

Assessment of Resources for Primary Health Care: Implications for the Revitalization of Primary Health Care in Akwa Ibom, Nigeria

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Abstract

Context: Primary health care (PHC) is the cornerstone of the Nigerian National Health Policy. The national policy on PHC under one roof is undergoing implementation nationwide as a means of strengthening the PHC system. Akwa Ibom State (AKS) is set to commence full implementation of the policy. **Aims:** The aim of the study was to assess the existing human resource and infrastructure in PHC facilities in AKS. **Settings and Design:** A descriptive cross-sectional study was carried out in 18 facilities selected from the three senatorial zones of AKS, Nigeria. **Subjects and Methods:** A rapid assessment of selected PHC facilities based on a checklist adapted from the minimum standards for PHC as provided by the National PHC Development Agency. The results were analyzed using Excel and presented in tables. **Results:** A total of 18 health facilities were included in the study. Human resources available were 276 full time core health workers, of which 48 (17.4%) were volunteer workers. There was inequitable distribution in district and facility type as 122(44.2%) work in Ikot Ekpene Senatorial district and 242 (87.7%) of them work in the Operational Base. Basic lifesaving equipment such as resuscitation sets was unavailable in more than 50% of the health facilities. **Conclusions:** There are absolute deficit and inequitable distribution of available human resources in AKS PHCs. Basic-lifesaving equipment is grossly inadequate. There is an urgent need for more health workers to be employed and provision of basic equipment for the PHCs.

Keywords: Assessment, equipment, human resource for health, primary health care

INTRODUCTION

Globally, there has been renewed interest and commitment to primary health care (PHC) in light of the 2018 Astana Declaration.¹ Subsequently, the World Health Assembly in 2019 adopted a resolution recognizing the role of PHC in providing the full range of health services needed throughout the life course, including prevention, treatment, rehabilitation, and palliative care.² It has been acknowledged that achieving the health-related sustainable development goals, including universal health coverage (UHC), will not be possible without stronger PHC.^{2,3}

The National Strategic Health Development Plan outlines the revitalization of PHC as central to achieving UHC in Nigeria.⁴ Such revitalization can only be possible with adequate numbers of competent, highly skilled, motivated, and productive frontline health-care workers that are equitably distributed.

Human resource for health, however, remains a global crisis. The World Health Organization estimates a global shortage of 18 million health workers by 2030, with the worst-hit countries being in the low- and middle-income countries (LMICs).⁵

For many Nigerians, especially those who live in rural areas, PHC is the first point of contact with the health-care delivery system.⁴ It is the level at which short-term, uncomplicated health issues should be resolved. At this level, health promotion

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and education efforts are undertaken, and patients in need of more specialized services are connected with secondary care.⁶ As the bedrock of the National Health Policy, PHC has been described as the “main focus for delivering effective, efficient, quality, accessible, and affordable health services to a wider proportion of the population.”

Although PHC is reported as the foundation of the nation’s health system, utilization of services at this level is poor. A major reason cited for the poor utilization rates is the lack of infrastructure and personnel in these facilities.⁶ Most PHC facilities across the country lack essential resources and health technologies, as well as the required minimum staffing complement required to deliver essential quality health care. Studies document surveys reporting only 25% of health facilities with more than 25% of the minimum equipment package and 40% of PHCs with <40% of equipment.⁷ In another survey, less than half of the facilities had an essential drug list and 46% of PHC facilities had less than half of essential drugs in stock.⁸ The failure of PHC in Nigeria has been attributed to the inadequate numbers and proportion of the various cadres of healthcare workers necessary to provide services in the health facilities.⁹

Over the years, the poor status of the implementation of PHC has been widely acknowledged, and various initiatives have been put in place to strengthen and revitalize PHC. In 2011, Nigeria instituted a national policy, “Bringing PHC under one roof (PHCUOR)” to integrate the management of PHC and end fragmentation in the health sector. The policy built on the experience and successes of a pilot project, the Gunduma system in Jigawa State, which amalgamated responsibility for services and resources of 27 local government authorities into a single Gunduma Health System Board. This led to the adoption of the health system reform “Bringing PHCUOR.”⁹ This initiative was part of a new governance reform designed to improve PHC implementation. PHCUOR is therefore a policy to reduce fragmentation in the delivery of PHC services which involves the integration of all PHC services under one authority. This policy reform was approved by the National Council of Health in 2011 and has since been adopted in over 20 states in Nigeria.¹⁰

Implementation of this policy is ongoing within all geopolitical zones of the country. As at the last published scorecard in 2015, the Northwest zone was the highest-performing geopolitical zone with a score of 55%, while Southeast zone was the least-performing geopolitical zone with a score of 19%. Across the states, the three best-performing states were Jigawa (80%), Rivers (73%), and Bauchi (67%), while the least-performing states were Bayelsa (5%), Akwa Ibom State (AKS) (0%), and Ebonyi (0%).¹¹ Thus, while many states have made progress to this effect, AKS recorded zero and was ranked as the poorest performing state in the country.

This dismal score and the continued poor performance of the state during peer-review meetings at the national level have motivated the state government to initiate steps to

revitalize the PHC system. So far, the State PHC Development Agency has been set up, but full implementation is yet to commence.

The aim of this study was to assess the existing human resource and infrastructure in government-owned PHC facilities in AKS in readiness for the implementation of PHCUOR. The results of this study will guide the revitalization of PHC in the AKS health system and provide guidelines to policymakers for the implementation of PHCUOR in the state.

SUBJECTS AND METHODS

A cross-sectional study was conducted between March and May 2016 in AKS, South–South Nigeria. This is an oil-rich state comprising 31 local government areas (LGAs), stratified into urban semi-urban and rural. Akwa Ibom has an estimated population of 5.48 million people.¹² The state is politically subdivided into three senatorial districts – Uyo, Eket, and Ikot Ekpene. Each of the zones is made of 10–12 LGAs. An LGA is the equivalent of a district. The PHC situated at the local government headquarters (district) serves as the operational base (OP Base). This is the central facility for PHC activities in the LGA, housing the administrative and clinical head designated as the PHC Coordinator or Director.

The state has a total of 425 public PHC facilities; however, primary care services are also offered by private health facilities. The distribution of the PHC facilities in each zone is 125, 148, and 152 PHCs in Uyo, Ikot Ekpene, and Eket senatorial districts, respectively.

A total of 18 PHCs were selected using multistage sampling from a list of all the PHCs obtained from the State Ministry of Health. Two LGAs were selected from each of the three senatorial zones in the state by a simple random sampling technique. Within the selected LGA, two PHC facilities were studied; the operational base was purposively selected. In addition, one other PHC facility was selected by simple random sampling using balloting.

The instrument used for the study was a checklist adapted from the PHC minimum standards.⁹ The checklist was used to elicit available human resources, essential drugs, equipment, and infrastructure in the facilities. Section A determined the human resources available (by number and qualification of personnel). Section B assessed basic equipment and infrastructure including power source, ambulance, and basic drugs, as listed in the essential drugs list in the PHC minimum standards guideline.

Ethical issues

Ethical approval was obtained from the AKS Ministry of Health Ethical Board and the University of Uyo Teaching Hospital Institutional Research Ethical Board.

Data analysis

Descriptive statistics was used to describe the resources found in the facilities. Descriptive data were analyzed using Excel.

RESULTS

The results provide an overview of the available human resource, equipment, and infrastructure in PHCs in AKS. A total of 18 facilities were selected for the study, of these 17 (94.4%) were finally included for the assessment as the last facility remained closed despite repeated visits, and the community members reported that only one nurse works there.

A total of 424 health workers were seen across the 17 health facilities. The total number of core health workers available included 276 full-time core health workers, of which 48 (17.4%) were volunteer workers.

The results in Table 1 show that Ikot Ekpene zone had the highest number of health workers with 121 (43.8%), while Eket zone had the lowest number of health workers at 47 (17%). There were a total of 150 (35.3%) noncore workers seen in the facilities.

Table 2 shows that about (242) 88% of the health workers were in the OP base, while some cadre of staff (pharmacy technician, laboratory technician, and environmental officer) were completely absent in the peripheral facilities. There were a total of 150 (35.3%) noncore workers seen in the facilities.

Table 3 shows the availability of basic equipment in the PHCs.

Basic equipment for resuscitation was available in only 2 (11.8%) of the facilities.

Only 4 (23.5%) of the OP bases had ambulances on standby and 8 (47.1%) had generators for power supply.

Table 4 shows that there was low availability of some drugs for treating common ailments. Clotrimazole and erythromycin were available in only 3 (17.3%) facilities, and Amoxil was seen in only 1 (5.9%) facility. However, antimalarial was available in almost all the facilities except one OP base. Most of the drugs available were more in the OP Base. Basic emergency obstetric care drugs and some emergency resuscitation drugs were seen in only half of the PHCs.

Table 5 shows that a majority of the services were in the OP base except the availability of packed cell volume (PCV) test and urinalysis which was found to be more available in the peripheral facilities. Partograph was available in only 4 of the 17 facilities, but none of the facilities used them routinely.

Table 6 shows that although a laboratory was present in only 10 (58.8%) of the facilities, most of the facilities had basic services available.

DISCUSSION

The results of the index study bring to the fore the critical shortage of human resources currently faced by the AKS PHC system. The total number of core health workers available was 228 full-time health workers, of which 48 (17.4%) were volunteer workers. These volunteers are people not employed in the public sector but have been trained as health workers

Table 1: Distribution of human resources in primary health care centres by senatorial districts in Akwa Ibom State

	Eket, n (%)	Uyo, n (%)	Ikot Ekpene, n (%)	Total
Health workers				
Nurses	20 (16.4)	53 (43.4)	49 (40.2)	122
CHEW/CHO	21 (18.4)	43 (37.7)	50 (43.9)	114
Pharmacy technician	0	2 (22.2)	7 (88.8)	9
Lab	2 (15.4)	5 (38.5)	6 (46.1)	13
Environmental technician	3 (16.7)	5 (27.8)	10 (55.5)	18
Total core PHC workers	46	108	122	276
Others*	32 (21.4)	59 (39.3)	59 (39.3)	150
Total	78	167	181	424

*Others include security officers, cleaners and other community members who volunteer their services. PHC – Primary health care; CHO – Community health officer; CHEW – Community health extension worker

Table 2: Distribution of core human resource in primary health care centres across type of health facilities in Akwa Ibom State

Health workers	OP base	Other facilities	Total
Nurses	105 (86.1)	17 (13.9)	122
CHO/CHEW	97 (85.1)	17 (14.9)	114
Lab technician	13 (100)	0 (0.0)	13
Pharmacy technician	9 (100)	0 (0.0)	9
Environmental officer	18 (100)	0 (0.0)	18
Total health workers	242 (87.7)	34 (12.3)	276 (100.0)

and have remained unemployed. Many are community health extension workers (CHEWs) who have never been employed in the public sector.

The range of years post training ranges from 5 to 20 years. They offer their services as volunteers and get paid from any monies paid by clients, usually a fraction of the funds. Others are paid by the facility head from their own pockets and from gains made from drug revolving funds of such facilities, where available.

About a third of the people seen in the facilities, 150 (35.4%) were classified as others [Table 1]. These are support (nonskilled) staff seen in the facilities including security officers, cleaners employed, and a number of community members who offer services at the facilities regularly. This gives an average of 8.8 workers per facility. These represent a ready pool of human resources that can be tapped into and trained as outlined in the task-shifting policy to make for improved health services in the state.¹³

The minimum recommended staff number and cadre for the PHC is 24, comprise 19 core staff and 5 support staff.⁹ None of the facilities had the minimum number of 24 staff as recommended by the minimum standards. This shows a gross deficit in human resources. This finding reflects the results of

Table 3: Distribution of equipment in primary health cares by senatorial districts in Akwa Ibom State

Resources	OP base (n=9), n (%)	Other PHCs (n=8), n (%)	Total (n=17)	Percentage of total with the resource
Basic examination supplies				
Weighing scale	9 (52.9)	8 (47.1)	17	100
Adult stethoscope	9 (52.9)	8 (47.1)	17	100
Fetoscope	9 (52.9)	8 (47.1)	17	100
Sphygmomanometer	9 (52.9)	7 (47.3)	16	94.1
Couch	8 (53.3)	7 (46.7)	15	88.2
Hospital bed	8 (88.9)	1 (11.1)	9	52.9
Oral thermometer	5 (62.5)	3 (37.5)	8	47.1
Rectal thermometer	2 (66.7)	1 (33.3)	3	17.6
IV stand	8 (57.1)	6 (42.9)	14	82.4
Wheel chair	4 (44.4)	5 (53.6)	9	52.9
Basic emergency obstetric supplies				
Delivery couches	3 (50.0)	3 (50.0)	6	35.3
Resuscitation set	1 (50.0)	1 (50.0)	2	11.8
Mama kits	2 (100.0)	0 (0.0)	2	11.8
Delivery set	4 (57.1)	3 (42.9)	7	41.2
MVA	3 (75.0)	1 (25.0)	4	23.5
Ambu bag	3 (100.0)	0 (0.0)	3	17.6
Partograph	4 (80.0)	1 (20.0)	5	29.4
Basic support equipment				
Ambulance	4 (100.0)	0 (0.0)	4	23.5
Generator	5 (62.5)	3 (37.5)	8	47.1

PHCs – Primary health cares; IV – Intravenous; OP Base – Operational base; MVA – Manual vacuum aspiration

Table 4: Distribution of some essential drugs in select primary health care facilities in Akwa Ibom State

Essential drugs for	Operational base (n=9), n (%)	Other facilities (n=8), n (%)	Total (n=17)	Percentage of total PHCs with drug
Common illnesses				
ACTs (AL, AA)	8 (50.0)	8 (50.0)	16	94.1
Quinine	2 (66.7)	1 (33.3)	3	17.6
Sulfadoxine	8 (50.0)	8 (50.0)	16	94.1
Pyrimethamine				
Benzylpenicillin	3 (42.9)	4 (57.1)	7	41.2
IV Gentamycin	7 (63.6)	4 (36.4)	11	64.7
Metronidazole	5 (45.5)	6 (54.5)	11	64.7
Amoxil	1 (100.0)	0 (0.0)	1	5.9
Erythromycin	2 (66.7)	1 (33.3)	3	17.6
Clotrimazole	2 (66.7)	1 (33.3)	3	17.6
Emergency resuscitation				
IV fluids	8 (66.7)	4 (33.3)	12	70.6
Adrenaline	4 (50.0)	4 (50.0)	8	47.1
Hydrocortisone	5 (55.6)	4 (44.4)	9	52.9
ORS	6 (66.7)	3 (33.3)	9	52.9
Phenobarbitone	1 (50.0)	1 (50.0)	2	11.8
Diazepam	2 (100.0)	0 (0.0)	2	11.8
Basic emergency obstetric care				
Oxytocin	9 (75.0)	3 (25.0)	12	70.6
Misoprostol	4 (50.0)	4 (50.0)	8	47.1
Ergotamine	4 (57.1)	3 (42.9)	7	41.2
Magnesium sulfate	2 (100)	0 (0.0)	2	11.8

AL – Artemeter–Lumefantrine; AA – Artemether Amodiaquin; PHCs – Primary health cares; IV – Intravenous; ACT – Artemisinin-based combination therapy; ORS – Oral rehydration solution

a rapid assessment carried out earlier in the state as a baseline for the elimination of mother-to-child transmission of HIV.

This study documents an average of 3.8 nurses and midwives and 3.2 CHEWs per facility.¹⁴

On the average, the total personnel facility ratio was 12:1. This reflects a severe shortage of human resources in each facility as against the recommended 24:1. However, this average does not give a true reflection of the staff availability in each facility. The worst number was seen in Eket senatorial district of 7.8:1 as compared with 20.2:1 in Ikot Ekpene Senatorial district.

About 45% of these health workers were located in Ikot Ekpene senatorial district. This was the only district that had the closest to the recommended 24:1 personnel facility ratio, having 20.2:1. These figures reflect findings from surveys of PHC carried out in different parts of the country.¹⁵⁻¹⁷

The findings also revealed inequity in the geographic distribution of available health workers, as Eket senatorial zone had the lowest number of staff 46 (16.7%) in the five study centers. A closer look also reveals inequity in distribution as 88% of the health workers were in the operational base. The operational base is the headquarters of the PHC in any LGA (district). This shows that 50% of the health facilities had 92% of the available human resource.

Table 5: Basic services/procedures available in primary health cares in Akwa Ibom

Facilities	Operational base (n=9), n (%)	Other health facilities (n=8), n (%)	Total (n=17), n (%)
Laboratory facility			
Yes	7 (77.8)	3 (37.5)	10 (58.8)
No	2 (22.2)	5 (62.5)	7 (41.2)
Urinalysis			
Yes	9 (100.0)	7 (87.5)	16 (94.1)
No	0 (0.0)	1 (12.5)	1 (5.9)
Can test for PCV			
Yes	6 (66.7)	8 (100.0)	14 (82.4)
No	3 (33.3)	0 (0.0)	3 (16.6)
Can test for malaria			
Yes	9 (100.0)	8 (100.0)	17 (100.0)
No	0 (0.0)	0 (0.0)	0 (0.0)
Can perform 3 rd stage of labor			
Yes	9 (100.0)	5 (62.5)	14 (82.4)
No	0 (0.0)	3 (37.5)	3 (16.6)

PCV – Packed cell volume

The inequitable distribution was perpetuated in all cadres, as seen in the results.

There was no Medical Officer of Health (MOH) in any of the facilities studied. Despite the recommendation by the National Health Policy that the MOH is to lead the implementation of PHC activities at the LG level.¹⁶ This has remained a constraint in the implementation of PHC as a strategy in Nigeria. For the Community Health Officer (CHO) cadre, the next in the hierarchy of the PHC workers, only 12 were employed in the facilities, meaning there was <1 CHO per facility as against the recommended 1 CHO per facility. Besides, 66.7% of the CHOs work in the operational base, leaving the peripheral centers without their services.

The nurse/midwife cadre constituted about 33% (73/276) of the workforce. The number of part-time nurses was 18, representing 24.3% not employed by the government. The majority of these nurses 89.2% were in the OP base. The CHEW cadre comprised 56 (20.3%) of staff 48 full-time staff and 8 part-time nurses. These represent the cadre most closely approximating the recommended minimum standards for personnel facility ratio of 3:1. As with the CHO cadre, 52 of the available 56 CHEWs being 92.9% were in the OP bases.

The reverse was the case in the Junior CHEW (JCHEW cadre), 31 full time and 15 part time, giving a total of 48. The ratio is then 2.8:1 as compared to the expected 6:1. These results reflect a possibility of the JCHEWs returning to be trained as CHEWs. All other cadres of PHC workers were also found to be inadequate in number and distribution.

The PHC system in AKS is thus experiencing the challenge of shortage in PHC workers due to the inability of the public sector to absorb the supply of health workers available. As a result, there is the paradox of health worker unemployment coexisting with major unmet health needs as seen in some other LMICs.⁵

There is an urgent need for employing all cadres of core staff in PHCs across the state. Specifically, the need to have a MOH in all PHCs must be addressed. An important finding is the availability of large number of trained CHEWs volunteering in many facilities. These are an untapped resource to help strengthen the weak PHC system.

The quality of care of any PHC depends largely dependent on availability of laboratory services, drugs, and equipment. Most of the available equipment were found in the centrally located PHC (operational base). In the category of basic

Table 6: Basic services and procedures available in select primary health cares across the 3 senatorial districts of Akwa Ibom State

	Eket (n=55), n (%)	Ikot Ekpene (n=6), n (%)	Uyo (n=6), n (%)	Percentage of total (n=17), n (%)
Laboratory present	4 (40)	3 (30)	3 (30)	10 (58.8)
Malaria	5 (29.4)	6 (35.3)	6 (35.3)	17 (100)
PCV	4 (28.6)	5 (35.7)	5 (35.7)	14 (76.4)
Urinalysis	5 (37.5)	5 (31.3)	5 (31.3)	16 (94.1)
Perform stage of labor	4 (28.6)	5 (35.7)	5 (35.7)	14 (82.4)

PCV – Packed cell volume

examination supplies, most facilities had at least one weighing scale, stethoscope, and sphygmomanometer; however, basic lifesaving equipment such as resuscitation set, Ambu bag, and manual vacuum aspirator were absent in many of the PHCs. This is a reflection of the state of readiness and capacity of the PHCs to handle common medical emergencies. This reflected the gross deficit in equipment seen in most PHCs. This agrees with the findings of similar studies in PHCs across Nigeria.¹⁵⁻¹⁷

To effectively provide essential health services, facilities must have available a minimum level of essential drugs. Our study, however, showed that essential drugs for common childhood illnesses, such as Amoxil, benzylpenicillin, and cotrimoxazole, were largely unavailable. However, there was near universal availability of first-line anti-malarials (artemeter–lumefantrine, artemether–amodiaquine, and sulfadoxine–pyrimethamine in all facilities.

Essential obstetric care has been identified as the main intervention strategy with the highest impact on maternal health. Drugs for basic emergency obstetric care including ergometrine, oxytocin, misoprostol, and magnesium sulfate were largely unavailable in most PHCs.

There was availability of basic laboratory services, even where no side laboratory was available. Basic services such as testing for malaria and urinalysis for sugar and protein were available in all the peripheral PHCs. All the centers had PCV testing for anemia. This is in contrast to findings in similar settings where they found that very few centers equipped for laboratory services.¹⁶

CONCLUSIONS

This study reveals that the AKS PHC health system is in dire need of human resources and basic equipment. Available human resource is inequitably distributed across the public PHCs. Despite having a large number of trained middle cadre workers in the state, core PHC workers are not employed and deployed to the rural areas where PHC services are most needed.

The implementation of PHCUOR provides an opportunity for revitalization of the entire PHC system in AKS. Central to the restructuring will be employment and deployment of core PHC staff, especially to the peripheral PHC facilities to enable delivery of PHC services. The policy implication of these findings is that the state needs to employ more core PHC staff and ensure equitable distribution of these important workforces. The state also needs to invest in basic lifesaving equipment to commence the implementation of the PHCUOR policy.

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Conflicts of interest

There are no conflicts of interest.

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