Author's response to reviews

Title: Evaluation of AFP surveillance indicators in polio-free Ghana, 2009-2013

Authors:

John K Odoom (jodoom@noguchi.mimcom.org)
Nana Afia A Ntim (nasantentim@noguchi.ug.edu.gh)
Badu Sarkodie (sarks60@yahoo.co.uk)
James Addo (jakaddo@yahoo.com)
Keren Minta-Asare (kasare@noguchi.ug.edu.gh)
Miriam Eshum (msagoe@noguchi.ug.edu.gh)
Vincent V Ahove (ahovevi@who.int)
Stanley Diamenu (diamenus@who.int)
Michael Adjabeng (golejeroen@hayoo.co)
Jacob Arthur-Quarm (jquarm@noguchi.ug.edu.gh)
Jacob S Barnor (ibarnor@noguchi.ug.edu.gh)

Version: 2
Date: 28 May 2014

Author's response to reviews: see over
Dear Editors,

I would like to submit a revised dispatch entitled “Evaluation of AFP surveillance indicators in polio-free Ghana, 2009-2013.” The dispatch describes the results of AFP surveillance, performance indicators, and progress made in the last five years in the absence of wild poliovirus circulation in the country.

As the world approaches the end game of polio eradication, monitoring of surveillance indicators to ensure that the sensitivity of the surveillance system, timeliness of reporting, collection of adequate stool samples, and achieving laboratory indicators set by the WHO is essential. We feel our dispatch would be appropriate for your readership because it evaluates the progress of AFP surveillance and the performance indicators in polio-free Ghana. This manuscript has not been submitted or accepted elsewhere and all authors meet the accepted authorship criteria for this journal.

Major Revisions
1. The paper contains several repetitions and should therefore be shortened in the introduction and discussion parts, in the objectives and the results, respectively. For this reason, it is highly recommended to revise these parts of the manuscript.

Major revisions have been done in the whole document especially in the introduction and discussion parts for purposes of clarity and better understanding.

2. The introduction must be shortened and does not always sound fluent, in particular, there are some sentences that are repeated in other chapters. This part of the manuscript would no doubt benefit from some editing. For example: “the established performance indicators for AFP surveillance requires that all cases of AFP in children aged less than 15 years be notified and investigated as prospective polio cases, including the collection of 2 stool samples 24 hours apart and within 14 days of the onset of paralysis,” found in the methods sections.

The whole manuscript has been revised to remove sentences that were repeated including sentences that did not read well. This has helped shortened the introduction.

3. In AFP Surveillance section the sentence “The last case of indigenous wild polio was detected in 1999, however, two major outbreaks due to importation were recorded in 2003 and 2008.” Could be cut as it is repeated.
The statement ‘the last case of indigenous wild polio was detected in 1999, however, two major outbreaks due to importation were recorded in 2003 and 2008’ has been deleted from page 6 under AFP surveillance.

4. Data analysis: I think that the authors must divide the softwares from the statistical test used. The authors should better specify the statistical method they used. In the text, the analysis performed is not always correct (for example, in tables 1 and 3, or in the sentence “within 3 days of onset (p<0.001), 1133 (84.2%) had fever at the onset of paralysis (p<0.001)”, what type of analysis was performed? Please define better.

Demographic data was entered in an electronic database file and Epi Info version 3.5.1 (Centres for Disease Control and Prevention, Atlanta, United States). Basic analyses were performed using Microsoft Excel to generate frequencies, graphs and tables. Data were analyzed using two statistical tests (i) Pearson’s chi square and (ii) Statistical Package for the Social Sciences (SPSS) 17.0 to generate percentages and p-values.

5. A problem in polioviruses free country is cases are underreported, due to the low perception of disease and to the fact that the surveillance data are compared with the Hospital Discharge data relating to primary diagnosis identified by ICD9 code 3570 (acute and infectious polyneuritis). Can this data be verified in our area?

There is greater awareness among the general population on polio and AFP surveillance. Any suspected case is duly reported and investigated. Hospital data are not compared for diagnosis.

6. Figure 1 must be removed.

We have removed Figure 1 and replaced with Table 1 which describes the regional distribution of population of children under 15 years from 2009-2013. Subsequently, tables 1, 2 and 3 have become tables 2, 3 and 4 respectively.

7. Figure 2 and Figure 3 must be remade as a table.

We believe the figures give clearer and better picture of the regional performance indicators. It allows one to appreciate regions that met the target at a glance compared with tables. Secondly, if they are converted into tables the whole document will have 7 tables with only one figure.

8. A lot of details about the regional settings of Ghana are also unsound.

Details about the regional setting have been revised to read; Ghana has ten administrative regions and 216 districts. The health system is organized according to national, regional, district, sub-district, and community levels. The total projected population of the country for 2012, based on the growth rate of 2.5% from the 2010 national population census was 25, 460, 099 with children under 15 years representing about 42%.
9. The paper lacks to describe the relation between the National Program and the Global Polio Initiative.

The relationship is described in page 5. The Global Polio eradication Initiative (GPEI) program was formally introduced in Ghana in 1996 after African Ministers of health adopted the World health Assembly (WHA) resolution in 1995 urging member states to implement the GPEI. This strengthened the country to intensify routine polio immunization, implement supplementary immunization activities (SIAs), and introduce active AFP surveillance for poliovirus with full laboratory support.

10. Also the Ghana Immunization Schedule and the vaccination coverage achieved must be described.

The immunization schedule is described in the last paragraph of page 4. The Expanded Programme on Immunization (EPI) was introduced in Ghana in 1978, and has been functioning in all regions of the country since 1985. Childhood vaccination schedule for polio includes four doses of live-attenuated oral polio vaccine (OPV) at birth, 6, 10 and 14 months of age.

The routine vaccination and SIA coverage is also described in Table 5 and cited in the discussion.

11. You state that “In Ghana an AFP is defined…” Why? Do the definition of AFP change in relation to the country?

The statement ‘In Ghana an AFP case is defined as any child who develops acute onset of focal weakness or paralysis characterized as flaccid (including Guillain Barre Syndrome), without any other obvious cause [21, 22] below the age of 15 years or indeed in any age in which a clinician suspects polio’ has been deleted from page 6 under AFP surveillance.

12. References must be updated; several cited papers are quite old…

Most of the old references have been updated.

13. The titles of Figures are missing.

Titles of figures are provided in the text under list of figures and tables.

Minor Revisions
14. Please convey uniformity in the text: polio, PV, Polioviruses

Uniformity has been maintained. Poliomyelitis; polio, poliovirus; PV, wild poliovirus; WPV

15. In Table 1 sometimes refers to numbers, other times to proportions Please define better
The numbers have been deleted leaving the proportions to reflect the title.

16. In Table 2, why is the total number of subjects 1254 (and not 1345)?

The total number of subjects has been checked and corrected to be 1345 and not 1254.

17. The manuscript would benefit from editing (use of abbreviations, numbers, etc…)

Use of abbreviations, numbers etc have been rectified.

Discretionary Revisions

18. A Flow chart with the surveillance system could help to better illustrate the points.

A flow chart representing figure 1 has been introduced to describe the surveillance system.

19. The authors use the WHO guidelines and cite them correctly (9-11). Is it necessary to rewrite them completely? Please delete them. If necessary add a Table.

The detail WHO surveillance indicators has been deleted since the reference is already cited.

Thank you for your consideration.

Sincerely,
John Kofi Odoom

**Corresponding Author:**
Virology Department
Noguchi Memorial Institute for Medical Research
College of Health Sciences
University of Ghana
P.O Box LG 581
Legon, Accra
Ghana
jodoom@noguchi.mimcom.org