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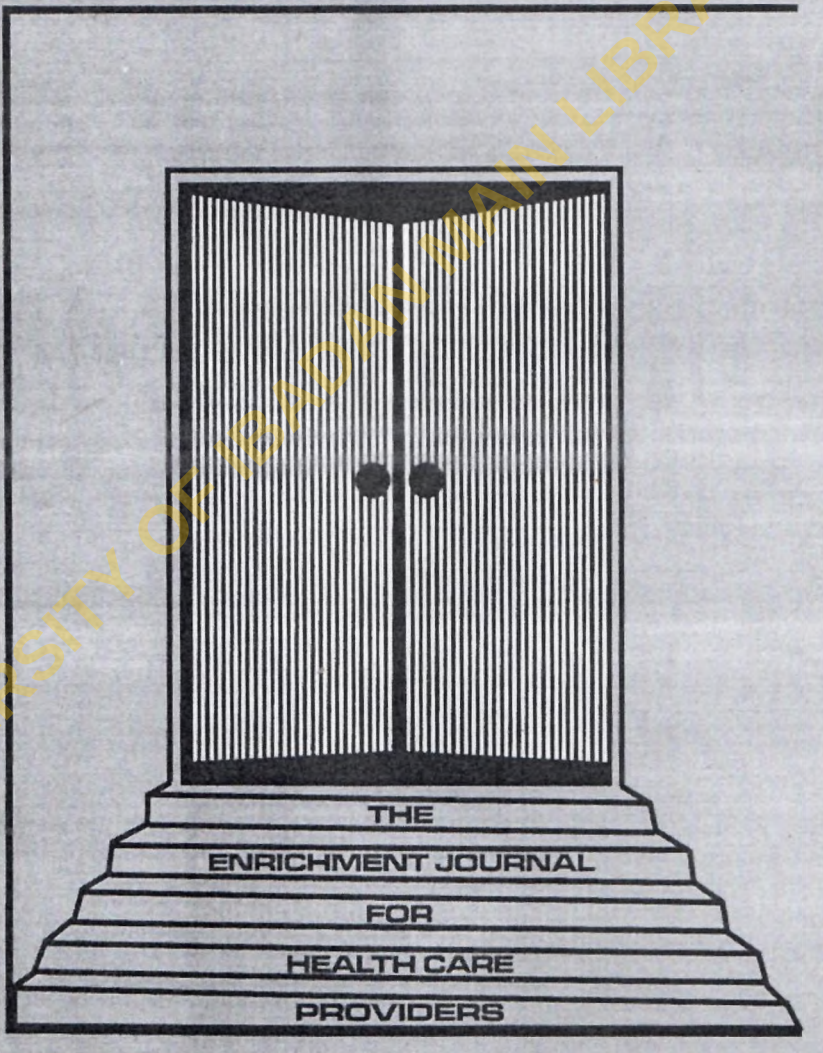

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Table of Contents **Pages**

Availability and Utilization of skilled Attendants for Child Birth: Implications for Maternal Mortality and Human Resources Development in Nigeria (A Review)

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Abstract

Shortage of manpower has been a major concern in health care delivery system. Poor utilization of skilled attendants for childbirth has been linked with high maternal mortality in developing nations. The effect has been quite deleterious and has contributed to the shortfalls in the achievement of set health goals.

This shortage heavily influences the effective and efficient delivery of services especially in rural communities in Nigeria. Preventable complications of childbirth have resulted in the death of many women during the process of bringing life. The countries that have identified and addressed the issue of skilled attendance at childbirth have witnessed a tremendous reduction in Maternal Mortality.

This paper presents a review of availability and utilization of skilled attendants for child birth: Implications for Maternal Mortality and human resources development in Nigeria. It is aimed at highlighting the need for more attention in improving Human resources for maternal and child health care. Anderson's model of Health care utilization was used to illustrate Health care utilization. Publications on skilled birth attendants, maternal mortality, human resources for health were also reviewed.

This review identified that Nigeria is among the countries with shortage in human resources for health and utilization of skilled attendants was below expectation, with slow decline in maternal mortality. Therefore, there is need for more political will in ensuring that the resources needed to improve health care receive more investment. More effort should be made to improve infrastructures in the rural communities to enhance staff retention and access to care.

Introduction

Shortage of manpower has been a major concern in the health care delivery system as it has been linked with sub-optimal care. World Health Organization[1] reported that 'Around 90% of all maternal deaths and 80% of all still births occur in 58 countries, largely because those countries lack trained midwives. This shows that women do not receive the right type of care from the right personnel. The quality of care available to women during childbirth needs to be improved by ensuring adequate number of appropriate staff in the available facilities. There are numerous reasons why it is important to improve quality of healthcare as deduced by Dodwad[2], which include

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enhancing the accountability of health practitioners and managers, resource efficiency, identifying, and minimizing medical errors while maximizing the use of effective care and improving outcomes, and aligning care to what users/patients want in addition to what they need.

The effects of lack of skilled birth attendants are quite obvious especially in the rural areas, where Maternal and child health services cannot be accessed easily by the women. Report from the 2013 Nigeria Demographic Health Survey (NDHS)[3] showed that thirty-six percent of births in Nigeria are delivered in a health facility, sixty-three percent of births are delivered at home, women in rural areas are more likely to deliver at home (77%) than their urban counterparts (37%). Global Health Alliance and WHO[4] stated that the health workforce is central to attaining, sustaining and accelerating progress on universal health coverage. More health workers would prevent most of the unnecessary young deaths from childbirth[4].

This paper attempts a review of skilled attendants for pregnancy, childbirth and postnatal care, measures for improving health services through skilled care and human resource development with a view of highlighting their implications for the reduction of maternal mortality.

Conceptual Model using Anderson Model of Health Care Utilization

The Andersen's Behavioural Model of Health Care Utilization (Figure 1), initially developed in the late 1960' suggests that people's use of health services is a function of their predisposition to use services, factors which enable or impede use, and their need for care, thus providing a way to conceptualize these variations in utilization rates and consumption of medical resources[5]. In this model, use of services is defined as a function of 3 main elements: need, enabling, and predisposing factors. Need factors, which have been shown to account for the majority of the explained variability in provider use, include the individual's perceived health care need and other indicators of their health status[5]. Enabling factors include items such as the individual's income, health insurance status, and access to a source of regular care including skilled care. Finally, predisposing factors include demographic variables, socioeconomic status, attitudes, and beliefs. This model shows various factors that influence utilization of health which could apply to skilled care for childbirth.

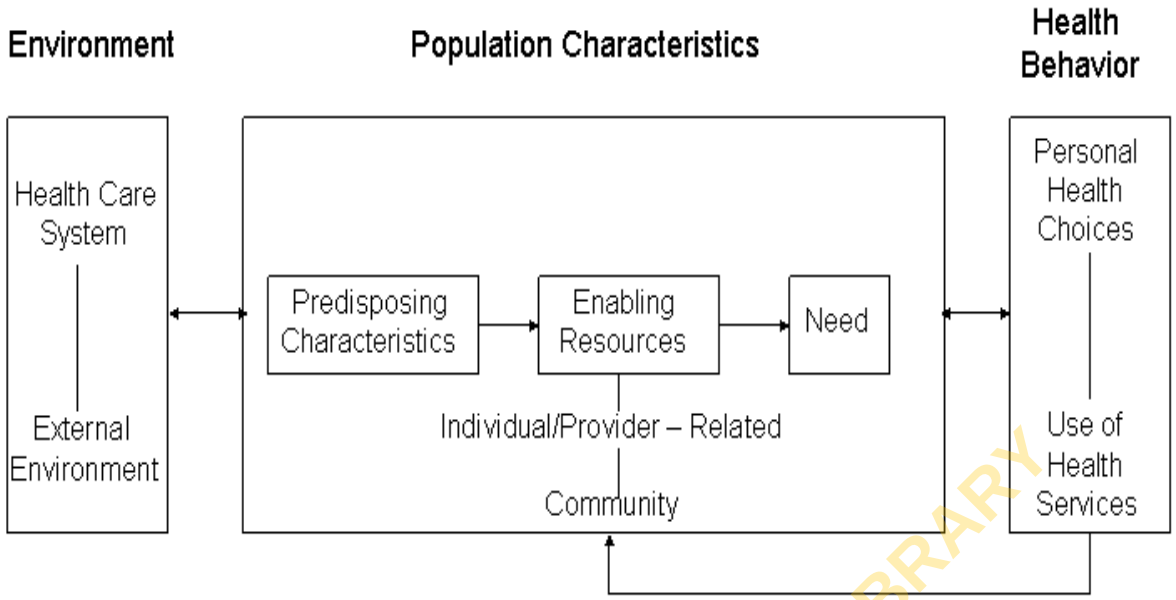

Figure 1: The Anderson's Model of Health Care Utilization[6]

Method: Literature search was carried out using PubMed, Google Scholar and other relevant websites. Also, articles were sought from the WHO, the World Bank, UNICEF, UN and the United Nations Population Fund (UNFPA) publication. Articles with information on Human resources for health, skilled attendance at childbirth, utilization of maternal health services, maternal mortality, Human resources for health and Millennium Development goals were reviewed for relevant information. Of over fifty papers retrieved from the searches that addressed the issue of, utilization of skilled care at childbirth most of the authors reported that less than 50% of women in most cases utilized skilled birth attendants. Good quality services were not readily available in some places as some facilities did not have registered midwives.

Availability and Utilization of Skilled Attendants for Childbirth

Most obstetric complications could be prevented or managed if women had access to a skilled birth attendant – doctor, nurse, midwife – during childbirth. Globally coverage of skilled attendant during childbirth increased from 61% in 2000 to 78% in 2016. However, despite steady improvement globally and within regions, millions of births were not assisted by a midwife, a doctor or a trained nurse. In sub-Saharan Africa approximately only half of all live births were delivered with the assistance of skilled birth attendant in 2016. Improvements in the coverage of the proportion of births attended by skilled health personnel and their provision of care may have contributed to declines in maternal mortality between 1990 and 2015. However, the estimated coverage of births attended by skilled health personnel in 2016 shows inequality between WHO regions as only half of the births in the sub-Saharan Africa Region, where maternal mortality is highest, are attended by skilled health personal whereas in the other WHO regions over 70% to 99% of all births are attended by skilled health personnel[7].

In Nigeria, it was reported that average maternal mortality ratio in northern Nigeria was 2420 (range:1060 - 4477) per 100,000 live births[8,9,10,11,12] while similar data in the southern parts of the country were considerably lower - between 454 and 772/100,000 live births[13,14]. There is increasing evidence that this difference in maternal mortality between the northern and southern parts of the country may be due to disparity in the accessibility and utilisation of health services, especially differences in the availability of skilled birth attendants between the regions.

A skilled health attendant according to WHO/ICM/FIGO[15] is “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 post-partum period, and in the identification, management, and referral of complications in women and newborns”. WHO[16] stated that ‘traditional birth attendants (TBAs), trained or untrained, are excluded from the category of skilled health workers. Skilled attendants are best placed to ensure the survival and safety of pregnant women and their infants

because they are able to identify early signs of complications, and offer first-line emergency obstetric care (including emergency newborn care) when needed[15].

The eight Millennium Development Goals (MDGs) were formulated in 2009, among which four were directly related to health, especially that of the poor[17]. The fifth millennium development goal was to reduce maternal mortality ratio (MMR) by three-quarters between 1990 and 2015[17]. This shows an inverse relationship between the proportion of deliveries assisted by a skilled attendant and the maternal mortality ratio in developing countries[18]. Key determinants of success for achieving international development goals as stated above are closely related to human-resource development. World Health Organization and Workforce Alliance[19] reported that up to 83 countries fall below the threshold of 22.8 skilled health professionals per 10 000 population and Nigeria happens to be one of those countries. Weak health systems and inadequate stock as well as inequitable distribution of skilled birth attendants (SBA) have been identified as key challenges have hindered achieving the MDG- 4 & 5 targets[20]. Skilled care at all births gives those women who develop life-threatening complications a better chance of receiving emergency obstetric care in time[18]. A skilled attendant providing skilled care will help achieve the goals of reducing both maternal and child mortality[21].

The ration of health care workers (HCW) to population density in Nigeria (20 doctors, nurses and midwives per 10,000 population) is a little below the WHO recommendations of 23 per 10,000[22]. However, the health workers in Nigeria are poorly distributed in favour of urban areas, southern zones, secondary and tertiary health care facilities. This inequitable distribution of skilled birth attendants is very apparent in the northern parts of the country and primary health care facilities in rural areas[23]. The shortage of skilled birth attendants such as midwives and doctors in rural Nigeria affects the utilization of services by women in these areas[24]. Since 2009, strategies towards improving these indices by the Government have focused on programmes that strengthen the health system by improving access to healthcare and health outcomes[25]. This led to the introduction of a high-profile umbrella approach of the Saving One Million Lives (SOML) programme. This ensured the integration of existing primary health care activities such as the Midwives Service Scheme (MSS) introduced in 2009 and the Subsidy Reinvestment and Empowerment Programme on Maternal and Child Health (SURE-P MCH) introduced in 2012[26]. The gap in utilization of primary health care services for skilled births alongside other poor maternal and child health indices led to the conception of the MSS and SURE-P MCH by the Nigerian Government[24].

The Midwives Service Scheme (MSS) was set up as a game changer to reduce maternal and child mortality so that Nigeria could achieve the Millennium Development Goals (MDGs) on maternal and child health (MCH)[27]. This programme was established by the national government in 2009 to improve the availability of skilled birth attendants in rural communities, it engages newly graduated, unemployed and retired midwives to work temporarily in rural areas.

Four midwives are posted for one year to selected primary health care (PHC) facilities to provide the human resources for health necessary to achieve the MDGs in their states and local government areas. It has gone a long way to improve availability of skilled birth attendants in Nigeria with the following evidences:

- **Scale up:** The MSS has subsequently been scaled up from 625 PHC facilities to an additional 375 facilities, providing 1,000 facilities across Nigeria with an additional 4,000 midwives and 1,000 community health extension workers.
- **Antenatal care, facility delivery, and family planning increase, maternal and neonatal mortality decrease:** The MSS continues to contribute to improved health outcomes in the rural communities where antenatal care visits and facility delivery have increased by more than 100%, family planning uptake by more than 200% and maternal and neonatal mortality have decreased by 19% and 5%, respectively, since the 2009 baseline. In 2012, inspired by the success of the MSS, the national government created a Maternal and Child Health component of the Subsidy Reinvestment and Empowerment Programme (SURE-P), which provides an additional 1,000 PHC facilities and strategies to mitigate some challenges encountered in implementing the MSS. Since its commencement, routine monitoring data show a 50% reduction in maternal mortality, 48% increase in antenatal visits, 61% increase in skilled birth attendance and 59% increase in first time acceptors of contraceptives in SURE-P MCH facilities compared to the baseline data.
- **Policy Change for Family Planning:** The experience of implementing the MSS has helped reveal to the national government the existing realities of PHC in Nigeria. This has contributed to influencing a change in national policy to now allow community health extension workers, who form the bulk of the PHC workforce in Northern Nigeria, to provide contraceptive injectables to women.
- **Conditional Cash Transfers Increase Facility Delivery:** Since antenatal care uptake far outpaces facility deliveries within the MSS, SURE-P MCH includes a conditional cash transfer component that was piloted in 18 of Nigeria's 36 states. Pregnant women receiving the cash transfer are required to attend four antenatal care visits, deliver in a facility and attend postnatal visits. In return, they are given N5,000 (US$32), pro-rated based on the number of conditions they meet. Preliminary results show a 27% increase in facility delivery with this incentive.
- **Improved community engagement and human resources investment:** Further, the MSS has renewed attention to community engagement

in PHC by reactivating community health committees, which have been successful in ensuring community ownership and support for health workers. To support these committees in generating demand for MCH services, SURE-P MCH introduced a cadre of 6,000 lay community-based health workers nationwide. Selected by the committees, they help pregnant women, mothers and their children use PHC facilities along the continuum of care.

Utilization of Skilled Attendants and Reduction of Maternal Mortality

Historical data indicates that countries successful in reducing maternal mortality have emphasized the role of a professional midwife or doctor working in a health institution[18]. Maternal mortality shows the greatest statistical disparity between developing and developed countries: more than 99% of maternal deaths occur in poor countries like Nigeria where women run a lifetime risk of dying from a pregnancy-related complication about 250-fold higher than women in developed countries[18]. Among developing regions, the adult lifetime risk of maternal death (the probability that a 15-year-old female will die eventually from a maternal cause) is highest in sub-Saharan Africa (at 1 in 31), followed by Oceania (1 in 110) and South Asia (1 in 120), while the developed regions had the smallest lifetime risk (1 in 4300)[28]). A maternal death is a relatively rare event and trends in maternal mortality over time are difficult to measure. The "proportion of births attended by skilled health personnel" is therefore often used as a more appropriate proxy indicator to track progress towards MDG 5. Skilled attendance at birth requires two key components: an SBA and an enabling environment that includes drugs and equipment, a functional referral system and enabling policies[25,19,30,31].

To prevent and manage pregnancy-related complications, there is increasing recognition that pregnant women should be assisted by professional health care providers with the necessary skills, drugs, supplies, equipment and back-up, particularly during and immediately following childbirth[21]. The Human Resources for Health crisis are still an acutely limiting factor in countries' attempts to reduce maternal and child mortality, to control priority infectious and non-communicable diseases, and to attain the broader target of universal health coverage[32].

This is demonstrated in the reduction of maternal mortality in western countries compared to less developed countries. Early in the twentieth century, maternal mortality levels in Western Europe and North America were similar to those in the developing countries today[21]. Some other countries have also successfully lowered maternal mortality, such as Thailand, Sri Lanka and Malaysia demonstrate that maternal mortality can be reduced using a variety of different models of care[33].

Furthermore, it is clear that such reductions are possible, even when resources are limited. The common feature in all these countries is that they all focus on ensuring that a skilled attendant attends the majority of births. The Thailand experience in particular shows how providing skilled attendants, in this case

midwives, resulted in dramatically reduced maternal and newborn mortality[21]. Also, Sri Lanka, for example, has a very high proportion of births attended by midwives and in Indonesia efforts are currently focused on making midwives available in the rural areas[34].

Many women lack access to skilled care as a result of challenges identified in a study[35]. "About one in three women reported that transportation, distance to the health facility, and not having a provider to attend to them are big problems". This is a common is situation even in some urban settings in Nigeria. There is need to consider both the technical aspects related to estimating the number, skills and distribution of health personnel for meeting population health needs, and the political implications, values and choices that health policy and decision-makers need to make within given resources limitations[35].

Quality obstetric care may not be attainable for the women in the developing world as lack of access to basic health facilities is one of the major factors responsible for high maternal mortality rates in the region[36]. Delay in adoption and utilization of highly efficient and cost-effective interventions have been implicated in the high mortality rates[37]. Majority of deaths and complications associated with labour can be prevented by cost effective and affordable health intervention like the use of partograph[38]. The partograph is an effective tool for monitoring labour and when used effectively, it prevents prolonged and obstructed labour by skilled birth attendants.

Challenges in access to health care services during childbirth

Improving human resources is fundamental to ensuring access to quality skilled care during childbirth and this is not without it challenges. This huge discrepancy in the rate of maternal deaths is due to differences in access and use of maternal health care services[39]. A study of a rural community in Nigeria showed that majority (50%) had no formal education and they utilized mainly the services like Traditional Birth Attendants and Mission Homes during childbirth[40]. So ignorance and lack of formal education is major challenge.

Deliberate effort has to be made in addressing the problem of inadequate manpower especially, skilled health personnel at the point of child birth. Many complications require urgent intervention which will not be possible if the individual giving care is not competent or the place or delivery does not have the required resources needed for the intervention. To give prompt care, one must have the necessary skill and dexterity. Thus the need to invest in health manpower cannot be over emphasized. Farooq & Aslam[41] reported a positive correlation between training and employee performance. This shows that training of personnel can contribute greatly to higher levels of effectiveness and efficiency especially in the health care system.

Despite the innovation of MSS and SURE-P, the high health worker attrition within the MSS continues. This is worse in northern Nigeria, where in some states only one third of deployed midwives stay. SURE-P MCH is

trying to address the challenges responsible for attrition: challenging living and working conditions, irregular payment of salary and deployment far from home, since the majority of the midwives are from southern Nigeria[27].

To ensure that all women and newborns have access to a skilled attendant at birth there is an urgent need for upgrading the skills of various cadres of health provider based on the available resources and on a 'fitness-for-purpose' curriculum[42]. The International Council of Nurses[43] states that, "health human resources development (HHRD) requires an interdisciplinary, inter-sectoral and multi-service approach".

The challenges that need to be addressed were identified as follows[44]:

- addressing the proportional representation of staff with a distinct social and ethnic background in the workforce;
- tackling geographical imbalances in the distribution of health sector work-force;
- extending qualitative and quantitative capacities of medical training institutions;
- conceiving and implementing national HRH policies;
- carrying forward good governance and a well-conceived and balanced overall policy framework.

Measures for improving utilization of skilled attendants

The most crucial measure is to address the needed workforce issues. The hour of need is to make the workforce a priority and put in place a national plan for managing it[45]. Government also needs to invest in training existing health workers to keep them up to date to the changing priorities.

Strengthening the health system and increasing the number of country-specific SBAs through re-training of existing cadres of health workers in midwifery skills are known to be effective strategies to improve pregnancy overcomes in regions of low SBA coverage[46].

Educational Empowerment of women is very important in ensuring skilled care utilization. Women who are educationally and financially empowered tend to use skilled care more than those that are not empowered[3]. The women's educational status had association with utilization of Prenatal, Delivery, Post Natal and Family Planning services from skilled providers[40,47]. There is need to carry out research on issues relating to skilled care provision and utilization. "Antenatal care is a key strategy for reducing maternal mortality, but millions of women in developing countries do not receive it"[48].

Other interventions explored like task shifting has not been quite favourable as the non-skilled healthcare workers have sometimes overstepped their limit resulting in various complications. Task shifting has the potential to increase productive efficiency and reduce the time needed to scale up, but was met with challenges and results have not always been favourable[49].

"In order to improve human resources, priority interventions are likely to require significant investments in trainees and medical and nursing training schools"[50]. Planning should be done early considering the time lag between enrolment in training institutions and employment at a given workplace. In many countries the development of coherent HRH planning approaches is of low priority[51,52]. More specifically, nurse-workforce requirements for addressing disease patterns of the population are often neglected[53]. Human resources for health development requires significant investments in initial and continuous training to ensure skilled manpower is available to meet the health needs of the people.

Shortages in the availability of well-trained health workers have been well documented in developing countries, particularly in sub-Saharan Africa[54]. Even in cases where there are relatively large numbers of health care providers, inadequate pre-service and in-service training, suboptimal proportions of different clinical specialties and a lack of strong health system support remain major challenges to providing high quality maternity care.

Implications for health care

The challenge of having skilled care for every delivery has implications for planning. Health practitioners in less developed countries like Nigeria face numerous and difficult barriers to providing effective evidence-based skilled care in pregnancy, childbirth and the postnatal period. Measures should also be put in place to ensure the workers are retained in the rural areas where these shortages are more evident. This can be done by recruiting and training indigenes of the community so that they can serve the community upon graduation.

Many nations are faced with declining national economies resulting in under employment evidenced by poor remuneration and poor working conditions. This has led to seeking for employment outside the country by many health practitioners thereby worsening the problem of manpower shortage. This situation demands proper planning as well as improving working relationships, resources, political will and action in order to address the situation.

There is need also for professional organizations to rise up to the challenge ensure futuristic health man power planning. Professional associations can work together to advocate for, the development of 'staff-friendly' human policies, and assist in, the development of equitable human resources policies at all levels. All barriers to HRH planning should be identified and appropriate measures taken to address them.

Summary and Conclusion

This paper has looked at the challenges of achieving skilled attendance at every child birth in order to reduce maternal mortality. Prevention and management of pregnancy-related complications can be achieved through skilled care. There is increasing recognition that pregnant women should be assisted by professional health care providers with the necessary skills, drugs, supplies,

equipment and back-up, particularly during and immediately following childbirth.

Many developed nations have achieved reduction in maternal mortality through provision of skilled birth attendance. To ensure skilled care investment has to be made into Human resource development. Health sector reform is also an important issue in planning skilled care. The role of planning cannot be over emphasized as it is required to achieve skilled attendance.

Planners require data to be able to forecast and plan for the future. Nigeria needs to plan and also invest in human resource development. The days of lip service should be put aside and political will mustered to achieve these goals. The barriers to planning should be identified and measures put in place to overcome them. Health care providers especially nurses should rise up as advocates to ensure skilled care for all women.

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