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RAPID ASSESSMENT AS AN EVALUATION TOOL FOR POLIO NATIONAL IMMUNISATION DAYS IN BRONG AHAFO REGION, GHANA

[1]T.M. Akande, [2]M. Eshetu and [3]G. Bonsu

[1]Department of Epidemiology and Community Health, University of Ilorin, Ilorin, Nigeria, [2]World Health Organization, Accra, Ghana and [3]Regional Health Administration, Brong Ahafo Region, Ghana
Reprint requests to: Dr. T. M. Akande, Department of Epidemiology and Community Health, University of Ilorin, P. M. B. 1515, Ilorin, Nigeria. E-mail: akandetm@yahoo.com

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Abstract

Background*:* Despite reported high coverage of National Immunization Days (NIDs) campaign in many countries children are still being missed during these campaigns. This is a study of a rapid assessment done to determine OPV coverage during an immunization campaign.

Methods*:* In this descriptive cross-sectional study, regional supervisors in Brong Ahafo region of Ghana visited randomly selected houses during the first round of the Polio NIDs in October 2004 to identify under-5 children that were reached with OPV vaccines in the households and those missed during the campaign.

Results*:* In the 13 districts a 1607 houses visited by regional supervisors for rapid assessment, volunteers did not visit 4 (0.24%) houses. There were 3737 under five in all the houses visited by the supervisors for rapid assessment out which 42 (1.2%) were missed and unvaccinated and the reason was that the children were not at home. The assessment showed that the main sources of information to mothers / caretakers on NIDs were Gong-gong and radio. The assessment provided opportunities to identify proportion of children missed and ensure necessary intervention to reach them.

Conclusion*:* Rapid assessment is a valuable tool for evaluation of NIDs; it enables timely intervention in covering missed children and helps in careful interpretation of the usual over 100% coverage often recorded during NIDs. It is recommended that this be practiced widely to improve quality of NIDs for early global eradication of poliomyelitis.

Mots clés: Estimation rapide, évaluation, polio immunisation

Résumé

Contexte : Malgré la haute couverte rapportée lors des campagnes nationales d'immunisation, dans plusieurs pays des enfants sont toujours ratés par ces campagnes. Nous proposons une estimation rapide de la couverture durant une campagne d'immunisation.

Méthodes : Dans cette étude descriptive sur un échantillon représentatif, des maisons choisies au hasard ont été visité par les superviseurs régionaux de la région de Brong Ahafo, Ghana lors du premier passage des journées nationales d'immunisation contre la Polio en Octobre 2004. Il s'agissait d'identifier les enfants de moins de 5 ans ayant reçu le vaccin dans ces maisons et d'identifier ceux qui n'ont pas été vaccinés dans cette campagne.

Résultats : Dans 13 districts, un total de 1607 maisons visitées par les superviseurs régionaux, pour estimation rapide. Quatre maisons (0,24%) n'avaient pas été visitées par les volontaires. Il y'avaient 3737 enfants de moins de 5 ans dans l'ensemble des maisons visitées par les superviseurs, parmi eux 42 (1,2%) n'avaient pas été vaccinés et la raison étaient que ces enfants étaient absents de la maison. L'évaluation avait montré que les principales sources d'information des mamans/gardiens lors des journées nationales d'immunisation étaient les Gong-gong et la radio. L'estimation

avait donné des opportunités pour la détermination de la proportion d'enfants non vaccinés et des interventions à faire afin d'atteindre ces enfants.
Conclusion : L'estimation rapide est un instrument important pour l'évaluation des journées nationales d'immunisation, elle permet des interventions opportunes pour couvrir les enfants manqués. Elle permet aussi de faire une interprétation prudente du taux de couverture de 100% habituellement rapporté durant ces journées nationales d'immunisation. Il est recommandé de vulgariser cette vérification afin d'améliorer la qualité de ces journées nationales d'immunisation pour une éradication globale de la poliomyélite.

Introduction

Polio eradication initiative is a global initiative taken during the world health assembly in 1988 to rid the world of poliomyelitis. Significant progress has been made since then. [1 -3] The goal of eradication by the year 2000 made intensification of the campaign necessary and therefore the introduction of the house-to-house delivery strategy during NIDs where volunteers visit houses and all structures to immunize under-5 children. National immunization days (NIDs) are nationwide mass campaigns to deliver supplemental doses of oral poliovirus vaccine to interrupt the circulation of wild polioviruses. [3-5] Despite reported high coverage of National Immunization Days (NIDs) campaign in many countries children are still being missed during these campaigns. [6] Supervision of volunteers conducting the exercise has been strengthened in Ghana with the introduction of rapid assessment tool to monitor and evaluate performance of vaccinating teams and provides appropriate interventions. This paper presents the findings of the rapid assessment conducted by regional supervisors in Brong Ahafo Region of Ghana during the first round of the Polio NIDs in October 2004.

Materials and Method

Brong Ahafo region is one of the ten regions of Ghana. It lies within longitude 0^o 15'E to 3^o W and latitude 8^o 45'N to 7^o 30'S. The Region shares boundaries with five others - Northern Region to the North, Ashanti and Western Region to the South, the Volta Region to the East and Eastern Region to South East. It has an international boundary to the West, which it shares with Cote d'Ivoire. It is the second largest Region in Ghana and has an area of 39,557 sq.km. It has an estimated population of 2,003,892. The region is divided into 13 administrative districts.

During the first round of the NIDs in Ghana from 8^{th} – 10^{th} October 2004, three regional supervisors were assigned to each of the 13 districts in Brong Ahafo region and as part of their supervisory role they were required to carry out rapid assessment of the campaign using a rapid assessment form. The rapid assessment form was designed to capture data on number of 0 – 59 months old children in each of the houses entered, number of children not vaccinated in the house and the reason for not vaccinating the child. In addition, sources of information on the NIDs were captured. [7] The assessment provided opportunity for the supervisors to vaccinate children.

In each of the districts, regional supervisors randomly selected two communities in a sub-district in at least two sub-districts in a district for rapid assessment. In each of the selected communities, 20 houses were randomly selected and visited in areas where volunteers have completed vaccination and houses marked as completed by the volunteers. The rapid assessment commenced about noon of the first day until a day after the campaign. On the day following the end of the campaign, any house can be randomly selected whether marked as completed or not by the volunteers. History from the mother or caretaker and absence or presence of gentian violet (GV) paint on the left little finger was used to identify vaccinated and unvaccinated children. A mark Q1 circled is put on houses where volunteers have completed vaccination and not requiring re-visit and vaccinated children are marked with Gentian violet on the left little finger.

In each sub-district, district supervisors also conducted rapid assessment in 20 randomly selected houses in at least 3 communities including the sub-district capital. This cross-sectional descriptive study is however limited to data obtained from regional supervisors.

Data obtained was entered; analyzed using MS excel to provide frequency distributions.

Result

In the 13 districts 1607 houses visited by regional supervisors for rapid assessment, it was found that volunteers did not visit 4 (0.24%) houses and this was found in only Atebubu district in the region. There were 3737 under five in all the houses visited by the supervisors for rapid assessment out which 42 (1.2%) were found not vaccinated in the houses where vaccination were supposedly completed by the vaccinating teams.

Of the 42 children in whom the reason for being unvaccinated was obtained, 3 (7.1%) said they did not know about the campaign, 39 (92.9%) were missed because they were not at home; none was due to refusal to receive vaccination. The highest proportion of 5.3% of missed children was found in Dormaa district. In two of the 13 districts, no child was missed from the finding of the rapid assessment (Table 1).

Table 2 shows the sources of information on NIDs mentioned by the caretakers / mothers in the houses visited. Radio and gong – gong (traditional village method of public announcement) are the most common source of information on the NIDs. Out of all houses visited for rapid assessment by the regional supervisors, 48.0% got NID information from Gong-gong, 47.2% from radio, mobile van (23.9%), health workers (21.9%), Interpersonal (15.0%) and other sources (11.8%). There is variation on the sources of information in the various districts. The traditional method of disseminating information (gong-gong) is least source of information in Sunyani district and is low in Wenchi, Berekum districts and radio, as a source of information is least in Sene district.

Table 1: Missed houses and children from rapid assessment

Districts	No. of houses visited	No. of houses not visited by volunteers	Total No. of children in houses visited	No. not vaccinated during NIDs (%)
Asunafo	180	-	360	4 (1.1)
Asutifi	80	-	159	0 (0.0)
Atebubu	80	4	144	5 (3.5)
Berekum	107	-	272	6 (2.2)
Dormaa	80	-	150	8 (5.3)
Jaman	80	-	199	1 (0.5)
Kintampo	320	-	1097	1 (0.1)
Nkoranza	160	-	282	0 (0.0)
Sene	80	-	182	2 (1.1)
Sunyani	160	-	348	4 (1.1)
Tano	120	-	201	3 (1.5)
Techiman	80	-	190	4 (2.1)
Wenchi	80	-	153	5 (3.3)
Total	1607	4	3737	43 (1.2)

NIDs = national immunization days

Table 2. Mothers' and caretakers' source of information on NIDs

Districts	No. of houses visited	Sources of information					
		Gong Gong	Radio	Mobile van	Health workers	Interpers-onal	Others
Asunafo	180	110 (61.1)	85(47.2)	19(10.6)	14(7.8)	22(12.2)	6(3.3)
Asutifi	80	33(41.3)	36(45.0)	0(0.0)	24(30.0)	22(27.5)	0(0.0)
Atebubu	80	39(48.8)	16(20.0)	19(23.8)	9(11.3)	6(7.5)	1(1.3)
Berekum	107	23(21.5)	51(47.7)	2(1.9)	21(19.6)	8(7.5)	12(11.2)
Dormaa	80	27(33.8)	69(86.3)	37(46.3)	23(28.8)	15(18.8)	18(22.5)
Jaman	80	51(63.8)	39(48.8)	10(12.5)	16(20.0)	5(6.3)	9(11.3)
Kintampo	320	214(66.9)	129(40.3)	83(25.9)	108(33.8)	65(20.3)	54(16.9)
Nkoranza	160	128(80.0)	105(65.6)	56(35.0)	63(39.4)	49(30.6)	16(10.0)
Sene	80	67(83.8)	13(16.3)	26(32.5)	25(31.3)	6(7.5)	1(1.3)
Sunyani	160	2(1.3)	105(65.6)	72(45.0)	19(11.9)	13(8.1)	32(20.0)
Tano	120	54(45.0)	53(44.2)	35(29.2)	12(10.0)	6(6.7)	15(12.5)
Techiman	80	9(11.3)	34(42.5)	7(8.8)	11(13.8)	11(13.8)	8(10.0)
Wenchi	80	15(18.8)	24(30.0)	18(22.5)	7(8.8)	11(13.8)	18(22.5)
Total	1607	772(48.0)	759(47.2)	384(23.9)	352(21.9)	241(15.0)	190(11.8)

Table 3: Oral polio vaccine coverage in the 13 districts

District	Target 0 – 59 months old children	No. 0 – 59 months olds vaccinated	Oral polio vaccine coverage (%)	Estimated coverage from rapid assessment (%)
Asunafo	52882	54845	103.7	98.9
Asutifi	22013	24284	110.3	100.0
Atebubu	45377	53789	118.5	96.5
Berekum	21176	24691	116.6	97.8
Dormaa	44024	49748	113.0	94.7
Jaman	31247	32732	104.8	99.5
Kintampo	42288	42401	100.3	99.9
Nkoranza	37557	39484	105.1	100.0
Sene	25005	25692	102.7	98.9
Sunyani	40057	41311	103.1	98.9
Tano	36202	36891	101.9	98.5
Techiman	39649	42131	106.3	97.9
Wenchi	39630	42110	106.3	96.7
Total	477107	510109	106.9	98.8

Discussion

The aim of the house-to-house NIDs campaign is to vaccinate every child below 5 years with oral polio vaccine (OPV). Key quality issues in NIDs include ensuring that every child is vaccinated and receive potent vaccine. Over the years, districts, regions and countries report over 100% coverage. [6, 8] of their target population given an impression all target children are being reached partly due to data error and unreliable denominator. On the long-term evaluation, occurrence of poliomyelitis in these populations indicates not all children are reached. Waiting for the occurrence or non-occurrence of Poliomyelitis to evaluate quality coverage of targeted population can be costly and can cause major setbacks.

Limitation in the use of the existing "dose enumeration method" of calculating reported coverage has been reported in India [9] and it can be deceptive. [6] The study suggested the need to incorporate an in-built community-based evaluation of future NIDs.

The use of rapid assessment for immediate evaluation and reaching those missed with vaccine prior to completion of the campaign therefore becomes very relevant. While in the past rapid assessment is conducted just after completion of the NIDs, it does not allow for timely intervention on missed children, as volunteers working in the designated areas would have 'completed' their assignment. Rapid assessment for NIDs now commence from day 1 of the immunization exercise in areas and houses marked by teams as completed and will not be revisited for the round. Any unvaccinated children in such houses are then missed for that round. During the rapid assessment, supervisors vaccinate the children found to have been missed and where the proportion is considered significant in an area, the attention of the sub-district team, team supervisors is called so that mop-up immunization of missed children can be done even before the end of the round or 1-2 day(s) after the round is ended. This is the major benefit of the rapid assessment since an early evaluation brings about immediate intervention.

The proportion of missed children is a reflection of the likely proportion of children that have been missed in the target population. Only a small fraction is often reached for vaccination by the supervisors or the health workers. Knowledge of the proportion of missed children allow for a careful interpretation of the coverage reported in NIDs. During this round of NIDs in Brong Ahafo region the coverage for the region based on highest number of children reached in previous NIDs as denominator is 106.9%, rapid assessment indicate that about 1.2% of children could have been missed during the round. The estimated coverage for the region therefore is about 98.8% of the targeted population. Where rapid assessment is not conducted, coverage may provide a wrong impression on the quality of the NIDs in terms of ability to reach all children under 5 years. Some factors like inaccurate denominator, vaccination of children above the target age of 0-59 months and data error is known to affect calculated NID coverage.

In addition to information on missed children, rapid assessment provides information on the sources of information on to mothers and caretakers about NIDs. In this round of NIDs ín Brong Ahafo region, rapid assessment indicate that the oral forms of communication namely radio and gong-gong beating (village/town announcers) was more effective in reaching the people as in almost half of the houses visited the reported source of information is gong-gong or radio. In municipal settlements like Sunyani, Wenchi the traditional mode of communication gong-gong is not often used. Ten of the 13 districts in Brong Ahafo region have local FM radio stations; this has contributed in the use of radio as a mode of communication, radio as a source of information is least in Sene district, which has many island communities and had no FM radio station. Studies in Pakistan and India have also shown radio as most

common source of information to parents during NIDs. [9, 10] Knowledge of the source of information can be a good guide on how to allocate fund to the various mode of communicating messages on NIDs. Very little proportion of those interviewed got information from banners and posters. Banners and posters that are displayed in all sub-districts and all communities respectively do not appear to capture much attention. Media effectiveness surveys provide important information that is useful for planning future NIDs. [10]

Rapid assessment is a valuable tool for evaluation of NIDs, it enables timely intervention in covering missed children and help in interpretation of the usual over 100% coverage (Table 3) often recorded during NIDs. Accuracy of the rapid assessment for evaluation will be higher with a larger sample of target population and houses are visited. It is recommended that this be practiced widely to improve quality of NIDs for early global eradication of poliomyelitis.

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