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Availability of AFP Specimen Collection Kits and Data Tools in Health Facilities in Selected States in Nigeria

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ABSTRACT

Background: *Acute flaccid paralysis (AFP) surveillance was adopted globally as a key strategy for monitoring the progress of the polio eradication initiative. The main objective of AFP surveillance is to detect the presence of circulating wild-type poliovirus and other subtypes of polioviruses. Stool specimen collection kits for AFP surveillance and data tools, regrettably are not always available in health facilities, and thus cause gaps in specimen collection and proper documentation which could ultimately lead to under-reporting of cases.* ***Methods:*** *This survey was undertaken to determine the availability of stool collection kits and data capturing tools in health facilities in some randomly selected states in Nigeria. The main aim was to relate the findings with the quality of the surveillance system in the areas visited and an overall indication of the functionality of the process in the country.* ***Results:*** *The outcome of the study found only 32,598 (74.7%) health facilities out of the 43,644 health facilities visited had stool specimen collection kits, while of the 43,582 health facilities visited, only 38,029 (87.3%) health facilities had data tools.* ***Conclusions:*** *Gaps were noticed in the supply of key AFP surveillance components to the health facilities visited, which by extension could apply to those not visited. Countries that are still polio-endemic will have to regularly survey their facilities for the availability of these very important materials. The methodology can be adapted to other diseases to evaluate the strength of the surveillance system.*

Keywords: Poliovirus, AFP surveillance, Specimen collection kits, Data tools, Health facilities

INTRODUCTION

Acute flaccid paralysis (AFP) surveillance was adopted globally as a key strategy for monitoring the progress of the polio eradication initiative [1,2]. Highly sensitive AFP surveillance, including immediate case investigation and specimen collection, are critical for the detection of wild poliovirus circulation with the ultimate objective of polio eradication. AFP surveillance is also critical for documenting the absence of poliovirus circulation for the purpose of polio-free certification [3,4]. The main objective of AFP surveillance is to detect the presence of circulating wild-type poliovirus and other subtypes of polioviruses. The data obtained, determines the final measure of a country's progress towards polio eradication. It also allows program managers to plan effective strategies for national immunization campaigns and supplemental activities [5,6].

The quality of AFP surveillance is evaluated by tracking 2 principal performance indicators. One of such is the proportion of AFP cases for which adequate stool specimens were collected; the target is ≥ 80%, indicating surveillance can effectively identify poliovirus among children with AFP [7,8]. Stool specimen collection kits for AFP surveillance and data tools regrettably are not always available in health facilities, thus causing gaps in specimen collection and proper documentation. Improvisation on the other hand, reportedly caused inadequate specimens, poor temperature regulation in transit, biosafety hazards at receipt and wrong or poor documentation [9-11]. This paper aims to determine the availability of AFP stool collection kits and data capturing tools in health facilities, with a view to evaluating the quality of the surveillance system in Nigeria.

MATERIALS AND METHODS

A cross-sectional survey was carried out in 24 out of the 36 states and FCT from January 2018 to September 2018 across the country as shown in Figure 1. Some health facilities were randomly selected in the states visited and surveyors were engaged for the assessment. An interviewer-administered questionnaire was used to collect data, which was then analyzed in an excel sheet.

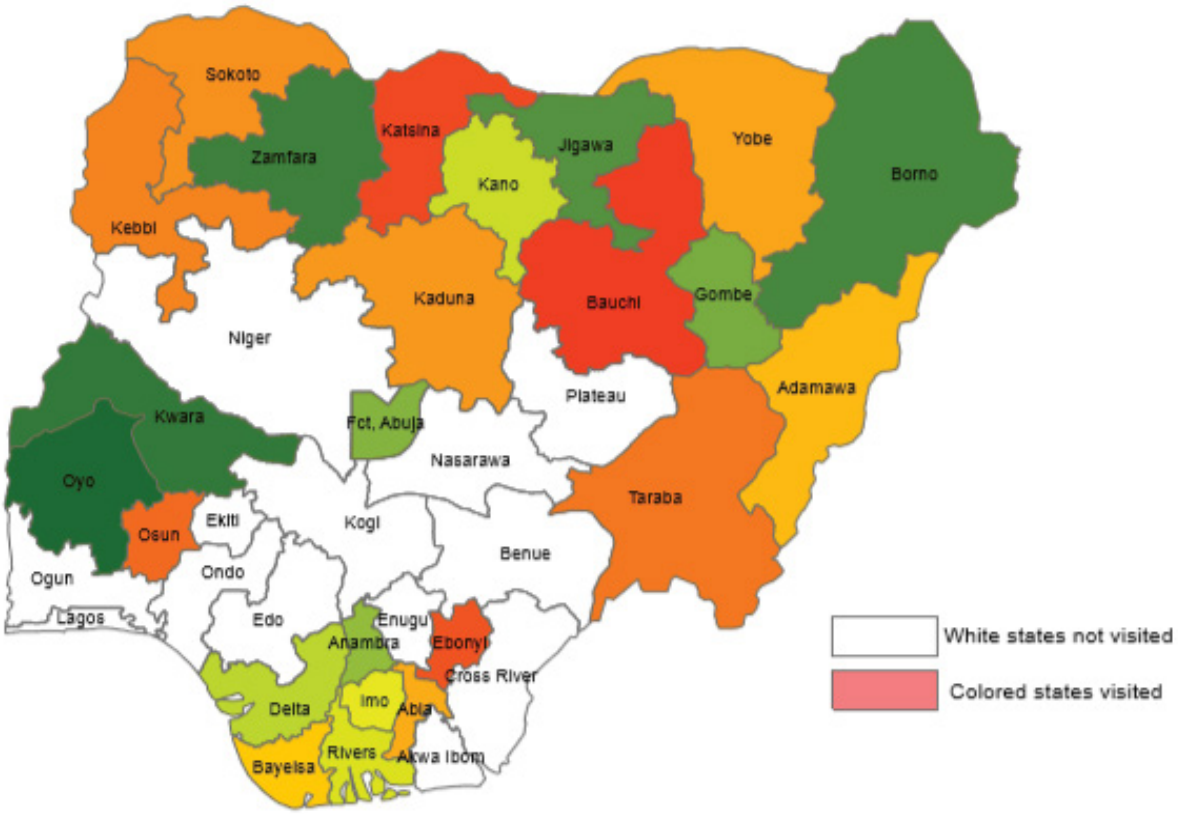

Figure 1 States and the Federal Capital Territory (FCT) visited

RESULTS

Stool Specimen Collection Kits

About 43,644 health facilities were visited and found to have stool specimen collection tools. The study revealed that each state had facilities with stool specimen collection kits as shown in Figure 2. Bayelsa State had the lowest percentage (48%) of health facilities having stool specimen collection kits amongst the facilities visited. Oyo State had the highest percentage (94%) of health facilities visited having kits. Two states (Bayelsa and Kaduna) had specimen collection kits in less than 50% of the health facilities visited. On the other hand, Oyo and Taraba states had specimen collection kits in over 90% of their health facilities visited.

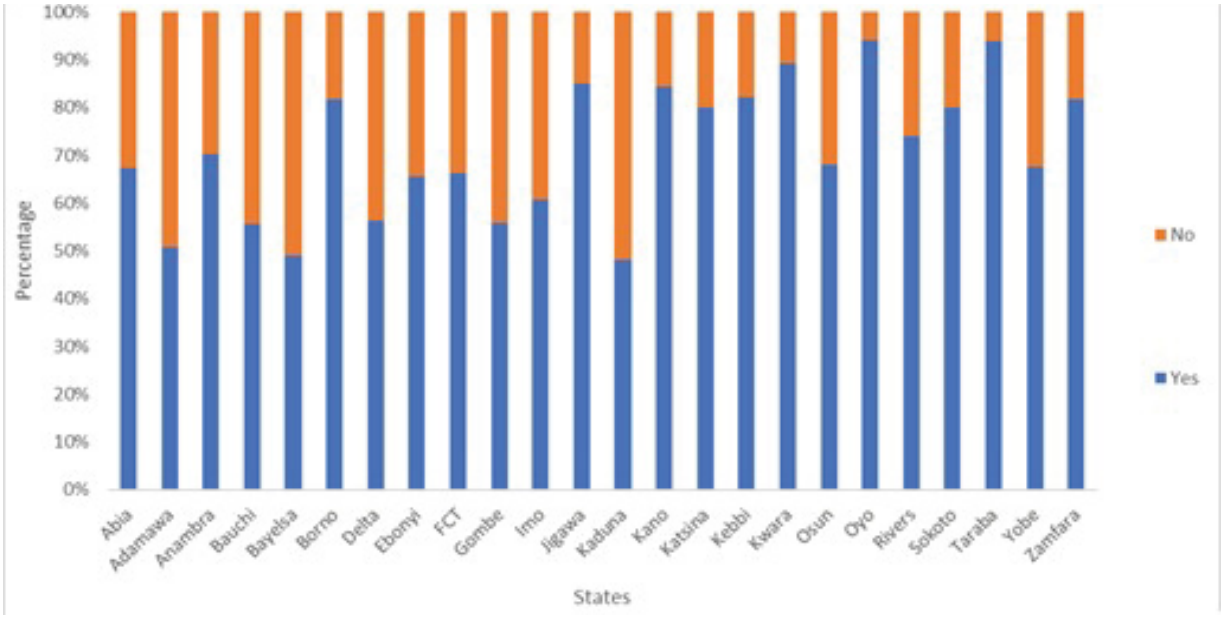

Figure 2 Availability of stool collection kits in health facilities, Jan 2018-Sept 2018

Data Tools

A total of 43,582 health facilities were found with data tools, as shown in Figure 3. From Figure 3, it can be seen that in all the states visited more than half of the facilities had data tools. Furthermore, about 9 states (Bauchi, Gombe, Jigawa, Kano, Katsina, Kebbi, Kwara, Oyo, and Sokoto) and the FCT had data tools in more than 90% of the health facilities visited. Whereas, Abia, Adamawa, Anambra, Bayelsa, Borno, Delta, Ebonyi, Imo, Kaduna, Osun, Rivers, Taraba, Yobe and Zamfara states had data tools in less than 90% of the health facilities visited.

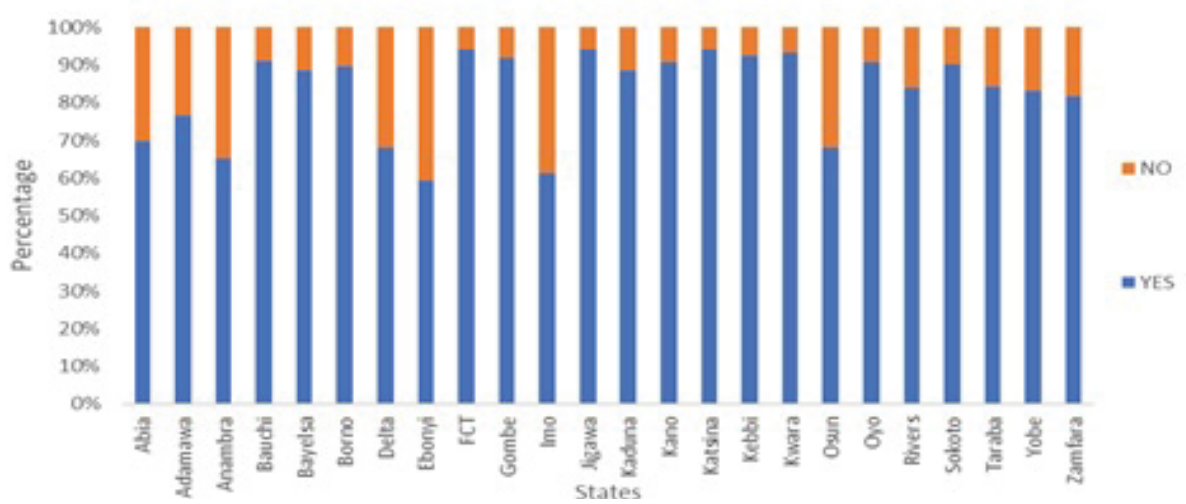

Figure 3 Availability of data tools in health facilities, Jan 2018-Sept 2018

DISCUSSION

Of the 43,644 health facilities visited, about 32,598 (74.7%) were found to have stool specimen collection tools, while 11,046 (25.3%) lacked the kits. Out of 43,582 health facilities visited to assess the availability of data tools, 38,029 (87.3%) health facilities had the data capturing tools, whereas, in about 5,553 (12.7%) health facilities the data tools were not available at the time of the survey.

Overall, about one-fourth (11,046; 25.3%) of the health facilities visited lack stool specimen collection kits, which could lead to AFP cases missed as a result of this inadequacy. In this survey, about 13% of the health facilities visited

had no data tools, though much lower when compared with similar studies conducted [1,12]. As small as this number is, in a country that is polio-endemic calls for urgent and immediate intervention. It is common knowledge that not all health facilities keep data tools, mostly resorting to sourcing these vital materials from nearby facilities as it was observed [1]. In similar work in Nigeria, AFP case notification forms were sighted in only 20% of LGAs assessed [13].

So many reasons could be advanced to explain the non-availability of specimen collection kits and data tools in most facilities, but the commonest one being a knowledge gap on the side of the health workers which may not allow them to see reason on why they should preposition these items in their facilities [13-15].

As the quality of AFP surveillance is conventionally being evaluated by tracking 2 principal performance indicators, one of which is the proportion of AFP cases for which adequate stool specimens were collected in a situation where these kits are not available, it becomes very difficult to convincingly assess the system [7,16]. Improvisation to bridge the gap as an alternative has been observed to result to; poor temperature regulation in transit, biosafety hazards at receipt and wrong or poor documentation [10]. However, earlier studies conducted in Nigeria showed an improvement in surveillance quality from 2009 to 2014 in the 3 states they visited, which they linked to the implementation of key surveillance activities, including expansion of the reporting network of community informants, training of disease surveillance and notification officers, engagement and sensitization of community-based organizations, sensitization of the public via the media, establishment of environmental surveillance, and initiation of contact sample collection [13,17].

One important factor that might explain why most African countries cannot adequately have enough stool collection kits and data tools could be linked with the relatively high cost of running the system, most states/districts have inadequate resources to manage the system [9,18,19]. In the long run, timely and adequate supply of specimen kits and data tools and ensuring their judicious use will surely improve AFP surveillance [20]. There could be other needs that the system may require, for it to function optimally apart from those outlined [21].

CONCLUSION

The study revealed some level of functionality of the surveillance system as it relates to the availability of key materials. The health worker's knowledge about the need to preposition all the items needed for effective surveillance has to be improved for them to work optimally. This could help them in sourcing and making all items and relevant documents available that will help keep the system running. Resources have to be made adequately available because of the high cost of managing the system. In the long run, timely and adequate supply of specimen kits and data tools and ensuring their judicious use will surely improve AFP surveillance and other diseases.

DECLARATIONS

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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