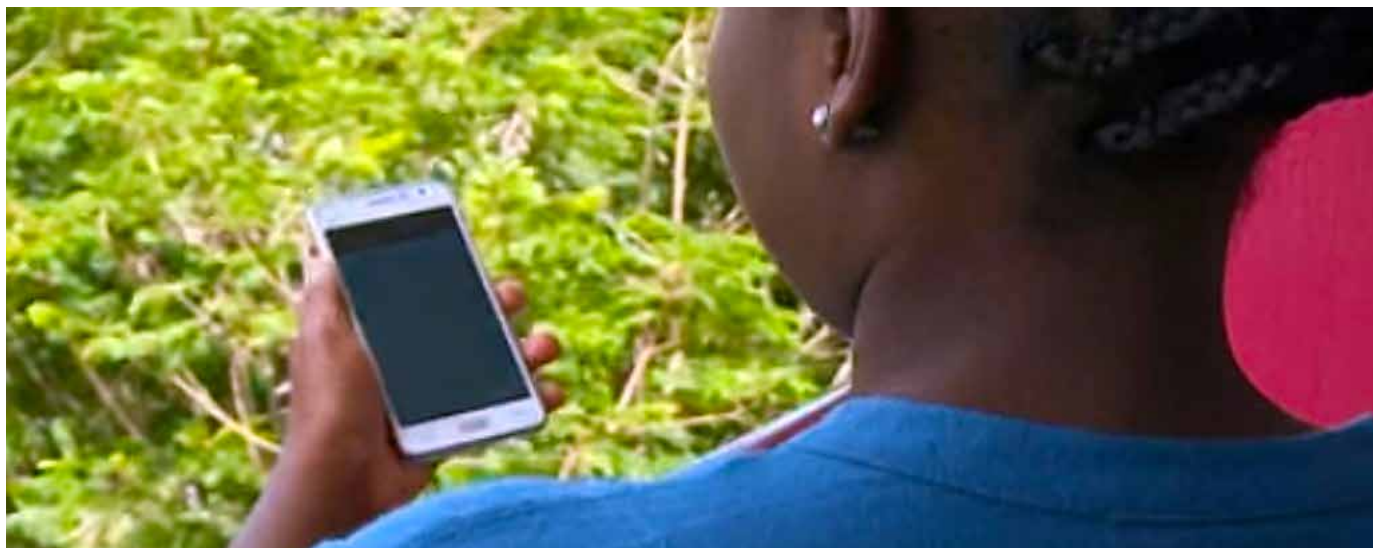
Violence against women is not only a problem in Uganda; it's a problem around the world. Globally approximately one woman in every three has experienced physical and/or sexual violence by an intimate partner or sexual violence by someone else at some point in their lives.

In 2016, the World Health Assembly endorsed a global plan of action to strengthen the role of the health system to address interpersonal violence in particular, against women and girls, and against children. One part of the plan encourages countries to enhance health service delivery and the capacity of health care providers to support survivors, as Uganda has done.

WHO just published a new manual, "Strengthening health systems to respond to women subjected to intimate partner violence or sexual violence," which provides a "how-to" guide for health managers and policy-makers for planning, managing and monitoring services for women who have been subjected to violence.

"Health services have a crucial role in responding to violence against women," says Dr Claudia Garcia-Moreno, who leads work at WHO on violence against women. "This guide is a practical tool for helping countries provide women subjected to violence with quality care and ensure their privacy, confidentiality and rights."

TREATING DIABETES TAKES MORE THAN INSULIN: SENEGAL MOBILE PHONE PROJECT PROMOTING PUBLIC HEALTH



Every morning, mother of six Mariama rises early to sell fish in her local market in Senegal. For the past decade, she has lived with diabetes, and takes insulin regularly. But her medication is not the only tool she relies on to look after her health – her mobile phone plays a critical part of her diabetes control regimen.

Thanks to Senegal’s mDiabetes programme during the Islamic holy month of Ramadan this year, Mariama has found it easier to cope with the condition and have the energy needed to work and care for her family. “These messages really help me manage my condition,” she says. They have also allowed her family to actively engage in her care.

“Every day I would ask my son to check if there was a new message,” Mariama adds. “He would help me understand what I needed to do to stay healthy and control my diabetes, and we would then talk about it together.”

THE ROLE OF THE MOBILE

Information and communications technology, or ICTs, especially the mobile phone, are changing

expectations around access to health information. Mobile phones can support diabetes prevention by providing simple tips on good management or prevention, usually around diet, exercise and checking for signs of complications such as diabetic foot complications.

Since 2013, WHO has been working with the International Telecommunication Union (ITU) to help countries like Senegal introduce large-scale mDiabetes services using mobile phones. The joint initiative, Be He@lthy, Be Mobile, works to design, deploy and scale up prevention and management services for diabetes and a number of other noncommunicable diseases (NCDs).

Diabetes was one of Be He@lthy, Be Mobile's first major programmes. The initiative has created a global handbook to help countries introduce large-scale services, including content for the SMS messages and support for other areas such as technology, promotion and evaluation.

Using SMS to deliver advice to patients speeds up the diffusion of information to help people manage or prevent the disease. This reduces prevalence and treatment costs, and helps patients live longer, healthier lives.

A GLOBAL PERSPECTIVE

Diabetes continues to be a serious public health challenge. Since 1980 the number of people with diabetes has increased four-fold to 422 million, and in 2015 an estimated 1.6 million deaths were directly caused by diabetes. This does not account for the additional impact of high blood glucose, which causes around 2 million deaths annually by increasing the risk of cardiovascular and kidney disease and tuberculosis. Poorly controlled diabetes aggravates the risk of debilitating and costly complications, such as blindness, kidney failure, heart disease and stroke, and lower limb amputations.

Senegal was the first country to launch a targeted mDiabetes campaign in 2014 to help people manage fasting during Ramadan. This has now become an annual service, and saw over 100 000 registrations in 2017.

But other countries are quickly following suit. In July 2016 the initiative launched an mDiabetes service in India which currently supports over 96 000 users. It also runs annual campaigns in Egypt to help people with diabetes manage fasting during Ramadan. The 2017 campaign there reached over 175 000 people.

FROM INFORMATION TO ACTION

One of the service's key lessons learned to date is the importance of making recommendations on diabetes management easy for patients to follow.

"It is important to frame facts in a way which encourages people to apply what they have learnt, in order for them to adopt new behaviours," says Dr Douglas Bettcher, Director of WHO's Department for the Prevention of NCDs, which runs the Be He@lthy, Be Mobile initiative. "By providing information in a format which is simple and action-oriented, it is easier for subscribers to incorporate the information into their daily routines and make positive changes in their diet, exercise and habits."

It is also a key step in moving towards patient empowerment. By giving people the right information at the right time, they can take charge of their condition in between contacts with their doctor or health worker. For chronic diseases this is essential to improve quality of life and treatment outcomes.

Dr Prebo Barango, WHO's focal point for the Be He@lthy, Be Mobile initiative in Africa, explains that better knowledge from the mDiabetes programme is impacting the way doctors support patients. "The programme has changed the format of medical consultations," Dr Barango says. "Doctors ask their patients if they have received the SMS messages, and which ones they need more information about to make sure they understand what it means. The dialogue is more constructive."

For Mariama, the benefit is clear. A programme which started as a simple six-week service has changed the way she manages her diabetes for good. "Thanks to the messages, I understand that I constantly need to pay attention to what and when I eat," she says.

MORE WOMEN ARE RECEIVING PREVENTIVE MEDICINE FOR MALARIA DURING PREGNANCY IN AFRICA



In the busy corridors of a Yaoundé hospital, Esther Sabouangis is attending an antenatal appointment. She is in her early thirties and expecting her third child.

“I am sleeping under an insecticide-treated net and have taken the medication against malaria every time. I never had any fever during pregnancy – and I never got sick. I am very happy about this – for my baby and for myself.”

Esther is fortunate enough to live in a major city in Cameroon where communication about the risks of malaria in pregnancy is good. Her government antenatal clinic offers the 3 or more doses of medicine that WHO recommends to protect mothers and unborn children from the devastating impact of malaria infection. Even better, the medicine is available for free.

“This preventive therapy – known as intermittent preventive treatment in pregnancy, or IPTp – was introduced in Cameroon about 11 years ago, but then the uptake was terribly slow,” said Professor Philip Nana Njotang, Esther’s attending physician. “It’s a life-saving malaria preventive therapy and adding it to the existing antenatal care package, together with insecticide treated nets, seemed like an obvious and simple way to get it to expectant mothers.”

Approximately 52 million women living in sub-Saharan Africa become pregnant each year and are at risk of exposure to *Plasmodium falciparum*, the deadliest malaria parasite, and the most prevalent on the African continent. IPTp can prevent maternal and infant death, anaemia and the other adverse effects of malaria in pregnancy.

IPTp is recommended by WHO for all pregnant women living in areas of stable malaria transmission in Africa. Doses should be given at routine antenatal care visits starting as early as possible in the second trimester.

WHO has been tracking implementation of its recommendations for malaria prevention in pregnant women. The 2016 World malaria report showed important progress: nearly 1 in 3 eligible pregnant women received the recommended 3 or more doses of IPTp in 20 countries in sub-Saharan Africa.

However, an estimated 69% of pregnant women are still not receiving the recommended number of IPTp doses. This year, on World Malaria Day, WHO is calling on all malaria-endemic countries in Africa, and their development partners, to urgently close the gap in access to IPTp and other critical malaria prevention tools.

“Today, in Yaoundé, I believe about 80% of our pregnant women can have access to all 3 doses of this medication. But in the periphery, in the rural areas – it’s a different story,” said Prof Nana.

In rural areas, health services are more sparse and women frequently have less information. Even if they are aware of the benefits of IPTp, they often can only obtain it at private pharmacies, which can be cost prohibitive.

“Our national health system across the 10 regions of Cameroon is currently not robust enough to serve our population with this type of routine care. If our professional societies, such as the Society of Paediatricians and Society of Obstetricians,

for example, could help to implement these recommendations, it would strengthen the capacity and promote such services and we would be in far better shape,” suggested Professor Nana.

Esther is indeed one of the lucky mothers. She has enjoyed three healthy malaria-free pregnancies and is looking forward to the birth of her third child.

“TODAY, IN YAOUNDÉ, I BELIEVE ABOUT 80% OF OUR PREGNANT WOMEN CAN HAVE ACCESS TO ALL 3 DOSES OF THIS MEDICATION. BUT IN THE PERIPHERY, IN THE RURAL AREAS – IT’S A DIFFERENT STORY,” SAID PROF NANA.



ZAMBIA IMPROVES REAL-TIME TRACKING OF VACCINES, REDUCES STOCK OUTS



“It would often take days to reach someone on the phone and track-down each registry,” said Guissimon Phiri, Chief Logistician for the Expanded Programme on Immunization (EPI) in the Zambian Ministry of Health. “By the time we received the registries they were already out-of-date and inaccurate.”

In Zambia, spreadsheets, paper registries and phone calls were once the only way for staff in the Ministry of Health, based in the capital Lusaka, to know if district and provincial health facilities and warehouses had adequate supply of vaccines. Since none of the supply registries were connected to the national warehouse, reporting was never timely.

A REAL-TIME, COST-SAVING SOLUTION

In search for a solution to track vaccines in real-time, the Zambian Ministry of Health and WHO decided to pilot a web-based logistic management information system in 34 facilities at the start of 2016.

Through the web and mobile phones, the system allows supply chain managers in the country’s

national, district and provincial vaccine warehouses and stores to monitor vaccine stocks, use, and expirations minute-by-minute. The system also monitors the cold chain to ensure vaccines are kept at the correct temperature at all times.

“There is now more control in the system,” says Phiri. “Whenever a vaccine is used, the system is automatically updated. We can see vaccine levels in all of the facilities, make quick decisions about how many vaccines to buy and with the click of the button place an order.”

Back in the capital, the Ministry of Health staff can also log into the system and see when supply registries have not been updated. If significant time has passed since a facility registry has been updated, they can call the supply chain manager and ask them to improve their reporting. The Ministry of Health can also see who is ordering what and how much, which helps to hold health workers accountable for over- or under-stocking.

“Vaccines are becoming more expensive,” says Abrahams Mwanamwenge, EPI Logistician WHO Zambia, who helped implement the system. “The system helps health facilities ensure the vaccines they have do not go unused.”

ENABLES QUICK RESPONSE FOR SUPPLY MOVEMENT

The system is already proving essential for introducing new vaccines and implementing nationwide immunization campaigns. When the country switched from the trivalent oral polio vaccine (tOPV) to bivalent oral polio vaccine (bOPV) in April 2016, the process was seamless. Supply chain managers could see how much tOPV stock they had in each facility and could easily replace it with bOPV.

Likewise, when more than 6 million children aged 9 months to 15 years were vaccinated during a nationwide measles and rubella campaign in September 2016, health workers could see when facilities were low on vaccines and were able to directly transfer vaccine to where they were needed most.

“Prior to the system, health facilities were not able to anticipate demand, which resulted in stock outs,” says Mwanamwenge. “Now, they can see when vaccines are running short and pre-warn when stock outs are expected.”

With additional funding from UNICEF, the system has now been scaled up to 115 facilities in every district in Zambia, each with at least one trained staff to manage it. As a result, nearly all facilities are reporting on-time each month to the Ministry of Health and nearly all are correctly stocked so vaccines do not go unused.

In the future, the Ministry of Health is looking to expand the system to see how it can be used for other essential medicines and tracking disease outbreaks.

“PRIOR TO THE SYSTEM, HEALTH FACILITIES WERE NOT ABLE TO ANTICIPATE DEMAND, WHICH RESULTED IN STOCK OUTS,” SAYS MWANAMWENGE. “NOW, THEY CAN SEE WHEN VACCINES ARE RUNNING SHORT AND PRE-WARN WHEN STOCK OUTS ARE EXPECTED.”



MILLIONS OF CHILDREN RECEIVE MEASLES VACCINE IN NORTH-EASTERN NIGERIA



A mass vaccination campaign to protect more than 4 million children (4 766 214) against a measles outbreak in conflict-affected states in north-eastern Nigeria was carried out.

The two-week campaign targeted all children aged from 6 months to 10 years in accessible areas in Borno, Yobe and Adamawa States.

“This measles vaccination campaign is an emergency intervention to protect more than 4 million children against a highly contagious and sometimes deadly disease,” says Dr Wondimagegnehu Alemu, WHO Representative in Nigeria. “Massive disruption to health

services in conflict-affected areas for many years has deprived these children of essential childhood vaccinations. In addition, many of them have severe malnutrition, making them extremely vulnerable to serious complications and death from measles.”

POLIO PROGRAMME PROVIDES CRUCIAL SUPPORT

WHO is supporting the 3 state Primary Healthcare Development Agencies to prepare for the campaign; working with partners including UNICEF, the United States Centers for Disease Control (CDC) and other health nongovernmental organizations. WHO is providing expertise in areas including logistics, data management, training, social mobilization, monitoring and evaluation, supportive supervision (human resource) and waste management.

“Nigeria’s well-established polio vaccination programme provides a strong underpinning for the campaign,” says Dr Alemu. “Population data from the polio programme has been essential to guide planning for the measles campaign. We are also able to make use of staff that have vast experience in providing health services in very difficult and risky areas.”

High insecurity, difficult terrain and lack of functioning health facilities add to the enormous logistical challenges of organizing a large mass vaccination campaign that requires assembling and training more than 4000 vaccination teams and ensuring the vaccine is kept within cold chain conditions (+2 to 8 C) in a climate where average daytime temperatures are above 30 C.

The vaccination teams for this campaign are made up of 7 people including a supervisor, vaccinators (health workers), record keepers, community mobilizers and town criers. The teams will also give children deworming medication and vitamin A supplements at the same time as the measles vaccination.

To prevent double vaccinations especially in schools and camps for displaced people, vaccination cards were issued to all vaccinated children as well as the use of pen markers to mark their thumbs.

“This measles vaccination campaign is an emergency intervention to protect more than 4 million children against a highly contagious and sometimes deadly disease.” Dr Wondimagegnehu Alemu, WHO Representative in Nigeria.

EARLIER CAMPAIGNS SHOW RESULTS

From early September to 18 December 2016, WHO-established Early Warning, Alert and Response System (EWARS) reported more than 1500 suspected measles cases in Borno State. More than 77% of children aged less than 5 years in Borno State have never received the measles vaccine and this is the age group where most cases have occurred.

The Borno State Ministry of Health, with support from WHO and partners, has already vaccinated more than 83 000 children aged 6 months to 15 years living in camps for IDPs (internally displaced people) where measles cases had been reported. These campaigns have started to show results, with a reduction of measles cases around the camps.

“NIGERIA’S WELL-ESTABLISHED POLIO VACCINATION PROGRAMME PROVIDES A STRONG UNDERPINNING FOR THE CAMPAIGN,” SAYS DR ALEMU. “POPULATION DATA FROM THE POLIO PROGRAMME HAS BEEN ESSENTIAL TO GUIDE PLANNING FOR THE MEASLES CAMPAIGN. WE ARE ALSO ABLE TO MAKE USE OF STAFF THAT HAVE VAST EXPERIENCE IN PROVIDING HEALTH SERVICES IN VERY DIFFICULT AND RISKY AREAS.”

WINNING THE WAR AGAINST YELLOW FEVER



Four months have passed without a single case of yellow fever related to the outbreak in Angola and the Democratic Republic of the Congo, thanks to the joint response activities of national health authorities, local health workers, WHO and partners.

“It is incredible that such a large and diverse group of partners have come together to protect people against yellow fever,” said Dr Matshidiso Moeti, WHO Regional Director for Africa. “I’m also proud of the Organization-wide support. Staff from across all three levels of WHO – country offices, the Regional Office for Africa and headquarters – have come together under one integrated incident management system.

Each level has played an important role: starting from the country level where the outbreak is occurring, to the Regional Office for oversight, command and control and the global level coordination support.”

The outbreak, which was first detected in Angola in December 2015, had caused 962 confirmed cases of yellow fever across the two countries (884 in Angola 78 in DRC) by 16 November 2016,

with more than 7300 suspected cases. The last confirmed case reported in Angola was on 23 June and DRC's last case was on 12 July.

More than 41 000 volunteers and 8000 vaccination teams were involved in the mass immunization campaigns. The vaccines used came from a global stockpile co-managed by Médecins Sans Frontières (MSF), International Federation of the Red Cross and Red Crescent Societies (IFRC), UNICEF and WHO. In the first 6 months of 2016 alone, the partners delivered more than 19 million doses of the vaccine – three times the 6 million doses usually put aside for a possible outbreak. Gavi, the Vaccine Alliance financed a significant proportion of the vaccines.

“This is the result of a gargantuan effort,” said Dr Margaret Lamunu, Yellow Fever Incident Manager at WHO HQ. “30 million people have been vaccinated across the 2 countries – can you imagine the sheer logistics of getting vaccines out to that many people? Many of these people live in dense urban areas or remote rural settings. But we worked tirelessly with the respective governments and our partners – notably Gavi, UNICEF, CDC and all the GOARN partners – and together, we pulled it off.”

A NEW APPROACH TO VACCINATION FOR YELLOW FEVER OUTBREAKS

When, given the unprecedented nature of the outbreak, more vaccine was needed, WHO consulted global experts on the introduction of an innovative new strategy: an emergency fractional dose of the yellow fever vaccine.

“We had seen studies showing that one fifth of the usual dose of the yellow fever vaccine would provide immunity for at least a year and probably longer,” explained Sergio Yactayo, WHO expert on yellow fever.

“In an urban emergency situation like this one and to ensure greater coverage with the limited available global vaccine stocks, we knew that a fractional dose strategy should provide more people with the protection required to stop the outbreak. And fortunately the people of the Democratic Republic of

the Congo were willing to take advantage of this new approach to interrupt transmission in the sprawling capital city of Kinshasa where more than 10 million people were at risk ahead of the rainy season. Their support is one of the key reasons why the country has not seen an outbreak-related case since July.”

BROAD SUPPORT FOR THE YELLOW FEVER RESPONSE

In addition to supporting mass vaccination campaigns, WHO has worked with the governments of Angola and the Democratic Republic of the Congo and 56 global partners to strengthen laboratory capacity and disease surveillance, control the spread of mosquitoes and engage communities on how to protect themselves.

The Organization's response to the outbreak has been possible thanks to financial support from Angola, Gavi, the Vaccine Alliance, BioManguinhos, CERF, Germany, the ICG Revolving Fund, Japan, USAID, and the newly created WHO Contingency Fund for Emergencies.



“WE’RE THANKFUL TO THE GOVERNMENTS OF BOTH ANGOLA AND THE DEMOCRATIC REPUBLIC OF THE CONGO FOR THEIR LEADERSHIP OF THE RESPONSE TO DATE. WE’RE NOT FINISHED YET, HOWEVER,” DR MOETI CONTINUED. “WE NEED TO KEEP A CLOSE EYE ON THE SITUATION IN BOTH COUNTRIES, PARTICULARLY WITH THE COMING RAINY SEASON – THIS IS A PEAK TIME FOR YELLOW FEVER-CARRYING MOSQUITOES. WE NEED TO CONTINUE WORKING TOGETHER TO ENSURE THIS OUTBREAK IS TRULY OVER, AND TO PREVENT FUTURE OUTBREAKS.”

PREVENTING FUTURE YELLOW FEVER EPIDEMICS

Outbreaks like the one in Angola and the Democratic Republic of the Congo could become more frequent in many parts of the world unless coordinated measures are taken to protect people most at risk. Climate change, the mobility of people within and across borders, and the resurgence of the *Aedes aegypti* mosquito, have combined to increase the likelihood of yellow fever epidemics.

Awareness of this increased global risk brought together a broad coalition of partners in Geneva, Switzerland, recently to develop a new global strategy for the “Elimination of Yellow fever Epidemics” (EYE). Key components of the strategy include preventive vaccination (both in routine immunization schedules and mass campaigns), an expanded global vaccine stockpile for outbreak response and support for greater preparedness in the most at-risk countries.

“The current battle against yellow fever in Angola and the Democratic Republic of the Congo is coming to a close,” Dr Moeti explained. “But the broader war against the disease is just getting started.”



WHO STRENGTHENS SOUTH SUDAN'S DISEASE DETECTION AND RESPONSE



When a country has an outbreak of an infectious disease such as measles or cholera, a good system that can detect it early is essential to help prevent further spread, and save lives and resources.

TRAINING HEALTH WORKERS IN DISEASE DETECTION

WHO is working with the Ministry of Health and partners to develop local skills and knowledge, including training more than 1300 health workers in such areas as disease detection, outbreak investigation and response.

“South Sudan is a challenging work environment because of insecurity and a limited

ability to access some of the country’s most vulnerable people,” said Dr Abdulmumini Usman, WHO Representative to South Sudan. “WHO is doing everything it can to detect and respond to multiple disease outbreaks and to ensure that the Ministry of Health and partners have the skills and knowledge to do their part as best they can with the limited resources available.”

In South Sudan, infectious diseases pose a major public health challenge and cause significant levels of illness, disability and death for a country also caught in conflict. The country's weak public health systems aggravate the situation to effectively respond to largely preventable disease outbreaks. Frequent disease outbreaks are driven by multiple factors, including conflict leading to displacement of people and overcrowding and poor environmental conditions.

WHO estimates that 12.3 million people in South Sudan are at risk due to disease outbreaks. In 2015 and 2016, WHO helped to identify, investigate and respond to 49 disease outbreaks, including outbreaks of cholera, measles, viral haemorrhagic fever, malaria and hepatitis E virus from multiple locations.

With nearly 3 million cases reported since 2015, malaria is one of the biggest causes of illness and death in South Sudan. Cholera is also a major public health concern with more than 4 500 cases reported since 2015. Measles and kala azar are also major concerns.

GETTING A HANDLE ON DISEASE OUTBREAKS

Since 2006, WHO has been working in South Sudan to help set up an Integrated Disease Surveillance and Response (IDSR) system, thanks to funding from the United States Agency for International Development (USAID).

In 2013, WHO helped introduced the Early Warning Alert & Response System (EWARS) to complement and enhance the IDSR in South Sudan's conflict-affected states.

Detecting diseases early helps WHO, the South Sudan Ministry of Health and Health Cluster partners to respond more effectively. For example, early detection of nearly 3 000 cholera cases reported so far this year has helped WHO and partners to target where to vaccinate as part of the response. WHO and partners have delivered over 69 000 oral cholera vaccinations as part of the response.

To build the capacity for disease surveillance and response in South Sudan, WHO trained over 1 300 healthcare workers on IDSR activities in 2015 and 2016. This includes:

- 231 trained on integrated disease surveillance and response
- 732 trained on reporting, preparedness and case management of infectious diseases
- 253 rapid response teams trained on outbreak investigation and response
- 34 trained on cholera sample collection, processing, packaging, shipment; and cholera rapid diagnostic testing

"We appreciate the commitments of our donors and other partners in this important endeavour," says WHO's Dr Usman.

SEEING RESULTS DESPITE MAJOR OPERATIONAL CHALLENGES

WHO helped to strengthen the abilities of the national public health laboratory to confirm cholera, measles, meningitis, and bacterial pathogens like salmonella and shigella that can cause serious gastroenteritis.

WHO reports seeing improved reporting performance and data quality at county and facility levels. For example, completeness of IDSR reporting increased from 42% in 2014 to 50% in 2016. Timeliness increased from 27% in 2014 to 51% in 2016.

With improved case management capacities, WHO reports that the case fatality rate for cholera reduced from 2.6% in 2014 to 1.5% in 2016. In Juba, where two-thirds of the cases were reported in 2016, the case fatality rate fell to less than 1%.

PARTNER WITH US



The World Health Organization contributes to a better future for people everywhere. Good health lays the foundation for vibrant and productive communities, stronger economies, safer nations and a better world. Our work touches people's lives around the world everyday. As the lead health authority within the United Nations system, we help ensure the safety of the medicines and vaccines that treat and protect us, the air we breathe, the food we eat and the water we drink.

We aim to provide every child, woman and man with the best chance to lead a long, healthy and fulfilled life. We listen to countries and monitor health trends to work out what needs to be done to protect human health. We use the best scientific evidence available to establish the most effective ways to prevent, treat and cure health problems. The vision of health for all is no longer a dream, but an achievable concrete reality.

