

ORIGINAL RESEARCH ARTICLE

Skilled Attendance: The Key Challenges to Progress in Achieving MDG-5 in North Central Nigeria

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ABSTRACT

The importance of skilled attendance at delivery, as reflected in the MDG 5, is being promoted in developing countries to address the high maternal/perinatal morbidity and mortality. Evaluation of personnel skills and availability of material resources are central to elimination of barriers to delivery of basic Emergency Obstetric Care (EOC) to the community. We designed a semi-structured, interviewee-administered questionnaire for 54 certified Nurse-Midwives working in Primary Health Care (PHC) clinics in Nasarawa State, central Nigeria, and examined their knowledge and competencies in the five major areas responsible for maternal mortality in sub-Saharan Africa, including power supply, referral linkages and motivation to work. Majority 51 (94.4%) of PHCs neither used the Partograph nor performed manual vacuum aspiration. Referral systems and feedback mechanisms were practically non-existent, 38 (70.4%) of facilities were >5km from the nearest referral centre, with 14(29.5%) connected to the national grid. Majority (68.5%) of respondents would want to work abroad. The quality of skilled attendance is low and basic EOC facilities are lacking, a situation further threatened by potential emigration to greener pastures. Governments and development partners need to address facility and skilled manpower shortages in developing countries to make a modest attempt at meeting the MDG on maternal health (*Afr. J. Reprod. Health* 2010; 14[2]: 129-138).

RÉSUMÉ

Présence des accoucheurs qualifiés : les défis clé au progrès dans l'accomplissement des ODM – 5 au nord central du Nigéria L'importance de la présence du personnel qualifié pendant l'accouchement, tel que cela figure dans les ODM-5 est reconnue et encouragée dans les pays en voie de développement pour aborder la haute mortalité et la morbidité périnatale. L'évaluation de la compétence du personnel et la disponibilité des ressources matérielles jouent un rôle essentiel dans l'élimination des obstacles à la prestation des services obstétricaux d'urgence de base (SOUB) à la communauté. Nous avons formulé un questionnaire semi-structuré pour 54 sages-femmes qui travaillent dans des cliniques des services médicaux primaires (SMP) dans l'état de Nassarawa, dans la région centrale du Nigéria. Nous avons étudié leur connaissance et compétences dans les cinq domaines principaux qui sont responsables de la mortalité maternelle en Afrique sub-saharienne y compris l'alimentation électrique, les liaisons des services d'orientation des malades vers un spécialiste et la motivation pour travailler. La majorité des SMPs (94,4%) n'ont pas utilisé le partographe et ils n'ont pas fait l'aspiration pneumatique manuelle. Il n'existait pratiquement pas de systèmes d'orientations vers les spécialistes et des mécanismes pour des réactions. 38(70,4%) établissements étaient situés à >5km du centre des orientations le plus proche, alors que 14 (29,5%) étaient reliés au réseau électrique national. La majorité (68,5%) des interviewés aimeraient travailler à l'étranger. La qualité du personnel qualifié est basse et les structures de base manquent, une situation qui est davantage menacée par la possibilité de la migration vers les lieux plus cléments +++++v Il est nécessaire que les gouvernements et les partenaires en matière de développement abordent les problèmes du manque de structures et de personnel dans les pays en voie de développement afin d'essayer, d'une manière modeste, d'accomplir les ODMs dans le domaine de la santé maternelle (*Afr. J. Reprod. Health* 2010; 14[2]:129-138).

KEYWORDS: Skill attendance, maternal mortality, midwifery skills, MDGs, Nigeria.

Background

Skilled attendance at delivery is being promoted to address the high maternal morbidity and mortality in developing countries, and is currently used to measure the achievement of the Millennium Development Goal 5 (MDG 5)^{1,2}. It has also attracted special attention of the international research partnership on Skilled Attendance For Everyone (SAFE)³. The current consensus on the link between skilled attendance and maternal mortality has engendered interventions through deployment and strengthening of midwifery skills and services at the community level.⁴⁻⁷ Skilled attendance is defined as care provided to a woman and her newborn during pregnancy, childbirth and immediately after birth by an accredited and competent health care provider who has at her/his disposal the necessary equipment and the support of a functioning health system, including transport and referral facilities for emergency obstetric care^{1,4,8}. Although skilled attendance incorporates the attendant and the enabling environment, only the presence of the health professional is measured by this process indicator, not the skills, but it cannot be assumed that all health professionals are skilled in delivery care, particularly in the developing world.

Sub-Saharan Africa (except for Southern Africa) is among countries that are furthest away from achieving the ICPD + 5 target of 85% of deliveries being attended to by a skilled attendant by 2010⁸⁻¹¹. While Nigeria and India contribute up to a third of all maternal deaths worldwide¹², the MMR in Nigeria's is 800/100,000 live births, with broad regional variations attributed to the literacy level^{13,14}. The highest figures are in the north, ranging from 1000 to 1500/100,000 live births, and lowest in the south west. Also contributing to this high MMR is the high rates of delivery by unskilled birth attendants, driven mainly among other reasons by the unavailability of reliable, quality, appropriate and effective 24 h obstetric services in public health institutions outside the cities. A study by the federal ministry of health in 2003 found that only one-

third of deliveries occur in a health facility¹⁴. Inequality in service delivery between the urban and the rural areas is further complicated by the acute shortage of skilled providers at the community level. The ever changing or unstable political climate does not allow for formulation of political commitment sufficiently strong to sustain good policies and programmes. Challenged by these facts, Nigeria recently launched the National road map for accelerating the attainment of Millennium development goals 4 and 5, emphasizing the importance of revitalizing the Primary Health Care. Similarly, the Society for Gynaecology and Obstetrics of Nigeria (SOGON) Strategic Plan on Women's Health (2000-2010) also endorsed the Mission statement of both International Confederation of Midwives (ICM) and the International Federation of Gynaecology and Obstetrics (FIGO) that emphasize the provision of skilled birth attendants to reduce maternal and neonatal mortality.¹³ The SOGON strategic plan focuses on three major issues to improve women's reproductive health: safe motherhood, prevention of unwanted pregnancy and prevention of HIV / AIDS. The National Health Bill passed recently (15.05.2008) by the Senate, provides for the establishment of the Primary Healthcare Development Fund. The Fund would, among other things, ensure the provision of basic health care facilities through the National Health Insurance Scheme (NHIS).

Various categories of birth attendants have been identified in Nigeria: the parturient herself 16.9%, family member 25.6%, traditional birth attendant 20.4%, CHEWs 1.1%, Doctors 6.6%, Nurses/midwives 28.6%¹⁴. While doctors cannot be retained at primary care level in Nigeria due to marked shortage, the CHEWs do not have the necessary knowledge and skills to be included in the ranks of skilled professional at birth. Also, even though the traditional birth attendants (TBAs) are members of the community, and often an integral part of the culture, and whose fees can be paid in kind and with deferment^{15,16,17}, are excluded from the definition of skilled attendants since they cannot re-

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duce MM^{11,18,19}. It is therefore not surprising that in North-central Nigeria, only the Nurse / midwife qualifies for the definition of a skilled attendant at the community level. The term "skilled attendant" refers to "an accredited health professional - such as a midwife, doctor or nurse - who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns^{8,20}. Skilled attendants, at all levels of the health system, must have skills and abilities to perform all of the core functions.²⁰

It has been shown that the accuracy and promptness with which complications are detected and managed is responsible for the enormous gap in maternal mortality ratios between developed and developing countries²¹. Hence, where a woman lives and where she gives birth, in global terms, makes all the difference between life and death. There is need therefore, to shift from the macro-level focus on skilled attendant at birth to a micro-level concern; of how skillful are these health personnel in delivering EOC services and the bottlenecks in the working environment. Similarly, though the WHO tracks the proportion of women delivered by skilled birth attendants, we know little about their competence to manage common life-threatening obstetric complications. This study sought to assess the current level of competence, knowledge and abilities of Nurse-midwives and the key challenges to progress in achieving MDG5 in Nasarawa state, North Central Nigeria. Furthermore, this may also spur policy-makers and research teams into action towards a revision of regulations and administrative procedures to ensure best practice rather than politics. We also put into perspective the core competencies for skilled birth attendants as defined by the International Confederation of Midwives (ICM) and endorsed by the World Health Organization (WHO). These are the international standard for provision of skilled, safe, professional care to childbearing women and their fami-

lies. They reflect the essential knowledge, skills and behaviours for a provider of ante-partum, intra-partum, post-partum and neonatal care^{22,23}.

METHODOLOGY

Study setting/Subjects

There are essentially four key types of providers of maternal and newborn care in Nigeria, most of who operate within the formal health sector, except for *ngo zumas* (traditional birth attendants) who are within the communities and families. Nurse-midwives have four years of training (three years of basic nursing and one year devoted to special post basic training in midwifery), while, the Nurses lack post basic training in midwifery. Doctors are not posted to the PHC facilities in Nigeria largely due to the shortage of this cadre of health professionals. Therefore, this level of healthcare does not receive the blessing of the NYSC (National Youth Service Corps) doctors on National services. While the community health extension workers (CHEWs) have a historic connection to the community, their training lacks the necessary knowledge and skills of a skilled attendant. Despite this deficiency, however, they are often left in-charge of majority of health facilities at the community level. The safe Motherhood practice at the Local Government level in Nasarawa State has received many policy changes and a medium level of regulatory support during the previous administration. Currently, Nurse-midwives at the Primary Health Care (PHC) level practice in Local Government areas of their origin, creating inequitable distribution of maternal health professionals between different health facilities across the State. Similarly, free obstetric care services have been operational at the secondary and tertiary health facilities in the state since 2005, but none at the primary health care level, making service delivery even more complex. The State currently has a School of nursing, but lacks Midwifery School. There are currently about 127 Nurse/midwives in Local Government service practicing at 586 PHCs throughout the state, implying that majority of communities have no access to skilled attendants either independent practitioner or attached to a health facility. Also, CHEWs numbered 560, given a ratio of about 1:5 Nurse/midwives to CHEWs per facility.

In March 2008, 54 nurse-midwives were identified and trained on Life Saving Skills (LSS) under the MDGs conditional Grants Scheme supported capacity building. The list of all Nurse/midwives in the payroll of the PHC department was obtained from the department of Local government. This served as our

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sampling frame. This was confirmed from the State RH-coordinator and Director, PHC. The 54 nurse mid-wives were then selected using stratified random sampling.

A descriptive, cross-sectional study design was used for the study, using a semi-structured, self-administered questionnaire, followed later during the training, with an in-depth interview. The 25 questions were divided into the major sections of maternal health-antepartum, intrapartum and post-partum. Each of these sections were further divided into basic knowledge and skills. Further questions address referral, power supply to facilities and job satisfaction.

Prior to filling the survey questionnaire, potential risks and benefits of participation in the study were explained to the research group to help address any questions. Further explanations on the nature of the questions were made during the research to improve the response rate. The study was approved by the ethics and research committees of the Nasarawa State MOH. A meeting was arranged with key personnel, including the Director of PHC, RH coordinator to inform them of the design and intent of the evaluation. A letter of agreement was signed, and a contact person in each Ministry was assigned to provide all written materials and supporting documents. Interviews were conducted with principals of SNM, Jos and vom, Plateau State, and SON, Lafia, Nasarawa State. A waiver of documentation of informed consent was obtained (informed consent was established by potential respondents' completing and returning the survey questionnaire).

Statistical Analysis

Descriptive statistics were computed to determine the demographic and practice location, provision of obstetric care. Details regarding their knowledge on antenatal health talk, including identification of at risk clients; infection prevention strategies, intrapartum care including the use of partograph; availability of family planning services; referral network; power supply. Chi-square tests were used to compare

In addition, the survey inquired about each respondent's overall career satisfaction and his/her perception of the overall influence of the working environment on their job satisfaction and/or their desire to travel abroad. Due to the voluntary nature of the survey, nonresponsive adjustments were made to reduce potential bias in survey estimates. Weights were constructed for this purpose and routinely applied to the analyses. *P* values <.05 were considered statistically significant. All data analyses were conducted using SAS 9.1 (SAS Institute Inc., Cary, NC).

RESULTS

There were 127 Nurse/midwives and 586 PHC clinics at the local government level, giving a ratio of about 1:5. All the 54 respondents were nurse/midwives currently engaged in clinical practice at the PHC level.

Data from 54 respondents was used for this analysis. Only 3 (5.6%) occasionally use partograph to monitor labour in their facilities, but all require assistant to effectiveness. Usage of uterotonic drugs indicated 25.9% oxytocin, 74.1% ergometrine, while misoprostol was not popular. Fifty four (96.3%) of respondents indicated that they could accurately measure BP, and 38 (70.4%) could identify three features of pre-eclampsia. Most respondents (88.1%) could accurately calculate the expected date of delivery, whereas 17 (31.5%) listed atleast three conditions that make a pregnancy high-risk. 94.4% of the respondents listed five topics discussed during ANC. Thirty eight (70.4%) of respondents use surgical gloves for examining women in labour. 24.1% are connected to the national grid, but supply remained irregular in all these facilities. Majority (70.4) of the facilities >5km from the first referral centre, and 48 (88.9%) had no formal referral links. 53.7% of the respondents said they were comfortable in their present job, yet, 68.5% want to travel abroad if the opportunity avails (Table 1).

DISCUSSION

A better understanding of skilled attendance in developing countries where all but 1% of the 526,000 maternal deaths occur is important; particularly, as the outcomes have critical consequences to the achievement of the MDGs. The findings from this study showed astounding revelations and the stark realities of skilled attendance in a resource constraint environment. A ratio of about 1:5 Nurse / midwives to CHEWs, and a similar ratio of Nurse/midwives to facility implies that majority of communities have no access to skilled

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Table 1. Responses of 54 Nurse-Midwives to knowledge, skill and facility assessment questions.

Question/Response	Frequency (%)	95% Confidence interval
Availability of manual vacuum aspiration		
yes	10(18.5)	9.3 to 31.4
no	44(81.5)	68.6 to 90.7
Use of MVA		
comfortable	3(5.6)	1.2 to 15.4
assistance required	51(94.4)	84.6 to 98.8
Use of Partograph		
yes	3(5.6)	1.2 to 15.4
no	51(94.4)	84.6 to 98.8
Gloves worn at delivery		
surgical	38(70.4)	56.4 to 82.0
non-surgical	16(29.6)	18.0 to 43.6
List Features of obstructed labour		
none	9 (16.7)	7.9 to 29.3
one	15 (27.8)	16.5 to 41.6
two	14 (25.9)	15.0 to 39.7
three	16 (29.6)	18.0 to 43.6
List Features of anaemia in pregnancy		
none	4 (7.4)	2.1 to 17.9
one	14 (25.9)	15.0 to 39.7
two	18 (33.3)	21.1 to 47.5
three	18 (33.3)	21.1 to 47.5
List Features of pre-eclampsia		
none	5 (9.3)	3.1 to 20.3
one	6 (11.1)	4.2 to 22.6
two	5 (9.3)	3.1 to 20.3
three	38 (70.4)	56.4 to 82.0
Distance from nearest referral center		
≥ 5km	38 (70.4)	56.4 to 82.0
< 5km	16 (29.6)	18.0 to 43.6
Referral feedback available		
yes	6 (11.1)	4.2 to 22.6
no	48 (88.9)	77.4 to 95.8
Satisfied with current job		
yes	29 (53.7)	39.6 to 67.4
no	25 (46.3)	32.6 to 60.4
Desire to work abroad		
yes	37 (68.5)	54.4 to 80.5
no	17 (31.5)	19.5 to 45.6

attendants either as independent practitioner or attached to a health facility.

The effective implementation of evidence-based health care practices remains a significant challenge globally²⁴. Safe abortion care

has benefitted from development of new techniques. Manual vacuum aspiration is now recognized as a safe and effective surgical method for abortion and its complications up to 15 weeks of pregnancy. Efforts to boost its

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used in developing countries are increasing²⁵, furthermore, USAID/COMPASS Project, a non-governmental organization that implement a comprehensive post-abortion care programme using MVA operates in Nasarawa state, yet only 5.6% of facilities are equipped with MVA services. The partograph, an inexpensive, effective and pragmatic tool adopted by WHO for monitoring labour in both developed and developing countries is seldom used in majority of the facilities (5.6%). Post partum haemorrhage (PPH), defined as blood loss in excess of 500ml or more following childbirth, accounts for around 30% of maternal deaths globally. Majority of deaths are a consequence of events in the third stage of labour. Routine active management of the third stage of labor (AMTSL) to prevent PPH is an evidence-based, feasible, low-cost intervention that can effectively prevent 60 percent of uterine atony, but erratically practiced in many developing country settings²⁶. Oxytocin is generally preferred but seldom available outside hospital based settings, thereby losing its superiority to newer oxytocics²⁷. Misoprostol (a stable prostaglandin E1 analogue) approved over 20 years ago for the prevention and treatment of gastric ulcers, has gained recognition recently as an effective, cheap and safe drug for the prevention and treatment of PPH^{28,29,30}. It holds great promise as an alternative oxytocic drug for the prevention of postpartum haemorrhage in resource poor settings; it neither require refrigerated storage nor injection, but importantly, has the benefit of being a heat stable tablet that can be taken orally, sublingually, or vaginally. Tragically, it is not yet an essential drug in many countries³⁰, and its popularity at the community level in Nigeria is still being awaited as indicated in our study.

Maternal health services offer a key opportunity to reach women with reproductive health services. The quality of antenatal care (ANC) is judge by its content; including nutrition education, tetanus vaccine, malaria, breastfeeding, contraception and HIV information, immunization, services for monitoring

potential complications. Previous research indicated that mothers in the northern part of Nigeria receive lower quality ANC than mothers in the southern part¹⁴. The low (47.6%) skilled attendance in North central Nigeria, compared to over 82% in other developing Countries³¹, may be attributed to the poor service delivery at the facility. Majority (94.4%) of our respondents could mention at least three major topics discussed during ANC health talk, 62.9% could confidently measure blood pressure. However, it is a well known fact that complications of pregnancy cannot be predicted or prevented. Even pre-eclampsia, which is often mentioned as the best example of how early signs of complications may be detected, its most fatal form (eclampsia) often arise suddenly during pregnancy, labour or delivery. In the same vein, poor interpersonal communication and counseling (IPCC) impact negatively on utilization of these services by women¹⁴. Our study, however, could not capture skills in IPCC. Maternal health services are also an excellent means through which to offer women prevention, counseling, testing and treatment for HIV infection and for preventing HIV transmission during pregnancy and birth and through breastfeeding. The over two million pregnancies that occur in the HIV-positive women each year are in resource-constrained settings where the maternal mortality is also unacceptably high³². HIV/AIDS is now a major cause of maternal mortality, and has overtaken direct obstetric causes as the leading cause of maternal mortality in high prevalence areas in sub-Saharan Africa³³. Although successful strategies to reduce the risk of mother-to-child transmission (MTCT) of HIV have almost eliminated pediatrics HIV infection with proven success in poorer settings³⁴, none of the respondents perform routine screen of pregnant women in their facilities. This may be due to the slow implementation of the nationwide free MTCT services at the community level. The aggressive awareness campaign on HIV/AIDS may account for the high (70.4%) of facilities using surgical gloves. Self protection

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may be the priority and not clean delivery practices per se, since other important ways of preventing puerperal sepsis like use of partograph to reduce frequent vaginal examinations and prolong labour, clean water and soap are factors still lacked in the region. A woman is not at risk of maternal death unless she becomes pregnant, and this risk adds up over her lifetime. Family planning services are an essential part of services to reduce maternal mortality because they enable women to post-poner, space and limit pregnancies³⁵. About 90% of abortion-related and 20% obstetric-related mortality and morbidity were averted by the use of effective contraception globally in 2000³⁶. Nigeria is one of the countries with both high maternal mortality ratio and high fertility rate, resulting in astoundingly high life-time risk of maternal death¹⁴. Despite these, the use of modern contraception continues to be low (20%), and the unmet need among married women in the region remained high (24%)³⁷. Maternal health services, particularly antenatal care offer a key opportunity to reach women with family planning services. Although all respondents in the study indicated availability of at least three (3) modern methods of contraception in their facility in the 3 months preceding the study, this cannot be translated to demand and usage of contraception considering the high unmet need in the region.

Evidence-based risk assessment guidelines that rely on clinical features of pre-eclampsia with criteria for early referral has been developed³⁸. Although majority (70.4%) of our respondents could list three features of pre-eclampsia, the use of magnesium sulphate in treating eclampsia and pre-eclampsia has not been widely adopted in developing countries despite evidence of its superiority over other anti-convulsant drugs³⁹.

The provision of skilled attendance and EOC to reduce maternal morbidity and mortality requires effective referral system since delays in care can be life-threatening. Evidence suggest that substantial reduction in maternal mortality is possible if functioning referral links to essential obstetric care are a

central feature of the maternity system.⁴⁰ Such a referral system needs to include a means of communication between staff at the peripheral health facility and at the referral level for medical advice and feedback, a means of transporting complicated cases to the referral centers and a means of coordinating care among different levels of health care providers. Our study revealed far from expectations as only 11.4% of those who actually refer patients receive feedback. Transport and communication links between rural and urban settings are fragile. To further complicate issues, majorities (70.4%) of the facilities were more than 5km from the referral hospitals, although this did not significantly affect the desire to refer. (p-value) this has far reaching consequences, women with obstetric complication arrive at a facility very late because it took too long to reach there.

People work in health care system for different reasons. While some like to care for patients and value clients' appreciation and societal status accorded health care providers^{41,42}, many providers work only because they need an income⁴³. Good quality care is an intrinsic motivator to perform well and a strong determinant to overall patient satisfaction with care⁴⁴. The continued inability to provide quality care, including unpaid salaries, under-staffing and attrition can contribute to job dissatisfaction, demotivation, and intentions to seek other employment. It has been documented that many skilled birth attendants in sub-Saharan Africa are moving away from public to private health facilities and to international health and development organizations⁴⁶. That 53.7% of our respondents were comfortable at their place of work and yet, 68.5% want to travel abroad if the opportunity avails, is in keeping with this 'greener pasture' syndrome^{45,46}. These migration gradients operate within a political, economic and socio-cultural context⁴⁷.

CONCLUSION

Access to quality emergency obstetric care is

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still lacking, as only few health care providers at the community level have the necessary skills or resources to monitor labour, screen for HIV/AIDS, and offer 24 hour services. Furthermore, the dare challenges the community Nurse/midwives in North Central Nigeria faces are tempting them to leave for better conditions of service abroad. Therefore the availability and quality of skilled birth attendants at the community level in North Central Nigeria deserves a critical appraisal. Although every Country has its own history and challenges, accelerating progress is not impossible if political will can be translated into action as seen in Sri Lanka and Malaysia⁴⁸. The findings in this study suggest a call for further investigation into the consequences of the poor policies and service condition in the low resource setting.

RECOMMENDATIONS

Revision of regulations and administrative procedures that will ensure a change in policy to improve widespread distribution of skilled providers is imperative.

Training, retraining and deployment of health personnel through building of nursing and midwifery schools are central elements in improving health care. Working with other key partners will permit a global movement to create the necessary commitment and unlock essential resources required to increase access to skilled attendants. Finally, enabling conditions like good salaries and upgrading of health facilities will have to be created for health workers to realize their full potentials and to motivate them to work.

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