

Re-Thinking Human Resource for Health and the Integration of Unskilled Birth Attendants for Increased PMTCT Uptake: Evidence from Nigeria

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Abstract

The global community has adopted Prevention of Mother-To-Child Transmission (PMTCT) of HIV as the first entry point of care to eliminating new pediatric infections. In the absence of any intervention, the possibility of HIV transmission often runs between 15 - 45% and can be reduced to below 5% with effective PMTCT intervention. However, not much attention is given to analyze the human resource requirements to scale up PMTCT services. Meanwhile, WHO's Alma Ata Declaration states that "primary health care shall rely, at local and referral levels, on health workers, including physicians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community". Over the years, this has been neglected and the results have been continued shortage of needed manpower to deliver health services to the people where it matters most. Using disaggregated data of frontline healthcare workers, TBAs' distribution as well as service utilization data across the State of Akwa Ibom of Nigeria between 2010-2015, the paper seeks to demonstrate the effectiveness of integration of traditional birth attendants (TBAs) into healthcare service delivery. Key findings from the analysis show that while ANC attendance has increased over the period under review, facility deliveries within the same period dwindled while non-facility deliveries on the otherhand increased. Secondly, with a nurse to population ratio of 1:2,067 compared with TBAs to population ratio of 1:1,883, there is a great shortage of manpower to meet the universal professional and skilled birth delivery targets especially in the face of dwindling resources for health in developing countries including Nigeria. Thus, engaging TBAs is achievable and effective in improving MNCH services and increasing PMTCT uptake.

Keywords: Human Resource for Health(HRH), Traditional Birth Attendants(TBAs), Integration, Prevention of Mother-to child Transmission (PMTCT) of HIV

1.0 Introduction

In 2013, 15% of the 16 million women living with HIV were aged 15–24 years and 80% of them lived in sub-Saharan Africa (SSA). The Joint United Nations Programme on HIV/AIDS (UNAIDS) estimated that between 2009 and 2014, a total of 3.8 million women of childbearing age in the 21 priority countries in Sub-saharan Africa (SSA) became newly infected with HIV. In 2014, the number of women requiring services for Prevention of Mother-to-Child Transmission (PMTCT) was estimated at 1.2 million. Although there has been a 48% decline of new infections among children between 2009 and 2014, 3 countries (Nigeria, South Africa, and Uganda) accounted for almost half of all new HIV infections among children in 2014. With only 15% decline in new infections, Nigeria is the only country among the 3 that achieved less than 30% decline in the number of new infections between 2009 and 2014. In 2014, Nigeria had the largest number of 58,000 newly HIV-infected children, a number equal to the combined total of the next 6 of the 22 priority countries. Nigeria also has the second largest epidemic in the world and is home to one third of all new HIV infections among children in the priority countries.

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Three main steps needed to reduce mother-to-child transmission include early identification of pregnant women who are HIV infected, treatment of HIV-infected pregnant women with Antiretroviral Therapy (ART), and prophylaxis for HIV-exposed infants.

A recent study shows that when a collective community effort is focused on these activities, the rate of transmission drops to less than 1% from between 15%-45%. The global call to action towards the prevention of vertical transmission of HIV remains the only route to averting pediatric HIV from mothers to the next generation. While this has been largely achieved in high-income settings, where integrated and comprehensive strategic services for prevention of MTCT (PMTCT) have been successful and are now the standard of care, vertical HIV transmission remains an important public health issue in the developing world like Nigeria mainly because the scale-up of PMTCT services so far has been slow. Meanwhile, Prevention of Mothers- to Child Transmission (PMTCT) of HIV/AIDS, also known as prevention of vertical transmission, refers to interventions to prevent transmission of HIV from an HIV-positive mother to her infant during pregnancy, labor, delivery, or breastfeeding using a four-prong comprehensive approach as provided in the table below:

1st prong	Prevention of HIV infection among young persons and pregnant women
2 nd prong	Prevention of unintended pregnancies in HIV-infected women
3 rd prong	Prevention of HIV transmission from HIV-infected women to their infants
4 th prong	Provision of treatment, care, and support to HIV-infected women and their families

The first and second prongs emphasize the important role of primary prevention of HIV among women of reproductive age and the need to prevent unintended pregnancies among HIV-infected women. The third prong of the strategy targets pregnant women already infected and recommends that HIV testing is integrated in MNCH units where ARTs are provided to prevent infection being passed on to their babies and also to improve the woman's own health; it requires also that adequate counseling is provided regarding the best feeding option for the baby. The fourth and last prong calls for better integration of HIV care, treatment and support for women found to be HIV infected and for their families.

The national HIV/AIDS goals of Nigeria are to ensure that 80 percent of adults and pregnant women access HIV counseling and testing (HCT) services; 80 percent of eligible adults, children, and HIV-exposed infants receive antiretroviral treatment (ART); and all TB/HIV patients access TB/HIV services. However, in Akwa Ibom State, the HIV prevalence among the general population is 6.5% whereas the HIV prevalence among pregnant women is 10.19% (NARHS 2012). And out of the 24,605 HIV positive pregnant women in the State (of the over 241,296 pregnant women), only 7% of HIV positive pregnant women receive ARTs for PMTCT. Nationally, PMTCT coverage is only 17 percent only at the moment. Several factors hampers the achievements of the national HIV/AIDS goals as encapsulated above —high HIV prevalence including among pregnant women; low testing rates for HIV/AIDS; poor ANC attendance, low levels of hospital delivery, very high traditional birth attendant (TBA) patronage, and the large number of adults and children who require ART. These are further compounded by low health workforce density, placing a higher burden on the existing health workforce.

Clearly, universal skilled attendance at delivery is a worthy objective. However, in many low income countries including Nigeria, where professional birth attendants are simply not available especially to rural populations, this ideal remains a distant goal. In a Demographic and Health Survey carried out by Macro International Inc in 1994 involving 22 countries in sub-Saharan Africa, only one (Botswana) had professional birth attendants attending delivery in more than three quarters of cases. It is estimated that, world-wide, two thirds of all births occur outside of the health facilities (WHO 1997). Of these, midwives or other professionals conduct only a small proportion. The majority, around 60 million deliveries per annum, are currently attended to by a traditional birth attendant (TBA), a relative, or, in some settings, no one at all (Alto 1991). Achieving skilled attendance at delivery for all is going to be a huge challenge for a long time, more so with global dwindling of domestic resources for healthcare in most developing countries. It has been calculated that, with an assumed load of 150 deliveries annually per midwife, plus associated prenatal and postnatal care, around 400,000 midwives will have to be trained (Walraven & Weeks 1999).

These estimates can be expected to increase as rising numbers of young women enter the reproductive age group. Significant costs, which include salaries, housing and rural posting allowances, are inevitable too. Theoretically, health outcomes are increasingly recognized as not being shaped only by individual behaviour and more by the wider environments in which people live and make choices, influenced by family and peers, local beliefs and values, cultural norms and practices and political and economic circumstances. Especially as regards maternal and child health services, facilitators of and barriers to uptake of services exist at multiple levels: within the woman's control (perceptions of care), slightly outside of the woman's control (family opinions and socio-economic status), and at an institutional- and societal-level (policies and tradition), thus in a medically pluralistic society, a model that accommodates the various proximate and distal determining factors of health outcomes should be explored to make issues of childbirth less 'medicalize'. This perhaps gives credence to WHO's Alma Ata Declaration of 1978 which states that "primary health care shall rely, at local and referral levels, on health workers, including physicians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community. It is against this background that this paper attempts to comparatively analyze personnel-service ratio using the distribution of frontline health workers and traditional birth attendants (TBAs) and service utilization data of ANC, delivery and PMTCT services in Akwa Ibom State of Nigeria.

The rest of the paper is structured as follows; Section 2 analyses the human resource for health situation of Akwa Ibom State of Nigeria, the study area, Section 3 discusses the data and method of study, Section 4 the result of the analysis while policy recommendation and conclusion is made in Section 5 of the paper.

2.0 Overview of Akwa Ibom State Human Resource for Health (HRH) Situational Analysis

Akwa Ibom State is one of the six states of the South-south geo-political zone of Nigeria that was carved out of the former Cross River State in 1987 and is made up of 31 Local Government Areas (LGAs). According to the State Strategic Health Development Plan (SSHDP) 2010- 2015, the State is largely rural, about 85% of the population lives in the rural areas. According to the NDHS (2008), the life expectancy at birth is 49 years, the Crude Birth Rate is 39/1000, Crude Death Rate is 12/1000, Infant Mortality Rate stands at 69/1000 live births, Under-5 Mortality is 138/1000 population, the Maternal Mortality Ratio is 128/100,000 and the Total Fertility Rate (TFR) is 5.5. In addition, the HIV-sero prevalence rate, according to 2012 NARHS report stood at 6.5%.

With a projected population of 5.16 million as of 2014 (from the 2006 census figures, UNFPA ,2014), and a population growth rate estimated at 3.4%, Akwa Ibom State is one of the five most densely populated states in Nigeria. According to the 2013 Statistical Year book for Akwa Ibom State, the total number of health establishments in the State including registered private hospitals and clinics in the year 2012 was 659. There are: one Federal Government Teaching Hospital, 22 General Hospitals, 11 Cottage Hospitals, 14 Comprehensive Hospitals, 351 Health centers and 260 registered Private Clinics and Hospitals in the state. In terms of ownership, one facility located in Uyo is owned by the Federal Government, 35 by the State Government, 342 by the Local Government and 281 by private individuals and missions.

Table 1: Summary of Demographic and Health Indicators for the State

S/N	INDICATOR	VALUE
1	Total Fertility Rate (TFR)	3.9
2	Use of Family Planning Modern Method by married women 15-49 years	16.5%
3	Maternal Mortality Ratio (MMR)	576/100,000(National)
4	Infant Mortality Rate (IMR)	69/1000
5	Under -5 Mortality Rate	128/1000
6	ANC Attendance	73.3%
7	Skilled Birth Attendance	45.6%
8	Delivery in Health Facilities	43.2%
9	Full Immunization Coverage	48.0%
10	Children with zero doses of immunization	7.2%
11	Stunting in under-5 Children	33.3%
12	Wasting in under-5 children	13.2%
13	Diarrhea in children	4.1%
14	ITN ownership	49.5%
15	ITN utilization	17% children, 16.5% pregnant women
16	Malaria treatment (any anti-malaria drug)	68.3% children, 63.3% pregnant women
17	Comprehensive knowledge of HIV	11% female and 22% male
18	Knowledge of Tuberculosis	88.8% female, 64.4% male

Source: NDHS 2013

There are a total of 3,280 health workers employed in health facilities in Akwa Ibom State as documented in the Akwa Ibom State Statistic Report 2013. 710 representing 21.65% of all health workers are employed in Uyo LGA alone. Other LGAs with high percentages of health care workers are Ikot Ekpene and Eket with 331 (10.1%) and 222 (6.8%) respectively. Specifically, the distribution of nurse/midwives and TBAs across the 31 LGAs and their population ratio in each of the LGA is presented in Table 2 below.

Table 2: Nurse/Midwives and TBAs in the 31 LGAs of Akwa Ibom State

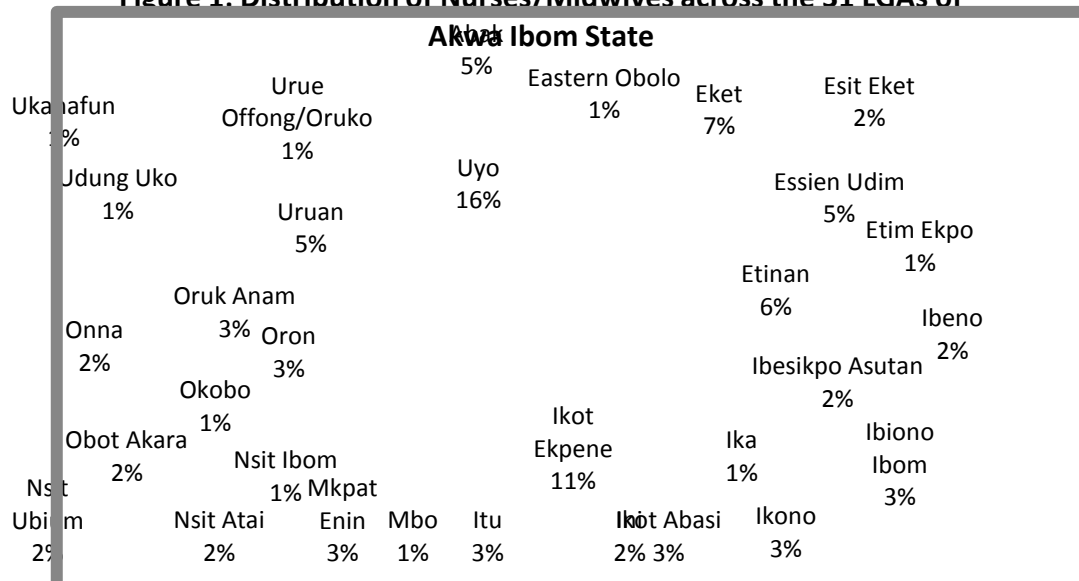
S/N	LGA	MALE	FEMALE	TOTAL	NURSES/MIDWIVES	TBAs
1	Abak	91,865	89,852	181,717	121	83
2	Eastern Obolo	39,499	38,862	78,361	17	17
3	Eket	116,301	109,564	225,865	184	84
4	Esit Eket	42,060	40,727	82,787	43	52
5	Essien Udim	127,907	124,615	252,522	120	110
6	Etim Ekpo	69,926	68,480	138,406	27	124
7	Etinan	112,060	108,668	220,728	150	112
8	Ibena	52,274	45,516	97,790	51	49
9	Ibesikpo Asutan	91,050	88,129	179,179	55	78
10	Ibiono Ibom	125,578	120,865	246,443	68	200
11	Ika	48,341	46,747	95,088	19	45
12	Ikono	86,344	85,708	172,052	88	121
13	Ikot Abasi	88,600	84,675	173,275	84	90
14	Ikot Ekpene	93,738	91,035	184,773	282	N/A
15	Ini	65,474	63,995	129,469	41	146
16	Itu	85,469	81,596	167,065	77	81
17	Mbo	68,405	65,101	133,506	17	89
18	Mkpat Enin	116,663	115,000	231,663	82	N/A

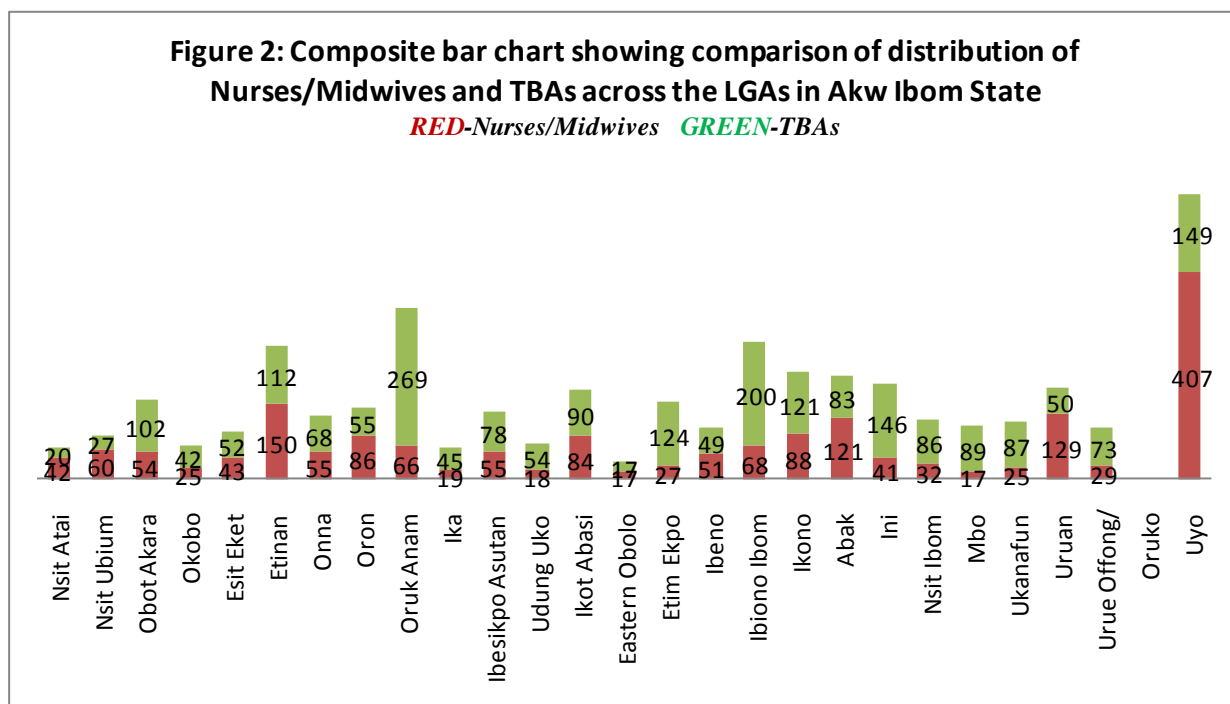
19	Nsit Atai	48,590	47,313	95,903	42	20
20	Nsit Ibom	72,124	69,120	141,244	32	86
21	Nsit Ubium	84,507	81,548	166,055	60	27
22	Obot Akara	97,205	95,248	192,453	54	102
23	Okobo	68,463	65,801	134,264	25	42
24	Onna	80,246	80,726	160,972	55	68
25	Oron	58,205	55,748	113,953	86	55
26	Oruk Anam	113,501	111,035	224,536	66	269
27	Udung Uko	36,081	33,251	69,332	18	54
28	Ukanafun	82,722	81,229	163,951	25	87
29	Uruan	77,425	75,676	153,101	129	50
30	Urue Offong/ Oruko	47,312	45,122	92,434	29	73
31	Uyo	203,445	196,343	399,788	407	149
	TOTAL	2,591,382	2,507,293	5,098,675	2,554	2563

Source: Statistical Year Book of Akwa Ibom State of Nigeria 2013 and Akwa Ibom State Ministry of Health (Reproductive Health Unit)

With a population of 5.16 million by 2014 (projected), the health worker/population density of the state is 0.63/1000 population (or 6.3/10,000) population. However, when calculated using just nurses/midwives, it is 5.6/10,000. This makes the workforce density of the state generally lower than the national average of 85/10,000. As the WHO lower limit for Africa is 2.3/1000 population, the State ration is far lower by all standard.

Figure 1: Distribution of Nurses/Midwives across the 31 LGAs of Akwa Ibom State





3.0 Data and Method of Study

Data on key indicators of PMTCT were sourced from the Health Management Information Services (HMIS) Unit of the Ministry of Health- Akwa Ibom State for the periods 2010-2014 as presented in Table 3. The data is cumulative from monthly summary HMIS forms of all the Primary Health Centers (PHCs) and secondary facilities as well as the Teaching Hospital in the State. However this does not include data from private health facilities. In addition, data for the periods 2010 -2012 were sourced from official documents outside the District Health Information System(DHIS) 2.0 while 2013 -2015 were from the DHIS platform. This is because the State only migrated to the DHIS 2.0 platform in 2013. To safeguard data accuracy and quality for the purpose of the analysis, data was triangulated with the figures in both the State AIDS and STIs Control Programme Unit of the Ministry of Health where data of total number of pregnant women tested, counseled and who received result was sourced for the periods under investigation. Data on the comprehensive database of registered Traditional Birth Attendants (TBAs) were on the other hand sourced from the Reproductive Health Unit of the same Ministry of Health in the TBAs Inventory database developed for the State with the support of USAID-funded Programme to build Leadership and Accountability in Nigeria’s Health systems (PLAN-Health). Thereafter, simple statistical method that consists of charts and graphs were used to analyze the disaggregated data of frontline healthcare workers as well as traditional birth attendants’ distribution across the entire 31 Local Government Areas of the State. The result was used to make a trend comparison with health service utilization (ANC, delivery and PMTCT uptake data) for a period of three (3) years.

Table 3: Health Service utilization data in Akwa Ibom State for 2010-2015

SERVICES	YEAR					
	2010	2011	2012	2013	2014	2015
Total ANC Attendance	38,856	97,392	84,301	54,160	65,442	79,917
Total Facility Deliveries	4,671	9,587	9,000	3,825	531	1,041
Total Non-Facility Deliveries	34,185	87,805	75,301	50,335	64,911	78,876
Total No. of Pregnant women counseled, tested and receive result	20,876	28,104	26,793	19,364	59,421	65,657

Source: Akwa Ibom State Ministry of Health (HMIS Unit)

4.0 Result and Discussion

Trend analysis of ANC attendance and facility deliveries over the six (6) years period in the State from Table 3 above shows that although ANC attendance increased year by year with the highest attendance of 97,392 in year 2011 and the least figure of 38,856 in year 2010, the same cannot be said of facility deliveries which increasingly plummet yearly with the highest figure of 9,587 in 2011 representing only 9.8% of the total ANC attendance for that year. This shows that 90.2% of pregnant women that year actually delivered outside of the formal health institutions. In the same vein, in years 2012, 2013, 2014 and 2015 respectively, a total of 9,000(10.67%), 3,825(7.1%), 531(0.8%) and 1,041(1.3%) only delivered in health facilities across the entire State. The average facility delivery within the period 2010-2015 is 6.8%.

On the other hand, the total number of pregnant women counseled, tested and who received result however increased significantly over the same period from 20,876 (53.7%) in year 2010, 28,104 (28.8%) in year 2011, 19,364 (35.7%) in year 2013 and 65,657 (82.1%) in year 2015 respectively. However, the average for the six (6) years period is 52.42%. This is largely due to combined interventions of international development support to drive down rate of new infections in newborns. The implication of the increase in the number of total pregnant women counseled, tested and who receive result and the low facility delivery is the high likelihood that most of the reactive cases or pregnant women who tested positives might have delivered outside the health institution with non-skilled birth attendance thus further increasing the chances of infecting the general population. This in itself is a major setback in the efforts towards stemming the tide of the epidemic in the State.

Another key finding from the analysis in Table 2 show that while the nurse to population ratio is 1:2,067 (from 2015 projected population of 5,272,029 and growth rate of 3.5%), the TBA to population ratio is 1:1,883. Also, in terms of spread and coverage, the TBAs are readily available and in large numbers to deliver home services compared to nurses and midwives who in most cases are not readily available especially in the rural areas. From Figure 2 above, apart from Etinan, Abak, Uruan and Uyo that the number of nurses/midwives are above TBAs, all the other LGAs apart from Ikot Ekpene and Mkpt Enin where data for TBAs was not available, the spread of TBAs is far higher than nurses/midwives. The non-availability of nurses/midwives to match the population needs can be attributed to several factors among which are challenges of lack of residential quarters within the health facilities and where these are available, issues of security and absence of power supply and other infrastructure poses huge challenge as well. Besides infrastructural deficits, another major challenge in meeting up with increasing demands for professional and skilled birth attendants is the poor remuneration and poor motivation that has increased the high rate of attrition and brain drain among the healthcare workers. The mal-distribution of available medical manpower that is urban-biased has also severely constrained efforts to increase access to healthcare services including PMTCT across the state.

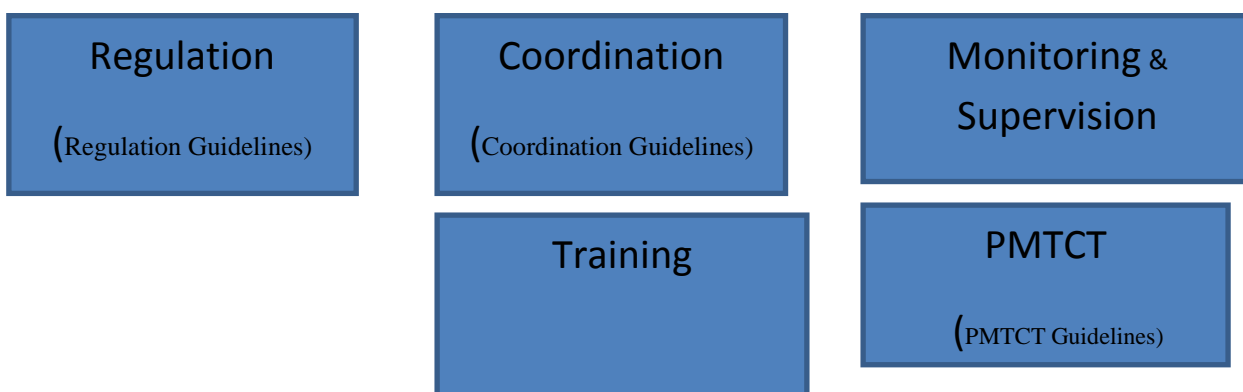
Figure 3: Comparisons of Facilities and Non-Facilities Deliveries in Akwa Ibom State 2010-2015

	1	2	3	4	5	6
Year	2010	2011	2012	2013	2014	2015
Non-Facility Deliveries	34,185	87,805	75,301	50,335	64,911	78,876
Facility Deliveries	4,671	9,587	9,000	3,825	531	1,041
ANC Attendance	38,856	97,392	84,301	54,160	65,442	79,917

In the light of the foregoing, evidence from the analysis above points to the fact that there is a need to re-think the integration of TBAs in the health system for optimal result owing essentially to their spread and availability. Although evidences are mixed with some reservations in certain quarters, however several successful models of integrating TBAs abound in several developing countries. In Nepal and Guatemala, existing traditional birth attendants are trained to employ sterile technique (Freedman, 2007; Goldman, 2003). Mozambique's Ministry of Health has trained and deployed non-physician surgical technicians to rural areas to perform obstetric surgeries in the event of complications during childbirth (Freedman, 2007). In Afghanistan, where there were fewer than 500 midwives nationwide in 2002, an extensive competency-based midwifery training program has more than doubled the midwifery workforce to date (Currie, 2007). Malawi has begun to provide training in midwifery skills to a proportion of its community health workers, known as District Health Officers (Fauveau, 2008). Other countries with similar programmes are Malaysia, Sri Lanka, Guatemala, Niger, Indonesia, Afghanistan and Mexico. Meanwhile, the Akwa Ibom State efforts to integrate TBAs in the health systems have followed Shankar *et al.* (2008) suggested theoretical framework of eleven essential elements and monitoring points for scaling up skilled attendance in the developing world. Among the essential elements are government support: governments to formulate policies and allocate resources for skilled attendants.

Systems, which involves the creation of strategies to integrate skilled attendants into existing health systems, or to create new health systems within which skilled attendants can operate. A comprehensive plan for the sustainability of the program must be assessed for viability, extensive, competency-based —training programs. Others are certification and regular re-licensing procedures for individuals who complete the training, establishment of clear scope of work for the trained TBAs, establishments of realistic workloads, in which tasks are appropriate to the training received, regular supervision, mentoring and continuing education as well as community participation in the monitoring and evaluation of TBAs services, a formalized monitoring process that measure quality of care and health outcomes. Finally, the program should undergo —modification in the event of changes in the environment. Beside Akwa Ibom State in Nigeria, Lagos and Jigawa States have also been able to enact laws to regulate and coordinate TBAs. Jigawa through funding from DFID funded program, PRINN and Lagos State solely by the state government. The institutional framework for the integration of TBAs in Akwa Ibom State summarized below followed painstaking process of vigorous stakeholders' engagements through study tour, technical working group sessions etc;

Figure 3: Schema of Akwa Ibom State TBA engagement components



Training- Training Guidelines, Curriculum, TOT Manual, Participants' manual, Certificate

Monitoring and Supervision- Monitoring & Supervision Guidelines, Minimum Standard criteria for Sites of TBAs, Data Quality Assurance Tools, Data Verification Tools, JDs and ToRs, Data Summary sheets, Cards

5.0 Summary and Recommendation

The paper sought to demonstrate that the integration of TBAs into the mainstream health system could be an effective approach towards bridging the gap in the shortfall of skilled birth attendants for improved maternal health outcomes. The paper draws evidence from data of cumulative selected indicators of PMTCT in Akwa Ibom State (ANC attendance, facility deliveries and number of pregnant women who are counseled, tested and who receive

results) between 2010-2015. A trend analysis shows high ANC attendance and very low facility deliveries. Additionally, the nurse to population ratio of 1:2,067 (from 2015 projected population of 5,272,029 and growth rate of 3.5%) compared with TBA to population ratio of 1:1,883 shows wide disparity between the spread and availability of TBAs to nurses/midwives in the State and a huge untapped potential workforce that could be engaged. The paper also summarizes other developing countries' experience in scaling up skilled birth attendance using TBAs and the institutional framework put in place by the Government of Akwa Ibom State in this regards. However, the operationalization of the framework is yet to be documented which is an area of limitation for further study. Albeit, the work document preliminary evidences.

To this end, it is recommended as follows;

1. That the Akwa Ibom State Government operationalizes the TBAs' integration programme systematically and documents her successes and challenges as a pilot for replication to other States.
2. That the National Council on Health considers the integration of TBAs into the formal health systems for the sharing and shifting of some basic tasks as regards maternal and neo-natal healthcare.
3. That the international donor organizations should consider this area a viable entry point to invest in Nigeria's health systems rather than the present single-disease and fragmented approach that is not sustainable.

6.0 Conclusion:

Integrating TBAs into the healthcare systems is achievable and effective judging from evidence and experiences of other developing countries. However, these processes must be entrenched in an extensive support system that includes a referral network, professional mentorship and supervision, and opportunities for employment upon completion of training.

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