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Conduct of Integrated Health Services in Real Hard-to-Reach/Under-Served Communities to Address Maternal/Child Health Problems, 2016–2018 in Borno State Nigeria

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Abstract

The study focused on the conduct of integrated health services in real hard-to-reach/under-served communities to address maternal and child health problems from 2016–2018, riding on the Global Vaccine Action Plan that was conducted in Seventeen (17) Local Government Areas at risk of sustaining polio transmission in Borno State from July 2014 to December 2015, it was further expanded to 1712 for both real Hard-to-reach and Under-served communities in 25 accessible Local Government areas for integrated Health services using two strategies, Real Hard-to-reach areas and under-served communities which targeted newly liberated communities including internally displaced persons between 2016 to 2018. The findings from the study show treatment of minor ailment, 628731 clients were seen, and 9482 were referred to next health facilities for proper diagnosis and management, 88421 pregnant mothers received intermittent preventive therapy, sensitization on exclusive breast feeding, complementary feeding, focused antenatal care, Water sanitation, and hygiene. Furthermore, the findings show that oral polio, measles, hepatitis, yellow fever, tetanus toxoid, and pneumococcal conjugate vaccination was carried out for children from 0-11 months, while tetanus vaccination was carried out for pregnant women. Based on the findings of the study, it was concluded that the mobile health teams had improved the health status of Children, women of childbearing age, pregnant mothers, and other age groups in Real Hard-to-reach and under-served communities like Antenatal/post-natal, treatment of minor ailments, vaccination, nutritional screening, HIV testing counselling and referrals, Gender-based violence identification counselling and referrals and de-worming.

Keywords*: Antenatal treatment, breast feeding, Borno State, hygiene, post-natal treatment, pregnant women, vaccination.*

Introduction

As a result of the Global call by the World Health Organization (WHO) to ensure universal health coverage (UHC) for all, the Global Vaccine Action Plan (GVAP) seeks to achieve the total realization of its vision, in which all individuals and communities enjoy the full benefit of integrated health services, through equitable access to antenatal/post-natal, treatment of minor ailments, nutritional screening, HIV testing, counselling and referrals, gender-based violence identification and reporting, immunization as well as other primary healthcare programs [1].

The GVAP targets women and children leaving in difficult communities and those newly liberated from the security areas by militaries, with the need for all individuals and communities to gain from the full benefit of integrated health services, same as those individuals leaving in urban areas. The inequities in accessing both under-served and real hard-to-reach communities with high issues to mitigate maternal and child health, including vaccine-preventable diseases. Real difficult

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areas are places that only those use to the geographical locations can access the areas, it was the reason why health care workers from those communities were selected to conduct activities in the difficult and underserve is a term used to describe those subgroups of the population that are newly liberated from trapped security areas leaving in the internally displaced person camp and outskated communities [2]. In this context, the operational definition of difficult roads to shuttle between inter settlement, inter-ward, or inter-Local Government Area (LGA) borders, scattered households of less than 30 per settlement, a nomadic population, rocky or moody without functional health clinic less than 10 kms to the communities, the operational definition of under-served communities are those newly liberated from security compromised areas by militaries or civilian joint task force popularly known as CJTF to internally displaced persons camp or an identified outskated locations [2].

The real Hard-to-reach areas serve as a reservoir supporting the transmission of all vaccine-preventable diseases and have a high number of maternal and child mortality. Women and children in difficult-to-access areas mostly have less access to healthcare services which lead to low immunization coverage which creates wide gap in access to healthcare which negatively influences women and children's health [3]. The Hospital survey conducted by the Society of Gynecology and Obstetrics of Nigeria (SOGON) reported a high number of women and children suffering from diseases in the state, the leading contributory factors or non-medical causes of Maternal and Perinatal Deaths include inadequate manpower (21.6%), delay in seeking help (11.8%), lack of essential equipment/medications/blood (7.8%), lack of ambulance/transportation (15.7%), delay in referrals was the major reasons projected [4]. In an assessment carried out in Borno state, by ministry of health it was revealed that there are wild polio cases, reported in the difficult communities and mobile population, with Borno being among the four polio-endemic states. With the findings from the mini-assessment the state agreed to target the difficult areas through Vaccination and integration of health services like antenatal/post-natal care, nutritional screening, treatment of minor ailments, HIV testing, counselling and referrals, gender-based violence detection and reporting and de-worming in both real hard-to-reach and under-served communities [5].

As a result of bad roads, difficult terrain, and long-distance travel, reaching the communities takes time. Due to the urgency of the need to reach these communities with integrated health services, the mobile outreach of the reaching every ward (REW/RED) was adopted in 2014 at kick start, followed by walkthrough micro-planning in 2017 [6]. The work through micro-planning provided direction to where, when, and how many clients to attend per session. Furthermore, the normal integrated health service delivery system is not sufficient for rural, real hard-to-reach, and underserved communities. The integrated health services were conducted in Borno state to bring health care to difficult/under-served communities to their doorstep based on a plan from walkthrough micro plan, and this is the have record of all have been done in both real hard-to-reach and under-served communities [7].

Methods

Vaccination was carried out in hard-to-reach populations in 2014–2015 in Borno state. Immunization plus days data was used to get 620 hard-to-reach settlements in the 17 Local Government Areas, which were mainly targeting vaccination. From 2016 to 2018, using outbreak response data from a house-to-house vaccination team we were able to extract a list of real hard-to-reach and underserved communities before conducting a walkthrough micro plan of hard-to-reach communities, 26 of which were in Abadam, 21 were in Bama, 5 were in Bayo, 25 were in Biu, 6 were in Chibok, 49 were in Damboa, 39 were in Dikwa, 29 were in Gubio,

29 were in Guzamala, 36 were in Gwoza, 79 were in Kaga, 32 were in Kalabalge, 1 were in Kwayakusar, 171 were in Mobbar, 34 were in Monguno, 19 were in Ngala and 19 were in Shani. (Figure. 1).

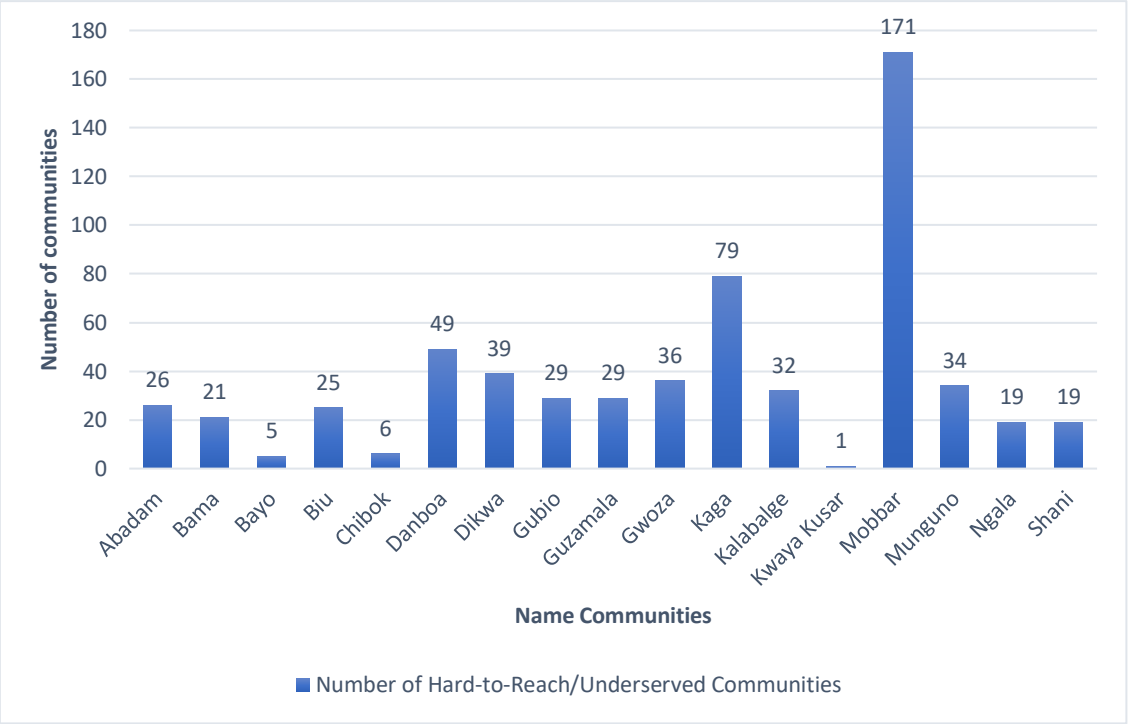

Figure 1. Number of Hard-to-Reach/Underserved Communities

The team were in twenty-five Local Government Areas of Borno State between 2016 and 2018, Fifteen (15) Local Government Areas in real Hard-to-reach areas and Ten (10) Local Government Areas in Under-served Communities, Walkthrough micro planning was conducted to know the actual target for the integrated health services in both real hard-to-reach and under-served communities, 1,250 real hard-to-reach settlements in 15 LGAs and 462 under-served communities in 10 LGAs, of these 130 were in Askira Uba, 45 were in Bayo, 179 were in Biu, 83 were in Chibok, 17 were in Damboa, 14 were in Gubio, 295 were in Hawul, 26 were in Jere, 13 were in Kaga, 29 were in Konduga, 134 were in Kwayakusar, 77 were in Magumeri, 138 were in Shani, 42 were in Kukawa and 28 were in Guzamala for real hard-to-reach settlements, however for Under-served Communities were, 37 in Bama, 21 were in Dikwa, 30 were in Mafa, 118 were in Monguno, 33 were in Nganzai, 48 were in Ngala, 33 were in Kalabalge, 54 were in Gwoza, 32 were in Mobbar and 56 were in Maiduguri [8] (Figure. 2).

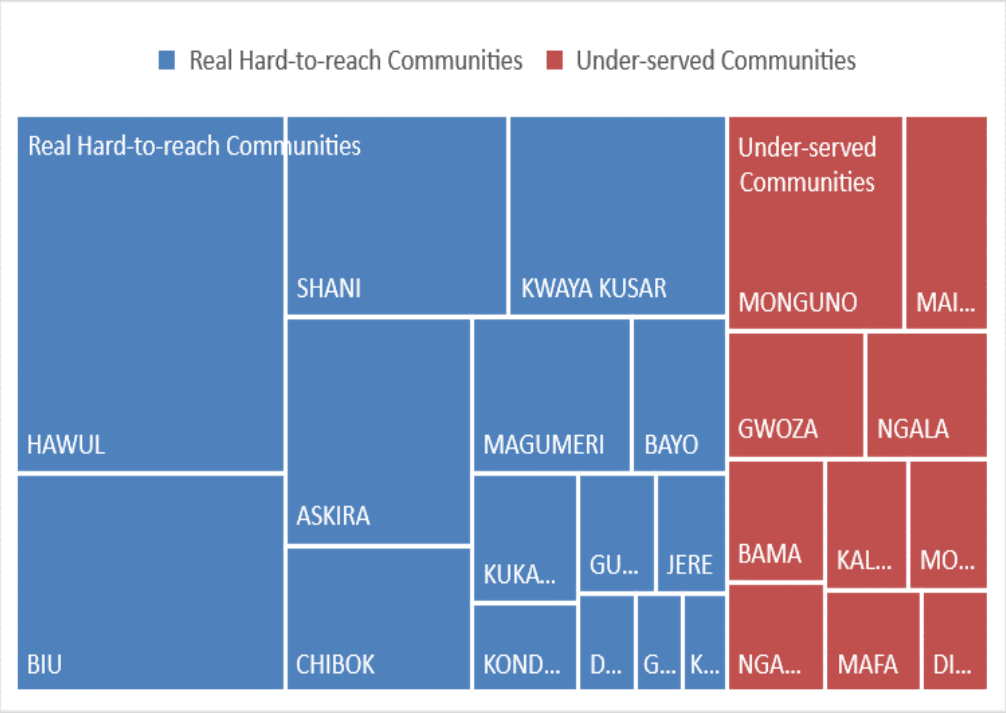

Figure 2.

Plannings

In the initial planning stages, top government officials were visited in order to informed them about the activities, and traditional leaders at the state level were engage so as for them to have ideas on how the work will be conducted; the team were to conduct 3 sessions per week, and all teams were to vaccinate 80 to 120 per session for the combination of pregnant mothers and children less than 5years of age, however between 2016 and 2018, riding on the existing structure, the mobile outreach was however re-defined from reaching every ward to walkthrough micro plan which was conducted for five days.

To identify the number of settlements in both strategies, state-level training was conducted, LGA level training also was conducted, and traditional leaders from the identified communities were attached to mobile health teams to enumerate Under 1year, under 5years, and pregnant mothers from each household of both real hard-to-reach and underserved communities, both hard copies and open data kits (ODK) were used to generate real-time data. All the data generated will be uploaded on daily bases to server; after the five days, micro-planning data was analyzed at the state level for session plan implementation. Teams working in real hard-to-reach areas maintain 3 sessions per week while teams working in under-served communities was to conduct 4 sessions per week, since they are not moving too far from the take off point, sometimes those working in real hard-to-reach communities plan to stay 2 to 3 days in the communities before coming back to base.

Community Engagement and Structure

Traditional/community leaders were the ones who identified their members from the community to serve as informants to the real hard-to-reach and underserved communities about teams visit to their area prior to the teams visit and mobilize client a day prior to the visit of mobile health teams, the informants announce the arrival of the mobile health team and readiness of the session using a megaphone, and they controlled the crowed including tracking defaulters during the session as well. Both Community mobilizers and informants were sensitized to their roles.

Logistics and Commodities

Inter-agency Emergency Health Kits and other commodities were procured centrally, and some Nigerian Health Kits were collected from UNICEF in collaboration and were given out to teams according to consumptions and onward based on a walkthrough micro plan conducted. The supply was distributed to the LGAs monthly through different ways, some through Helicopters because of insecurity, some through road with a military escort, and some through mobile health team supervisors and leads during monthly review meetings, and on a weekly basis to mobile health teams. Commodities were adequately given to teams without shortfall and were related to data generated by the team on a weekly basis.

Personnel's Involved

The national level was still operational and, at the state level, one Hard-to-reach focal point, one Hard-to-reach Coordinator, one Hard-to-reach data assistant, one Hard-to-reach store assistant, 23 Local Government Area Facilitators, 58 Nurse/Midwifes/Community Health Officers, 58 Senior Community Health Extension workers, 58 Junior Community Health Extension workers, and 58 Health Information managers known as medical records, which were all 100% dedicated to integrated health services to real hard-to-reach and under-served communities, while others were from the Local Government Area and communities, which comprises one LGA hard-to-reach focal person, one integrated health services focal person, one community mobilizer, and one town informant and a Cold Chain officer at LGA for vaccine management.

Guidelines, Training Manual, and IEC Materials

The hard-to-reach training manual developed in 2014 and 2015 and was used for the first training of teams was updated to new strategies implemented in 2016 to 2018. New standard operating procedure was also developed to guide the new strategy implementation process of integrated health services in real hard-to-reach and under-served communities. A new training package was also developed for all categories of health workers in the team, including community mobilizers and town announcers [9].

Baseline Assessment

Re-assessment of the situation was done, and information, education, and communication materials were also appraised. The report of assessment was analyzed to provide observations to guide health services to reach children and women in real hard-to-reach and underserved communities.

Data Management

Data was generated during each session using both tools from the teams and from the integrated health services focal person from the catchment area health facility, all data will be entered into the monthly tool at the health facility for submission to LGA on the monthly bases, the monitoring, and evaluation at LGA level will enter all from health facilities to National Health Management Information System (NHMIS). Both strategies give a card for treatments, vaccination, antenatal and nutritional screening, and all clients visiting mobile health teams must be recorded into the treatment register for documentation of all integrated health services. The data assistant at the state level collects data from Local Government area facilitators on a weekly bases to guide the program internally.

Supportive Supervision and Monitoring of Activities

Hard-to-reach focal point and Coordinator at the state level alongside with state focal person from the ministry of health monitor and supervised mobile health teams. Local Government area facilitators monitor the activities of both real hard-to-reach and under-served teams in the LGAs. Supervision was carried out by other units of the organization like Cluster consultants, Local Government areas

facilitators, and field volunteers, alongside local government officials. On a weekly bases, supervisors using their mobile phones conduct supervision, including on-the-job training identified during the visit, tracked through real-time transmission. These will be analyzed by Hard-to-reach focal point on a monthly bases for monthly meetings with Local Government area facilitators and team leads [10]. The outreach strategy was used to provide all activities been provided in the component of PHC, from antenatal/pos-natal care, treatment of minor ailments, nutritional screenings, etc. However, Government permission and buy-in was granted and was fully involved in the activities, another good part of the session monitoring was mobile health teams have to open ODK (open data kit) on their mobile phone to check in before starting the session with geo-location captured, and they will enter some activities conducted during check-out on the same ODK, they upload before leaving the community, if they have a network or immediately when the access network, it will be downloaded at the state level to check if they were at communities as planned, it also revile total time spent at the session site[11].

Results

Integrated health services were conducted in One thousand seven hundred and twelve (1712) real hard-to-reach and under-served communities in One hundred and twenty-three (123) wards in Twenty-five (25) Local Government Areas of Borno states. Teams through their Local government area facilitators sent data, and check-in and out using mobile phones was done. Mobile health teams working in real hard-to-reach communities sometimes spend three days in the communities conducting activities before coming back to base. See the Table below for the distribution and target populations.

Table 1. Distribution of Real Hard to reach and Under Served Communities and Target Populations, 2016 to 2018

S/N	LGAs	Number of Wards	Number of Communities	Total Population	Under l year	Pregnant Women's	Under 5 years	Women of Childbearing Age
1	Askira Uba	13	130	39670	3139	1392	7934	6019
2	Bama	3	37	18360	1175	486	3672	1802
3	Bayo	7	45	25520	2216	1284	5104	4786
4	Biu	9	179	94435	9056	5523	18887	19300
5	Chibok	9	83	17380	1109	738	3476	3420
6	Damboa	3	17	13240	987	477	2648	2256
7	Dikwa	1	21	3175	246	67	635	712
8	Gubio	3	14	8690	721	426	1738	1588
9	Guzamala	4	28	19700	1979	964	3940	3474
10	Gwoza	4	54	54465	3372	2140	10893	11290
11	Hawul	12	295	65960	5569	2805	13192	13634
12	Jere	4	26	30625	1861	957	6125	4523
13	Kaga	4	13	12400	910	374	2480	1544
14	Kala balge	1	33	14180	560	474	2836	1535
15	Konduga	4	29	29470	2175	1340	5894	4566
16	Kukawa	4	42	47715	3034	1442	9543	7467
17	Kwaya Kusar	10	134	52200	4132	2266	10440	10230

18	Mafa	3	30	22990	1071	650	4598	2617
19	Magumeri	5	77	42705	3711	1909	8541	6579
20	Maiduguri	3	56	42000	2053	1570	8400	7956
21	Mobbar	2	32	19070	1184	631	3814	2373
22	Monguno	1	118	23695	2529	908	4739	3881
23	Ngala	3	48	16230	1020	664	3246	2286
24	Nganzi	1	33	15150	1971	1053	3030	3725
25	Shani	10	138	32230	1948	1018	6446	33204
Total		123	1712	761255	57728	31558	152251	160767

The nutritional screening was 78% males in green and 79% females in green in 2016 compared to 98% males, and 98% females in 2018, those males in yellow were 23% and females 21% in 2016 compared to only 2% males and 2% females in 2018, those in red were 26% males and 30% females in 2016 compared to 11% males and 16% females in 2018. Total males screened in 2016 was 34433 compared to 249909 in 2018, and 36781 females screened in 2016 compared to 292499 in 2018.

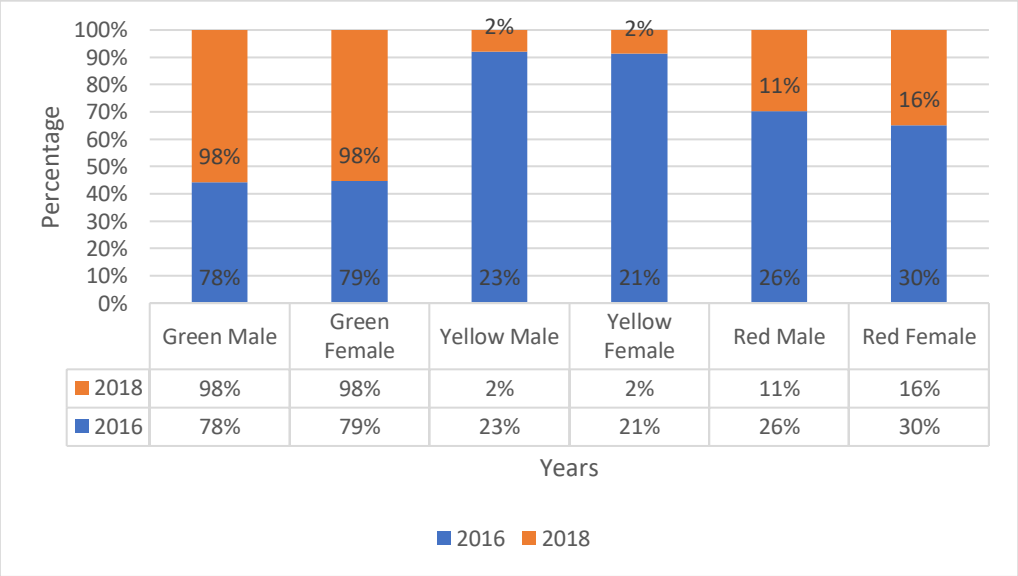

Figure 3. Comparing Nutritional Screening 2016 and 2018 Conducted in Real Hard-to-Reach and Underserved Communities

Vaccinations by antigens trend was very speedy, OPV3 was 49% in 2016 compared to >100% in 2018, BCG was 32% in 2016 compared to 84% in 2018, Hep-B was 2% in 2016 compared to 12% in 2018, Measles was 54% in 2016 compared to >100% in 2018, Yellow fever was 48% in 2016 compared to >100% in 2018, IPV was 48% in 2016 compared to >100% in 2018, Penta3 was 44% in 2016 compared to >100% in 2018, PCV was 0% in 2016 compared to >100% in 2018, TD was 46% in 2016 compared to >100% in 2018, OPV12-59 vaccination was 171205 in 2016 compared to 491079 in 2018.

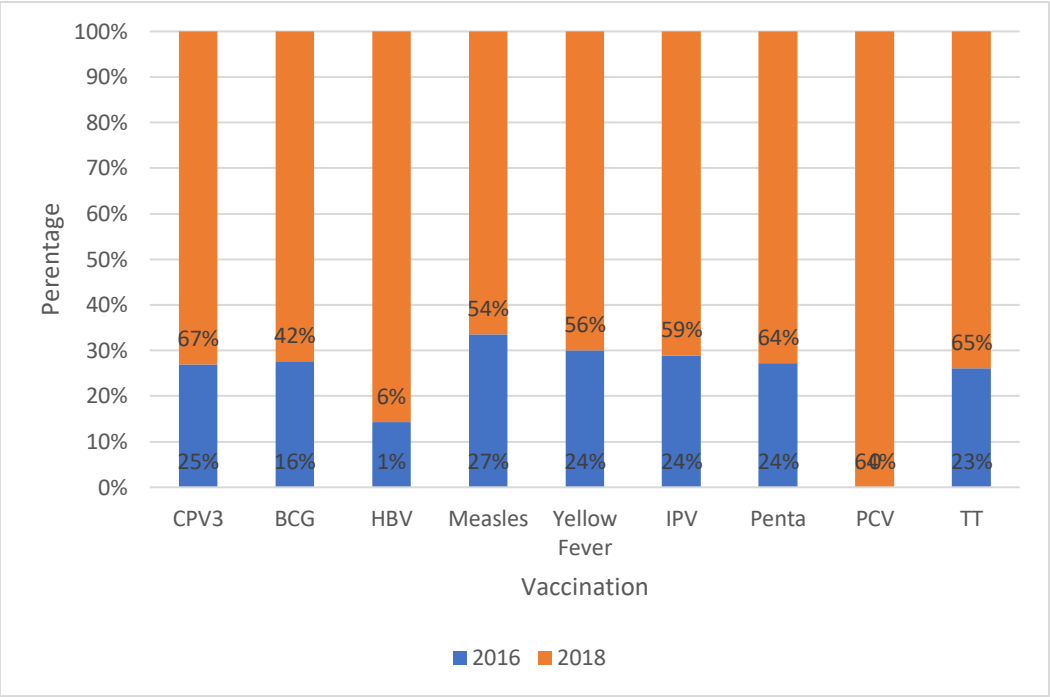

Figure 4. Comparing Vaccination by Antigens for 2016 and 2018 Conducted in both Real Hard-to-Reach and Underserved Communities

Antenatal/post-postnatal care was also good, 27263 women's received intermittent preventive therapy in 2016 compared to 59877 in 2018, 30328 received Iron folate in 2016 compared to 108037 in 2018, 65981 women's were health educated on exclusive breastfeeding in 2016 compared to 329229 in 2018, 64858 were health educated on complementary feeding in 2016 compared to 331498 in 2018, 59048 received focused antenatal care in 2016 compared to 337126 in 2018, 73876 were sensitized on water sanitation and hygiene in 2016 compared to 332622 in 2018, growth monitoring and promotion were also conducted among children's, 33201 were monitored in 2016 compared to 187459 in 2018, there was Vitamin-A supplementation among 6-11month and 12-59month, 25781 children's 6-11month were supplemented with 100,000IU in 2016 compared to 103163 in 2018 and 47812 children's 12-59months were supplemented with 200,000IU in 2016 compared to 253972 in 2018, children's 12-59months were also de-wormed with albendazole, 32638 males were de-wormed in 2016 compared to 143097 in 2018, 35392 females were de-wormed in 2016 compared to 172403 in 2018.

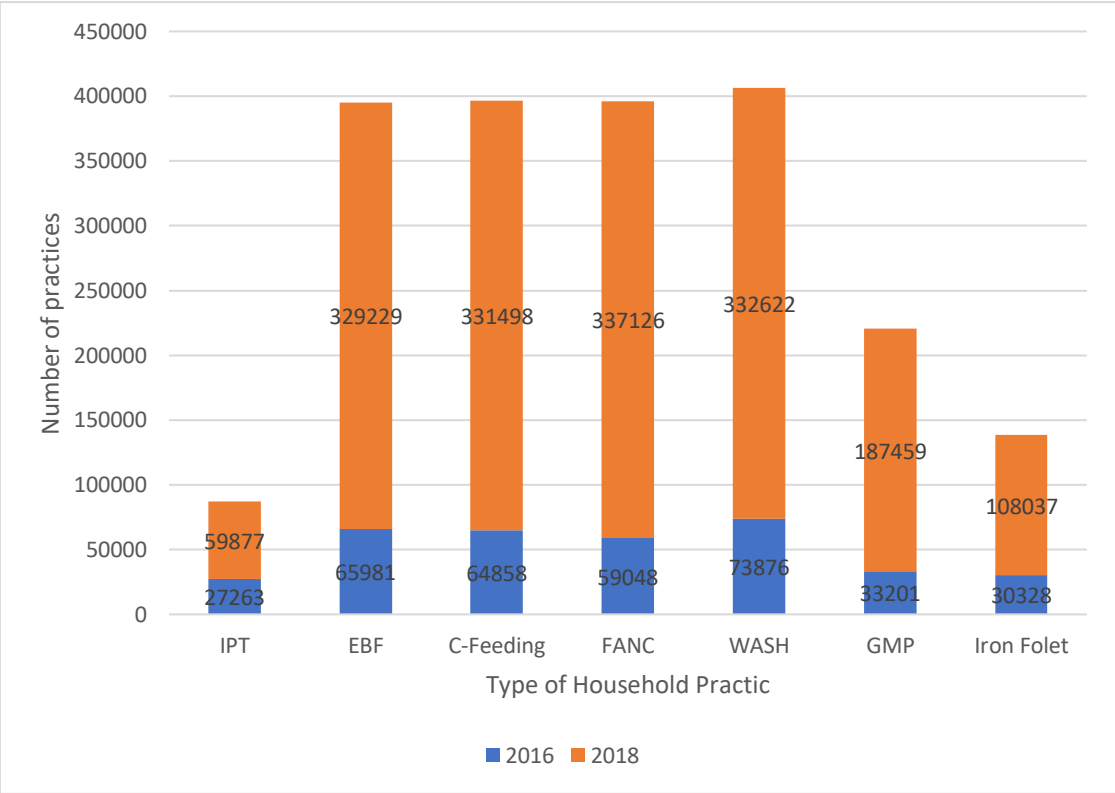

Figure 5. Comparing 2016 and 2018 Key Household Practices during Antenatal Care Visits in Real Hard-to-Reach and Underserved Communities

Treatment of minor ailments, there was huge number of clients seen in 2018 compared to 2016, 161356 clients were seen during sessions in 2016 compared to 448296 seen in 2018, 3330 clients were referred to next facility for further management in 2016 compared to 5663 referrals in 2018, there were 43 cases on non-serious adverse event following immunization in 2016 compared to 426 in 2018 and there were 11 cases of serious in 2016 compared same in 2018, 9933 cases of diarrhea watery treated in 2016 compared to 22652 in 2018, 5113 cases of diarrhea with blood treated in 2016 compared to 2349 in 2018, 28931 cases of mild malaria treated in 2016, compared to 93810 in 2018, 7167 cases of severe malaria treated in 2016 compared to 7961 in 2018, 5310 cases of malaria in pregnancy treated in 2016 compared to 6282 in 2018, 1055 cases of suspected measles treated in 2016 compared to 173 in 2018, 7600 client were check for blood pressure in 2016 compared to 11355 in 2018, 2735 cases of malnutrition managed in 2016 compared to 4574 in 2018, 3870 cases of pneumonia were treated in 2016 compared to 7636 in 2018, mobile health teams were conducting active case search of acute flaccid paralysis during their sessions, they were able to report 56 cases in 2016 compared to 62 cases in 2018.

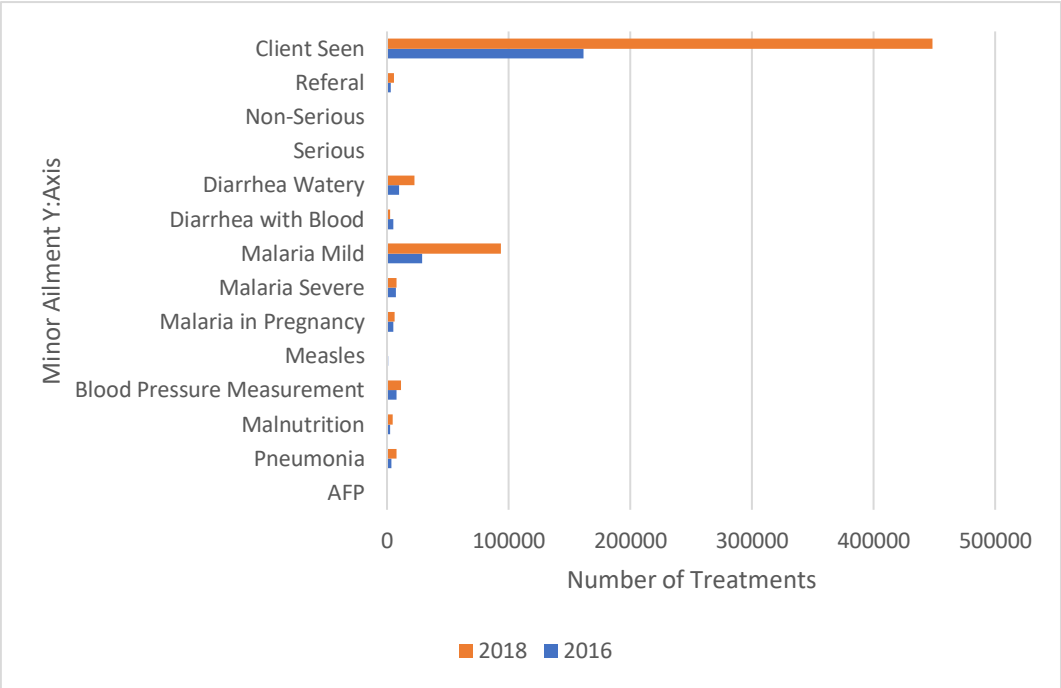

Figure 5. Treatment of Minor Ailment and other Interventions

Discussions

There was a huge increase in all integrated health services conducted in both real hard-to-reach and under-served communities in 2018 compared to 2016. The use of antenatal/post-natal, treatment of minor ailments, nutritional screening, vitamin-A supplements, de-worming, HIV testing counseling and referrals, Gender-based violence detection, and reporting by the certified trained health workers have addressed the unmet health needs of both real, hard-to-reach and under-served communities, and mobilization of the communities both was conducted, an increasing number of children received vitamin A, de-worming, vaccination and screening against nutrition and antihelminth, women's vising session site were given all required routine drugs needed during pregnancy, and visit plan to difficult and under-served communities were on the monthly bases for follow up, moody, riverine and waterlog communities were reached with integrated health services, pregnant mothers and women of childbearing ages were the major targets, there was also conduct of active case searches AFP cases from both real hard-to-reach and under-served communities.

The hard-to-reach program contributed towards improved maternal and child health indices. The reaching the real hard-to-reach and under-serve communities project was an intervention to improve population health needs from difficult and less access to maternal and child health services.

There was effective monitoring of sessions at the state level using data submission through an open data kit (ODK) by the team members during check-in and check-out in the visited communities. These were downloaded and analyzed by the hard-to-reach focal point and projected during monthly meetings, and this helped in monitoring the activities of mobile health teams and the next quarter plan.

Cost per session was conducted in Bayo LGA, but the result was not available at the state level. There is a need to get the result of cost per session or re-conduct a cost-benefit analysis of the intervention.

Real hard-to-reach communities and under-served communities come to stay as traditions have always been respected, some communities even with the government offer of taking them

to another location with good health facilities and other infrastructures, will not accept to change the location, so there is a need to add those real hard-to-reach and under-served communities to government plan from the Local government headquarters [12].

Conclusion

The activity was to help those communities with less access to health care services from 2014 to 2015. However, in 2016 to 2018 was re-defined into two strategies, the real hard-to-reach and under-served communities. The real hard-to-reach communities were more to the southern part of the state as the insurgency was less to the areas, so communities in real hard-to-reach were still existed, however, the under-served communities were more to the northern and central part of the state, this is communities that were badly affected by insecurity, the mobile health teams were also deployed to those communities in the internally displaced persons (IDPs) camp and temporary communities at outskirts, there was a lot of malnutrition among those under-served communities newly liberated from in secured areas compared to real hard-to-reach communities [13].

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Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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