



West African Health  
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## Editorial

I am honoured to take the helm of the West African Health Organization (WAHO). I am committed, under the political guidance of the Heads of State and Governments of ECOWAS, to work closely with all regional and international partners, the private sector and, of course, the general public in the ECOWAS member States to improve the status of health and ensure the better integration of the people in our region.

Going forward, my most important priorities will be two-fold: impact and legacy. The 320 million inhabitants of the West African Community should feel the impact of what we do at WAHO. WAHO's mandate from the Heads of State and Government is to strive to maintain the highest possible standard of health and healthcare for the region. To this end, we will aim to build the networks and capacity of primary healthcare workers in the region. This will be a way to achieve the Universal Health Care in the region and enable us to better carry out disease surveillance and predict epidemics.

We will seek to establish a drug manufacturing facility to serve the region. We would also like to develop a regional health observatory. Finally, we will work to reduce the mortality rate in mothers and children under the age of 5. These measures will allow our region to make progress towards achieving UN SDG 3. This is the legacy that I seek to establish.

We will focus our efforts on five thematic areas:

1. Maternal, child and adolescent health
2. Pharmaceuticals: Ensuring regional manufacturing, quality, and commodity security
3. Prevention and control of communicable and non-communicable diseases
4. Quality standards and centres of excellence
5. Up-to-date, region-specific health information on major health and health systems issues and interventions

I ask for continued support and funding from the Heads of State and Government to make all of this possible.

In the spirit of our renewed focus on sharing region-specific health information, this WAHO bulletin for the first time contains articles about a health topic beyond epidemic-prone diseases. In this issue, we included two articles about recent experiences with TB diagnostics in our region. We will appreciate your feedback about the usefulness of such articles. I further encourage you to send us suggestions about themes to cover in future issues of the bulletin.

*Director-General*  
*Prof Stanley Okolo*

# Overview of epidemic-prone diseases

## Overview of priority epidemic-prone diseases (EPD) and other health emergencies in the ECOWAS region in the first quarter of 2018

### Summary

The situation of EPDs in the region is being monitored by WAHO through a review of the weekly epidemiological bulletins of member states, as well as the data submitted to the regional data sharing platform. The objective is to inform WAHO and ECOWAS countries about disease trends and outbreak risks, in order to strengthen disease prevention and response.

During the first quarter of 2018, WAHO received reports for the thirteen weeks from all member countries. Data completeness in the regional platform could be improved thanks to a new data module, which allowed the direct import of data from the Excel files that the countries share with WHO. This contributed to an improved data availability and quality for the disease monitoring.

The most frequently notified diseases during the first quarter were measles (over 13,000 cases in 14 countries) and meningitis, (4,356 cases in 14 countries). However, the number of both diseases was lower compared to the same reporting period in the previous two years. In contrast, cholera and Lassa fever have seen a significant increase, particularly in Nigeria. Meningitis and Lassa fever caused the greatest number of deaths, killing 293 and 162 people respectively.

Figure 1 below shows the trend in suspected cases of the five main EPDs in the region. The number of suspected cases and deaths by country and disease are shown in table 1.

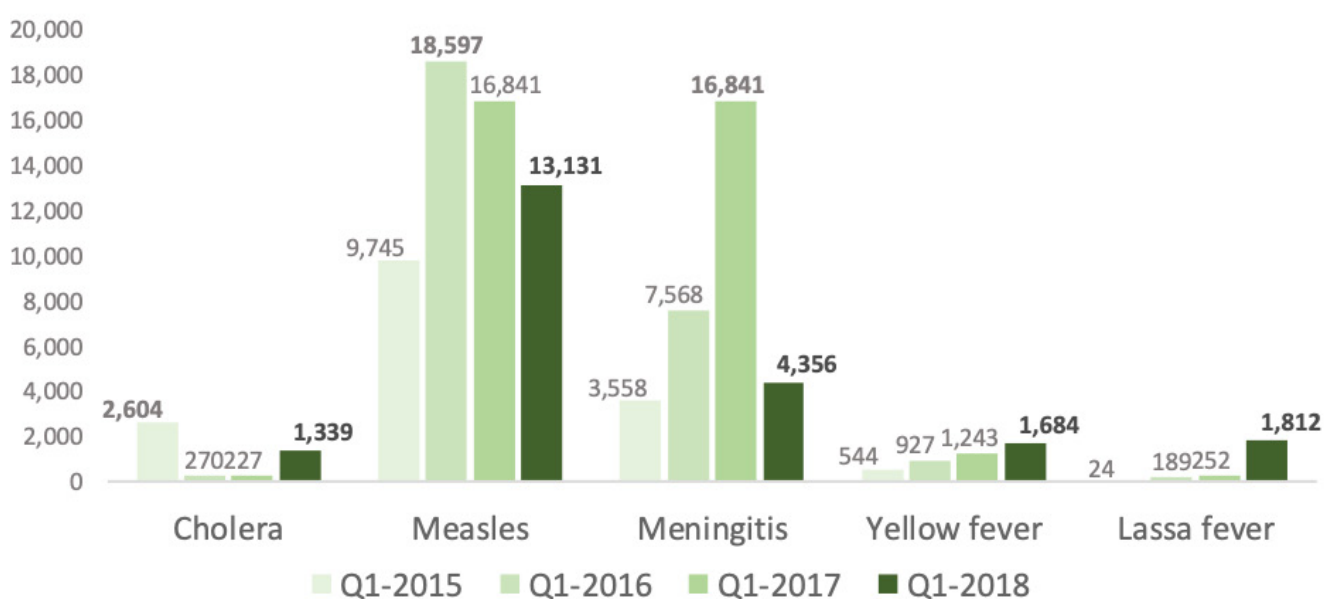


Figure 1: Trend in the number of cases (suspected or confirmed), of the main epidemic-prone diseases in the past four years

## Cholera

A total of 1,339 cases of cholera (suspected or confirmed) were notified during the first quarter of 2018 in the region. This represented nine times the number of cases in 2017 and 5 times the number in 2016 for the same period. However, contrary to previous years, almost all cases (1,262, 94%) were found in Nigeria which continued to grapple with the outbreak that had started towards the end of 2017. After Nigeria, the other two countries with a large number of cases were Liberia (35 cases), and Sierra Leone (32 cases). In the first quarter of 2018, cholera caused 38 deaths, all of which occurred in Nigeria (mortality rate of 3%).

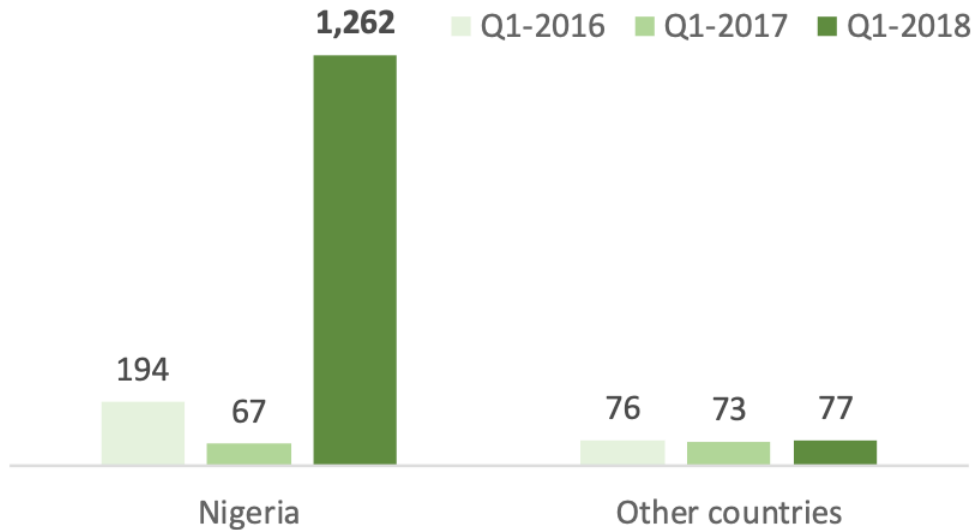


Figure 2: Trend of suspected or confirmed cases of cholera during the first quarters of 2016 - 2018 in Nigeria and the remaining ECOWAS countries

## Measles

Measles is one of the most widespread EPDs in the region. During the first quarter, a total of 13,131 cases (suspected or confirmed) were reported by 14 countries, with the only country not reporting any cases being Cape Verde. The mortality rate continued to be relatively low at 0.5%.

Whilst the number of suspected cases was high, it was 22% lower than during the same period in 2017, due to a better situation in Nigeria and Guinea. Burkina Faso and Liberia are the two countries with the most significant increase in the number of cases notified.

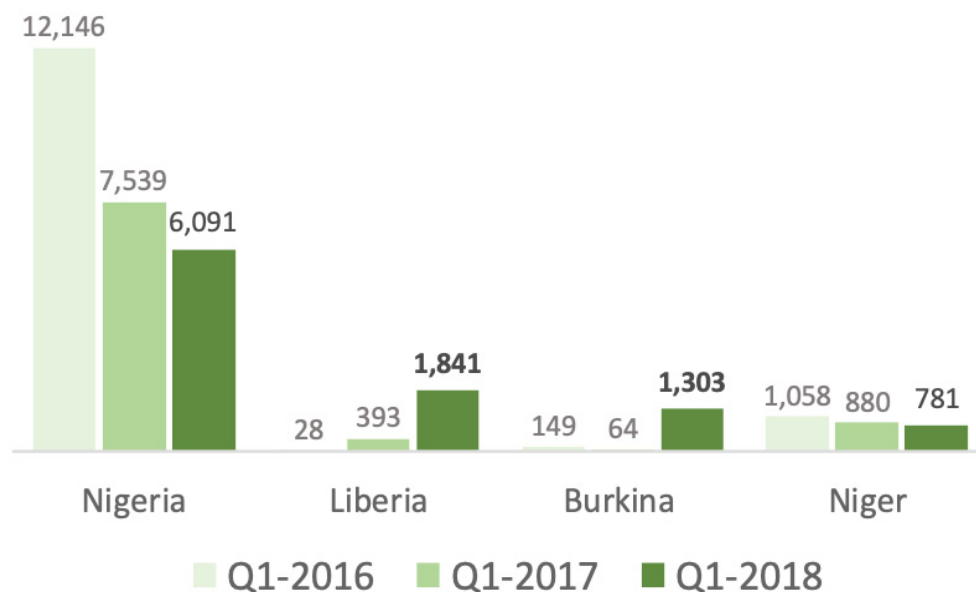


Figure 3: Trend of measles cases reported by the countries most affected in Q1 between 2016 to 2018

## Meningitis

Meningitis is among the EPDs with the highest incidence and a particularly serious problem in the region. During the first quarter of the year, a total of 4,356 cases (suspected or confirmed) and 293 deaths (mortality rate = 6,7%) were registered in 14 countries, with the only exception being Guinea-Bissau. Nigeria, Burkina Faso, Ghana and Niger are the countries that were affected the most. Together they accounted for 75% of the cases. Figure 4 shows the trend of cases (suspected or confirmed) in the four most affected countries.

The incidence of the disease was lower in 2018 than during the same period for previous years, with 7,161 cases in 2017 and 7,568 cases in 2016 respectively. However, there was a rapid increase in the number of cases in Niger and Nigeria towards the end of the quarter, raising the concern of a possible resurgence of the disease similar to the situation in 2017.

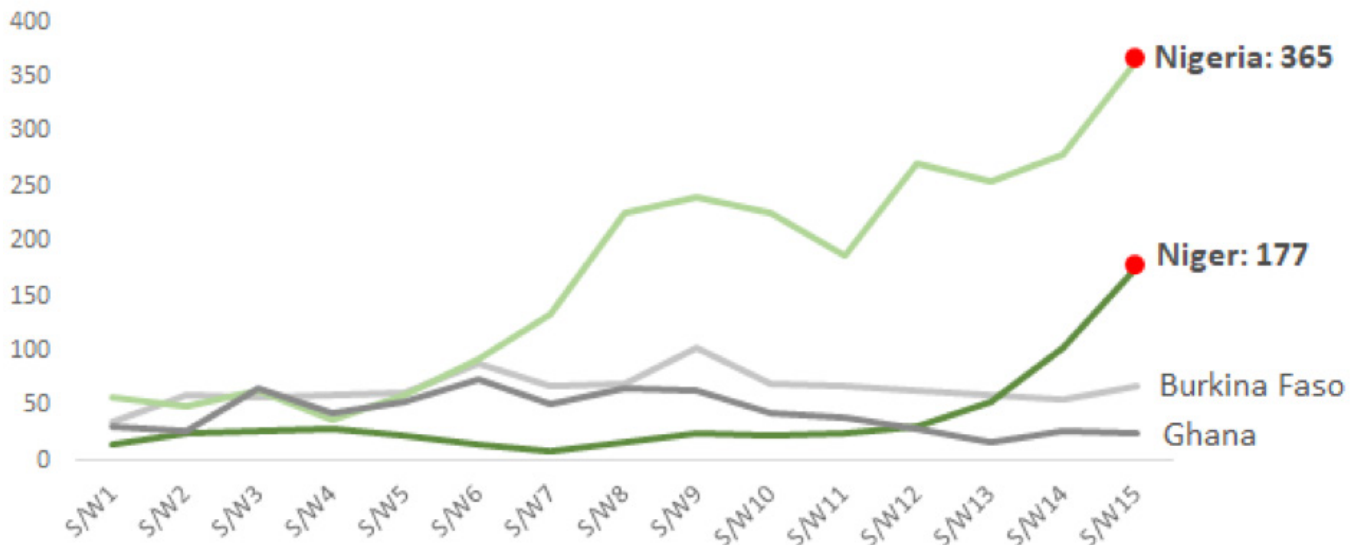


Figure 4: Trend of suspected cases of meningitis in the first quarter of 2018 in Burkina Faso, Ghana, Niger and Nigeria

## Lassa fever

The incidence of Lassa fever has been increasing in the ECOWAS region over the years. Since 2015, Nigeria, Liberia and Sierra Leone reported cases in every year, and the same was the case for Benin since 2016. In the first quarter of 2018, 1,812 (suspected or confirmed) cases were reported, causing 162 deaths; this included 2 suspected cases in Gambia. During the same period in 2017 and 2016, only 252 cases and 189 cases respectively were registered. The great majority of cases were reported by Nigeria (1,706; 94% of all cases). The mortality rate of 8.9% in the first quarter of 2018 was comparable to that of 2017 (6%), and continues to be lower than that of 2016 (23.3%).

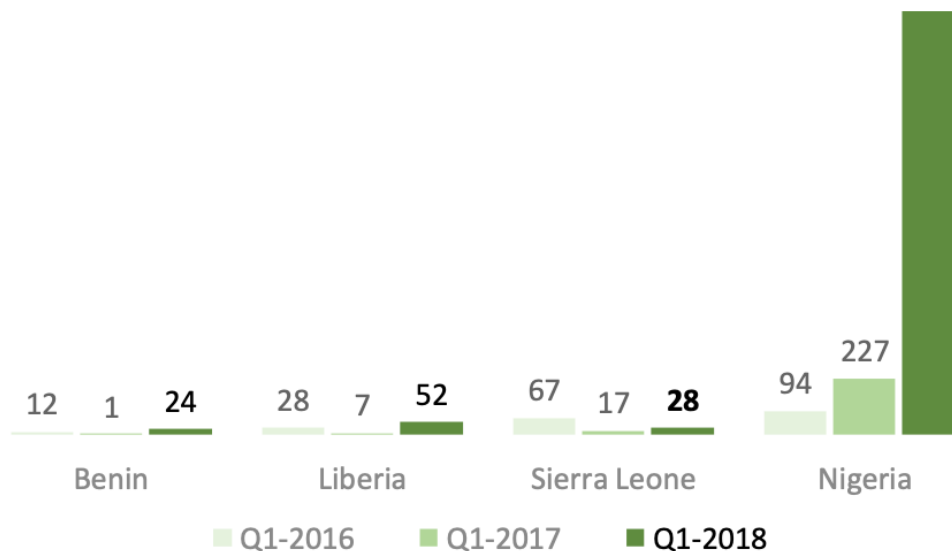


Figure 5: Trend of reported cases of Lassa fever between 2016 and 2018 in the affected countries (Q1)

## Dengue fever

During the first quarter of the year, only Burkina Faso reported cases of dengue fever: In total, 903 cases and 6 deaths, much more than the 260 cases and 1 death that were reported for the same period in 2017. In 2017, the other two countries that reported were Ivory Coast (during the second and third quarter) and Senegal (in the third quarter). However, in Quarter 1/2018 these countries did not report any cases. Nevertheless, the overall trend observed over the past three years shows that the disease is expanding in the region, both in terms of the number of cases and the number of countries affected.

The figure below shows that the number of suspected or confirmed cases of dengue fever during the first quarter has remained above that observed during the same period in 2017 in Burkina Faso.

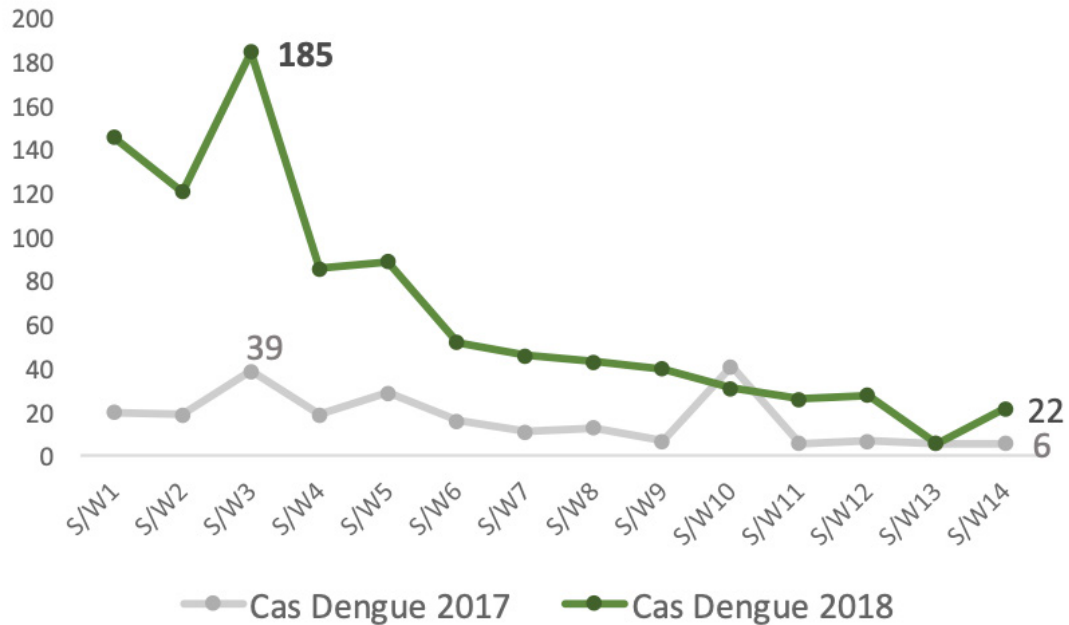


Figure 6: Trend of dengue fever cases (suspected or confirmed) in Burkina Faso during the first quarter of 2017 and 2018

Country	Cholera		Meningitis		Measles		Yellow Fever		Lassa Fever		Neonatal Tetanus	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Benin	0	0	123	10	298	1	28	0	24	9	1	0
Burkina Faso	0	0	869	59	1303	5	320	5	0	0	2	1
Cape Verde	0	0	1	0	0	0	0	0	0	0	0	0
Ivory Coast	1	0	92	1	697	0	224	0	0	0	3	2
The Gambia	8	0	6	0	11	0	2	0	2	0	0	0
Ghana	0	0	625	49	511	0	219	0	0	0	4	0
Guinea	1	0	90	11	682	6	42	2	0	0	36	17
Guinea-Bissau	0	0	0	0	1	0	0	0	0	0	1	0
Liberia	35	0	22	1	1841	2	27	0	52	7	4	0
Mali	0	0	180	1	548	0	58	3	0	0	1	0
Niger	0	0	306	24	781	1	11	0	0	0	2	0
Nigeria	1262	38	1804	119	6091	53	618	0	1706	142	11	2
Senegal	0	0	69	3	190	0	50	0	0	0	0	0
Sierra Leone	32	0	14	4	107	0	17	0	28	4	10	2
Togo	0	0	155	11	70	0	68	0	0	0	3	0
<b>Total ECOWAS</b>	<b>1339</b>	<b>38</b>	<b>4356</b>	<b>293</b>	<b>13131</b>	<b>68</b>	<b>1684</b>	<b>10</b>	<b>1812</b>	<b>162</b>	<b>78</b>	<b>4</b>

Sources: IDSR country services

Table 1: Number of cases and deaths (suspected or confirmed), of the main epidemic-prone diseases reported in the ECOWAS region during the first quarter of 2018

# Focus on tuberculosis

## Improving TB case detection: Strengthening and sustaining active case finding in ECOWAS

**Actively reaching under-served or high risk populations for TB screening, testing and care is crucial for closing the gap in case detection. Although costly, this approach can avert the greater cost of caring for these individuals at a later stage.**

By Paula Akugizibwe

Detection of TB remains a challenge worldwide, with 40% of estimated total TB cases not notified<sup>1</sup> - leading to deaths of patients who remain undiagnosed and therefore untreated. This problem is particularly pronounced in the African region. Five ECOWAS countries are in one or more of the global lists of countries with the highest burdens of TB (HBCs). Nigeria is among the countries with the highest numbers of all-TB, TB-HIV, and MDR-TB patients. Liberia and Sierra Leone are both among the countries with the highest rates of TB per capita, while Ghana, Guinea-Bissau and Liberia are among the countries with the highest rates of TB-HIV co-infection per capita.

However, with the exception of Sierra Leone, case detection rates (CDR) in these countries - the proportion of incident cases that are detected and notified - are all lower than the global average (Table 1), and below 40% in Ghana, Guinea-Bissau and Nigeria. Nigeria in particular has been flagged as one of the top three HBCs in which intensified effort to improve CDR is needed in order to meet global TB goals - while only 4% of estimated global TB incidence is found in the country, it accounts for 8% of missing cases worldwide<sup>2</sup> - but at the same time, available diagnostic capacity such as GeneXpert machines remain under-utilised.<sup>3</sup>

	Ghana	Guinea-Bissau	Liberia	Nigeria	Sierra Leone
<b>Total TB Incidence (WHO estimate)</b>	4,4000	6,800	14,000	407,000	22,000
<b>Total TB Notifications</b>	14,675	2,247	7,180	100,433	14,114
<b>Case Detection Rate (all TB)</b>	33.4%	33.0%	51.3%	24.7%	64.2%

Table 2: TB Incidence and Case Detection in 5 High-Burden ECOWAS countries (WHO 2017)

Addressing these gaps requires countries to move beyond passive case finding (PCF) — the traditional approach to TB detection in which screening and diagnosis only happens when TB patients present themselves at health facilities. Globally, there is increasing emphasis on the need for active case finding (ACF), which is viewed as crucial for closing the case detection gap. The Stop TB Partnership (STBP) defines ACF as “special efforts made by the NTP or other partners...in which communities or population groups that are underserved or at higher risk of TB are actively reached for providing access to care, including screening and testing”.<sup>4</sup> However, large scale implementation of active case finding has proven difficult. A recent study on the impact of ACF projects supported in the first two rounds of the STBP’s TB Reach program found that, while these projects significantly increased TB detection in the intervention areas, in most cases they did not impact overall notification of smear-positive (SS+) at the national level, either during or after the intervention.<sup>5</sup>

<sup>1</sup> WHO 2017 TB report

<sup>2</sup> WHO Global TB report

<sup>3</sup> Gidado Paper

<sup>4</sup> TB Reach case studies doc

<sup>5</sup> Koura study

The only exception was an ECOWAS country, Benin, where there was a significant increase in SS+ notification at both local and national levels during the intervention. However, as the authors pointed out, “it was estimated that cost per new patient diagnosed through the ACF [in Benin] was more than US\$4000 and a dedicated team with a medical doctor and nurses was hired. In other countries, the cost per TB case detected was estimated at around US\$800”. This illustrates the challenge with ACF projects, which are often resource-intensive and confined to specific localities and timelines. Although such projects might generate lessons to inform broader national approaches to case finding, these lessons are often not scalable to national level due to the amount of resources required.

But while ACF can be costly, it is important for countries to consider the costs that are averted by achieving earlier diagnosis among individuals who are known to be at high risk of TB. For example, WHO recommends ACF among household contacts of TB patients but implementation is weak in many settings, as conducting active follow-up in the communities is resource-intensive. However, cost-effectiveness studies in various settings such as Uganda and Peru have found that, when considering the costs averted, household contact investigation in combination with PCF is actually cost-effective compared to PCF alone.<sup>6</sup> By investing in household contact investigation, which is likely to yield high rates of TB diagnoses, countries could save themselves costs associated with undiagnosed and untreated TB.

Through partnerships, TB ACF can also be embedded within other health programs, enabling scale-up of ACF without the need to invest in entirely separate projects. The most widely implemented example of this is TB screening within HIV care settings, which has become a key component of the global HIV response. There are many other areas where partnerships could potentially yield high benefit for ACF- for example, integrating TB screening into malnutrition or diabetes programs.<sup>7</sup> Partnerships with the private health sector are also essential: in many countries, private doctors or pharmacies are the first point of care for TB patients, but management of TB in the private sector is often fragmented, poorly monitored and of variable quality, leading to many missed opportunities to detect TB.

Additionally, given the severe human resource shortages in most countries’ health sectors, relying on nurses and doctors to conduct ACF for TB is both costly and unrealistic. Engagement of community members or lay health workers can offer a relatively less costly but highly effective way to scale up ACF. In Rwanda for example, nearly half of presumptive TB cases and one in four confirmed TB diagnoses at the national level are referred through community health workers, as part of their broader mandate.<sup>9</sup> In Pakistan, TB screening by lay health workers in private facilities, combined with a mass communications campaign on the symptoms of TB, resulted in a 3.77 increase in TB notifications for adults and 7.32 times increase for children in one year alone.<sup>10</sup>

***“ACF can also be embedded within other health programs, enabling scale-up of ACF without the need to invest in entirely separate projects..”***

***“By investing in household contact investigation, countries could save themselves costs associated with undiagnosed and untreated TB.”***

Above all, it is important to remember that there is no one-size-fits-all model for ACF. The choice of target population, algorithms, screening sites and diagnostics should be based on a careful analysis of national epidemiology and health systems, including human resources and facility/community infrastructure. In some ECOWAS countries such as Ghana<sup>11</sup> and Nigeria<sup>12</sup>, such research has been conducted, and should inform national case finding strategies. The most effective and sustainable approaches to ACF will vary from context to context, and by investing in careful evidence-based planning, TB programs can ensure more rapid and sustainable progress towards case detection goals.

<sup>6</sup> Shah study, Sekandi study

<sup>7</sup> <http://sciencespeaksblog.org/2017/08/09/study-screening-malnourished-children-for-tb-in-high-burden-countries-would-boost-detection/>

<sup>8</sup> Jeon et al [https://www.cap-tb.org/sites/default/files/documents/Bidirectional%20screening%20for%20DM%20and%20TB.systematic%20review\\_0.pdf](https://www.cap-tb.org/sites/default/files/documents/Bidirectional%20screening%20for%20DM%20and%20TB.systematic%20review_0.pdf)

<sup>9</sup> <http://www.afro.who.int/news/rwanda-employs-stringent-measures-significantly-decline-tb-incidences>

<sup>10</sup> Khan 2012

<sup>11</sup> Ohene 2017 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5709967/>

<sup>12</sup> [https://www.researchgate.net/publication/301298611\\_Impact\\_of\\_community\\_based\\_tuberculosis\\_care\\_interventions\\_on\\_TB\\_Case\\_detection\\_in\\_Nigeria\\_-\\_What\\_works\\_and\\_what\\_does\\_not](https://www.researchgate.net/publication/301298611_Impact_of_community_based_tuberculosis_care_interventions_on_TB_Case_detection_in_Nigeria_-_What_works_and_what_does_not)



## Nigeria and GeneXpert TB diagnostics: exploring and addressing the challenges

**GeneXpert has the potential to revolutionise TB diagnostics. But to realise its potential, there is a need for context-specific strategies to ensure full functionality in less favorable external conditions.**

By Paula Akugizibwe

When the World Health Organisation (WHO) endorsed the GeneXpert diagnostic machine as a first line TB test in 2010, this was hailed as a milestone in the global TB response<sup>13</sup>. GeneXpert promised a much quicker and more accurate diagnosis of TB and drug-resistant TB at the health facility level, and a shift from microscopy to cutting-edge molecular technology. However, its implementation has faced numerous challenges, and studies in several African countries have found that its impact on mortality has not been as large as expected.<sup>14</sup>

The test was rapidly scaled up across the world, and by 2016, all ECOWAS countries had procured Xpert machines and cartridges. Nigeria<sup>15</sup>, ranked 7th on the global list of high-burden countries (HBC), procured over half a million cartridges. In May 2017, the Federal Government of Nigeria reported that it had deployed 185 machines across the country, trained personnel, and established a maintenance plan for the machines as well as systems for supply chain management, supervision and M&E.<sup>16</sup> Despite this planning by the National Tuberculosis and Leprosy Control Program (NTLCP), Nigeria - like many other developing countries - grapples with broader health system gaps that have affected the scale-up of Xpert.

A research study published in March 2018, based on data from 52,219 tests conducted in 2015, found that Xpert machines were under-utilised, and that among the tests conducted, 11% were unsuccessful due to error results, invalid results, or no results (Gidado et al 2018<sup>17</sup>). Error results in particular stood at an especially high rate of 5.7% at the primary health care level, although, as highlighted by the authors, the Xpert manufacturer has warned that “a cumulative error rate greater than 5% is unacceptable and should be investigated and resolved immediately”.

The study found that 69% of the underlying causes of the error results were due to technical errors. Technical errors are often associated with human error due to non-adherence to protocols, and were noted across all cadres of staff at primary, secondary and tertiary levels of care. Although the NTLCP had invested extensively in training for Xpert implementation, the authors pointed out that high rates of health care worker attrition from the public sector can leave Xpert testing in the hands of less experienced staff. Sustaining and strengthening the NTLCP’s ongoing capacity-building efforts is therefore crucial, and needs to take account of high staff turnover rates.

**“Technical errors are often associated with human error, and were noted across all cadres of staff at primary, secondary and tertiary levels of care.”**

***GeneXpert can detect the presence of TB in under two hours, compared to the 48-hour waiting period needed for sputum smear microscopy. It is more sensitive than microscopy, especially in immunosuppressed patients. Xpert can also detect resistance to rifampicin, a first-line drug, in TB strains. Rifampicin resistance serves as a surrogate for multi-drug resistant TB (MDR-TB) - a diagnosis that would otherwise take several weeks if using conventional drug susceptibility testing, during which the patient could deteriorate and may also transmit the resistant strain to others in the community.***

Other causes of errors included external environmental factors such as high temperatures and dust. While improved maintenance of refrigerators and air conditioners is needed, even minor adjustments like ensuring a small space between the Xpert machine and the wall could help with temperature regulation. Unstable electricity was also a problem faced at all levels of care. Increased investment in sustainable back-up power supplies is needed - an issue that is not specific to the TB program. Like many of the other issues raised, it highlights the limitations of deploying strong technology within weak health systems.

<sup>13</sup> [http://www.who.int/tb/features\\_archive/new\\_rapid\\_test/en/](http://www.who.int/tb/features_archive/new_rapid_test/en/) . Accessed 24 May 2018

<sup>14</sup> <https://academic.oup.com/trstmh/article/110/8/432/2427525> . Accessed 24 May 2018

<sup>15</sup> <http://apps.who.int/tb/laboratory/xpertmap/> . Accessed 24 My 2018

<sup>16</sup> <https://naca.gov.ng/2017/05/government-nigeria-deploys-185-genexpert-machines-across-country/> . Accessed 24 May 2018

<sup>17</sup> Gidado M, Nwokoye N, Nwadike P, et al. Unsuccessful Xpert® MTB/RIF results: the Nigerian experience. Public Health Action. 2018;8(1):2-6. doi:10.5588/pha.17.0080.

The challenges described in Gidado’s article are not unique to Nigeria, and have been noted in many other countries since the early stages of Xpert roll-out. A key lesson that the authors flagged was the need to look beyond access to Xpert as the main indicator for gauging success. Monitoring and reducing the rate of unsuccessful tests, which offer no patient benefit and waste valuable resources, is equally important, as is increasing utilisation of Xpert. The authors recommended that “the NTLCP and donors should prioritise the implementation of strategies for improved functionality of Xpert machines over the installation of new machines.”

***“A key lesson is the need to look beyond access to Xpert as the main indicator for gauging success.”***

Finally, it is important to note that the gains promised by scale-up of Xpert implementation cannot be achieved without an intensified effort in all areas of TB care. Several studies in high-burden settings including Nigeria have shown that, even when test results have been successfully processed, Xpert has not significantly improved survival of TB patients, despite the earlier diagnosis that it consistently achieves.<sup>18</sup> However, its limited impact on mortality is often due to factors beyond the scope of diagnostic activities.

As Pai et al commented earlier this year: “the purpose of a TB diagnostic test is to rapidly and accurately identify

patients with TB. Once this is done, other factors become more prominent, for example, what treatment is initiated and why... These steps in the care cascade are often weak in many settings. In that case, is it fair to expect a TB test to save lives?”<sup>19</sup> It is therefore essential that TB responses do not concentrate on single innovations, but work comprehensively to strengthen the complete cascade of care, from prevention to active case finding through to treatment completion.

<sup>18</sup> Akanbi MO, Achenbach C, Taiwo B, et al. Evaluation of gene xpert for routine diagnosis of HIV-associated tuberculosis in Nigeria: A prospective cohort study. BMC Pulmonary Medicine. 2017;17:87. doi:10.1186/s12890-017-0430-6.

<sup>19</sup> Pai M, Schumacher SG, Abimbola S. Surrogate endpoints in global health research: still searching for killer apps and silver bullets?BMJ Glob Health 2018;3:e000755. doi:10.1136/bmjgh-2018-000755

# Health Information Systems

## Strengthening analysis and evidence for RMNCAH in West and Central Africa



One of WAHO's top priorities is the availability and accessibility of high-quality health information across the ECOWAS region, on all levels of the health systems. Given the still relatively weak institutional capacity at the national level to produce and communicate actionable insights, WAHO continues to build partnerships to strengthen the technical and organizational capacities of national institutions. In the first quarter of 2018, WAHO collaborated with WHO, UNICEF, UNFPA and the Countdown to 2030 Project to carry out a regional initiative to strengthen the data analysis capacity for reproductive, maternal, neonatal, child and adolescent health and nutrition (RMNCAH&N) in West and Central Africa. The general objective of the initiative is to (1) strengthen the evidence-base in support of RMNCAH programmes through multi-country studies, (2) strengthen the capacity of countries and regional institutions in the analysis of survey- and other data, interpretation of findings, and their communication to political decision-makers.

A workshop designed to strengthen the capacity of participants in analyzing RMNCAH data was held in Senegal in March. It brought together representatives of ministries of health, public health institutions and academia from the 15 ECOWAS countries as well as five Central African countries. Participants conducted their own analyses based on their country's DHS/MICS data. They contextualized the interpretation of the results by linking low coverage data to gaps in health services or programs, and gained experience with tools such as StatCompiler and HeatPlus.

In preparation of a second workshop, participants will compile health system and facility data for their respective countries. As a result of the two trainings, participants will be expected to:

- Be able to conduct comparative analyses with regards to RMNCAH inequalities, along three dimensions: wealth, residential setting (urban-rural) and administrative region
- Develop joint scientific publications with a similar thematic focus, i.e. socioeconomic inequalities; regional inequalities at the subnational level, and inequalities between the capital city, secondary cities, and rural settings.

Preparations are already underway for the continuation of the project in the year 2019, which will focus on other aspects related to RMNCAH evidence generation.



**This document is produced by the West African Health Organization (WAHO).**

WAHO is the specialized agency of the Economic Community of West African States (ECOWAS) for health matters. It was established in 1987 and is headquartered in Bobo-Dioulasso, Burkina Faso.

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