

*Full Length Research Paper*

# **Midwives Services Scheme: A Purposive Assessment of Performance in Enugu State, Nigeria**

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**Ending preventable maternal and infant deaths can be achieved by improving access to skilled health professionals. This study examined and elicited the contributions of the intervention of Midwives Services Scheme (MSS) on maternal, newborn and child health (MNCH) in participating rural primary health facilities in Enugu State of Nigeria, between 2009 and 2015 when the programme was properly funded. The study was carried out at four purposively selected Primary Health Facilities in Enugu State where midwives have been deployed. The study design was a retrospective comparative study. Secondary data was obtained through medical records at the facilities. Findings revealed that there was an initial increase in the proportion of pregnant women that attended antenatal care, an increased number of deliveries by midwives and increased number of Family Planning Attendance from 2012 to 2013 when compared to baseline data of 2009. The study also found increased infant child immunization in the selected health facilities when compared to baseline data of 2009. However, there was a noticeable decline in all the indicators in 2014. The establishment of MSS is a laudable health policy as it elicits improved equity in the distribution of health resources and will go a long way in improving health outcomes of maternal, newborn and child health services delivery. However, the gains of the scheme were short-lived as shown from data collected from 2014.**

**Key words:** Maternal mortality, Neonatal mortality, Primary Health care, Maternal and Child health, Skilled birth attendants

## **INTRODUCTION**

Nigeria has been plagued with dismal health system indicators as the country is the second largest contributor to the under-five and maternal mortality rate in the world (FMOH, 2004; Austin et al., Salam et al., 2014; UNICEF, 2014). The situation is dire with deaths of new born babies in Nigeria representing a fourth of the total number of deaths of children under five years-which stood at 2,300 every single day and an estimated

maternal mortality rate of 814 deaths per 100,000 live births, 53,000 maternal deaths every year, and under-5 mortality rate of 124 deaths per 1000 live births (WHO, 2012; UNICEF, 2014). These deaths have been attributed to preventable causes (WHO, 2012). These causes include ones from complications during pregnancy and delivery, thus linking new-born survival to the quality of maternal care. For children under-5 deaths,

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these have been attributed to preventable or treatable infectious diseases such as malaria, diarrhoea, pneumonia, measles and HIV/AIDS (UNICEF, 2017) One of the contributing factors for the poor health statistics in Nigeria is the shortage of skilled health workers, especially in rural areas (Ebuehi and Campbell, 2011; Abimbola et al., 2012). Reduction in maternal mortality and prenatal deaths requires that among other solutions, the human resource for health (midwives/ nurses and other community health workers) are trained and equipped to manage pregnancy, childbirth, post-natal care, and the proper detection, treatment and referral of complications in women and new-borns (Austin, et al., 2014; Adogu, 2014; Bhutta, et al., 2014). In most low-income countries, skilled health workers are reluctant to relocate to areas where basic social infrastructures for health professionals and their families are inadequate (Awofeso 2010; WHO, 2010). Hence, there is maldistribution of skilled workers in the rural area as compared to the urban areas (Abimbola et al., 2012). In Nigeria, less than 50% of pregnant women in rural areas receive ante-natal care from skilled health service provider unlike close to 90% of their counterparts in urban areas; only a quarter of rural deliveries are assisted by skilled health service providers during delivery in contrast to two-thirds of their counterparts in urban areas (NPC, 2014). As a result of increasing concerns over shortage of skilled birth attendants especially at the Primary Health Care (PHC) facilities in rural areas in Nigeria, the government introduced the Midwives Services Scheme (MSS) in 2009 as a pilot programme using resources from the Millennium Development Goals funds to address these anomalies (NPHCDA, 2015). This was centred on the evidence that increasing the number of midwives will lead to higher utilisation of quality services, thus reducing the high maternal and neonatal mortality rates (Mohammad et al., 2011). Midwives have been identified as the main attendants at birth at under-resourced areas (Renfrew, et al., 2014). Also, studies have identified that training and using midwives is a cost-effective approach in uncomplicated deliveries (Dawson et al., 2015). Midwifery is defined as "skilled, knowledgeable and compassionate care for childbearing women, new-born infants and families across the continuum through pre-pregnancy, pregnancy, birth, postpartum and the early weeks of life (Renfrew, *et al.*, 2014). The MSS was introduced by the National Primary Health Care Development Agency in 2009 as a public sector collaborative initiative by the three arms of government (Federal, State and Local) in Nigeria. The primary aim was to increase coverage of Skilled Birth Attendants (SBA) especially in the rural areas to reduce maternal, new-born and child mortality. Studies have shown that there is a correlation between access to skilled birth attendant (midwives) and maternal/child health outcomes (Mohammad et al, 2011). The MSS programme is achieved through a model of four

PHC facilities with a capacity to perform basic obstetric care clustered around a General hospital with a capacity to provide comprehensive obstetric care. A midwife is attached to each PHC to ensure availability of a skilled birth attendant on a 24hr, 7days of the week basis. The scheme commenced with a 5-year projection/objectives which are; (i)increase by 80%, PHCs with 24-hours maternal health services (ii)increase to 80%, pregnant women with at least 4 ANC Visits (iii)increase to 72.6%, deliveries by skilled birth attendants (iv)reduce by 60%, maternal mortality ratio (MMR), reduce by 60%, neonatal mortality ratio (NMR) and (v)increase to 50% family planning (FP) attendance and increase by 60% Children immunized at infancy. As the scheme has operated for more than 5 years In Enugu State, Nigeria, it becomes imperative to assess its effects on maternal, new-born and child health in selected health facilities in Enugu State.

## MATERIALS AND METHODS

This retrospective facility survey was conducted between June and July 2015. Maternal and Child health services outcome data, from facility records from 2012 to 2014, were compared to the baseline data of 2009 when there were no midwives in those PHC facilities. To allow for consolidation of gains of the scheme, the period 2010 to 2011 were not assessed. We determined the changes that have occurred around the primary objectives as conceived by the program initiators viz: in the proportion of pregnant women that received antenatal care at least four (4) times before delivery, changes in the proportion of deliveries attended to by a midwife, family planning attendance, and children that received immunization in the selected health facilities in Enugu State in the years under study compared to the baseline data of 2009.

### Sample and Sampling Procedure

Only 8 LGAs have midwives under the MSS. Out of these 8 LGAs, only 5 have district hospitals. We purposively selected four participating PHCs all clustered around 1 of the district hospitals (Agbani district hospital) in Nkanu-west, LGA. These PHCs included Obinagu-Uwani, Akpugo PHC, Amagunze PHC, Akegbe-Ugwu PHC and Nara PHC.

### Data collection, analysis and presentation

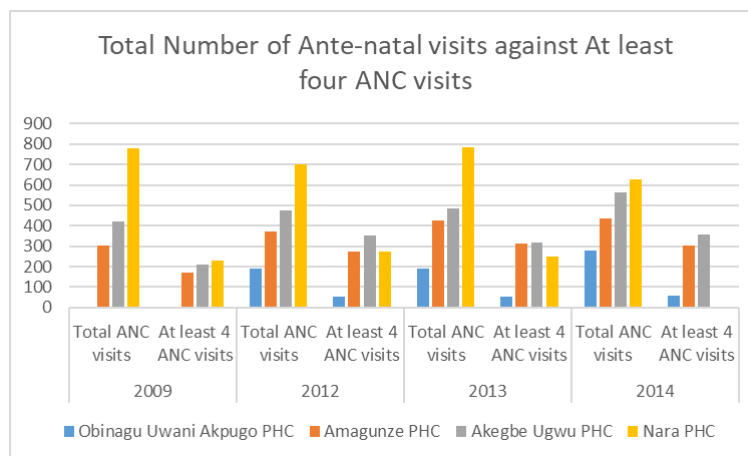
Data (MCH change outcomes for 2012 to 2014, as well as 2009 outcomes) from the target health facilities were extracted from medical record with a designed data extraction form and then transferred to Microsoft Excel workbook which helped to organize and sort the data. Each sheet in the workbook were assigned a particular category of outcome data, for example number of deliveries, with all the years being surveyed as sub categories. It provided a good avenue to make easy comparisons within sub categories and relatively across categories. These data were then presented in tables for easy understanding.

### Study Location

The study took place in Nkanu-west LGA of Enugu state. Its district

**Table 1.** Total number of antenatal care (TANC) visits and those of at least four ANC visits (ANCV)

PHC Health facilities	2009		2012		2013		2014	
	TANC	ANC	TANC	ANC	TANC	ANC	TANC	ANC
Obinagu Uwani Akpugo	-	-	190	54	56	51	281	
Amagunze	305	173	372	274	304	315	437	
Akegbe-Ugwu	420	2112	476	351	356	318	561	
Nara	780	231	702	274	161	251	625	

**Figure 1.** Total number of antenatal care (ANC) visits and those of at least four ANC visits**Table 2.** Proportion of women that attended antenatal care (ANC) visits at least 4 times before delivery and the percentage change (CHA)

PHC Health facilities	2009		2012		2013		2014	
	%ANC	%ANC	% change	%ANC	% change	%ANC	% change	
Obinagu Uwani Akpugo	-	28.4	-	26.7	-	19.9	-	
Amagunze	56.7	73.7	17.0	73.8	17.1	70.0	13.3	
Akegbe-Ugwu	49.5	73.7	24.2	65.8	16.3	63.5	14.0	
Nara	29.6	39.0	9.4	32.0	2.4	25.8	-3.8	

hospital at Agbani is one of the totals of seven statewide. Nkanu-west is mostly rural and is one out of the 17 LGAs of Enugu state which is located in the eastern part of Nigeria with a total population of over 3.8 million people (SMOH, 2013).

## RESULTS

**Table 1** shows that for Obinagu Uwani Akpugo PHC, there was no data available for both total ANC and at least four ANC visits. No data was available for patients who had at least four ANC visits in 2009. However, there were 190, 191 and 281 ANC visits in 2012, 2013 and 2014 respectively. Records also showed that 54, 51 and 56 patients had at least four (4) ANC visits in 2012, 2013 and 2014 respectively.

In Amagunze PHC, there were 305, 372, 427 and 437 ANC visits in 2009, 2012, 2013 and 2014 respectively.

Records showed that 173, 274, 315 and 304 patients had at least four (4) ANC visits in 2009, 2012, 2013 and 2014 respectively.

For Akegbe Ugwu PHC, there were 420, 476, 483 and 561 ANC visits in 2009, 2012, 2013 and 2014 respectively. Records showed that 212, 351, 318 and 356 patients had at least four (4) ANC visits in 2009, 2012, 2013 and 2014 respectively.

In Nara PHC, there were 780, 702, 785 and 625 ANC visits in 2009, 2012, 2013 and 2014 respectively. Records showed that 231, 274, 251 and 161 patients had at least four (4) ANC visits in 2009, 2012, 2013 and 2014 respectively as demonstrated also in **Figure 1**.

**Table 2** shows that for Obinagu Uwani Akpugo PHC, there was no data available for patients who had at least four (4) ANC visits in 2009 hence, a change in percentage could not be calculated against the base line

**Table 3.** Proportion of pregnant women that delivered (DEL) in the health facilities

PHC Health facilities	2009		2012		2013		2014	
	DEL	DEL	% change	DEL	% change	DEL	% change	
Obinagu Uwani Akpugo	-	49	-	20	-	12	-	
Amagunze	65	28	-56.9	23	-64.6	20	-69.2	
Akegbe-Ugwu	51	67	31.4	88	72.5	98	92.2	
Nara	58	74	27.6	97	67.2	61	52	

**Table 4.** Proportion of Family Planning Attendance (FPA) in the health facilities

PHC Health facilities	2009		2012		2013		2014	
	FPA	FPA	% change	FPA	% change	FPA	% change	
Obinagu Uwani Akpugo	-	125	-	118	-	215	-	
Amagunze	-	103	-	95	-	111	-	
Akegbe-Ugwu	-	65	-	58	-	83	-	
Nara	78	171	119	155	98.7	204	161.5	

year of 2009.

In Amagunze PHC, there was 17.0%, 17.1%, 13.3% increase in 2012, 2013 and 2014 respectively for at least four (4) ANC visit when compared to the baseline data of 2009.

In Akegbe Ugwu PHC, there was 24.2%, 16.3%, 14.0% increase in 2012, 2013 and 2014 respectively for at least four (4) ANC visits when compared to the baseline data of 2009.

In Nara PHC, there was an increase of 9.4%, 2.4%, and a decrease of 3.8% in 2012, 2013 and 2014 respectively for at least four (4) ANC visits when compared to the baseline data of 2009.

**Table 3** shows that for Obinagu Uwani Akpugo PHC, there was no data available for deliveries in 2009, however in 2012, 2013 and 2014, the number of deliveries were 49, 20 and 12 respectively.

In Amagunze PHC, the number of deliveries was 65 in 2009 with a decrease in percentage of deliveries of 56.9%, 64.6% and 69.2% in 2012, 2013 and 2014 respectively. In Akegbe Ugwu PHC, the number of deliveries was 51 in 2009 with a percentage increase in deliveries of 31.4%, 72.5% and 92.2% in 2012, 2013 and 2014 respectively. For Nara PHC, the number of deliveries was 58 in 2009, with a percentage increase in deliveries of 27.6%, 67.2% and 5.2% in 2012, 2013 and 2014.

**Table 4** shows that for Obinaga Uwani Akpugo PHC, Amagunze PHC and Akegbe Ugwu, there was no data available for the number of Family Planning Attendance (FPA) in 2009. However, in 2012, 2013 and 2014, the number of FPA was 125, 118 and 215 respectively for Obinagu Uwani Akpugo PHC. Amagunze PHC recorded 103, 95 and 111 FPA in 2012, 2013, 2014 respectively.

While Akegbe Ugwu recorded 65, 58 and 83 FPA in

2012, 2013 and 2014 respectively.

In Nara PHC, the number of FPA was 78 in 2009. Their records showed 171, 155 and 204 FPA in 2012, 2013, 2014 respectively. Calculated against the baseline year of 2009, Nara PHC showed a percentage increase in FPA of 119.2%, 98.7% and 161.5% in 2012, 2013 and 2014 respectively as demonstrated also in **Figure 2**.

**Table 5** shows that Obinagu Uwani Akpugo PHC, had no data available for number of infants/ children immunized in 2009. However in 2012, 2013 and 2014, the number of infants/children immunized were 120, 129 and 100 respectively.

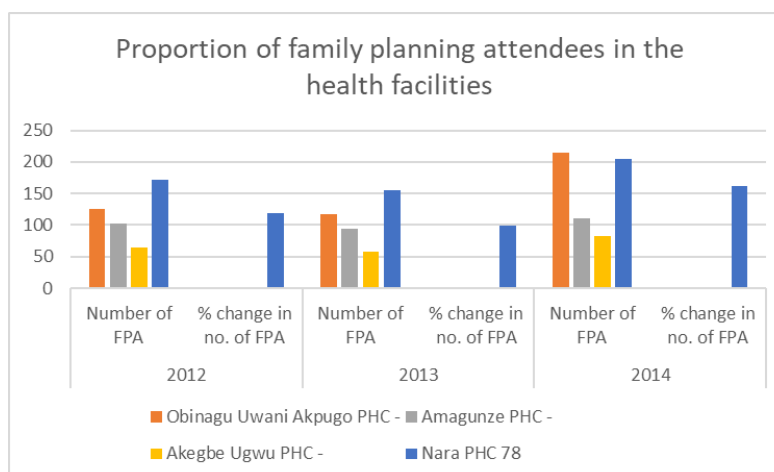
In Amagunze PHC, the number of infant children immunized was 116 in 2009 with a recorded percentage decrease of 19.0%, 7.8% and 22.4% in 2012, 2013 and 2014 respectively when compared to baseline data of 2009.

For Akegbe Ugwu PHC, in 2009, the number of infant children immunized was 260 with a percentage increase of 10.8%, 22.3% and 25.8% in 2012, 2013 and 2014 respectively.

In Nara PHC, the number of infant children immunized was 152 in 2009 with a percentage increase of 15.8%, 21.7% and 25.0% in 2012, 2013 and 2014 respectively.

## DISCUSSION

The study findings showed a boost in the number of pregnant women with at least 4 antenatal care (ANC) visits in the health facilities studied in 2012, 2013, and 2014 compared to the baseline data of 2009. This could be attributed to increased availability of midwives and sensitization at the various health facilities rendering midwifery services and community participation in health.



**Figure 2:** Proportion of Family Planning Attendance (FPA) in the health facilities

**Table 5.** Proportion of infant children immunized (ICI) (0 - 1year) in the health facilities

PHC Health facilities	2009		2012		2013		2014	
	ICI	ICI	% change	ICI	% change	ICI	% change	
Obinagu Uwani Akpugo	-	120	0	129	-	100	-	
Amagunze	116	94	-19.0	107	-7.8	90	-22.4	
Akegbe-Ugwu	260	288	10.8	318	22.3	327	25.8	
Nara	152	176	15.8	185	21.7	190	25.0	

This finding implies improvement in maternal and neonatal health which will in turn lead to early diagnosis and treatment of infections and pregnancy related complications in the mother. However, the results recorded at the health centres fell short of the projected MSS goal of 80% increase in the percentage of pregnant women with at least 4 ANC visits.

The study found a decrease in number of at least 4 ANC visits in the health facilities especially in Akegbe Ugwu and Nara. This existing decline may be attributed to lack of motivation of the midwives as a result of irregular payment of their salaries as some of the midwives, on the course of data collection, informally complained about their salaries not being paid as at when due. Also due to irregular payments it could result to midwives not being physically present all the time in the facilities. These findings support the evidence in the study reported by Oluyimi et al., (2014) on declining enthusiasm of midwives.

Findings also reveal that there was an increase in the number of deliveries in the health facilities studied in 2012, 2013, and 2014 when compared to the baseline data of 2009 (with the exception of Amagunze PHC, that showed a decrease). This increase can be attributed to the increased access to human resource for health at the health facilities. This increase in the proportion of deliveries in the health facilities implies less women

delivering at home or with the help of traditional birth attendants (TBA), thus reducing the risks of complications, associated with delivering at home or with the help of TBA. It indicates a positive impact of MSS on the maternal and neonatal health. These findings are also in line with a similar study conducted by National Primary Health Care Development Agency (2013), which found a 56% increase in number of health facility deliveries as a result of availability of skilled midwives through MSS. However, the decrease in the number of deliveries recorded in Amagunze PHC may be attributed to issues which are specific to the health facility or to the community where the health facility is located. On the increase in number of Family Planning Attendance (FPA) in the target health facilities from 2012 to 2014 compared to the baseline data of 2009, this may be attributed to increased health education of the community members on the benefits of family planning by the midwives at the facility. This increase in the number of FPA implies reduced risks of complications and improvement in health for mothers and their children, thus, better health for the community. Similar findings had been reported in a study by Abimbola et al., (2012) which showed 120% increase in family planning attendance compared to the baseline for the period under study.

On the number of infant children (0 – 1 year) immunized in the target health facilities, the study

showed increase in the number of infant children immunized in the health facilities (with the exception of Amagunze PHC, that showed a decrease). This can be attributed to increased access to healthcare services, efforts of the midwives in educating the women and other community member on the importance of infant children immunization, and also on the increased confidence of the community members on the midwives in the health facilities. This improvement in the number of infant children immunized will lead to more protection against childhood diseases in the community, and in turn will lead to decrease in neonatal and child mortality rate. Similarly, increase in the number of infant children immunized in the health facility had been reported on another study by Partnership for Reviewing Routine Immunization in Northern Nigeria-Maternal Neonatal and Child Health Care (PRRINN-MNCH) (2011). The study reported that fully immunized infant children had increased with the increase of skilled birth attendants.

The decrease recorded in Amagunze PHC reflected the pattern shown on the change in the proportion of deliveries. This gives credence to the idea of likely facility or community specific issues which is inherent in Amagunze PHC within the time frame considered in this study.

## CONCLUSION

Midwives Service Scheme initiative is a laudable health policy that has shown that improving equity in the distribution of human resources for health will go a long way to improve the maternal, neonatal and child health outcome especially in rural areas. However, the scheme continues to face daunting challenges as seen from the results of some health facilities reflecting poor or negative results. Results in some health facilities suggested peculiar systemic issues that need to be addressed in order to get the full impact of the scheme. Increasingly, the midwives on the scheme began to lack motivation as they suffered from irregular and non-payment of their salaries and allowance. The implication was a reverse to the achievement the scheme made initially. Finally, there is the need to find out why patients prefer to use traditional birth attendants despite the availability of skilled birth attendants in health facilities.

## RECOMMENDATION

- Continual motivation of midwives on the scheme should be a priority for the management of the scheme, by ensuring regular payment of their salaries and allowances.
- Better supervision of each facilities where midwives are deployed is necessary to ensure that the midwives are always available in their stations
- Systemic issues which may be affecting some of the health facilities like perception of community members (for instance that deliveries in the facilities are through caesarean operation) towards the health facility should be addressed to improve utilisation of these health facilities.
- It is imperative to look at the original policy documents for MSS to identify any inadequacy and for clearer methods for assessing outcomes or goals.

Exclusively using existing data (retrospective study), was it adequate in finding explanations to missing data, or no data or operational and system problems at the study sites? Surely it cannot, but only enable you suggest a prospective or a more robust cross-sectional study.

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