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REVIEW ARTICLE

# Amenities that can Attract Skilled Birth Attendants (SBAs) to Practice in Rural Areas of a Developing Country

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**ABSTRACT**

*The attainments of the Millennium Development Goal 5 (MDG 5) targets by 2015 in most developing countries are unlikely when large numbers of poor, illiterate, and vulnerable rural women do not have access to skilled care. To review progresses in MDG 5 targets and evaluate amenities that can influence SBAs to accept to practice in the rural areas of Enugu State. This was a questionnaire study administered to SBAs in private health facilities in Enugu metropolis from April 1 to 30, 2014. Data on demographic profile and the amenities that can attract SBAs to live and practice in rural areas were extracted from the respondents. Out of 145 questionnaires administered 138 were completely filled, and analyzed using Excel 2007 software, and presented using percentages and figure. Majority of the SBAs were of ages between 20-30 years (69/138, 50.0%). Staff nurse midwife were 91(65.9%) while medical doctor were 47(34.1%). Ninety (65.2%) of the SBAs had no rural practice experience, and 70 (50.7%) wish to practice in developed countries. The 5 top amenities that can attract SBAs to the rural area include: security of lives and property 134(97.1%), pipe borne water supply 130(94.2%), equipped hospital 130(94.2%), market with regular food supply 130(94.2%), and higher staff salary and other motivations 129(93.5%). There were high demands of amenities by SBAs for them to accept to live and practice their crucial services in the rural areas. The 5 top amenities that can attract SBAs to practice in the rural area include: security of lives and property, pipe borne water supply, equipped hospital, market with regular food supply, and higher staff salary and other motivations. SBAs services in the rural areas are crucial for attainments of the MDG 5 targets in developing countries by 2015.*

***Key Words:*** *Amenities, MDG 5, SBAs, Rural Practice, Enugu, Nigeria*

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## BACKGROUND

'Where's the **M** in **MCH**?' exposed the several years of global neglect on maternal mortality, and this gave rise to several international conventions on maternal health. [1] The Safe Motherhood Initiatives in Nairobi in 1987, and International Conference on Population and Development in Cairo in 1994 stimulated world leaders on the need to improve maternal health. Such international conventions gave rise to the Millennium Development Goals (MDGs) in 2000 with the vision to fight poverty in its many ramifications. The MDGs 1 to 8 had clearly defined targets and indicators to be achieve between 1990 and 2015. With such galvanized global, regional, national and local efforts; targeted interventions that were supported with resources and political will resulted in dramatic and unprecedented achievements in MDGs targets in many nations including the poorest countries. [2] The achievements were, however, uneven especially between developed and developing countries; and between urban and rural areas.

The MDG 5 targets were to improve maternal health. MDG 5A targets were to reduce by three quarters the maternal mortality ratio and achieve 90 % of births attended by skilled health personnel between 1990 and 2015. The targets of MDG 5B (i.e. achieve universal access to reproductive health by 2015) were monitored by contraceptive prevalence rate, adolescent birth rate, antenatal care coverage, and unmet need for family planning. To achieve the three quarters reduction in maternal mortality ratios, MDG-member

countries were expected to reduce their maternal mortality ratio by 5.5% annually [3] However, between 1990 and 2013, the global annual maternal mortality ratio declined by only 2.6%. In 2013, globally, 293,000 maternal deaths occurred, 800 maternal deaths occurred every day, and 99% of these preventable deaths occurred in developing countries mostly in sub-Saharan Africa and South Asia. [4] Those that died were mostly poor, illiterate, hard-to-reach rural women who do not have access to skilled care [5]. WHO [6] defined a SBA as "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 uncomplicated pregnancies, childbirth and the immediate post natal period and in the identification, management and referral of complications in women or newborns."



Globally, maternal mortality ratios decreased by 45% since 1990, and the reduction has been attributed to reduction in the total fertility rate, increase in maternal education, and increased access to skilled birth attendants [7]. The proportion of births attended by skilled birth attendants in developing countries increased only from 56 to 68 per cent between 1990 and 2012, and 40 million births were still not attended by SBAs, and over 32 million of such unsupervised births by SBAs occurred in rural areas [8]. The maternal mortality ratio in developing countries in 2013 was 230 per 100 000 live births versus 16 per 100 000 live births in developed countries. A woman's lifetime risk of maternal death was 1 in 3700 in developed countries versus 1 in 160 in developing countries [5]. Some countries like Sierra Leone, Central African Republic, Chad and Somalia still have very high maternal mortality ratios of about 1000 per 100 000 live births. [9]

The major causes of maternal deaths are similar in the developing and developed nations. Globally, 75% maternal deaths are due to severe bleeding, infections, pre-eclampsia and eclampsia, obstructed labour and unsafe abortion. [10] Severe bleeding, infections, pre-eclampsia and eclampsia are still the leading causes of maternal deaths even in developed countries. The high maternal deaths in developing countries are preventable if women have timely access to quality skilled care in pregnancy, childbirth, and postpartum periods as in developed countries of the world. Prompt diagnosis, treatment, and referral by SBAs can make a great difference between life and death. Skilled birth attendance is known to be the single most important factor in preventing maternal death. [11] Unfortunately, there is a dearth of skilled health workers in sub-Saharan Africa and South Asia where maternal deaths are still unacceptably too high. SBAs are virtual non-existence in the rural areas of many developing countries where over 80% of the population lives. Nkwo et al (2015) [12] identified acute shortage of SBAs in rural areas of Enugu state, Nigeria. In India non-availability of SBAs in the rural areas was also identified as one of the reasons for the high maternal mortality ratios in the country and the key constraints in providing comprehensive emergency obstetric care in government health facilities [13, 14]. Other factors that may prevent women from receiving or seeking care during pregnancy and childbirth in the developing countries include poverty and prohibiting cost of care, illiteracy, distance, lack of information, and cultural practices. Lack of many basic amenities in rural areas in most developing countries can be a major barrier to the availability of SBAs in these areas of high need. Unfriendly attitude of some skilled health workers can also cause non-utilization of the services of SBAs.

To improve maternal health and MDG 5 targets, barriers (including lack of social amenities in the rural areas) that can limit access to SBAs services must be identified and addressed. This article will focus on amenities that may attract SBAs to live and practice in the rural areas of Enugu State of Nigeria.

## METHOD

This was a questionnaire (Appendix A) study administered to SBAs in private health facilities in15 hospitals and 25 maternity centers in Enugu metropolis from April 1 to 30, 2014. Data on age, sex, marital status, professional status, childhood-up bring, years of rural practice, free choice of where to work in the world, and the amenities that can attract them to practice in the rural areas were extracted from the respondents by four trained nurse aides. Out of 145 questionnaires administered 138 were completely filled, and analyzed using Excel 2007 software, and presented using percentages and figure.

**Inclusion criteria**Staff nurse midwives, medical doctors, and staff nurses who have been educated and trained to proficiency in the childbirth skills were included in the study. The respondents, at the time of interview, are working and taking deliveries in their various hospitals and maternity centers, and can identify, manage or refer complicated cases in pregnancy, childbirth and postpartum periods.

**Exclusion criteria**

Other health workers (auxiliary nurses, community health extension workers, and traditional birth attendants) who were not classified as skilled birth attendants by WHO [6] were excluded.

## RESULTS

Table 1 showed that majority of the SBAs was of ages between 20-30 years (69/138, 50.0%). Staff nurse midwife were 91 (65.9%) while medical doctor were 47 (34.1%). Ninety two (66.7%) of the SBAs grew up as a child in urban areas, 90(65.2%) had no rural practice experience, 99 (71.7%) agreed that over 80% of SBAs live and practice in the urban areas in Nigeria. Seventy (50.7%) wish to practice in developed countries. Other characteristics of the respondents were as shown in Table 1.



Table 2 showed the amenities that can attract SBAs to live and practice in the rural area. The 5 top amenities include: security of lives and property 134 (97.1%), pipe borne water supply 130 (94.2%), equipped hospital 130 (94.2%), market with regular food supply 130 (94.2%), and higher staff salary and other motivations 129 (93.5%). Figure 1 showed the high demand of virtually all the amenities by the SBAs.

## DISCUSSION

The year 2015 should be the year to audit the MDGs, and determine areas of successes and failures as the world plans for the post-2015 development agenda. The MDGs have shown that targeted interventions that were supported with resources and political will can result in dramatic and unprecedented achievements in many nations. These achievements were, however, uneven especially between developed and developing countries; and between urban and rural areas as were summarized in Tables 3 and 4 for MDG 5 targets. The interventions that can reduce maternal mortality ratio by 75%, and achieve 90% skilled birth attendance (i.e. MDG 5A); and increase contraceptive prevalence rate, reduce adolescent birth rate, increase antenatal care (at least one attendance) coverage to 100%, and reduce unmet need for family planning to 0% (i.e. MDG 5B) by 2015 are skilled interventions that need SBAs to deliver the services. The wide disparities in the availabilities of SBAs in the urban and rural areas in developing countries as was identified by Nkwo et al (2015) and depicted in Table 4 implies that improvement of maternal health and attainments of MDG 5 targets in the rural areas of high need are unlikely. Skilled birth attendance is the single most important factor in preventing maternal death [11] and the disparities in the availabilities SBAs services between the developed and developing countries, and urban and rural areas may explain the wide disparities in health indices in the world. Globally, maternal mortality ratios decreased by 45% since 1990. Out of the 800 maternal deaths that occurred every day globally in 2013, 99% of these preventable deaths occurred in developing countries mostly in sub-Saharan Africa and South Asia, among poor, illiterate, hard-to-reach rural women who do not have access to skilled care. [4,5] Only 16 maternal deaths per 100 000 live births occurred in developed countries in 2013 versus 230 in the developing countries. A woman's lifetime risk of maternal death was 1 in 3700 in developed countries versus 1 in 160 in developing countries [5]. The proportion of births attended by SBAs in most developing countries increased only from 56 to 68 per cent between 1990 and 2012, 40 million births were still not attended by SBAs, and over 32 million of such unsupervised births by SBAs occurred in rural areas.[8]

As the world strategizes for the post-2015 development agenda, the provision of basic social amenities in the rural areas should be at the forefront to ensure that the world does not leave the rural areas behind again in the next-15- year development agenda. This study has shown that there were high demands of virtual all the basic amenities studied by the SBAs for them to live and practice in the rural areas as was shown in figure 1.

East Asia made remarkable achievements in MDG 5 targets between 1990 and 2015. The maternal mortality ratio decline from 95 to 39 per 100000 live births, the percentage of births attended to by SBAs increased from 94 to 100% in both urban and rural areas, the contraceptive prevalence rate increased from 78 to 83%, the unmet family planning needs reduced from 6 to 4%, and the adolescent pregnancy rate reduced from 15 to 6%. The secret of these outstanding progresses appear to be the 100% availability of SBAs in both urban and rural areas.

Contrary to East Asia, sub-Saharan Africa made little progresses in the achievements of MDG 5 targets. The maternal mortality ratio decline from 990 to 510 per 100000 live births, the births attended to by SBAs increased from 43 to 52% only (urban area 77% and rural areas 38%), the contraceptive prevalence rate increased from 13 to 28%, the unmet family planning needs reduced from 28 to 24% and the adolescent pregnancy rate reduced from 123 to 116% between 1990 and 2015. The 38% availability of SBAs in rural areas in sub-Saharan Africa versus 100% in East Asia may explain these disparities in the MDG targets in the two regions.

To replicate the outstanding MDG achievements in East Asia in other developing countries like Nigeria, the basic amenities in the rural areas must improve to attract SBAs in this area of high needs.

**Table 1: Socio-demographic characteristics of the** Skilled Birth Attendants

| **Age in Years** | **Number** | **Percentage** |
|---|---|---|
| <20 | 7 | 5.1 |
| 20-30 | 69 | 50.0 |
| 31-40 | 43 | 31.2 |
| 41-50 | 14 | 10.1 |
| >50 | 5 | 3.6 |
| Total | 138 | 100 |
| **Sex** | | |
| Female | 80 | 58.0 |
| Male | 58 | 42.0 |
| Total | 138 | 100 |
| **Marital Status** | | |
| Married | 61 | 44.2 |
| Single | 77 | 55.8 |
| **Professional Status** | | |
| Staff nurse midwife | 91 | 65.9 |
| Medical doctor | 47 | 34.1 |
| **Grew up as a child in** | | |
| Rural area | 46 | 33.3 |
| Urban area | 92 | 66.7 |
| **Number of years of practice in rural areas** | | |
| None | 90 | 65.2 |
| <10 | 38 | 27.5 |
| 10-20 | 4 | 2.9 |
| .>20 | 6 | 4.3 |
| **Over 80% of** Skilled Birth Attendants **live and practice in the urban area** | | |
| No | 39 | 28.3 |
| Yes | 99 | 71.7 |
| **Free choice of places to work in the world by** Skilled Birth Attendants | | |
| Rural setting | 4 | 2.9 |
| Semi-urban | 19 | 13.8 |
| Capital city | 28 | 20.3 |
| Developing countries | 17 | 12.3 |
| Industrialized/developed countries 70 | | 50.7 |
| **Total** | **138** | **100** |

**Table2: Amenities that can attract** Skilled Birth Attendants **to practice in the rural area.**

| **Amenities needed in the rural areas** | **Number** | **Percentage (%)** |
|---|---|---|
| 1. Security of lives and property | 134 | 97.1 |
| 2. Pipe borne water supply | 130 | 94.2 |
| 3. Hospital with equipment and essential drugs | 130 | 94.2 |
| 4. Daily market with regular food supply | 130 | 94.2 |
| 5. Higher staff salary and other motivations | 129 | 93.5 |
| 6. Good access road | 129 | 93.5 |
| 7. Functional ambulances for prompt referrals | 128 | 92.8 |
| 8. Facilities for professional development | 128 | 92.8 |
| 9. Electricity | 126 | 91.3 |
| 10. Mobile phones, electricity and internet services | 126 | 91.3 |
| 11. CEmOC*** Trainings for job satisfaction | 124 | 89.9 |
| 12. A friendly community to SBAs* | 124 | 89.9 |
| 13. Furnished staff quarters/accommodation | 124 | 89.9 |
| 14. Availability of banks | 124 | 89.9 |
| 15. There should be no language barrier | 124 | 89.9 |
| 16. Presence of SBAs and support services | 116 | 84.1 |

| | | | |
|---|---|---|---|
| 17. | Availability of recreational amenities | 114 | 80.4 |
| 18. | Rural job opportunities for other family members | 111 | 80.4 |
| 19. | Good nursery, primary and secondary schools | 108 | 78.3 |
| 20. | Availability of large patients/clients population | 82 | 59.4 |

*** CEmOC Comprehensive Emergency Obstetric Care

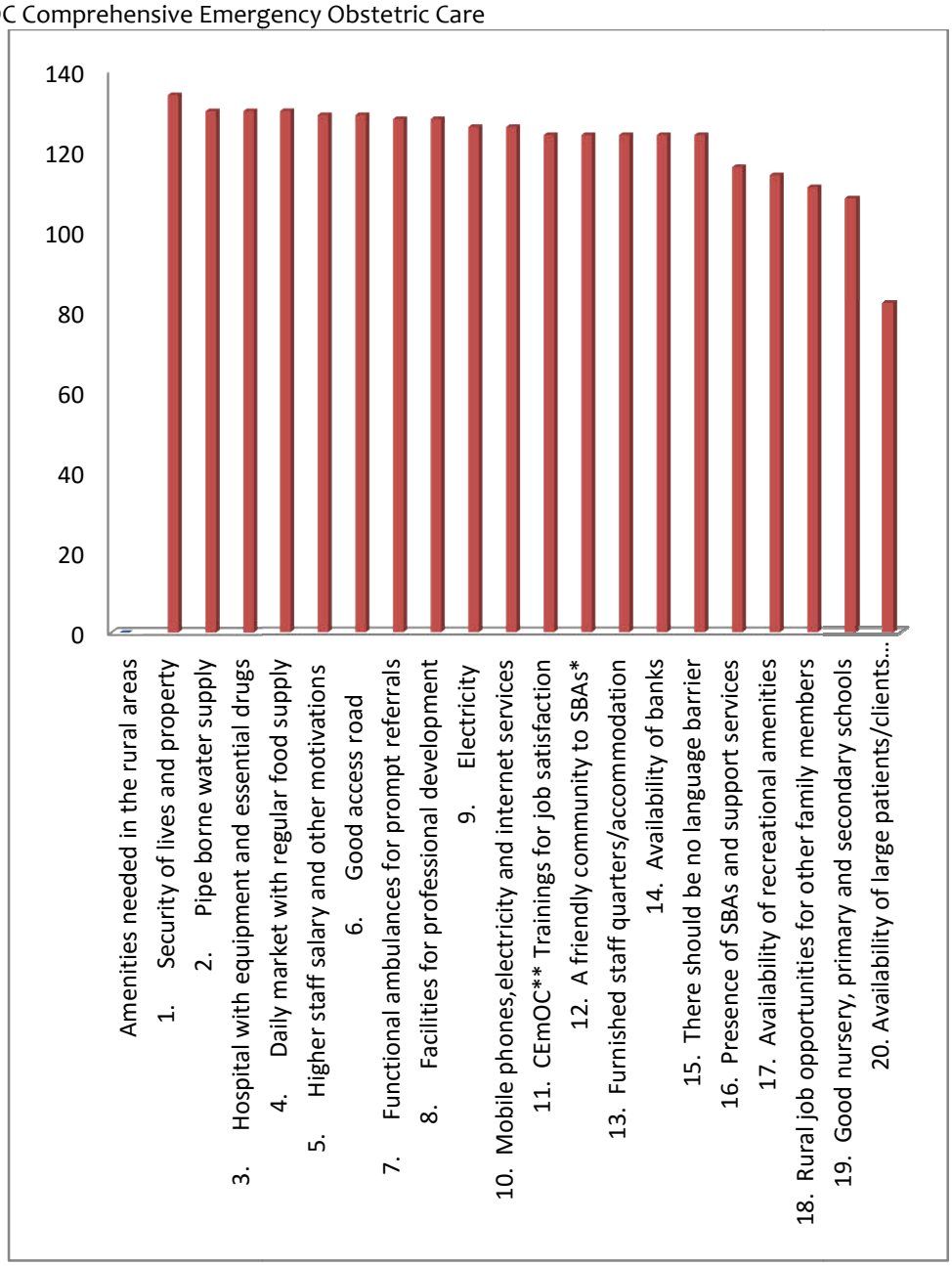


**Figure 1: High demand of Amenities by skilled birth attendants**

**Table 3: Summary of the achievements in MDG 5 between 1990 and 2013/2014/2015 [2]**

| MDG** 5A | 1990 | 2000 | 2013 |
|---|---|---|---|
| **Maternal Mortality Ratios (Maternal death per 100000 live births)** | | | |
| Global | 380 | 330 | 210 |
| Developed regions | 26 | 17 | 16 |
| Developing regions | 430 | 370 | 230 |
| North Africa | 160 | 110 | 69 |

| | | | |
|---|---|---|---|
| Sub Saharan Africa | 990 | 830 | 510 |
| Southern Asia | 530 | 360 | 190 |
| South East Asia | 320 | 220 | 140 |
| East Asia | 95 | 63 | 39 |
| **Percentage of Births attended by SBAs** | | | |
| Global | 59 | 61 | 71(2014) |
| North Africa | 62 | 69 | 90 |
| Sub Saharan Africa | 43 | 45 | 52 |
| Southern Asia | 32 | 38 | 52 |
| South East Asia | 49 | 66 | 82 |
| East Asia | 94 | 97 | 100 |
| **MDG**5B** | 1990 | 2000 | 2015 |
| **Four ANC attendance coverage** | | | |
| Developing regions | 35 | 42 | 52 |
| North Africa | 50 | 58 | 89 |
| Sub Saharan Africa | 47 | 47 | 49 |
| Southern Asia | 23 | 27 | 36 |
| South East Asia | 45 | 71 | 84 |
| **Contraceptive prevalence ( and unmet family planning)** | 1990 | 2015 | |
| Global/world | 55 (15) | 64 (12) | |
| North Africa | 44 (22) | 61 (12) | |
| Sub Saharan Africa | 13 (28) | 28 (24) | |
| Southern Asia | 39 (21) | 59 (14) | |
| South East Asia | 49 (19) | 64 (12) | |
| East Asia | 78 (6) | 83 (4) | |
| **Adolescent pregnancy rate (15-19years)** | 1990 | 2000 | 2015 |
| Global/world | 59 | 52 | 51 |
| Developing regions | 64 | 56 | 56 |
| North Africa | 42 | 32 | 38 |
| Sub Saharan Africa | 123 | 121 | 116 |
| Southern Asia | 88 | 61 | 47 |
| South East Asia | 54 | 43 | 44 |
| East Asia | 15 | 6 | 6 |

Source:[2] UN MDG report 2015 ** MDG Millennium Development Goal

**Table 4: Inequalities in % of births attended by SBAs* between 2010 and 2014 [2]**

| Regions | Urban | Rural |
|---|---|---|
| Developing regions | 87 | 56 |
| North Africa | 87 | 62 |
| Sub Saharan Africa | 77 | 38 |
| West Africa | 75 | 33 |
| South East Asia | 91 | 74 |
| East Asia | 100 | 100 |

Source: [2] UN MDG report 2015 SBAs* Skilled Birth Attendants

**RECOMMENDATIONS**

The 5 top amenities demanded by SBAs ---- security of lives and property, pipe borne water supply, equipped hospital, market with regular food supply, and higher staff salary and other motivations -- should be available in the rural areas when governments in developing countries want to scale-up rural health facilities to provide basic and comprehensive emergency obstetric care. Governments should build more training health schools, and produce more SBAs. Resident doctors in Obstetrics and Gynecology, and student midwives should have at least 3-months rural practice experiences before qualifications. Further work on the barriers to decentralization of quality maternity care services to the rural areas should be undertaken.

**LIMITATIONS OF THE STUDY**

The 138 SBAs studied in this cohort were living in the urban areas. This number is too small to make generalization for the entire population. An in-depth study of the few SBAs that are currently practicing in the rural areas may give further insights to the problems of the rural areas.

**CONCLUSION**



There were high demands of virtual all the amenities by SBAs for them to accept to live and practice their crucial services in the rural areas. The provision of amenities in the rural areas should in the forefront in the post-2015 development agenda. Security of lives and property, pipe borne water supply, hospital with equipment and essential drugs, daily market with regular food supply, higher staff salary and other motivations, good access road, functional ambulances for prompt referrals, facilities for professional development, electricity, mobile phones, and internet services etc are basic necessities for SBAs for them to live and practice in the rural areas. The gross deficiency of amenities in the rural areas may be the cause of the non-availability of SBAs and non-attainments of the MDG 5 targets in most developing countries by 2015.

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**Appendix A-- Questionnaire**

**SECTION A.**

**Please tick the appropriate options as they apply to you.**

1. **Age in Years:** a. <20 b. 20-30 c. 31-40 d. 41-50 e. >50
2. **Marital status:** a. Single b. married c. others
3. **Professional Status: a.** Staff nurse midwife b. Medical doctor
4. **Grew up as a child in: a.** Rural area b. Urban area
5. **Number of years of practice in rural areas**

**a.** None b. <10 c. 10-20 d.>20

6. **Over 80% of** Skilled Birth Attendants **live and practice in the urban area**

a. No b. Yes c. Do not know

7. **Free choice of places to work in the world by** Skilled Birth Attendants

a. Rural setting b. Semi-urban c. Capital city d. Developing countries e. Industrialized/developed countries

**SECTION B**

**Tick the amenities that can attract** you (the Skilled Birth Attendants) **to live and practice in the rural area.**

1. Pipe borne water supply
2. Availability of banks

3. Higher staff salary and other motivations
4. There should be no language barrier
5. Good access road
6. Hospital with equipment and essential drugs
7. Daily market with regular food supply
8. Security of lives and property
9. Functional ambulances for prompt referrals
10. Rural job opportunities for other family members
11. Good nursery, primary and secondary schools
12. Facilities for professional development
13. Electricity
14. Mobile phones,electricity and internet services
15. Comprehensive emergency obstetric care trainings for job satisfaction
16. A friendly community to Skilled Birth Attendants
17. Furnished staff quarters/accommodation
18. Presence of Skilled Birth Attendants and support services
19. Availability of recreational amenities
20. Availability of large patients/clients population


| | |
|---|---|
| CONFLICT OF INTEREST | : Nil |
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