Nigeria - Accessibility to EmONC facilities in the State of Cross River

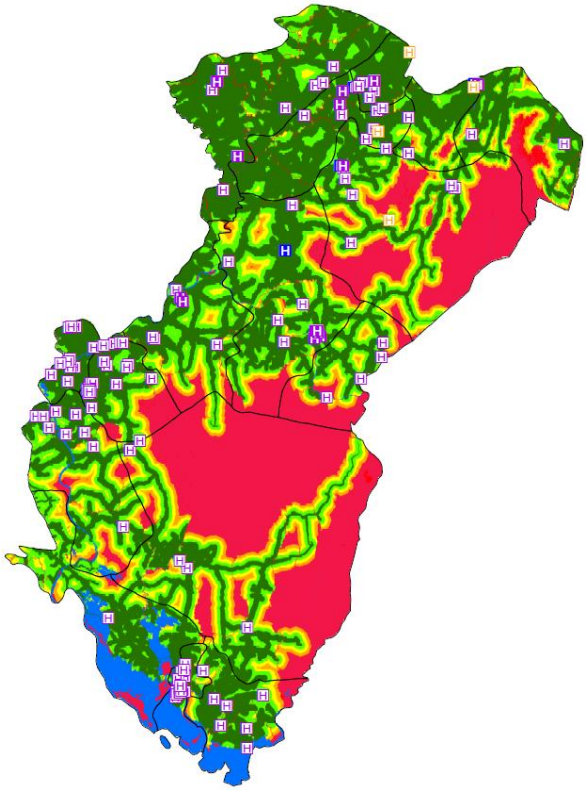

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Table of Contents

Acknowledgements....4

1. Introduction....5

2. Measured indicators and assumptions....5

3. Tool used for the different analyses: AccessMod 5.0....7

4. Data and national norms used in the different analyses....8

4.1 Statistical Data....9
4.1.1 LGA Number of pregnant women for 2010 and 2015....9
4.2 Geospatial Data....12
4.2.1 Administrative boundaries and extent of the study area....13
4.2.2 Geographic location of the EmONC facilities and associated information....17
4.2.4 Transportation network....26
4.2.5 Hydrographic network....28
4.2.6 Digital Elevation Model....28
4.2.7 Spatial distribution of pregnancies....29
4.3 National norms....31

5. Results....32

5.1 Evolution of the accessibility coverage for BEmONC facilities....34
5.2 Evolution of accessibility coverage for CEmONC facilities....38
5.3 Travel time between each BEmONC and the nearest CEmONC facility....41

6. Conclusions and recommendations....44

References....49

Annex 1 – State level population - 2006 census, 2010 and 2015 projections....51

Annex 2 – LGA level population and number of pregnant women for the Cross River State....52

Annex 3 - Facilities considered in the different analyses....53

Annex 4 - Availability of motorized vehicles and communication media in EmONC facilities 55

Annex 5 - Accessibility coverage for BEmONC facilities 57

Annex 6 - Accessibility coverage for CEmONC facilities 59

Annex 7 - Travel time from each BEmONC facility and the nearest CEmONC facility taking into account both fully, partially and non-functional facilities as well as the availability of a motorized vehicle and communication media on site 60

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1. Introduction

The Saving Mothers, Giving Life (SMGL) initiative [1] is a public-private partnership launched in 2012 by the U.S. Secretary of State Hillary Clinton to dramatically reduce maternal and newborn mortality in sub-Saharan African countries.

The initiative promotes an integrated health system approach that addresses the "three delays" associated with maternal and newborn deaths:

1. delays in seeking appropriate care,
2. delays in reaching care in a timely manner;
3. delays in receiving high-quality care at a health facility.

In Nigeria, the SMGL initiative works in partnership with the government of Cross-River State to implement this approach and therefore ensure that every pregnant woman has access to clean and safe normal delivery services, including prevention of mother-to-child transmission (MTCT) and, in the event of an obstetric complication, life-saving emergency care within two hours will be employed.

The present study has been conducted to have a greater understanding of the accessibility to Basic and Comprehensive Emergency Obstetric and Neonatal Care (BEmONC/CEmONC) facilities among Local Government Areas in Cross-River State and therefore inform SMGL interventions on the second delays listed here above.

2. Measured indicators and assumptions

The following set of indicators has been defined in order to inform SMGL about potential delays in reaching care in a timely manner within the Cross River State:

1. Evolution of the accessibility coverage for 1, 2, 3 and 4 hours of travel time to the nearest BEmONC facility meaning those providing the 7 signal functions;
2. Evolution of the accessibility coverage for 1, 2, 3 and 4 hours of travel time to the nearest CEmONC facility meaning those providing the 9 signal functions.
3. Travel time between each BEmONC and the closest CEmONC facility to identify which BEmONC facilities which itself further away than 1, 2, 3, 4 hours of travel time of a CEmONC facility;

These indicators have been calculated for three groups of health facilities, namely:

1. The fully functional EmONC facilities independently from the number of deliveries performed over a year;
2. The fully functional EmONC facilities and the partially functional EmONC facilities in which at least 30 deliveries took place over a year;
3. The fully functional EmONC facilities and all the health facilities in which at least 30 deliveries took place over a year, meaning including those not performing any EmONC signal functions.

While measuring the indicators for the first group of health facilities will provide an estimation of the current situation in terms of accessibility coverage to EmONC services, measuring these same indicators for the second and third groups will themselves inform the SMGL program on the gain and potential gaps in accessibility coverage when increasing the number of fully functional facilities in the State.

The following assumptions have been considered when measuring the above mentioned indicators and this for the three groups of health facilities:

- A Basic Emergency Obstetric Care (BEmONC) facility is a health facility that is performing all the 7 Basic EmONC functions, namely [2]: administer parental antibiotics, administer uterotonic drugs (i.e. parental oxytocin), administer parental anticonvulsants for pre-eclampsia and eclampsia (i.e. magnesium sulphate), manually remove the placenta, remove retained products (e.g. manual vacuum extraction, dilation and curettage), perform assisted vaginal delivery (e.g. vacuum extraction, forceps delivery), perform basic neonatal resuscitation (e.g. with bag and mask);
- A Comprehensive Emergency Obstetric Care (CEmONC) facility performs all the signal functions of a BEmONC facility plus [2]: surgery (e.g. caesarean section), and blood transfusion;
- CEmONC facilities are also considered to be BEmONC facilities as they are performing the 7 Basic EmONC functions as well;
- Would a complication requiring blood transfusion and/or surgery occur during the delivery in the BEmONC facility, the patient should be transferred to a CEmONC facility;
- A health facility has been considered as a partially functional BEmONC facility when performing at least 1 of the 7 basic EmONC signal functions;
- A health facility has been considered as a partially functional CEmONC facility when performing at least 1 of the 7 basic EmONC signal functions and at least 1 of the 2 additional comprehensive EmONC signal functions;
- It has been considered that health facilities having performed at least 30 deliveries over a year but not performing any EmONC signal functions would potentially be upgraded to become a BEmONC but not a CEmONC facility;
- The assumption is that women would walk or be carried from their home to the nearest road. This would take place during early labour (assuming that a birthing plan has been developed and that the woman has the support of her family to initiate care seeking as labour commences). At this stage in the delivery process a 50% reduction in walking speed is assumed. Upon reaching a road, women would then travel by motor vehicle to the nearest BEmONC facility;
- The transfer between the BEmONC facility to the CEmONC facility is done using a motor vehicle (4 or 3 wheels,…)
- Analyzes are performed considering transportation conditions during the dry season. While the tool used here (see Chapter 3) can account for areas and/or roads being flooded during the wet season, this particular context has not been analysed here;

- Patient movements across sub national administrative boundaries (States and LGAs) have been considered in the analysis but country borders have been considered as closed even if patient movement across these borders are expected as well.

It is important to note here that the model being used:

- Assumes that:
  - Women have enough resources to pay for the transportation cost to the health facility;
- Does not consider:
  - The availability of waiting homes to allow for women living in remote areas to come close to an EmOC facility before the due date and therefore increase accessibility.

3. Tool used for the different analyses: AccessMod 5.0

All analyzes conducted in the context of this project have been possible thanks to the use of AccessMod.

AccessMod is a toolbox developed by the World Health Organization (WHO) to provide Ministries of Health, and other health partners, with the possibility to use the power of Geographic Information System (GIS) to:

- Measure physical accessibility to health care,
- Estimate geographical coverage (a combination of availability and accessibility coverage) of an existing health facility network,
- Scale up the existing health facility network.

AccessMod uses a specific set of algorithms on a series of GIS layers containing the information influencing the time taken by a patient to reach a particular health facility depending on the mode of travel (for example, by feet, by car, etc).

While version 1 to 4 have of AccessMod have been developed as an extension to Esri's GIS technology, version 5 has itself been developed as a standalone tool based on open source solutions and this in order to allow for a larger use. In addition to this, version 5 does give access to the following new analytical capabilities:

- Referral analysis to measure travel time and distances between two sets of facilities;
- Zonal statistics to extract population coverage figures according to specific zone boundaries (administrative or health divisions for example).

Version 5 of AccessMod is composed of six modules, namely:

- Module 1 to create the combined land cover distribution grid based on the land cover, road and hydrographic network layers;

- Module 2 to measure physical accessibility (travel time) to or from a given health facility network;
- Module 3 to analyze the geographic coverage an existing health facility network through the generation of catchment areas and determination of the population covered by each of the facilities;
- Module 4 to measure travel time and distance between two set of health facilities to simulate referral;
- Module 5 to extract population coverage figures according to a specific zone boundaries;
- Module 6 to determine the locations for new health facilities, and the population they cover, to scale up an existing network or to perform different analyses when no information about the location of the existing health facility networks is available (e.g. for cost-effectiveness analysis).

Modules 1, 2, 4 and 5 have been used in the context of the present project. While version 5.0 is still in beta phase, these modules are already fully functional. Once the tests finalized this new version of AccessMod will be available for free download and non-commercial use from AccessMod's page on WHO's web site [3].

4. Data and national norms used in the different analyses

Performing the different analyses considered in the context of this project requires an important volume of data that can be grouped into three main categories:

- Statistical data,
- Geospatial data,
- National norms,

The only statistical data needed to perform the analyses was the 2015 LGA number of pregnant women observed in 2015 for the Cross river State.

From a geospatial data perspective, the different analyses required having the following at disposal:

1. Administrative boundaries;
2. Geographic location of all the EmONC facilities;
3. Transportation network;
4. Hydrographic network (major rivers and water bodies);
5. Land cover;
6. Digital Elevation Model (DEM);
7. Spatial distribution of the number of pregnant women.

When it comes to national norms, the maximum travel speed expected for a motor vehicle on the different types of roads observed in the country was necessary.

The following sections describes more in details the sources of the data and norms used for the Cross River State as well as the potential preparation, adjustments or transformations that have been applied to obtain the final dataset necessary to implement the different analyses.

It is important to emphasize here the potential temporal discrepancies that exist between the different datasets that have been used. These needs to be taken into account when looking at the results of the different analyses:

- The HFA has been implemented in two phases, December 2014 for the Southern part of the State and June-July 2015 for the Northern part. Changes in the EmONC status might therefore have occurred over the 6 month period between the two data collection exercises;
- The LGA number of pregnant women is based on the 2006 census data [4] that have been projected to obtain estimates for 2015 (see Section 4.1.1);
- The temporal representativeness of the geospatial dataset used, mainly the road network and land cover, are difficult to estimate. A temporal shift is therefore possible among GIS layers and between the statistical and geospatial data being used.

4.1 Statistical Data

4.1.1 LGA Number of pregnant women for 2010 and 2015

The latest population census conducted in Nigeria took place in 2006. At that time, the total population in the country has been estimated to be of 140,431,790 inhabitants [4].

The population figures collected at that time down to the LGA level are accessible from the web site of the National Population Commission (NPC) [4]. Table 1 provides these figures for the State of Cross River.

The documents posted on this web site [4] do also provide inter-census growth rates at both the national (3.183) and State level, the one for Cross river being of 2.89.

In the absence of a more recent census, projected population figures from the 2015 world population prospects database published by the United Nation Department of Economic Social Affairs can be used to have an idea of the evolution of the population at the national level [5]. This database provides the following total population figures (medium variant) for Nigeria:

- 159,424,742 inhabitants for 2010
- 182,201,962 inhabitants for 2015

LGA code	LGA name	2006 Census population [4]
NGA009001	Abi	144,317
NGA009002	Akamkpa	149,705
NGA009003	Akpabuyo	272,262
NGA009004	Bakassi	31,641
NGA009005	Bekwara	105,497
NGA009006	Biase	168,113
NGA009007	Boki	186,611
NGA009008	Calabar South	191,515
NGA009009	Calabar-Municipal	183,681
NGA009010	Etung	80,036
NGA009011	Ikom	163,691
NGA009012	Obanliku	109,633
NGA009013	Obubra	172,543
NGA009014	Obudu	161,457
NGA009015	Odukpani	192,884
NGA009016	Ogoja	171,574
NGA009017	Yakurr	196,271
NGA009018	Yala	211,557
	Total	**2,892,988**

Table 1 - LGA level population for the State of Cross River (2006 census)

In comparison, applying the national level inter-census growth rate of 3.183 to the total population observed during the 2006 census provides the following figures:

- 159,183,494 for 2010
- 186,182,470 for 2015

While comparable for 2010, the difference between the two sources is important for 2015 and indicative of an expected reduction in growth rate over the recent years. In order to be consistent with the UN figures, it has finally been decided to use the 2015 world population prospects figures as reference for the present project.

The above decision required applying a similar adjustment at the sub national level. This has first been done by estimating the State level population over the entire country using the 2006 census population and inter-state growth rate figures[1] and adjusting the resulting values to match the total population reported in the 2015 world population prospects for 2010 and 2015. The result of these calculations is reported in Annex 1 and gives the following total population figures for Cross River[2]:

- 3,243,375 for 2010
- 3,645,371 for 2015

[1] The growth rate has been considered as homogenous over the all State and constant through time.
[2] Please note that applying the State level inter-census growth rates result in slightly different national figures than using the national growth rates of 3.183. The former figures have nevertheless been kept to obtain the final UN adjusted figures.

These figures have been used as reference to calculate the LGA total population and number of pregnant women for Cross River. These estimations have been obtained as follow (Annex 2):

1. To account for the transfer of the Bakassi peninsula to Cameroon in August 2008, and the fact that we don't yet have the boundaries for the new Bakassi LGA (See Section 4.2.1), the 2006 population for the Bakassi LGA (Table 1) has been added to the one of Akpabuyo in Annex 2 to form the virtual LGA of Bakassi/Akpabuyo considered in the present project (Table 3);
2. The LGA level total population figures from the 2006 census have been projected for 2010 and 2015 using the Cross River inter-census growth rate of 2.89;
3. The results from step 2 have been adjusted to match the total state level figures mentioned here above;
4. The LGA level number of pregnant women has been estimated considering that 5%[3] of the total population was pregnant.

Figure 1 does itself present the LGA distribution of the number of pregnant women for 2015.

As we can see from Annex 2 and Figure 1, the LGAs presenting the highest number of pregnant women are spread in different part of the State, the highest number being observed in the merged Akpabuyo/Bakassi LGA in the South.

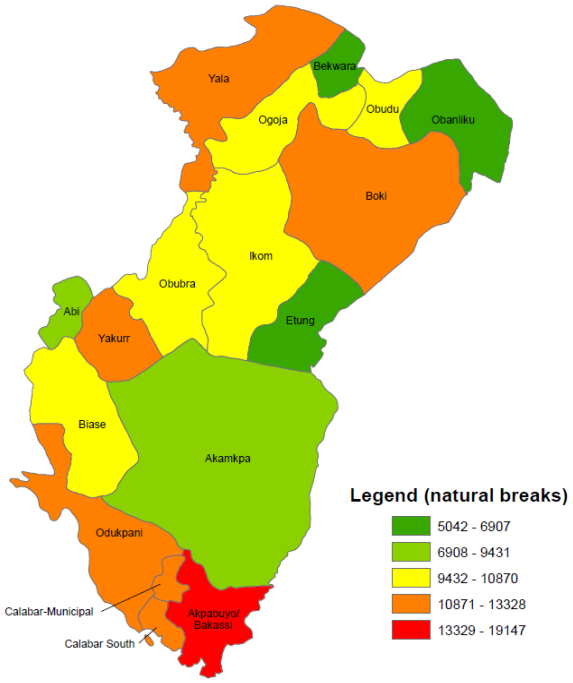


Figure 1 - LGA level distribution of the number of pregnant women for 2015

[3] Figure based on the 2006 census and used by different projects including the USAID country office in Nigeria and the WorldPop program [15]

4.2 Geospatial Data

To ensure compatibility between sources, and in order for AccessMod to produce correct results, all the geospatial data presented in this section have been homogenized in terms of projection and spatial resolution (for geospatial data in raster format).

When it comes to projection, it has been decided to use the Universal transverse Mercator (UTM) projected coordinate system as the data needs to be projected in a metric system when using AccessMod. Here are the different elements that define this particular projected coordinated system when it comes to the UTM zone in which the Cross River State is located (Zone 32) as they appear in Esri's GIS software:

- Projected Coordinate System: WGS_1984_UTM_Zone_32N
- Projection: Transverse_Mercator
- False_Easting: 500000.00000000
- False_Northing: 0.00000000
- Central_Meridian: 9.00000000
- Scale_Factor: 0.99960000
- Latitude_Of_Origin: 0.00000000
- Linear Unit: Meter

The geographic coordinate system on which the UTM system is based is the following:

- Geographic Coordinate System: GCS_WGS_1984
- Datum: D_WGS_1984
- Prime Meridian: Greenwich
- Angular Unit: Degree

The spatial resolution of the GIS data in raster format used in this project (land cover, DEM and distribution of pregnant women) has itself been decided based on two criteria:

1. The resolution of the freely available data for the concerned layers;
2. The volume of RAM memory in the computer used to perform the different analyses.

In view of the above, the spatial resolution finally used is the one of the Digital Elevation Model (DEM) which is of 0.00083333333 degrees when the data is unprojected (geographic projection). This corresponds to 92.595703 meters for Nigeria once projected according to the above-mentioned projected coordinate system.

While 92.595703 meters is a quite high resolution, this still remains a simplification of the reality when performing the different analyses in AccessMod.

As an example, a road, which in reality would seldom be wider than 10 meters, would be presenting a width of 92.595703 meters during the different analyses.

This simplification has an impact on the travel time calculated by the model over cells crossed by a road. More specifically, the model would consider patients to be travelling

by road over the all surface of these cells while she/he would normally still have to cross some lands by feet before reaching the road. This being said this distance would be shorter than 90 meters which walking at a speed of 2.5 km/hour corresponds to a little more than 2 minutes.

Another impact concerns roads located along rivers. In this case, it can happen that the combination of the road and river network layers in AccessMod result into the creation of artificial bridges and therefore potential movement across rivers that do not exist in the reality.

These cases are nevertheless very limited with a resolution of 92.595703 meters. In addition to that, AccessMod 5.0 runs a cleaning process aiming at correcting such bridges when combining these layers.

Taking all the above into account, the following sections describe more in details the source of the geospatial data used in the context of this project as well as the modifications performed on them before conducting the different analyses leading to the indicators reported in Chapter 2.

4.2.1 Administrative boundaries and extent of the study area

To be able aggregating the results of the different analyses at the State and Local Government Area (LGA) levels it was necessary to have a GIS layer containing the actual boundaries of these LGAs for the State of Cross River.

The projected number of pregnant women for 2015 having been based on the 2006 population census data, it was actually necessary to identify if the LGA boundaries had change over the 2006-2015 period.

In addition to that, patients are often crossing administrative and sometime even country boundaries to reach the care provider closest to their home. Conducting a physical accessibility analysis over the Cross River State should therefore normally have taken into account the health services located in the neighboring States and the neighboring country - Cameroon.

The border between Nigeria and Cameroon having been considered as closed to patient movements in the context of the present project (see Chapter 2), only the facilities located in the neighboring States (Abia, Akwa Ibom, Benue and Ebonyi) should have been included.

Unfortunately, the Health Facility Assessment (HFA) conducted by USAID only covered 3 States in Nigeria for the moment: Cross River, Ebonyi and Kogi.

Ebonyi is one of the States neighboring Cross River and the initial plan was therefore to also include the HFA data for that State in the present analyses. Unfortunately, while the

same questionnaire has been used, the HFA in Ebonyi has only been implemented on a random sample of health facilities and not systematically on all the health facilities in which at least one delivery took place over the year preceding the assessment.

In view of the above, the HFA data for the State of Ebonyi has finally not been included in the present analyses as not comparable to the one collected for the State of Cross River.

According to the information collected [6, 7, 8, 9 and information from the field], the following changes occurred over the 2006-2015 period for the State of Cross River:

- The transfer of the Bakassi LGA to Cameroon on August 2008;
- The creation of a new Bakassi LGA out of the Akpabuyo LGA.

Two different lists of LGAs and LGA boundary maps needed therefore to be obtained, namely:

- The list (Table 2) and map (Figure 2) for 2006. These have been obtained from the Office of the Surveyor General of the Federation (OSGOF) through Second Administrative Level Boundaries (SALB) dataset project;
- The list for 2015 (Table 3) has just been derived from Table 2. When it comes to the map, it has unfortunately not been possible to find a document showing the boundary of the new Bakassi LGA. In order to still proceed with the analyses, it has finally been decided to consider the new Bakassi LGA and the modified Akpabuyo LGA as one virtual LGA named Akpabuyo/Bakassi (Figure 3) and temporarily coded NGA038XXX for the rest of the present report. While this approach does not allow differentiating between the new two LGAs in the results of the analyses it remains geographically consistent.

Please note that:

- The codes reported in Tables 2 and 3 are those coming from the SALB project as no other official codes have been identified in the context of the present project;
- The change in code observed between Table 2 and 3 as well as the last part of the code for Bakassi and Akpabuyo LGAs are due to the transfer of Bakassi to Cameroun and the change in geometry this generated for these different administrative divisions in this area. Using different codes allows to easily identify the geometry which is being referred to in the text of the present report.

Cross River	NGA009	Abi	NGA009001
		Akamkpa	NGA009002
		Akpabuyo	NGA009003
		Bakassi	NGA009004
		Bekwara	NGA009005
		Biase	NGA009006
		Boki	NGA009007
		Calabar South	NGA009008
		Calabar-Municipal	NGA009009
		Etung	NGA009010
		Ikom	NGA009011
		Obanliku	NGA009012
		Obubra	NGA009013
		Obudu	NGA009014
		Odukpani	NGA009015
		Ogoja	NGA009016
		Yakurr	NGA009017
		Yala	NGA009018

Table 2 - 2006 list o LGAs for the State of Cross River

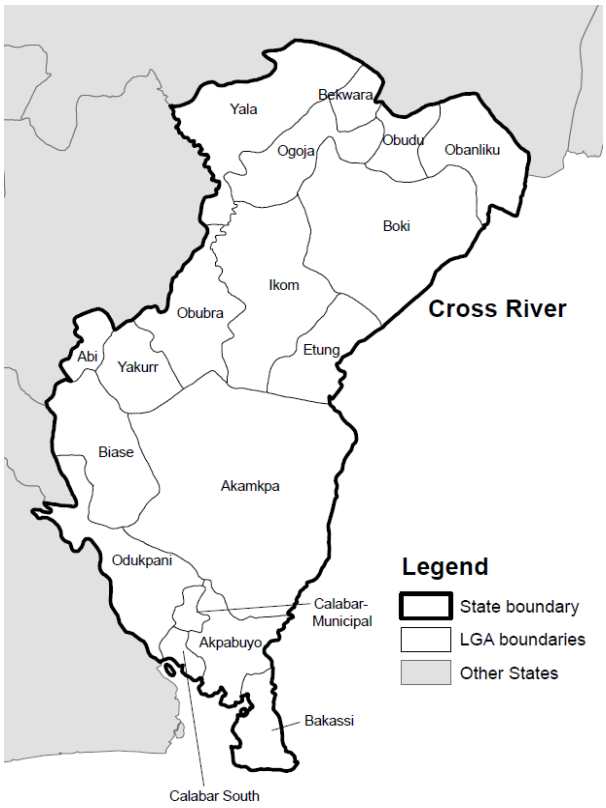


Figure 2 - 2006 State and LGA boundaries for Cross River

State Name	State Code	LGA Name	LGA Code
Cross River	NGA038	Abi	NGA038001
		Akamkpa	NGA038002
		Akpabuyo	NGA038019
		Bakassi	NGA038020
		Bekwara	NGA038005
		Biase	NGA038006
		Boki	NGA038007
		Calabar South	NGA038008
		Calabar-Municipal	NGA038009
		Etung	NGA038010
		Ikom	NGA038011
		Obanliku	NGA038012
		Obubra	NGA038013
		Obudu	NGA038014
		Odukpani	NGA038015
		Ogoja	NGA038016
		Yakurr	NGA038017
		Yala	NGA038018

Table 3 - 2015 list of LGAs for Cross River State

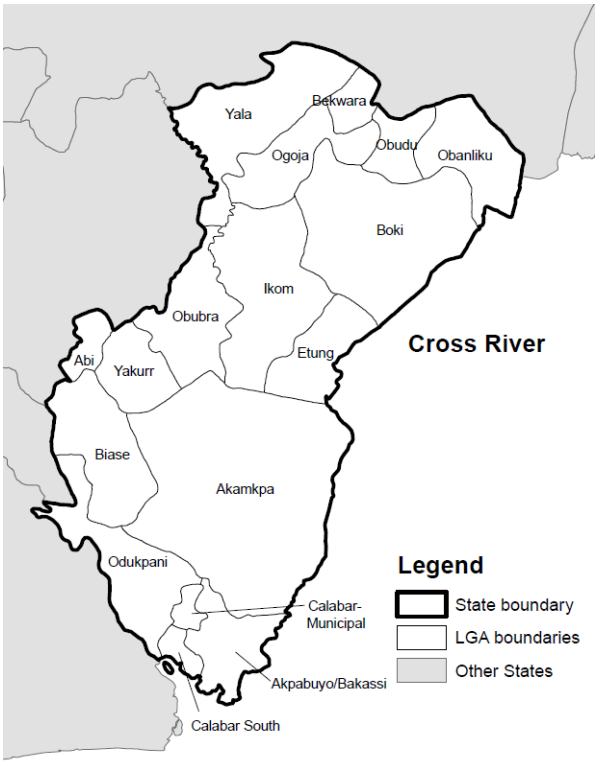


Figure 3 - 2015 State and LGA boundaries for Cross River

The study area has then be extended to also take into account the road network in the neighboring States as this network can, in some cases, allow to reach a health facility faster than using the roads located within the Cross River State.

As a result, the study area covers not only the State of Cross River as observed in 2015 but also a 50 km buffer around it. The country border being considered as closed (see Chapter 2), the buffer in question only extends to areas within Nigeria (in grey in Figure 4).

Figure 4 - Extent of the study area considered for the analyses over the Cross River State (in grey)

All the GIS layers, except the location of the EmONC facilities, have therefore been clipped according to the area reported in grey in Figure 4.

4.2.2 Geographic location of the EmONC facilities and associated information

The health care delivery system in Nigeria is organized according to three (3) levels (from the lowest to the highest one) [10]:

- The primary level composed of health facilities (Health centers, clinics, dispensaries, and health posts) typically providing general preventive, curative, promotive, and pre-referral care;

- The Secondary level composed of general hospitals providing general medical and laboratory services as well as specialized health services such as surgery, pediatrics, obstetrics and gynecology
- The Tertiary level made of specialist and teaching hospitals as well as federal medical centers that have special expertise and full-fledged technological capacity that enable them to serve as referral centers for patients from the primary and secondary levels and act as resource centers for knowledge generation and diffusion. Each state has at least one tertiary facility.

While the public sector (government) is present at all the three levels, privates and faith based organization facilities are only operating at the primary and secondary level.

USAID, through Pathfinder International, implemented the Health Facility Assessment (HFA) questionnaire in the State of Cross River with the objectives to identify the facilities providing Emergency Obstetric and Newborn Care (EmONC).

The assessment got implemented in the Southern part of the State (Abi, Akamkpa, Akpabuyo, Bakassi, Biase, Calabar-Municipal, Calabar South, Odukpani and Yakurr LGAs) in December 2014 and in the Northern part of it (Bekwarra, Boki, Etung, Ikom, Obanliku, Obubra, Obudu, Ogoja and Yala LGAs) in June-July 2015 and covered the following facilities for all the sector (public, private, faith based):

- All the secondary and tertiary level facilities;
- All the primary facilities in which at least one delivery took place over the 12 months preceding the assessment.

The complete list of these facilities has been obtained by combining different sources together (2012 directory of health facilities from the Ministry in Cross River State, the 2012 FHI360 Rapid Health Facilities Assessment, the 2013 Department of Community Health and Primary Health Care directory, and the LGA Primary Health Care Coordinators). The facilities in the resulting list were then visited to validate their existence and assess if they at least one delivery in the preceding year.

As a result, the HFA covered 812 facilities distributed as per Table 4 in terms of level and sector.

The facilities managed by the army and the police have finally not been considered in the analyses and this because their accesses remains restricted to a certain part of the population.

Out of the remaining 810 facilities, SMGL has decided to focus support to facilities that were either already fully functional or that performed at least 30 deliveries the year preceding the assessment.

The 135 facilities fulfilling these criteria are reported in Annex 3 and their distribution by level and EmONC status for the 3 months preceding the assessment as well as by sector and EmONC status is respectively reported in Table 5 and 6.

	Government			Faith Based Organization	Private for profit	Total
	Public	Army	Police			
Tertiary level	1					1
Secondary level	16		1	3	62	82
Primary level	712	1		4	12	729
Total	729	1	1	7	74	812

Table 4 - Distribution of the health facilities covered by the HFA in Cross River State by level and sector

	Fully functional BEmONC	Fully fonctional CEmONC	Partialy functional BEmONC	Partialialy functional CEmONC	Not preforming any EmONC signal function	Total
Tertiary Facility			93	3	4	100
Secondary Facility	1	5	17	11		34
Primary Facility			1			1
Total	1	5	111	14	4	135

Table 5 - Distribution of the 135 selected health facilities covered by the HFA in Cross River State by level and EmONC status for the 3 months preceding the assessment

	Fully functional BEmONC	Fully fonctional CEmONC	Partialy functional BEmONC	Partialialy functional CEmONC	Not preforming any EmONC signal function	Total
Faith Based Organization		2	2	1		5
Government (Public)			97	3	4	104
Private for profit	1	3	12	10		26
Total	1	5	111	14	4	135

Table 6 - Distribution of the 135 selected health facilities covered by the HFA in Cross River State by sector and EmONC status for the 3 months preceding the assessment

Table 7 does itself provide the number and density of these facilities at both the State and LGA level.

LGA Code	LGA Name	Number of EmONC facilities	EmONC density	
			Per 100'000 population	Per 1'000 pregnant women
NGA038017	Yakurr	18	9.9	2.0
NGA038001	Abi	13	6.9	1.4
NGA038005	Bekwara	9	2.4	0.5
NGA038011	Ikom	13	9.8	2.0
NGA038009	Calabar-Municipal	12	5.7	1.1
NGA038007	Boki	11	4.7	0.9
NGA038006	Biase	9	3.7	0.7
NGA038018	Yala	11	4.8	1.0
NGA038010	Etung	4	4.0	0.8
NGA038016	Ogoja	8	3.9	0.8
NGA038013	Obubra	6	4.3	0.9
NGA038002	Akamkpa	5	2.3	0.5
NGA038014	Obudu	4	2.0	0.4
NGA038XXX	Akpabuyo/Bakassi	7	2.9	0.6
NGA038008	Calabar South	3	1.4	0.3
NGA038012	Obanliku	1	0.4	0.1
NGA038015	Odukpani	1	0.4	0.1
	State level	135	3.7	0.7

Table 7 - Distribution of the 135 selected health facilities covered by the HFA in Cross River State by LGA and corresponding facility density for 2015

At the State level, the 2015 density of fully functional EmONC facilities is of 0.82 per 500,000 population ((6/3,635,371)*500,000) and of 0.68 for fully functional CEmONC facilities, which are both largely below the benchmark fixed by WHO, UNFPA, UNICEF and AMDD in the context of the handbook released in 2009 (at least 5 EmONC facilities per 500'000 population with at least one of them being a CEmONC facility) [2].

As per table 7 and Annex 3, if all the partially functional EmONC facilities together with the facilities presenting at least 30 deliveries over a year where converted into fully functional ones, these density would respectively reach 18.5 EmONC facilities and 2.6 CEmONC per 500,000 population, being therefore both above the same benchmark.

Important disparities would nevertheless remain between LGAs (Table 7) but the analyses performed here will confirm if this a problem from an accessibility coverage perspective.

When looking at Annex 3 it is important to note that:

- The list is sorted by EmONC status, number of signal functions being performed then alphabetical order of the LGA and health facility name;
- A complete and up-to-date health facility registry does not exist in the Federal Ministry of Health of Nigeria. As such:
    - The Unique ID does not correspond to an official codes but the HFA form number which has been modified to be made unique as there were some

duplicate between the two round of implementation. More specifically, 1000 has been added to the form number for the Northern part of the State and 2000 to the same form number for the southern part of the State;

  - We could not verify if the health facility name reported in this annex are spelt correctly. In any case, some of the facility names definitively appear to be truncated and several facilities present the same name. The HFA database would have therefore have benefited from some more cleaning.

- The LGA codes and names corresponds to the one reported in Table 3
- Two facilities, the Eyo Medical Center and Awukam Clinic, which are respectively a fully functional CEmONC and fully functional BEmONC, performed less than 30 deliveries over the year preceding the assessment;

The geographic location of each facility has been collected during the implementation of the HFA. Unfortunately, the lack of proper data collection protocol and the use of different devices during this exercise (GPS device or GPS enabled mobile phone) lead to a significant number of errors in the geographic coordinates for these facilities (points falling outside the correct LGA or even the country and/or in areas without buildings).

These errors have been identified through different tests performed in ArcGIS and Google Map and have then been corrected either by the staff in the field or by using coordinates from an online health facility database developed in the context of the Nigeria MDG Information System (NMIS) [11]. It is important to mention here that, while including an important number of health facilities (20,400), the NMIS data set is unfortunately no standardized and often incomplete, especially when it comes to the name of the health facility, making it difficult to be used. It is also not clear if the data it contains has been validated by the Federal Ministry of Health before being posted on the web site.

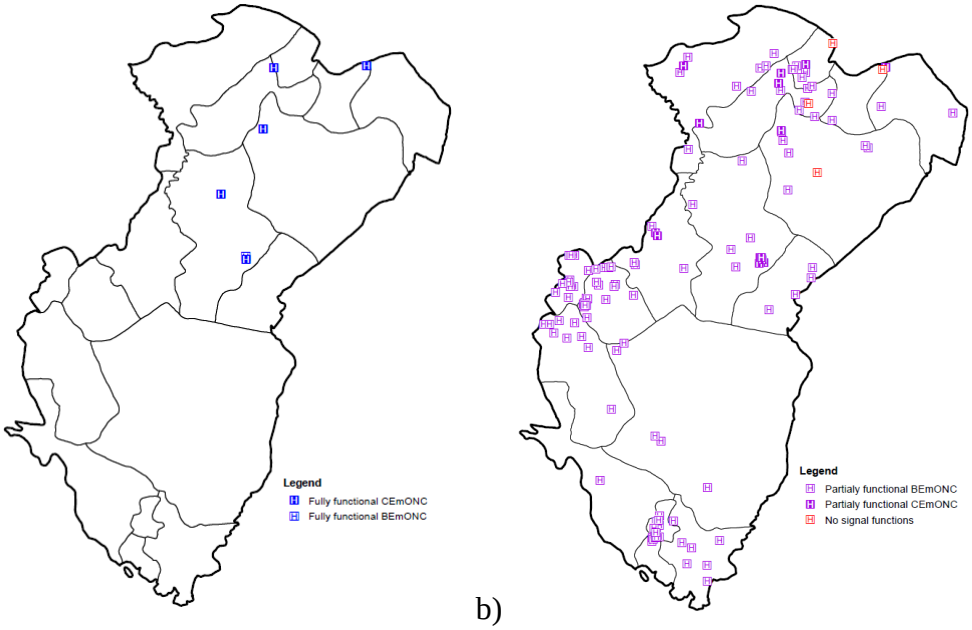
The final geographic coordinates for the 135 health facilities considered here are reported in Annex 3. The corresponding Easting/Northing (UTM system), also reported in this annex, have themselves been obtained by projecting the original coordinates in ArcGIS.

Figure 5a presents the geographic location of the fully functional BEmONC and CEmONC facilities while Figure 5b presents the location of the partially functional ones together with those that do not perform any signal functions but covering more than 30 deliveries in a year.

As we can see from Figure 5a and b, all the fully functional facilities and well as all the CEmONC facilities (fully and partially functional) are all located in the Northern part of the State.

It is also important to mention here that some of the final coordinates are falling outside of the boundary of the LGA in which the facility is located but this has been checked and not due to an error in the coordinates itself but to a difference of scale, and therefore

accuracy, between the boundary layer being used (Figure 3) and the coordinates that have been collected with a higher precision with the GPS device.



a) b)

Figure 5 – Location of: a) the fully functional EmONC facilities and b) partially functional EmONC facilities together with those not performing any signal function but presenting more than 30 deliveries in a year used in the different analyses

Referral between a BEmONC and CEmONC facility is conditional to the availability of a functioning motorized vehicle for the transfer of the patient. If such vehicle is not available, the BEmONC facility might have to contact the CEmONC facility, or another facility, in order to send such vehicle, which would of course significantly increase the referral time.

In order to consider these parameters in the analyses, the following variables have also been extracted from the HFA and this for all the 135 facilities mentioned here above (Annex 4):

- Presence of a motorized vehicle:
  - 4 wheels motor vehicle (variable: VEH4AV)
  - Motorized tricycle (VEH3AV)
- Communication media:
  - Landline telephone in the maternity area (LTELMAV)
  - Landline elsewhere in the facility (LTELFACAV)
  - Cell phone owned by facility (CELFACAV)
  - Cell phone owned by individual (CELINDAV)
  - Cell phone signal available (CELLSIG)
  - Two-way radio (TWRADAV)

When looking at Annex 4 please note that:

- The table is sorted according to the availability of motorized vehicle before the availability of communication media (landline and cell phone before two ways radio);
- The availability of a motorcycle (2 wheels) has not been taken into account as not considering as being an appropriate transportation media for a women needing referral due to complications during delivery;
- The availability of boats has not been taken into account here as not available in any of the 135 facilities considered in the analyses;
- Cell phones have only been considered as functioning if the cell phone signal was present as well;
- Two-way radios have been considered separately from landline and cell phones in the analysis and this to account for the fact that these represent two distinct set of devices that do not communicate with each other;
- The awareness of the phone number for the nearest CEmONC facility, or the facility that could provide a motor vehicle for referral, has not been asked during the HFA. It has therefore been considered that this information was known by the concerned facilities;
- the HFA asked if the communication media (landline, cell phone or two-way radio) was used for referral but this information has not been taken into account here considering that, if there is an emergency, and that a communication media is available in the facility, the media would be used for the referral to take place;
- Some information was missing in the final database. The corresponding cells are highlighted in grey in Annex 4 and these cases have been treated as if the vehicle or the communication was not available in the rest of the analysis.

Table 8 presents the availability of a functioning motorized vehicle on site and this by EmONC status and Table 9 the availability of communication media for the facilities that do not have access to such vehicle.

EmONC Status	Motor vehicle available on site and functioning	
	Yes	No
Fully functional BEmONC		1
Fully functional CEmONC	3	2
Partialy functional BEmONC	17	94
Partialy functional CEmONC	6	8
No signal functions		4
Total	26	109

Table 8 - Availability of a functioning motor vehicle on site by EmONC status

EmONC Status	Functioning phone (landline/cell)		Functioning two-way radio	
	Yes	No	Yes	No
Fully functional BEmONC	1			1
Fully functional CEmONC	2			2
No signal functions	3	1		4
Partialy functional BEmONC	80	14	3	91
Partialy functional CEmONC	7	1		8
Total	93	16	3	106

Table 9 - Availability of a functioning communication media by EmONC status for the facilities not having a functioning motor vehicle on site

The following can be observed from Table 8 and 9:

- The fully functional BEmONC facility as well as two of the fully functional CEmONC facilities do not have access to a functioning motor vehicle on site;
- 84.7% of the partially functional BEmONC and 57.1% of the partially functional CEmONC, as well as the facilities not performing any of the EmONC signal functions, finds themselves in the same situation;
- 85.3% of the facilities that do not have a functioning motor vehicle on site do nevertheless have access to a functioning phone (landline or cell). Among the remaining 16 facilities that do not have access to such communication media only 3 of them have access to a two-way radio.

In view of the above, it appears that upgrading partially functional EmONC facilities into fully functional ones might also require investing in motor vehicles and/or communication media to facilitate referral.

4.2.3 Land cover

This project used the freely accessible 30-meter resolution global land cover distribution grid released by the National Geomatics Center of China [12].

In order to match the projection and spatial resolution set for the project (see Section 4.2) the original grid has been reprojected and resampled before simplifying the original classification as per Table 10.

Figure 6 does itself present the landcover distribution grid resulting from this process.

Original class code	original class label	Simplified class code	Simplified class label
10	Cultivated land	4	Medium dense vegetation
20	Forest	5	Dense vegetation
30	Grassland	3	Low dense vegetation
40	Shrubland	3	Low dense vegetation
50	Wetland	6	Water
60	Water bodies	6	Water
80	Artificial surfaces	2	Built areas
90	Bareland	1	Bareland

Table 10 - Simplified classification for the global land cover distribution grid

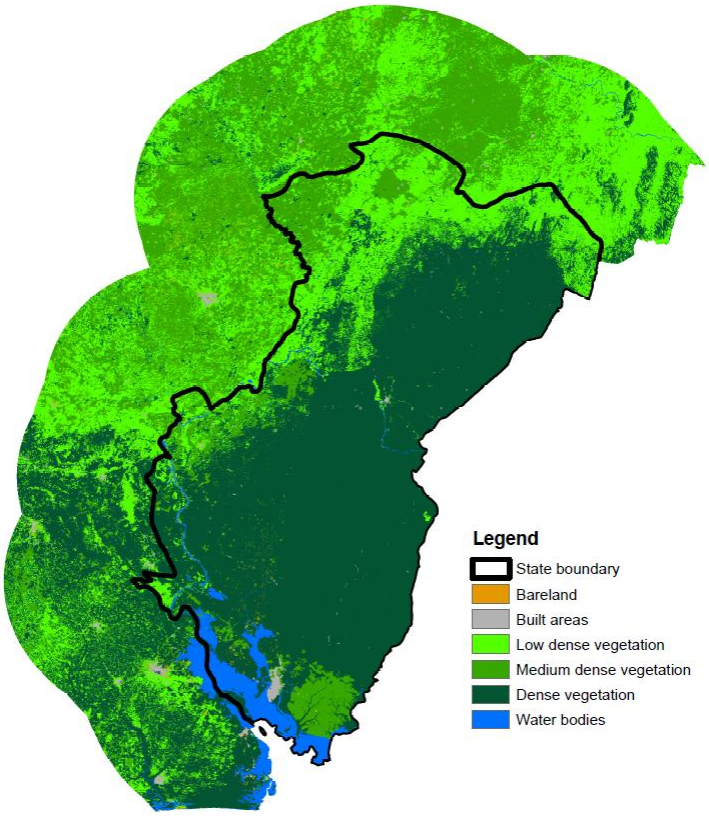


Figure 6 – Land cover distribution layer used in the different analyses

4.2.4 Transportation network

The starting point for creating the transportation network layer over the study area is the one developed by the OpenStreetMap (OSM) community of volunteers and extracted from the bbbike web site [13] on February 12th, 2016.

Despite the great work done by the volunteers and other institutions such as the Bill and Melinda Gates foundation to reach completeness over the all country, the OSM datasets still present three major limitations towards its use without adjustments in the context of the present project, namely:

1. It is not complete in some part of the Cross River State;
2. The road classification used by the OSM community does not match the national classification;
3. An important number of the segments remain unclassified and, when classified, the classification does not always match the type of road observed on satellite images or on different sources.

The following process has therefore been applied in order to address these issues as much as possible:

1. The segments presenting the following classes in the OSM layer have been removed as they are not considered as being part of the transportation network in the context of the present project:
    - Bridleway
    - Bus stop
    - Construction
    - Cycleway
    - Emergency access
    - Proposed
    - Footway
    - Path
    - Pedestrian
    - Rest area
    - Services
    - Steps
2. The segments presenting the following categories were then reclassified:
    - Motorway_link into Motorway
    - trunk and trunk_link, primary and primary_link into Federal road
    - Road, secondary and secondary_link unto State road
    - Tertiary and tertiary_link into rural road
    - Unclassified and unsurfaced into track
    - Living_street, residential and traffic island into Residential road
3. Another road network layer in GIS format coming from the US Government and google map have been used to fill as much as possible the gaps observed in the OSM data set. When doing so:

- The location of the health facilities (Figure 5) and the hydrographic network layer (see Section 4.2.5) have been added to the map not only to ensure consistency but also perform an additional check on these two layers as well;
- the priority has been put on filling the gaps over the surface of the Cross River State before completing the roads located in the neighbouring States and within the buffer presented in Figure 4;

4. The network resulting from step 3 has been checked and cleaned using the following map and google map as references for the attribution of the road types: http://www.ra.org.mw/maps/Malawil_Road_Network_All_Roads.pdf [Accessed February 25, 2016]. The segments remaining uncertain after this step have then been classified as tracks;
5. Crossing points on rivers have been classified as such to account for the time it would take to use a barge to cross them. In some limited areas, travel by boat has been added to the layer to account for health facilities in remote villages not accessible by road.

At the end of this process, the resulting map (Figure 7) contains the following road categories: Motorways, Federal roads, State roads, rural roads, tracks residential roads, crossing points and boat routes.

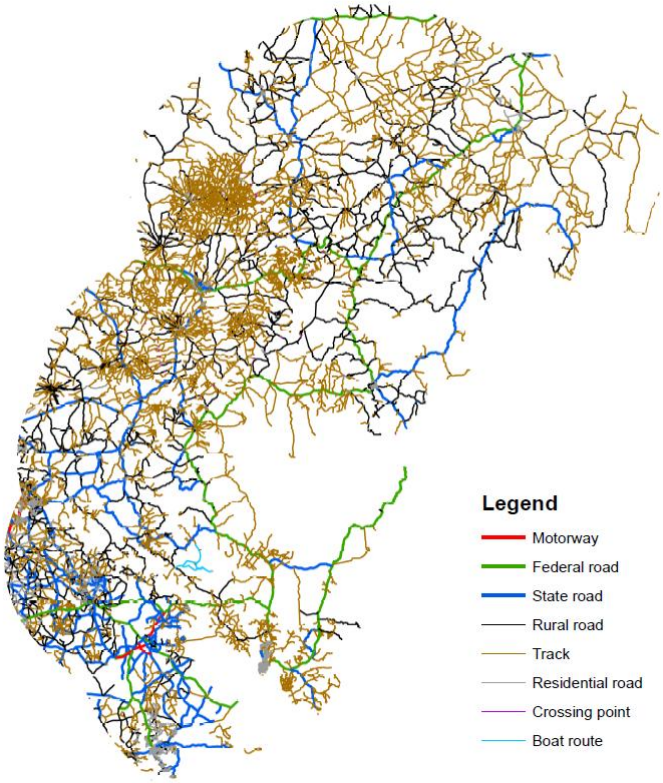


Figure 7 - Transportation network layer used in the different analyses

4.2.5 Hydrographic network

The hydrographic network layers (rivers and water bodies) used in the present study have also been developed based on the OpenStreetMap (OSM) dataset [13].

Like for the road network layer (see Section 4.2.4), additional editing work needed to nevertheless be performed in order to fill the gaps.

This work has been performed by USAID's GeoCenter using Landsat imagery, ArcGIS Online basemap imagery as well as the Digital Chart of the World dataset for reference.

The map resulting from this process is presented in Figure 8.

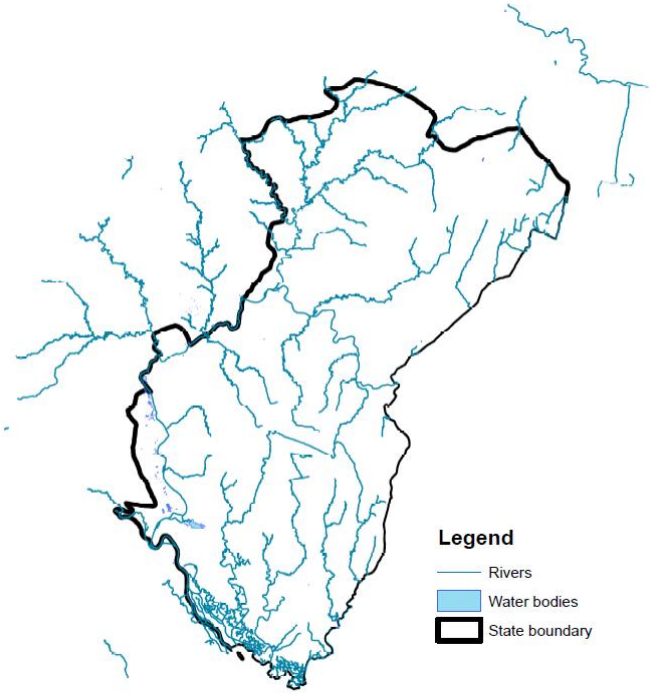


Figure 8 – Hydrographic network layers (rivers and water bodies) used in the different analyses

4.2.6 Digital Elevation Model

The freely accessible 90 meters resolution Shuttle Radar Topography Mission (SRTM) dataset produced in 2000 by the NASA in collaboration with other institutions [14] has been used without performing any changes on the original dataset (Figure 9).

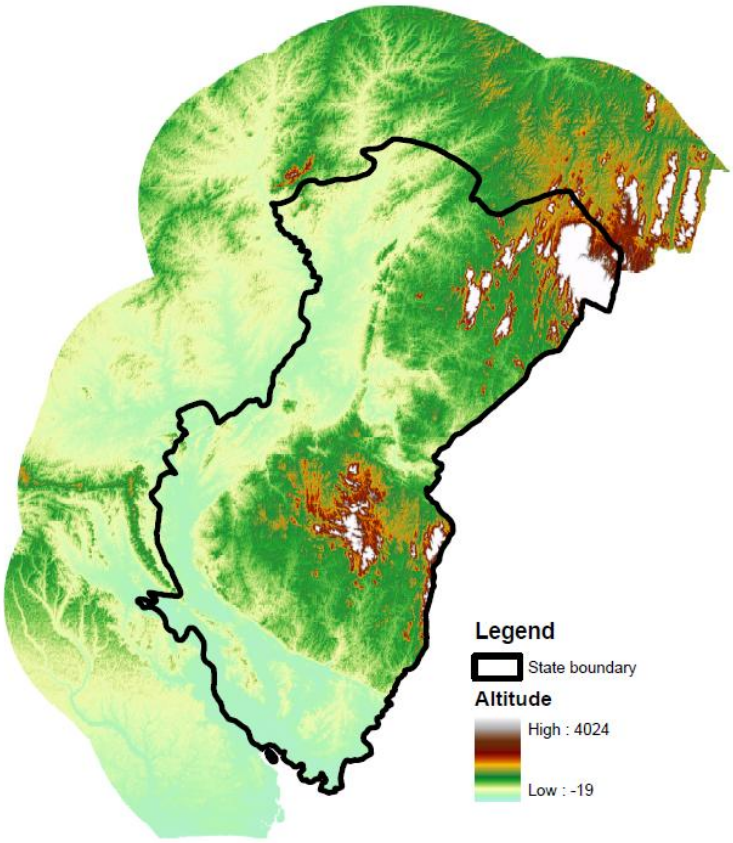


Figure 9 – Digital Elevation Model (DEM) used in the different analyses

4.2.7 Spatial distribution of pregnancies

The most recent, detailed, and freely accessible population as well as pregnancies distribution database in GIS format is the one released in the context of the WorldPop project [15].

Presenting a spatial resolution of 100 meters this dataset is based on the most recent census data being desegregated further using probability distribution algorithms and projected for different years, all of this taking several parameters into account including rural/urban specific growth rates.

In the case of Nigeria, this data set is available for 2010 and 2014 when it comes to the total population and for 2010 when it comes to pregnancies. The 2010 version of the dataset has therefore been used in the context of the present project.

This dataset first needed to be adjusted to match the following before being used:

- The projection system and spatial resolution presented in Section 4.2;
- The 2015 LGA number of pregnant women reported in Annex 2;

This has been done through the application of the following steps:

1. The original 2010 WorldPop grid has been re-projected according to the coordinate system set for the project (see beginning of Section 4.2);
2. The resulting re-projected grid presenting a resolution of 92.77776 meters it has been resampled and snapped to the Digital Elevation Model (DEM) (see section 4.2) in order to present the resolution set for the project, 92.595703 meters;
3. The travel time distribution grid resulting from the application of the second module of AccessMod has been reclassified to obtain a mask in which any cell located outside of the country, corresponding to water areas or being inaccessible by feet or motor vehicle have been attributed a value of "0" while all the other cells containing a travel time were attributed a value of "1";
4. The mask generated under step 3 has been applied to the re-projected and resampled pregnancy distribution grid obtained after step 2 using the Spatial Analyst > Math > Times tool in ArcGIS;
5. The LGA boundaries layer in raster format has been used as the input layer for the Spatial Analyst>Zonal>Zonal Statistics tool in ArcGIS and this to extract the total number of pregnant women per administrative divisions from the grid generated in step 4. The result has been saved in a dbf file;
6. The dbf resulting from step 5 has been imported in Excel and a LGA level specific correction factor to be applied on the spatial distribution of pregnant women obtained under step 4 has been calculated;
7. The resulting correction factor table has been linked (join) to the attribute table of the LGA boundaries layer using the common code. The shape file has then been converted into a raster grid presenting the same resolution than the population distribution grid using the Conversion Tools>To Raster>Polygon to Raster tool in ArcGIS (The Environment settings>General Settings has been used to set the extent of the resulting grid needs to match the one of the travel time distribution grid and snapped to that same grid;
8. The grid obtained under step 7 has been multiplied with the spatial distribution of pregnant women generated under step 4 to obtain the final layer which is consistent with the total number of pregnant women estimated for 2015 at the LGA level (Annex 2).

Figure 10 presents the gird resulting from the above-mentioned process.

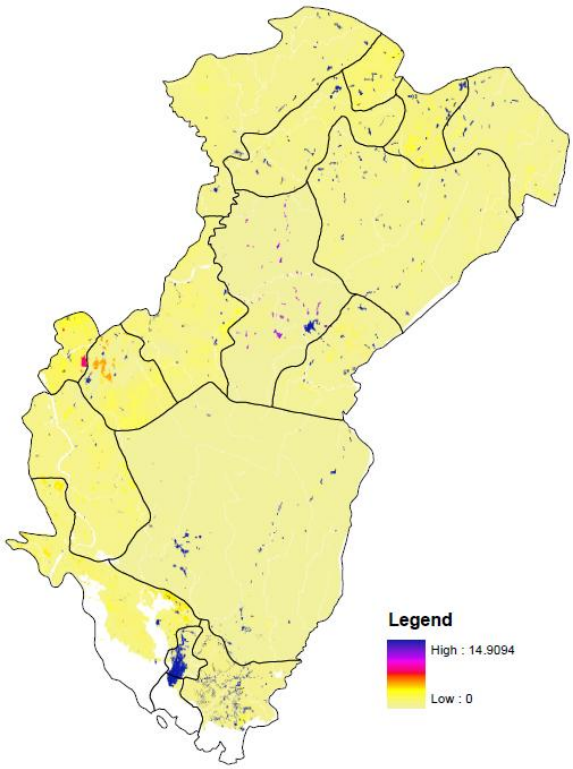


Figure 10 – Spatial distribution of pregnant women for 2015 as used in the different analyses

4.3 National norms

It has unfortunately not been possible to find official national norms regarding the maximum speed expected by motor vehicles on the different road types observed in the country (Figure 7).

Starting from the 2013 global status report on road safety [16] which indicates a maximum enforced speed of 50 km/h on urban roads in Nigeria, inputs received from people living in the country have been used to come up with a maximum expected speed for each type of road observed in the country (Table 11). It is nevertheless important to mention here that motorized tricycles, vehicles some time on site of EmONC facilities (Annex 4), might nevertheless not be able reaching the highest speeds reported in Table 11.

In addition to this, the maximum traveling speed for a pregnant woman walking in her last month of pregnancy or being carried (estimated as 50% of the speed of a woman not being pregnant, i.e. 2.5 km/h in an open area) has been attributed for each land cover class considered here (Figure 6). These speeds are also reported in Table 11.

Boats have also been considered as transportation media on some rivers. It has unfortunately not been possible to find a reference speed for the type of boats used in Nigeria. A speed of 30 km/h has therefore been considered based on a previous similar studies conducted in other countries.

Finally, a speed of 20 km/h has been attributed to the crossing points observed over some rivers and this to account for the time it would take to cross over by boat and get another vehicle on the other side or to use a barge for the vehicle to cross the river itself.

Land cover/road type	Maximum speed (km/h)	Transportation media
Bareland	2.5	Feet
Built areas	2.5	Feet
Low dense vegetation	2	Feet
Medium dense vegetation	1.5	Feet
Dense vegetation	1	Motor vehicle
Motorway	100	Motor vehicle
Federal road	90	Motor vehicle
State road	75	Motor vehicle
Rural road	50	Motor vehicle
Residential road	50	Motor vehicle
Track	35	Motor vehicle
Crossing point	20	Boat
Boat route	30	Boat

Table 11 – Maximum travel speed on the different land cover, road types and boat paths considered in the different analyses

5. Results

This Chapter presents the results obtained when measuring the indicators reported in Chapter 2.

These analyzes have been performed using the following GIS layer and associated data described in the previous Chapter:

1. Location of the health facilities (Figure 5);
2. Transportation network (Figure 7);
3. Hydrographic network (Figure 8);
4. Digital Elevation Model (DEM) (Figure 9);
5. Land cover (Figure 6);
6. LGA boundaries as observed in 2015 (Figure 3);
7. Distribution of pregnant women (Figure 10);
8. The following travelling scenarios:
    a. From home until the nearest BEmONC or CEmONC facility: Pregnant woman walking or being carried until reaching a road or boat route and then taking a motor vehicle;

   b. Between the BEmONC facility and the nearest CEmONC facility in case of complication: Use of a motor vehicle.

9. The maximum travelling speeds reported in Table 11.

The following modules of AccessMod have then been used as follow:

- Module 1 to merge the landcover with the transportation and hydrographic network layers;
- Module 2 to measure the travel time to the nearest BEmONC or CEmONC facility;
- Module 4 to measure the travel time between each BEmONC and the nearest CEmONC facility;
- Module 5 to extract the evolution of accessibility coverage for different travel time at both the State and the LGA level.

Finally, the following reference benchmarks have been used to comment on the results:

- The International Conference on Population and Development (ICPD) target of having 90% of births assisted by a skilled attendant by 2015 [17] has been used as a benchmark for accessibility coverage. In the context of our analyses, we further interpreted this target to require that skilled attendance at birth should be available for 90% of births. Skilled attendance at birth is interpreted as a skilled attendant working within an enabling environment or health system that is capable of providing care for normal deliveries as well as appropriate emergency obstetric care for all women who develop complications during childbirth.[4] Other breaks have also been used when presenting the geographic coverage results (75, 50, 25 and 0%) but these do not have any particular programmatic significance, they have just been used to facilitate the visualisation of the data on tables and maps.
- The standard for the availability of services suggested in the 2009 hand book for monitoring emergency obstetric care is set to be between 2 and 3 hours [2].
- In case of complications, especially haemorrhage, the estimated average interval between onset of a postpartum haemorrhage and death is set as being 2 hours [18]. This value has therefore been used as benchmark when looking at referral between a BEmOC facility, where all women delivering should initially seek care, and the nearest CEmOC facility because of severe complications.

The results obtained for the three groups of facilities are reported in the following sections.

[4] http://web.unfpa.org/public/home/mothers/pid/4383 [Accessed February 27, 2016]

5.1 Evolution of the accessibility coverage for BEmONC facilities

As per the assumptions reported in Chapter 2:

- CEmONC facilities have also been considered as BEmONC facilities and this for both fully and partially functional facilities;
- health facilities having performed at least 30 deliveries over a year but not performing any EmONC signal functions have been considered for potential upgrade to become BEmONC facilities.

The total number of facilities considered for each group has therefore been has follow (Table 5):

- Fully functional BEmONC, including CEmONC, facilities: 6
- Fully and partially functional BEmONC, including CEmONC, facilities: 131
- Fully and partially functional BEmONC, including CEmONC, facilities as well as facilities having performed at least 30 deliveries over a year but not performing any of the signal functions: 135

Figure 11 present the spatial distribution of the travel time to the nearest BEmONC, including CEmONC, facilities obtained for the three groups of facilities through the application of the second module of AccessMod.

The LGA boundaries layer for 2015 (Figure 3) has then be used to obtained the measure of accessibility coverage, expressed as the total number and percentage of pregnant women located within the different travel time set for the study (1, 2, 3 and 4 hours) and this at both the State and LGA levels (Annex 5, Figure 12 and 13).

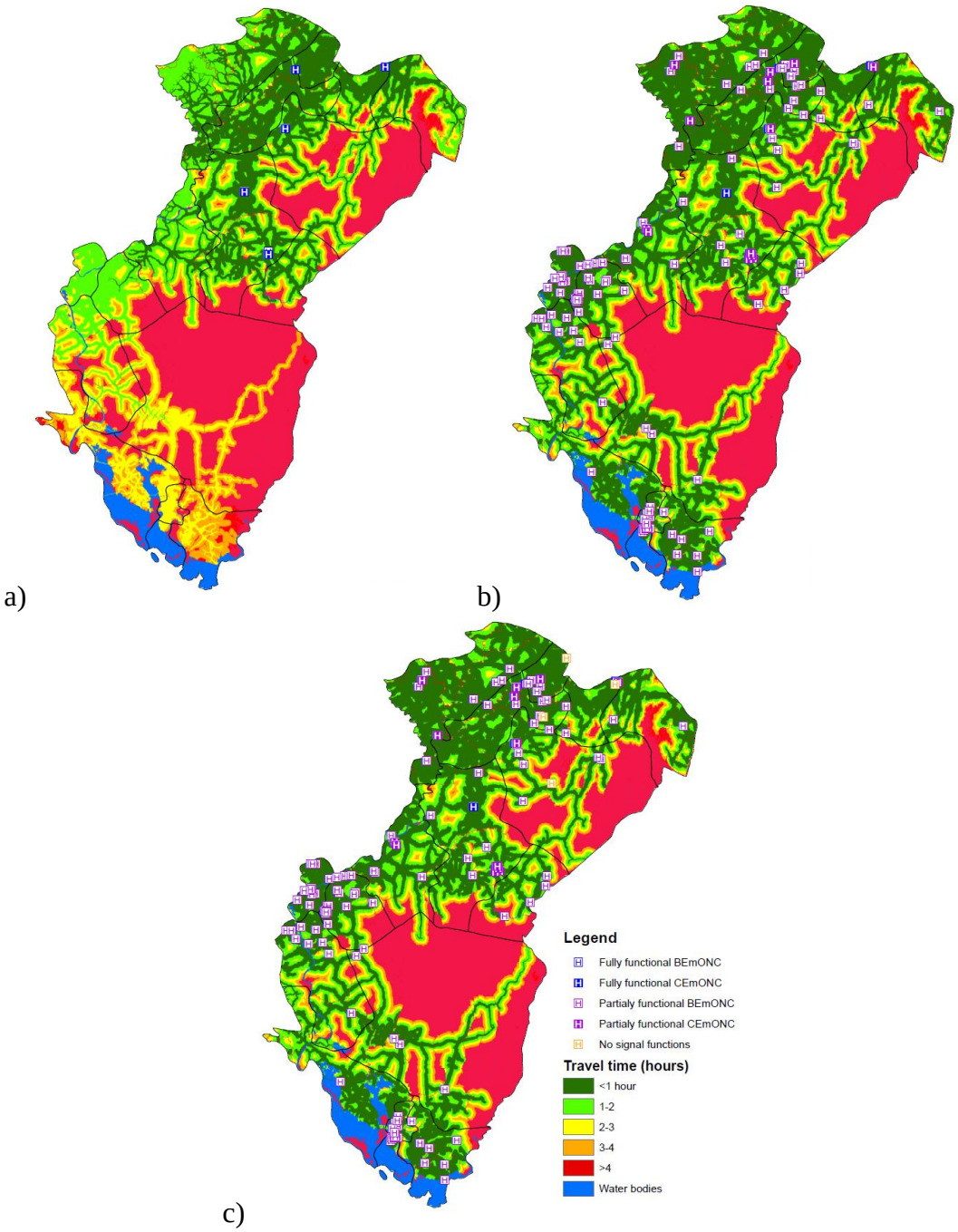


Figure 11 – Travel time to a) the nearest fully functional BEmONC, including CEmONC, facility; b) fully and partially functional BEmONC, including CEmONC, facilities and c) fully and partially functional BEmONC, including CEmONC, facilities as well as facilities having performed at least 30 deliveries over a year but not performing any of the signal functions

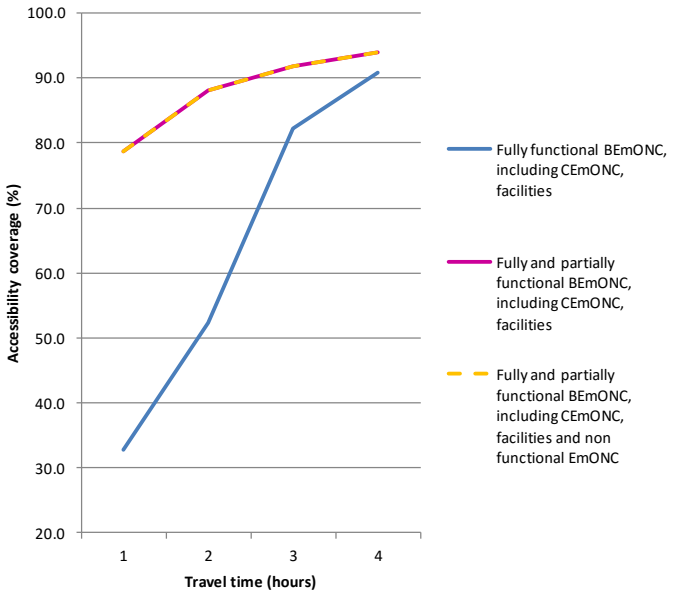


Figure 12 - State level evolution of the percentage of pregnant women (accessibility coverage) within a given travel time to the three considered group of BEmONC, including CEmONC, facilities

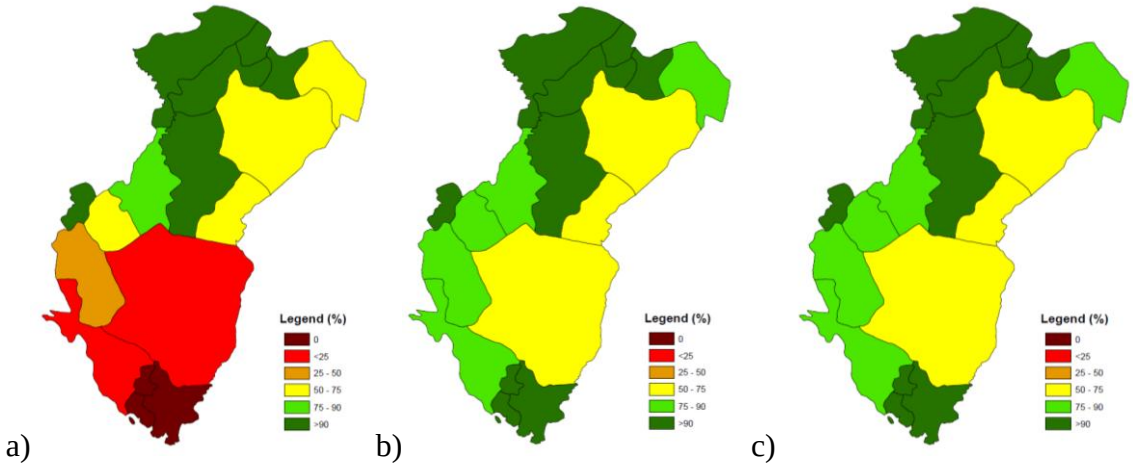


Figure 13 - LGA level percentage of pregnant women (accessibility coverage) for 2 hours of travel time to the three considered group of health facilities: a) Fully functional BEmONC, including CEmONC, facilities; b) Fully and partially functional BEmONC, including CEmONC, facilities; c) Fully and partially functional BEmONC, including CEmONC, facilities and non functional EmONC facilities

The following can be observed from Annex 5, Figure 12 and 13 taking into account that the result obtained here depend greatly on the population distribution grid (figure 10):

- At the State level:
    - 32.8% of pregnant women have physical access to a fully functional BEmONC, including CEmONC facility within 1 hour of travel time. This

percentage increases to reach 52.4% for 2 hours, 82.3% for 3 hours and 90.9% for 4 hours of travel time;

- These percentages reach 78.6% for 1 hour, 88% for 2 hours, 91.9% for 3 hours and 94% for 4 hours when also considering partially functional EmONC facilities in the analysis;
- While the gain in accessibility coverage is significant when adding partially functional EmONC facilities for 1 and 2 hours of travel time, (respectively 45.8% and 35.6%), this gain is of only 9.6% for 3 hours and 3.1% for 4 hours of travel time, indicating that the most populated place in the State can be reached within 4 hours of travel based on the scenario and maximum travelling speed used in the context of this project (Table 11).
- 90% of coverage is reached:
  - Only after 4 hours of travel time when considering the fully functional BEmONC, including CEmONC, facilities confirming therefore the need to expand the number of these facilities in the State of Cross River to reduce travel time to these facilities;
  - Between 2 and 3 hours of travel time when adding the partially functional BEmONC, including CEmONC, facilities into the analysis. Adding the non-functional facilities does not have any significant impact due to the location and number of these facilities (4).

- At the LGA level:
  - When considering only the fully functional BEmONC, including CEmONC, health facilities:
    - Only 1 LGA (Bekwara) presents an accessibility coverage above the 90% benchmark after 1 hour of travel time. This number pass to 6 when considering 2 hours of travel time, 9 for 3 hours and 11 for 4 hours.
    - 7 LGAs (Akamkpa, Biase, Calabar South, Calabar-Municipal, Odukpani and Akpabuyo/Bakassi), all located in the Southern part of the State, present an accessibility coverage of 0% for 1 hour of travel time. This number reduces 3 LGAs (Calabar South, Calabar-Municipal and Akpabuyo/Bakassi) and remains very low for two other ones (Odukpani and Akamkpa) when considering 2 hours of travel time;
    - The LGA remaining below the 90% benchmark even after 4 hours are: Yakurr, Obanliku, Etung, Boki and Akamkpa who present the lowest value with 52.1%;
  - When adding partially functional BEmONC, including CEmONC, facilities into the analysis:
    - 6 LGAs are above the 90% benchmark for 1 hour of travel time. This number pass to 9 for 2 hours, 11 for 3 hours and 13 for 4 hours;
    - 2 LGAs (Akamkpa and Boki) present an accessibility coverage below 50% and 7 others (Biase, Etung, Obanliku, Obubra, Odukpani and Yakurr) below 75% of for 1 hour of travel time. This number would

reduce to 2 LGAs remaining below 75% after 2 hours (Akampkpa and Boki);
    - The 4 LGAs remaining below the benchmark after 4 hours of travel time are: Obanliku, Etung, Boki and Akamkpa with once more the lowest value (64.2%). It is important to mention here that these 4 LGAs correspond to those where the density of the road network is the lowest (Figure 7) and where population is quite largely spread according to the WordlPop Database. In addition to that, Obabliku present the lowest density of EmONC facilities (Table 7);
    - Adding the partially functional BEmONC, including CEmONC, facilities significantly improve accessibility coverage in the Southern part of the State when considering 2 hours of travel time (Figure 13);
  - As mentioned earlier, adding the 4 non-functional facilities does not generate any additional significant gain in accessibility coverage.

5.2 Evolution of accessibility coverage for CEmONC facilities

The same set of analyses conducted on BEmONC facilities (section 5.1) has been conducted on CEmONC facilities. In this case, the total number of facilities considered for each group has been as follow (Table 5):

- Fully functional CEmONC, facilities: 5
- Fully and partially functional CEmONC facilities: 19

As per the assumption reported in Chapter 2, the facilities having performed at least 30 deliveries over a year but not performing any of the EmONC signal functions have been considered for upgrade as BEmONC and not CEmONC facilities. They have therefore not been included here.

Figure 14 present the spatial distribution of the travel time to the nearest CEmONC facilities for the 2 groups of facilities obtained through the application of the second module of AccessMod.

The LGA boundaries layer for 2015 (Figure 3) has then be used to obtained the measure of accessibility coverage, expressed as the total number and percentage of pregnant women located within the different travel time set for the study (1, 2, 3 and 4 hours) and this at both the State and LGA levels (Annex 6, Figure 15 and 16).

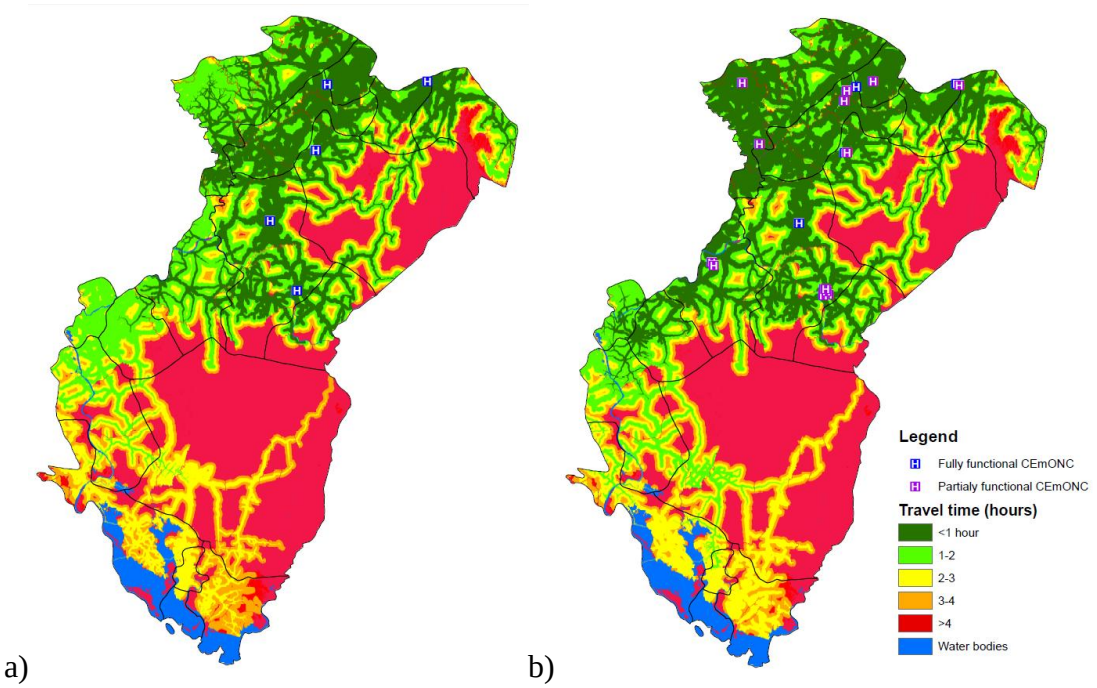


Figure 14 – Travel time to a) the nearest fully functional CEmONC facility and b) fully and partially functional CEmONC facilities

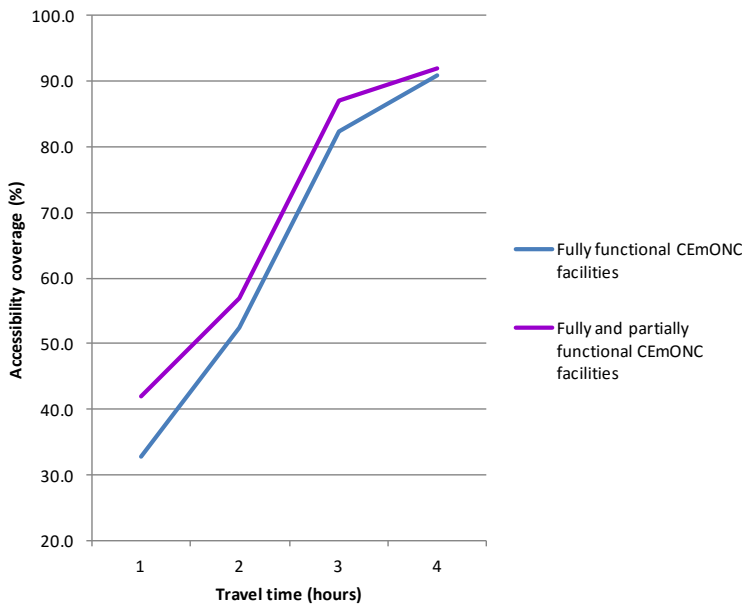
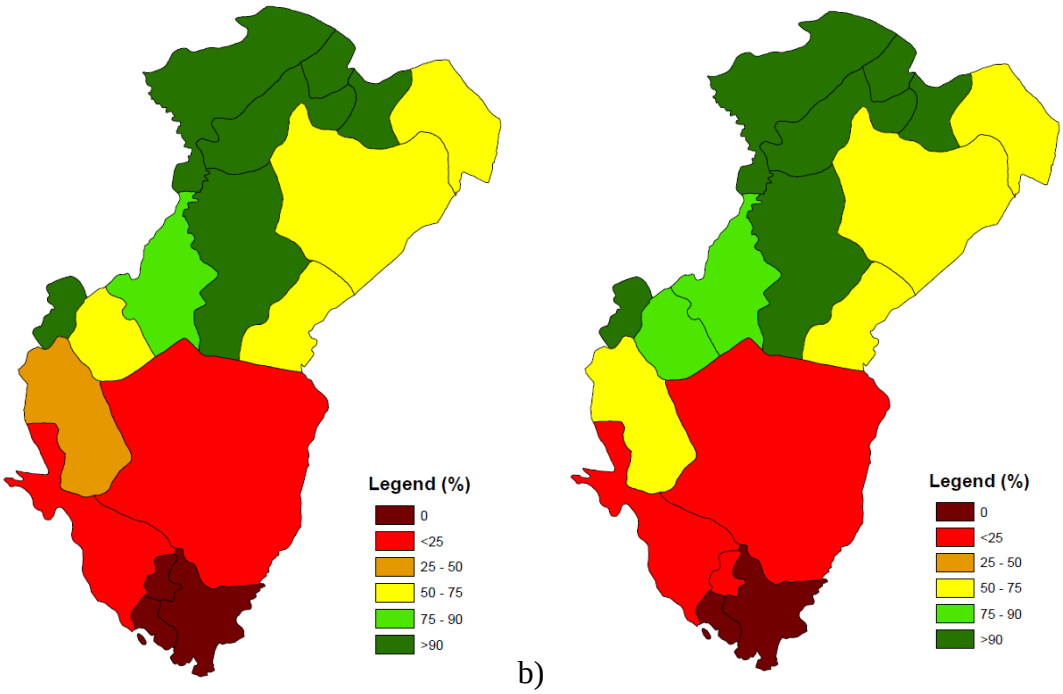


Figure 15 - State level evolution of the percentage of pregnant women (accessibility coverage) within a given travel time to the two considered group of CEmONC facilities



a) b)

Figure 16 - LGA level percentage of pregnant women (accessibility coverage) within 2 hours of travel time to the two considered group of health facilities: a) Fully functional CEmONC facilities; b) Fully and partially functional CEmONC facilities;

The following can be observed from Annex 6, Figure 15 and 16 taking once more into account that the result obtained here depend greatly on the population distribution grid (Figure 10):

- At the State level:
  - The results for the fully fonctional CEmONC are the same than for the fully functional BEmONC (Section 5.1) and this simply because 5 of the 6 fully functional BEmONC facilities appears to be CEmONC facilities as well and the last one is located in the close vicinity of a CEmONC facility;
  - These percentages reach 42 % for 1 hour, 57% for 2 hours, 87.1% for 3 hours and 91.9% for 4 hours when also considering partially functional CEmONC facilities in the analysis;
  - The gain in accessibility coverage when adding partially functional CemONC facilities is low and this across all travel time, ranging from 9.2% for 1 hour to 1% for 4 hours and this because these facilities are mostly located in the same areas than the fully functional ones.
  - In both cases, fully functional only or fully and partially functional CEmONC facilities, the 90% of coverage is only reached after 4 hours of travel time;
- At the LGA level:
  - Once again, the observation made for the fully functional BEmONC facilities (Section 5.1) apply also to the fully CEmONC facilities;
  - Adding partially functional CEmONC facilities into the analysis:

- Does not result in any increase of the number of LGAs passing the 90% benchmark and this independently from the travel time being considered.
- 5 LGAs (Akamkpa, Calabar South, Calabar-Municipal, Odukpani and Akpabuyo/Bakassi), all located in the Southern part of the State, present an accessibility coverage of 0% and one more a very low coverage of 8.9% (Biase) when considering 1 hour of travel time. These numbers reduce to 2 LGAs presenting a coverage of 0% (Calabar South and Akpabuyo/Bakassi) and 3 a very low coverage (Akamkpa, Calabar-Municipal and OdukpanI) when considering 2 hours of travel time;
- The LGAs that present the highest gain in accessibility coverage compare to the current situation are:
  - Abi (+51.4%), Yakurr (+52.5%), Yala (+20.8%) and Obubra (+15%) for 1 hour of travel time;
  - Odukpani (+19.2%) Calabar-Municipal (+15.3%) and Akamkpa (+15.3%) for 2 hours of travel time;
- 6 LGAs remain below the 90% benchmark after 4 hours of travel time: Yakurr, Obanliku, Etung, Biase, Boki and Akamkpa with once more the lowest value (55.8%);
- The important gap in accessibility coverage observed after two hours of travel time in the Southern part of the State is not being addressed by adding the partially functional CEmONC facilities (Figure 16);

5.3 Travel time between each BEmONC and the nearest CEmONC facility

The fourth module of AccessMod has then been used to measure the travel time between each BEmONC facility and the nearest CEmONC facility.

As per the assumptions reported in Chapter 2:

- CEmONC facilities have also been considered as BEmONC facilities and this for both fully and partially functional facilities. In this case, the referral travel time is of course equivalent to 0 as the patient is already on site of a CEmONC facility;
- health facilities having performed at least 30 deliveries over a year but not performing any EmONC signal functions have been considered for potential upgrade to become BEmONC facilities.

The total number of facilities considered for each group has therefore been has follow (Table 5):

- Fully functional facilities:
  - BEmONC facilities: 1
  - CEmONC, facilities: 5
- Fully and partially functional BEmONC facilities as well as facilities having performed at least 30 deliveries over a year but not performing any of the signal functions:

- BEmONC facilities: 116
- CEmONC facilities: 19

When it comes to fully functional facilities, Awukam Clinic (BEmONC) is less than 2 minutes away from the nearest CEmONC facility (Benson Clinic) but former does not have a functioning motor vehicle on site for the moment. Awukan Clinic could therefore contact Benson clinic by phone to get access to its functioning motorized vehicle. This would of course increase the referral time but it would remain below 5 minutes.

The analysis has been conducted in two phases when adding the partially and non-functional facilities to the fully functional ones.:

1. The travel time between each BEmONC and the nearest CEmONC facility has been measured using AccessMod. This result correspond to a situation where all the BEmONC facilities would have a functioning motor vehicle on site;
2. The information regarding the availability of a functioning motor vehicle and communication medias based on the approached used by Bailey et al. in their analysis of the EmONC referral system in Ethiopia [19]. The rules they used have nevertheless been modified as follow:
    a. If the BEmONC facility has a motorized vehicle on site, the transfer time is equal to the direct travel time to the nearest CEmONC facility;
    b. If the BEmONC facility do not have a motorized vehicle, but has access to a communication media (phone in this case) it has been considered that:
        - The BEmONC facility would contact the closest facility having both a functioning motor vehicle and phone;
        - The vehicle would be coming from the closest facility and would be transporting the patient to the closest CEmONC facility;
        - The total referral time would be equal to the travel time between the contacted facility and the BEmONC plus the travel time between the BEmONC facility and the nearest CEmONC facility;
    c. If the BEmONC facility has neither a motorized vehicle nor a means of communication (phone in this case) on site the same approach than in case 2 would be considered but an additional 30 minutes would be added to the calculation in order to account for the notification and response time.

Please note that, as it stands, only 24 facilities are having both a functioning motor vehicle and phone (landline or cell) on site (Annex 4).

The information used and the results for both phases of this analysis are reported in Annex 7.

When applying the above-mentioned rules to take the availability of a functioning motor vehicle and phone on site into account, and therefore be closer to the current situation, patients with complications:

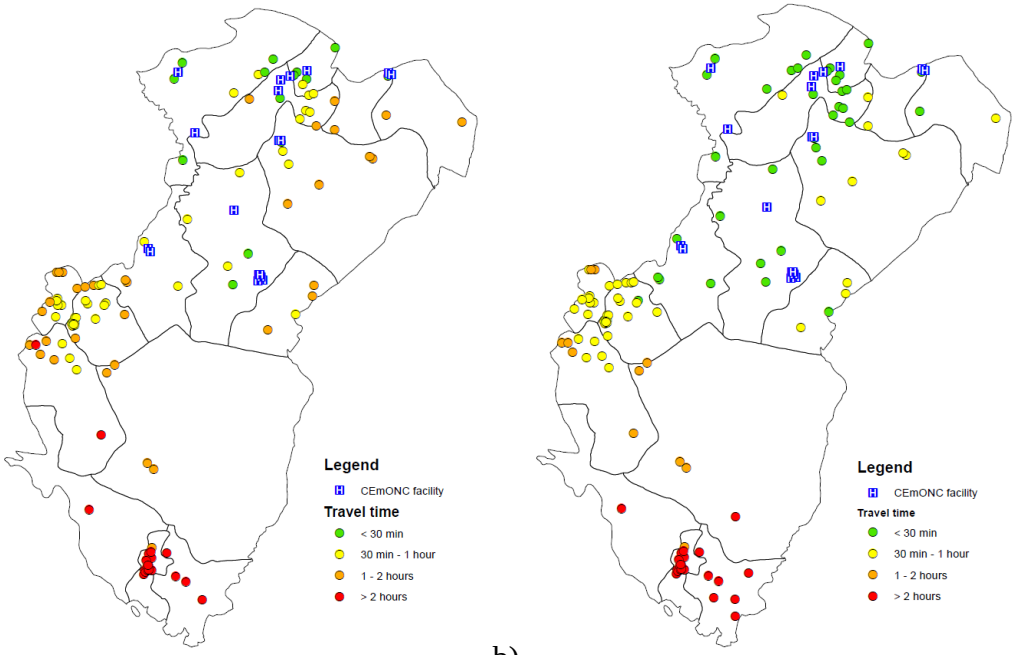
- The patients from 91 BEmONC facilities (78.4%) can reach the nearest CEmONC within 2 hours of travel time;

- For the remaining 25 BEmONC facilities the referral time varies between 2 and 3.2 hours (PHC Aningeje). The facilities in question are all located in the Southern part of the State (Figure 17a)

As expected, ensuring for a functioning motor vehicle to be available on site of each BEmONC facility would reduce the referral time to the nearest CEmONC facility. More specifically:

- 93 BEmONC facilities (80.1%) would be able to directly transport the patient with complications to the nearest CEmONC facility within 2 hours of travel time;
- For the remaining 23 facilities, the referral time would vary between 2 and 2.7 hours (Health centre Ikot-Ekpo) and would still be those previously observed in the Southern part of the State;
- Referral time would be reduced for 99 facilities. The reduction in question would vary between 1 and 80 minutes with a mean value of 22 minutes.
- Ensuring for a functioning phone (landline or mobile) to be available would further decrease referral time for 15 of these facilities

It is finally importtant to note that the limited number of CEmONC facilities and their geographic distribution might lead to a very important volume of referral in certain facilities. This is particular the case of Ekana Medical Centre which appears as being the nearest CEmONC for 71 BEmONC facilities.



a) b)

Figure 17 - Travel time from each BemONC facilities to the nearest CemONC facilities when considering a) the situation currently observed when it comes to the availability of functioning motor vehicle and communication media and b) the availability of functioning motor vehicle on site of all the BemONC facilities

6. Conclusions and recommendations

The analyses performed here aims at providing the SMGL initiative with a greater understanding of the accessibility to Basic and Comprehensive Emergency Obstetric and Neonatal Care (BEmONC/CEmONC) facilities among Local Government Areas (LGAs) in Cross-River State and this to help reducing delays in reaching care in a timely manner, one of the "three delays" associated with maternal and newborn deaths.

By applying the same set of indicators to different groups of health facilities these analyses do provide a picture of the current situation and help visualizing not only the impacts but also the gaps resulting from the upgrading of certain facilities to become fully functional BEmONC of CEmONC facilities.

Considering only the EmONC facilities identified as **fully functional** during the Health Facility Assessment (HFA) conducted between December 2014 and July 2015:

- At the State level:
  - the density of EmONC facilities is of 0.82 per 500,000 population and of 0.68 for CEmONC facilities;
  - 32.8% of pregnant women have physical access to a BEmONC, including CEmONC facility within 1 hour of travel time. This percentage increases to reach 52.4% for 2 hours, 82.3% for 3 hours and 90.9% for 4 hours of travel time;
  - The same percentage are observed when it comes to physical accessibility to CemONC facilities and this simply because 5 of the 6 fully functional BEmONC facilities appears to be CEmONC facilities as well and the last one is located in the close vicinity of a CEmONC facility.
- At the LGA level:
  - Important geographic disparities are observed as all the EmONC facilities are located in the Northern part of the State;
  - Accessibility coverage for BEmONC facilities:
    - Only 1 LGA (Bekwara) presents an accessibility coverage above the 90% benchmark after 1 hour of travel time. This number pass to 6 when considering 2 hours of travel time, 9 for 3 hours and 11 for 4 hours.
    - 7 LGAs (Akamkpa, Biase, Calabar South, Calabar-Municipal, Odukpani and Akpabuyo/Bakassi), all located in the Southern part of the State, present an accessibility coverage of 0% for 1 hour of travel time. This number reduces to 3 LGAs (Calabar South, Calabar-Municipal and Akpabuyo/Bakassi) and remains very low for 2 other ones (Odukpani and Akamkpa) when considering 2 hours of travel time;
    - The LGA remaining below the 90% benchmark even after 4 hours of travel time are: Yakurr, Obanliku, Etung, Boki and Akamkpa who present the lowest value with 52.1%;
  - Accessibility coverage for CEmONC facilities:
    - The same observations than for the BEmONC facilities apply here;
- The only fully functional BEmONC facility (Awukan Clinic) finds itself at less than 2 minutes away from the nearest fully functional CEmONC facility (Benson

clinic) but the absence of a functioning motorized ambulance on site result in the doubling of the travel time in case of referral, travel time that remains nevertheless very low.

In view of the above, the State of Cross River is currently:

- Not complying with the 2009 benchmark fixed by WHO, UNFPA, UNICEF and AMDD of having at least 5 EmONC facilities per 500'000 population with at least 1 of them being a CEmONC facility [2];
- Showing important geographic disparities at the LGA level in terms of density of EmONC facilities and indirectly accessibility coverage;
- Only reaching the 90% universal coverage target set by the ICPD for 2015 [15] after 4 hours of travel time for BEmONC facilities while the recommendation from the same handbook is to have basic and comprehensive facilities available within 2-3 hours of travel time;
- Complying to the benchmark of 2 hours when it comes to the maximum referral travel time between the BEmONC and the nearest CEmONC facility.

If all the facilities identified as being **partially functional or non-functional but performing at least 30 deliveries per year** as identified during the HFA would be made fully functional:

- At the State level:
  - the density EmONC facilities would reach 18.5 per 500,000 population and of 2.6 for CEmONC facilities;
  - 78.6% of pregnant women would have physical access to a BEmONC, including CEmONC facility within 1 hour of travel time. This percentage would increases to reach 88% for 2 hours, 91.9% for 3 hours and 94% for 4 hours of travel time;
  - 42 % of pregnant women would have physical access to a CEmONC facility with 1 hour, 57% within 2 hours, 87.1% within 3 hours and 91.9% within 4 hours;
- At the LGA level:
  - Geographic disparities would:
    - be reduced when it comes to BEmONC facilities but important inequities in terms of density of BEmONC facilities would remain;
    - remain for CEmONC facilities and this because they would still only be located in the Northern part of the State;
  - Accessibility coverage for BEmONC facilities:
    - 6 LGAs would be above the 90% benchmark for 1 hour of travel time. This number would rich 9 for 2 hours, 11 for 3 hours and 13 for 4 hours.
    - 2 LGAs (Akamkpa and Boki) would present an accessibility coverage below below 50% and 7 others (Biase, Etung, Obanliku, Obubra, Odukpani and Yakurr) below 75% for 1 hour of travel time. This number would reduce to 2 LGAs remaining below 75% after 2 hours (Akampkpa and Boki);
    - The 4 LGAs that would remain below the benchmark after 4 hours of travel time are: Obanliku, Etung, Boki and Akamkpa with once more the lowest value (64.2%);
  - Accessibility coverage for CEmONC facilities:

    - Only 1 LGA (Bekwara) would presents an accessibility coverage above the 90% benchmark for 1 hour of travel time. This number would pass to 6 for 2 hours, 9 for 3 hours and 11 for 4 hours;
    - 5 LGAs (Akamkpa, Calabar South, Calabar-Municipal, Odukpani and Akpabuyo/Bakassi), all located in the Southern part of the State, would present an accessibility coverage of 0% and one more a very low coverage of 8.9% (Biase) when considering 1 hour of travel time. These numbers would reduce to 2 LGAs presenting a coverage of 0% (Calabar South and Akpabuyo/Bakassi) and 3 a very low coverage (Akamkpa, Calabar-Municipal and OdukpanI) when considering 2 hours of travel time;
    - The LGAs that would present the highest gain in accessibility coverage compare to the current situation are:
        - for 1 hour of travel time: Abi (+51.4%), Yakurr (+52.5%), Yala (+20.8%) and Obubra (+15%);
        - for 2 hours of travel time: Odukpani (+19.2%) Calabar-Municipal (+15.3%) and Akamkpa (+15.3%) for 2 hours of travel time;
    - The LGAs that would remain below the 90% benchmark after 4 hours of travel time are: Yakurr, Obanliku, Etung, Biase, Boki and Akamkpa with once more the lowest value (55.8%);
- Referral time between BEmONC and CEmONC facilities:
    - When taking the availability of functioning motorized vehicle and communication media (phone) into account as per the HFA:
        - The patients from 91 BEmONC facilities (78.4%) can reach the nearest CEmONC within 2 hours of travel time but this is often dependent on a motor vehicle to come from another health facility;
        - For the remaining 25 BEmONC facilities the referral time varies between 2 and 3.2 hours (PHC Aningeje). The facilities in question are all located in the Southern part of the State (Figure 17a)
    - If a functioning motorized vehicle was available at the site of each BEmONC facility:
        - 93 BEmONC facilities (80.1%) would be able to directly transport the patient with complications to the nearest CEmONC facility within 2 hours of travel time;
        - For the remaining 23 facilities, the referral time would vary between 2 and 2.7 hours (Health centre Ikot-Ekpo) and would still be those previously observed in the Southern part of the State;
        - Referral time would be reduced for 99 facilities. The reduction in question would vary between 1 and 80 minutes with a mean value of 22 minutes;

In view of the above, upgrading the partially and non-functional facilities into fully functional EMONC facilities and ensuring the availability of a functioning motorized vehicle and/or phone on site would put the State of Cross River in the position to:

- Comply with the benchmark fixed by WHO, UNFPA, UNICEF and AMDD when it comes to the density of EmONC and CEmONC facilities [2];

- Reduce geographic disparities at the LGA level in terms of density of BEmONC but not CEmONC facilities;
- Be close to reach 90% of accessibility coverage within 2 hours of travel time for BEmONC facilities (88%) but would remain below that same benchmark when it comes to CEmONC facilities (57%) and this despite complying to the density of CEmONC facilities promoted by the 2009 handbook [2];
- See 80.1% of its BEmONC facility being within reach of a CEmONC facility within 2 hours of travel time.

The following limitations have nevertheless to be considered when looking at the above results:

1. The spatial distribution of pregnant women is based on a probabilistic model that redistributed the 2006 census population data down to a 90m square resolution grid. In addition to that, the model being used by WorldPop might have overspread population in LGAs where the road network density is low (Boki, Etung and Akamkpa);
2. The availability of EMONC services in the States neighboring the State of Cross River have not been taken into account either because the data collected was not comparable (Ebonyi) or because the HFA has not yet implemented in these States. It might therefore be that some EmONC facilities are close enough to the border of Cross River to have an influence on accessibility coverage especially in the Southern part of the State;
3. Temporal discrepancies might exist between the different datasets that have been used (see Chapter 4) and it is not possible to ensure that some of the layers such as the transportation and hydrographic network are complete and up-to-date. The classification of roads in the transportation network layer would also have deserved some further check;
4. Accessibility coverage only look at how accessible the service is in terms of travel time without taking into account if the facility has enough capacity (staff, equipment) to cover the demand.

Regarding the first and second point, the type of conducted here remains dependent on the data being available and working at improving those would unfortunately have a cost. This being said, it would be worth to add neighboring States in the analyses once covered by the HFA and to find out if more desegregated population data, down to the village level for example, would not be available for Nigeria as this would allow confirming the spread of the population in the above mentioned LGAs.

When it comes to the third point, the availability of health facility level data on human resources and equipment would allow for the performing of a geographic coverage analysis, analysis that combines physical accessibility and availability of services into one single measure. Such analysis is possible with AccessMod and would allow ensuring that the offer in terms of services meets the spatial distribution of the demand. This type of analysis would also help identifying potential over or under use of services and

therefore allow for the most cost-effective use and distribution of available or planned resources (human, material and financial).

Despite these limitations, the results presented here are already providing a first picture of the accessibility coverage offered by the EmONC facilities identified as fully functional during the 2014-2015 HFA as well as the impact that upgrading the partially functional and non-functional EmONC facility to become fully functional would have on that same coverage.

In this regards, it appears clearly from the results that:

- upgrading the partially functional BEmONC and non-functional facilities identified during the HFA to be fully functional would result in a reduction of the current geographic disparities observed for this service as well as in a significant improvement of accessibility coverage across the State;
- considering the establishment of few CEmONC facilities in the Southern Part of the State would be necessary to significantly reduce geographic disparities, improve accessibility to this service, ensure for all the BEmONC facilities in that part of the State to reach a CEmONC facility within 2 hours of travel time and indirectly reduce the load on other facilities located in the central part of the State. AccessMod could help identifying the most appropriate location for these additional CEmONC facilities.

Working at checking the geographic component of the HFA data during the course of this project also leads to a set of recommendations, more precisely for USAID to:

- Advocate for a complete, up-to-date and uniquely coded health facility registry to be developed and maintained by the federal ministry of health;
- Use this registry as the reference for any other health facilities level related work in the country (survey, analysis,...)
- Develop a section specific to the collection of the geographic information in the HFA data management guidelines and to improve the geographic component of the HFA questionnaire;
- Homogenise data collection methods in countries, especially when implemented by different partners and this starting with the selection of the health facilities to be covered in order to ensure compatibility between States and the use of GPS devices for the collection of geographic coordinates.

The guidelines currently under development by the Asian eHealth Health Information Network (AeHIN) GIS Lab[5] in close collaboration with Mahidol Oxford Tropical Medicine Research Unit (MORU) in Bangkok and the USAID's GeoCenter could serve as the basis for the implementation of these recommendations.

[5] Regional center established by ADB and WHO with the support of the private sector to guide and support Ministries of Health in Asia and the Pacific to benefit from GIS capacities through the geo-enabling of their health information systems.

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Annex 1 – State level population - 2006 census, 2010 and 2015 projections

State code	State name	Total population (2006 census)	Inter- census Growth rate (2006 census)	2010 projected population based on census growth rate	2010 UN adjusted projected population	2015 projected population based on census growth rate	2015 UN adjusted projected population
NGA001	Abia	2,845,380	2.77	3,173,991	3,175,145	3,638,627	3,547,922
NGA002	Adamawa	3,178,950	2.89	3,562,676	3,563,971	4,108,111	4,005,702
NGA003	Akwa Ibom	3,902,051	3.36	4,453,515	4,455,134	5,253,702	5,122,736
NGA004	Anambra	4,177,828	2.8	4,665,767	4,667,463	5,356,592	5,223,061
NGA005	Bauchi	4,653,066	3.39	5,316,837	5,318,770	6,281,249	6,124,668
NGA006	Bayelsa	1,704,515	2.92	1,912,493	1,913,188	2,208,507	2,153,452
NGA007	Benue	4,253,641	3.04	4,794,952	4,796,695	5,569,465	5,430,627
NGA008	Borno	4,171,104	3.47	4,780,891	4,782,629	5,669,974	5,528,631
NGA009	Cross River	2,892,988	2.89	3,242,196	3,243,375	3,738,567	3,645,371
NGA010	Delta	4,112,445	3.22	4,668,265	4,669,962	5,469,842	5,333,488
NGA011	Ebonyi	2,176,947	2.82	2,433,090	2,433,974	2,796,058	2,726,357
NGA012	Edo	3,233,366	2.78	3,608,189	3,609,501	4,138,399	4,035,235
NGA013	Ekiti	2,398,957	3.11	2,711,600	2,712,586	3,160,309	3,081,528
NGA014	Enugu	3,267,837	3	3,677,979	3,679,316	4,263,786	4,157,497
NGA015	Federal Capital Territory	1,406,239	9.28	2,005,496	2,006,225	3,125,542	3,047,627
NGA016	Gombe	2,365,040	3.23	2,685,729	2,686,705	3,148,414	3,069,929
NGA017	Imo	3,927,563	3.19	4,453,214	4,454,833	5,210,287	5,080,403
NGA018	Jigawa	4,361,002	2.91	4,891,213	4,892,991	5,645,527	5,504,793
NGA019	Kaduna	6,113,503	3.07	6,899,526	6,902,034	8,025,657	7,825,590
NGA020	Kano	9,401,288	3.36	10,729,942	10,733,842	12,657,848	12,342,308
NGA021	Katsina	5,801,584	3.04	6,539,883	6,542,260	7,596,250	7,406,888
NGA022	Kebbi	3,256,541	3.17	3,689,523	3,690,864	4,312,583	4,205,077
NGA023	Kogi	3,314,043	3.03	3,734,332	3,735,689	4,335,423	4,227,348
NGA024	Kwara	2,365,353	2.96	2,658,093	2,659,059	3,075,479	2,998,812
NGA025	Lagos	9,113,605	3.24	10,353,381	10,357,144	12,142,893	11,840,190
NGA026	Nasarawa	1,869,377	3.05	2,108,089	2,108,855	2,449,790	2,388,721
NGA027	Niger	3,954,772	3.42	4,524,177	4,525,821	5,352,569	5,219,138
NGA028	Ogun	3,751,140	3.31	4,272,998	4,274,551	5,028,570	4,903,216
NGA029	Ondo	3,460,877	3.01	3,896,760	3,898,176	4,519,607	4,406,940
NGA030	Osun	3,416,959	3.21	3,877,277	3,878,686	4,540,836	4,427,640
NGA031	Oyo	5,580,894	3.35	6,367,159	6,369,473	7,507,548	7,320,397
NGA032	Plateau	3,206,531	2.94	3,600,577	3,601,886	4,161,912	4,058,162
NGA033	Rivers	5,198,716	3.41	5,944,923	5,947,084	7,030,058	6,854,810
NGA034	Sokoto	3,702,676	3.03	4,172,252	4,173,769	4,843,831	4,723,082
NGA035	Taraba	2,294,800	2.91	2,573,802	2,574,738	2,970,729	2,896,673
NGA036	Yobe	2,321,339	3.53	2,666,880	2,667,849	3,172,010	3,092,937
NGA037	Zamfara	3,278,873	3.2	3,719,147	3,720,499	4,353,533	4,245,006
	Country level	140,431,790	3.183	159,366,814	159,424,742	186,860,084	182,201,962

Annex 2 – LGA level population and number of pregnant women for the Cross River State

LGA code	LGA name	2006	2010 projected population based on census growth rate	2010 UN adjusted projected population	2010 estimated number of pregnant women	2015 projected population based on census growth rate	2015 UN adjusted projected population	2015 estimated number of pregnant women
NGA038001	Abi	144,317	161,737	161,796	8,090	186,499	181,850	9,092
NGA038002	Akamkpa	149,705	167,776	167,837	8,392	193,462	188,639	9,432
NGA038XXX	Akpabuyo/Bakassi	303,903	340,587	340,711	17,036	392,729	382,939	19,147
NGA038005	Bekwara	105,497	118,231	118,274	5,914	136,332	132,934	6,647
NGA038006	Biase	168,113	188,406	188,474	9,424	217,250	211,834	10,592
NGA038007	Boki	186,611	209,137	209,213	10,461	241,155	235,143	11,757
NGA038008	Calabar South	191,515	214,632	214,711	10,736	247,492	241,323	12,066
NGA038009	Calabar-Municipal	183,681	205,853	205,928	10,296	237,368	231,451	11,573
NGA038010	Etung	80,036	89,697	89,730	4,486	103,429	100,851	5,043
NGA038011	Ikom	163,691	183,450	183,517	9,176	211,536	206,262	10,313
NGA038012	Obanliku	109,633	122,867	122,911	6,146	141,677	138,145	6,907
NGA038013	Obubra	172,543	193,370	193,441	9,672	222,975	217,416	10,871
NGA038014	Obudu	161,457	180,946	181,012	9,051	208,649	203,447	10,172
NGA038015	Odukpani	192,884	216,167	216,245	10,812	249,261	243,048	12,152
NGA038016	Ogoja	171,574	192,284	192,354	9,618	221,723	216,195	10,810
NGA038017	Yakurr	196,271	219,963	220,043	11,002	253,638	247,315	12,366
NGA038018	Yala	211,557	237,094	237,180	11,859	273,392	266,577	13,329
	Total	**2,892,988**	**3,242,196**	**3,243,375**	**162,169**	**3,738,567**	**3,645,371**	**182,269**

Annex 3 - Facilities considered in the different analyses

Unique ID	Data collection date	LGA Code	LGA Name	Facility name	Facility level	Facility type	Operating agency	Latitude	Longitude	Northing	Easting	Source lat/long	Administer parental antibiotics	Administer uterotonic drugs	Administer parental anticonvulsants for pre-eclampsia and eclampsia	Manually remove the placenta	Remove retained products	Perform assisted vaginal delivery	Perform basic neonatal resuscitation	Perform C-Sections	Perform blood transfusion	Number BEmONC signal functions	Number CEmONC signal functions	EmONC Status
1095	03.07.15	NGA038011	Ikom	AWUKAM CLINIC	Secondary Facility	Private Hospital	Private for profit	5.974415	8.723445	660384.04	469392.27	HFA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	7	0	Fully functional BEmONC
1152	16.06.15	NGA038007	Boki	OMEGA CLINIC	Secondary Facility	Private Hospital	Private for profit	6.441505	8.787705	712014.77	476524.97	HFA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	2	Fully functional CEmONC
1117	18.06.15	NGA038011	Ikom	EYO MEDICAL CENTER	Secondary Facility	Private Hospital	Private for profit	6.201763	8.632403	685522.06	459333.18	HFA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	2	Fully functional CEmONC
1097	02.07.15	NGA038011	Ikom	BENSON CLINIC	Secondary Facility	Private Hospital	Private for profit	5.963470	8.724621	659174.07	469521.82	HFA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	2	Fully functional CEmONC
1426	16.06.15	NGA038014	Obudu	SACRED HEART HOSPITAL	Secondary Facility	Faith Based Hospital	Faith Based Organization	6.674560	9.167732	737776.00	518538.74	HFA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	2	Fully functional CEmONC
1452	15.06.15	NGA038016	Ogoja	MATERNITY HOSP MONIAYA	Secondary Facility	Faith Based Hospital	Faith Based Organization	6.664540	8.826330	736668.56	480804.57	HFA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	2	Fully functional CEmONC
2286	09.12.14	NGA038001	Abi	COMPREHENSIVE H.C EDIBA	Primary Facility	LGA PH Centre	Government	5.872103	8.037261	649158.20	393424.71	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2289	09.12.14	NGA038001	Abi	HEALTH CLINIC USUMUTONG	Primary Facility	LGA PH Centre	Government	5.830910	8.017333	644607.83	391210.50	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2278	08.12.14	NGA038001	Abi	P.H.C EDIBA	Primary Facility	LGA PH Centre	Government	5.871304	8.024333	649072.34	391993.29	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2282	08.12.14	NGA038001	Abi	P.H.C ADADAMA ATANI	Primary Facility	LGA PH Centre	Government	5.928825	8.090716	655419.24	399352.92	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2129	05.12.14	NGA038001	Abi	HEALTH CENTER ANONG EZEKE	Primary Facility	LGA PH Centre	Government	5.985415	8.040186	661685.10	393770.21	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2128	05.12.14	NGA038001	Abi	EJA MEMORIAL JOINT HOSPIT	Secondary Facility	State Hospital	Government	5.894595	8.023126	651647.57	391864.16	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2134	04.12.14	NGA038001	Abi	HEALTH CENTER AGBARA	Primary Facility	LGA PH Centre	Government	5.984973	8.019946	661640.19	391529.80	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2138	03.12.14	NGA038001	Abi	HEALTH CENTER NGARABE	Primary Facility	LGA PH Centre	Government	5.985900	8.027106	661741.27	392322.51	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2133	02.12.14	NGA038001	Abi	PHC EMIN EBOL	Primary Facility	LGA PH Centre	Government	5.887988	8.019435	650917.83	391454.26	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2305	17.12.14	NGA038001	Abi	MODEL PHC IMABANA	Primary Facility	LGA PH Centre	Government	5.940108	8.148226	656656.51	405720.99	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2316	16.12.14	NGA038001	Abi	IKPALEGWA PHC	Primary Facility	LGA PH Centre	Government	5.934571	8.118416	656049.53	402420.23	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2314	15.12.14	NGA038001	Abi	AFAFANYI PHC	Primary Facility	LGA PH Centre	Government	5.882461	7.996755	650311.24	388942.30	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2283	10.12.14	NGA038001	Abi	P.H.C EBOM	Primary Facility	LGA PH Centre	Government	5.849991	7.970423	646726.68	386020.49	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2227	08.12.14	NGA038002	Akamkpa	PHC ANINGEJE	Primary Facility	LGA PH Centre	Government	5.137053	8.525918	567833.42	447456.43	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2115	05.12.14	NGA038002	Akamkpa	PHC IKO EKPEREM	Primary Facility	LGA PH Centre	Government	5.638392	8.193974	623293.58	410737.64	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2116	05.12.14	NGA038002	Akamkpa	PHC IKO ESAI	Primary Facility	LGA PH Centre	Government	5.665510	8.221194	626287.40	413756.28	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2108	02.12.14	NGA038002	Akamkpa	PHC AKAMKPA	Primary Facility	LGA PH Centre	Government	5.305735	8.356281	586496.99	428673.57	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2219	01.12.14	NGA038002	Akamkpa	GENERAL HOSPITAL	Secondary Facility	State Hospital	Government	5.326641	8.334419	588810.64	426253.56	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2254	08.12.14	NGA038019	Akpabuyo	PHC IDUNDU	Primary Facility	LGA PH Centre	Government	5.015018	8.401325	554354.67	433634.59	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2255	08.12.14	NGA038019	Akpabuyo	HEALTH CENTRE IKOT-EKPO	Primary Facility	LGA PH Centre	Government	4.944837	8.570333	546582.06	452365.14	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2258	08.12.14	NGA038019	Akpabuyo	PHC IDEBE IKOT WAKANDA	Primary Facility	LGA PH Centre	Government	4.859439	8.450851	537151.65	439110.72	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2162	02.12.14	NGA038019	Akpabuyo	PHC IKOT OFFIONG AMBAI	Primary Facility	LGA PH Centre	Government	4.934597	8.432259	545461.58	437056.22	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2320	01.12.14	NGA038019	Akpabuyo	ST JOSEPH HOSPITAL	Secondary Facility	State Hospital	Government	4.915781	8.467512	543378.38	440963.07	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2297	09.12.14	NGA038020	Bakassi	HEALTH CENTRE IKOT IWANG	Primary Facility	LGA PH Centre	Government	4.853053	8.524206	536439.57	447243.98	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2126	01.12.14	NGA038020	Bakassi	PHC IKANG CENTRAL	Primary Facility	LGA PH Centre	Government	4.795866	8.525158	530117.95	447345.14	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2181	05.12.14	NGA038006	Biase	URUGBAM PHC	Primary Facility	LGA PH Centre	Government	5.734100	7.927100	633922.69	381199.65	NMIS	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2178	05.12.14	NGA038006	Biase	PHC ABANWAN	Primary Facility	LGA PH Centre	Government	5.701572	7.964546	630318.80	385339.96	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2182	05.12.14	NGA038006	Biase	AFONO HEALTH CENTER	Primary Facility	LGA PH Centre	Government	5.733997	7.948224	633906.96	383538.92	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2176	02.12.14	NGA038006	Biase	ABARIBARA HEALTH CENTRE	Primary Facility	LGA PH Centre	Government	5.747997	7.984431	635447.55	387551.21	NMIS	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2333	17.12.14	NGA038006	Biase	PHC AKPET 1	Primary Facility	LGA PH Centre	Government	5.647862	8.090072	624357.46	399231.87	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2334	17.12.14	NGA038006	Biase	PHC, IWURU	Primary Facility	LGA PH Centre	Government	5.422924	8.174747	599476.21	408575.15	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2344	15.12.14	NGA038006	Biase	PHC AGWAGUNE	Primary Facility	LGA PH Centre	Government	5.683088	8.012346	628265.98	390630.08	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2345	15.12.14	NGA038006	Biase	PHC ADIM	Primary Facility	LGA PH Centre	Government	5.737968	8.040475	634328.07	393755.41	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2201	01.12.14	NGA038006	Biase	PHC ABINI	Primary Facility	LGA PH Centre	Government	5.687897	8.065925	628787.78	396564.66	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2157	04.12.14	NGA038008	Calabar South	BLESSED SEATOE CLINIC	Secondary Facility	Private Hospital	Private for profit	4.941050	8.322250	546186.34	424860.05	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2248	10.12.14	NGA038008	Calabar South	PHC EKPO ABASI	Primary Facility	LGA PH Centre	Government	4.955272	8.324747	547758.24	425138.50	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2156	01.12.14	NGA038008	Calabar South	EVANGEL MODEL CLINIC	Secondary Facility	Private Hospital	Private for profit	4.949373	8.327463	547105.82	425438.96	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2370	09.12.14	NGA038009	Calabar-Municipal	HEALTH CENTRE IKOT ISHIE	Primary Facility	LGA PH Centre	Government	4.992150	8.338280	551833.43	426642.97	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2371	08.12.14	NGA038009	Calabar-Municipal	UCTH	Tertiary Facility	Teaching Hospital	Government	4.955490	8.349760	547779.57	427911.69	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2234	04.12.14	NGA038009	Calabar-Municipal	IKOT ANSA PHC	Primary Facility	LGA PH Centre	Government	5.011600	8.339590	553983.40	426790.36	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2107	03.12.14	NGA038009	Calabar-Municipal	FAITH FOUNDATION CLINIC	Secondary Facility	Private Hospital	Private for profit	4.971390	8.339498	549538.37	426775.71	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2231	03.12.14	NGA038009	Calabar-Municipal	IMMANUEL INFORMARY	Secondary Facility	Faith Based Hospital	Private for profit	5.034500	8.351020	556513.63	428060.00	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2101	03.12.14	NGA038009	Calabar-Municipal	CANNAN CLINIC	Secondary Facility	Private Hospital	Private for profit	4.966860	8.333980	549038.21	426163.44	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2106	02.12.14	NGA038009	Calabar-Municipal	AMAZING GRACE SPECIALIST	Secondary Facility	Private Hospital	Private for profit	4.998143	8.349904	552494.65	427932.30	NMIS	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2235	02.12.14	NGA038009	Calabar-Municipal	MARY MOTHER OF MERCY CLNC	Secondary Facility	Private Hospital	Private for profit	4.989970	8.330130	551593.36	425739.19	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2363	17.12.14	NGA038009	Calabar-Municipal	GENERAL HOSPITAL	Secondary Facility	State Hospital	Government	4.953550	8.336100	547566.61	426397.00	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2362	16.12.14	NGA038009	Calabar-Municipal	AKIM HEALTH CENTRE	Primary Facility	LGA PH Centre	Government	4.957820	8.339690	548038.24	426795.50	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2242	11.12.14	NGA038009	Calabar-Municipal	146 BATALLION MEDICAL CEN	Primary Facility	Federal PHC	Government	5.019110	8.346840	554812.80	427594.92	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2191	01.12.14	NGA038009	Calabar-Municipal	VICTORIA ITAM SPECI HOSP	Secondary Facility	Private Hospital	Private for profit	4.972910	8.336870	549706.69	426484.52	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2211	05.12.14	NGA038015	Odukpani	PHC USUNG ESUK	Primary Facility	LGA PH Centre	Government	5.164722	8.133056	570937.90	403916.26	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2208	09.12.14	NGA038017	Yakurr	PHC NKO	Primary Facility	LGA PH Centre	Government	5.879061	8.189513	649900.74	410281.34	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2209	09.12.14	NGA038017	Yakurr	PHC EKORI	Primary Facility	LGA PH Centre	Government	5.876839	8.127761	649665.37	403444.68	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2368	08.12.14	NGA038017	Yakurr	PHC IDOMI	Primary Facility	LGA PH Centre	Government	5.757332	8.085312	636460.74	398723.89	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2377	08.12.14	NGA038017	Yakurr	GENERAL HOSPITAL UGEP	Secondary Facility	State Hospital	Government	5.808381	8.072377	642106.80	397300.79	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2148	03.12.14	NGA038017	Yakurr	PHC UGEP	Primary Facility	LGA PH Centre	Government	5.813153	8.077185	642633.50	397834.00	NMIS	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2144	02.12.14	NGA038017	Yakurr	DANEX MEDICAL CENTRE UGEP	Secondary Facility	Private Hospital	Private for profit	5.798801	8.075912	641047.04	397690.46	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2147	02.12.14	NGA038017	Yakurr	PHC NTANKPO	Primary Facility	LGA PH Centre	Government	5.828046	8.082767	644279.00	398454.71	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2150	02.12.14	NGA038017	Yakurr	PHC ASSIGA	Primary Facility	LGA PH Centre	Government	5.940602	8.165554	656708.20	407639.17	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2146	02.12.14	NGA038017	Yakurr	HEALTH POST KETABEBE	Primary Facility	LGA PH Post	Government	5.809214	8.082963	642196.98	398473.03	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2374	18.12.14	NGA038017	Yakurr	ANSOR CLINIC	Secondary Facility	Private Hospital	Private for profit	5.827816	8.088056	644252.62	399040.26	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2350	16.12.14	NGA038017	Yakurr	PHC AGOI EKPO	Primary Facility	LGA PH Centre	Government	5.839627	8.255458	645531.13	417575.91	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC
2348	15.12.14	NGA038017	Yakurr	IJIMAN PHC	Primary Facility	LGA PH Centre	Government	5.802759	8.082657	641483.40	398438.00	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partialy functional BEmONC

Nigeria - Accessibility to EmONC facilities for the Cross River State

Unique ID	Data collection date	LGA Code	LGA Name	Facility name	Facility level	Facility type	Operating agency	Latitude	Longitude	Northing	Easting	Source lat/long	Administer parental antibiotics	Administer uterotonic drugs	Administer parental anticonvulsants for pre-eclampsia and eclampsia	Manually remove the placenta	Remove retained products	Perform assisted vaginal delivery	Perform basic neonatal resuscitation	Perform C-Sections	Perform blood transfusion	Number BEmONC signal functions	Number CEmONC signal functions	EmONC Status
2376	15.12.14	NGA038017	Yakurr	PHC OKOMASI	Primary Facility	LGA PH Centre	Government	5.871285	8.184539	649041.88	409729.45	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partially functional BEmONC
2366	14.12.14	NGA038017	Yakurr	PHC AJERE	Primary Facility	LGA PH Centre	Government	5.887033	8.120079	650793.69	402596.01	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partially functional BEmONC
2202	12.12.14	NGA038017	Yakurr	PHC MKPANI	Primary Facility	LGA PH Centre	Government	5.825173	8.154821	643948.92	406431.81	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partially functional BEmONC
2205	10.12.14	NGA038017	Yakurr	HEALTH POST ASSIGA OLD TO	Primary Facility	LGA PH Post	Government	5.942335	8.173504	656898.47	408519.46	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partially functional BEmONC
2142	01.12.14	NGA038017	Yakurr	UBI MEDICAL CONSULT	Secondary Facility	Private Hospital	Private for profit	5.807777	8.078539	642038.91	397982.94	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partially functional BEmONC
2143	01.12.14	NGA038017	Yakurr	ANGELS' CLINIC	Secondary Facility	Private Hospital	Private for profit	5.803851	8.078733	641604.83	398003.72	HFA	Yes	Yes	Yes	Yes	Yes	No	No	No	No	5	0	Partially functional BEmONC
1331	08.07.15	NGA038018	Yala	CHC WANIKADE	Primary Facility	LGA PH Centre	Government	6.654494	8.425545	735591.54	436504.29	HFA	Yes	Yes	No	Yes	Yes	Yes	No	No	No	5	0	Partially functional BEmONC
1126	24.06.15	NGA038007	Boki	MODEL PHC KATCHUAN IRRUAN	Primary Facility	LGA PH Centre	Government	6.491397	8.917782	717525.90	490909.46	HFA	Yes	Yes	No	Yes	No	Yes	No	No	No	4	0	Partially functional BEmONC
1137	23.06.15	NGA038007	Boki	HEALTH POST MGBABESHA	Primary Facility	LGA PH Post	Government	6.378900	9.113125	705090.66	512510.57	HFA	Yes	Yes	No	Yes	Yes	No	No	No	No	4	0	Partially functional BEmONC
1154	16.06.15	NGA038007	Boki	PHC OKUNDI	Primary Facility	LGA PH Centre	Government	6.435666	8.796233	711368.92	477467.73	HFA	No	Yes	No	Yes	Yes	No	Yes	No	No	4	0	Partially functional BEmONC
1267	16.06.15	NGA038010	Etung	PHC CENTRE AJASSOR	Primary Facility	LGA PH Centre	Government	5.841191	8.846861	645651.83	483047.33	HFA	Yes	Yes	No	Yes	Yes	No	No	No	No	4	0	Partially functional BEmONC
1071	23.06.15	NGA038011	Ikom	PHC OFUN NTA	Primary Facility	LGA PH Centre	Government	6.169933	8.472128	682018.30	441598.24	HFA	Yes	Yes	Yes	Yes	No	No	No	No	No	4	0	Partially functional BEmONC
1111	22.06.15	NGA038011	Ikom	PHC EMANGABE	Primary Facility	LGA PH Centre	Government	6.329881	8.652506	699683.40	461566.55	HFA	Yes	Yes	Yes	Yes	No	No	No	No	No	4	0	Partially functional BEmONC
1230	18.06.15	NGA038013	Obubra	PRIMARY HEALTH C ABABENE	Primary Facility	LGA PH Centre	Government	5.951866	8.263035	657938.13	418431.16	HFA	Yes	Yes	No	Yes	Yes	No	No	No	No	4	0	Partially functional BEmONC
1481	06.07.15	NGA038016	Ogoja	PMC IBIL 1	Primary Facility	LGA PH Centre	Government	6.516718	8.861100	720326.36	484643.10	HFA	Yes	Yes	No	Yes	Yes	No	No	No	No	4	0	Partially functional BEmONC
1317	15.06.15	NGA038018	Yala	PHC OLACHOR	Primary Facility	LGA PH Centre	Government	6.604801	8.632533	730076.33	459379.43	HFA	Yes	Yes	Yes	Yes	No	No	No	No	No	4	0	Partially functional BEmONC
1324	07.07.15	NGA038018	Yala	ELAHEN HEALTH CENTRE	Primary Facility	Faith Based Health Centre	Faith Based Organization	6.677994	8.438693	738187.80	437960.57	HFA	Yes	Yes	Yes	No	No	Yes	No	No	No	4	0	Partially functional BEmONC
1140	25.06.15	NGA038007	Boki	PHC BANSAN OSKOM	Primary Facility	LGA PH Centre	Government	6.360175	8.822897	703022.71	480413.33	HFA	Yes	Yes	No	No	No	Yes	No	No	No	3	0	Partially functional BEmONC
1138	23.06.15	NGA038007	Boki	PRIMARY HC CLINIC WULA	Primary Facility	LGA PH Centre	Government	6.386346	9.102603	705913.53	511346.77	HFA	Yes	Yes	No	No	Yes	No	No	No	No	3	0	Partially functional BEmONC
1184	22.06.15	NGA038007	Boki	PHC OKUBUCHI IRRUAN	Primary Facility	LGA PH Centre	Government	6.478562	8.981091	716106.36	497909.25	HFA	Yes	Yes	No	No	Yes	No	No	No	No	3	0	Partially functional BEmONC
1193	02.07.15	NGA038007	Boki	PHC ISOBENDEGHE	Primary Facility	LGA PH Centre	Government	6.223227	8.818961	687884.10	479972.78	HFA	Yes	No	No	Yes	Yes	No	No	No	No	3	0	Partially functional BEmONC
1271	15.06.15	NGA038010	Etung	PRIMARY HEALTH C AGBOKIM	Primary Facility	LGA PH Centre	Government	5.903102	8.904362	652494.18	489413.94	HFA	Yes	Yes	No	Yes	No	No	No	No	No	3	0	Partially functional BEmONC
1061	25.06.15	NGA038011	Ikom	PHC NDE	Primary Facility	LGA PH Centre	Government	6.050265	8.682335	668771.25	464847.25	HFA	Yes	Yes	No	No	Yes	No	No	No	No	3	0	Partially functional BEmONC
1011	02.07.15	NGA038012	Obanliku	NKST PHC	Primary Facility	Faith Based Health Centre	Faith Based Organization	6.504666	9.422244	719011.46	546685.14	HFA	Yes	Yes	Yes	No	No	No	No	No	No	3	0	Partially functional BEmONC
1224	19.06.15	NGA038013	Obubra	HEALTH FACILITY OFAT	Primary Facility	LGA PH Post	Government	5.958665	8.257981	658690.52	417872.75	HFA	No	Yes	No	Yes	No	Yes	No	No	No	3	0	Partially functional BEmONC
1238	17.06.15	NGA038013	Obubra	PHC OCHONG	Primary Facility	LGA PH Centre	Government	5.937079	8.439323	656280.56	437942.14	HFA	No	Yes	No	Yes	Yes	No	No	No	No	3	0	Partially functional BEmONC
1340	18.06.15	NGA038018	Yala	HEALTH CENTER IGBEKURIKOR	Primary Facility	LGA PH Centre	Government	6.670102	8.717500	737288.98	468776.06	HFA	Yes	Yes	No	No	No	Yes	No	No	No	3	0	Partially functional BEmONC
1494	23.06.15	NGA038005	Bekwara	PHC UGBORO	Primary Facility	LGA PH Centre	Government	6.677050	8.850730	738050.60	483501.88	HFA	Yes	Yes	No	No	No	No	No	No	No	2	0	Partially functional BEmONC
1492	23.06.15	NGA038005	Bekwara	UTUKWE HEALTH POST	Primary Facility	LGA PH Post	Government	6.664413	8.834933	736654.20	481755.44	HFA	Yes	Yes	No	No	No	No	No	No	No	2	0	Partially functional BEmONC
1502	18.06.15	NGA038005	Bekwara	AGIM HEALTH POST	Primary Facility	LGA PH Post	Government	6.652964	8.884295	735387.01	487211.05	HFA	Yes	Yes	No	No	No	No	No	No	No	2	0	Partially functional BEmONC
1506	16.06.15	NGA038005	Bekwara	ANYIKANG ROADSIDE H.CENTR	Primary Facility	LGA PH Centre	Government	6.665864	8.839495	736814.43	482259.72	HFA	No	Yes	No	Yes	No	No	No	No	No	2	0	Partially functional BEmONC
1133	15.06.15	NGA038007	Boki	PRY HEALTH CENTRE OGEP	Primary Facility	LGA PH Centre	Government	6.404529	8.801811	707926.65	478083.20	HFA	Yes	Yes	No	No	No	No	No	No	No	2	0	Partially functional BEmONC
1262	18.06.15	NGA038010	Etung	PRIMARY HEALTH C ITAKA	Primary Facility	LGA PH Centre	Government	5.787522	8.749983	639722.97	472320.15	HFA	Yes	Yes	No	No	No	No	No	No	No	2	0	Partially functional BEmONC
1269	17.06.15	NGA038010	Etung	PRIMARY HEALTH C ABIA	Primary Facility	LGA PH Centre	Government	5.941286	8.909657	656715.02	490000.72	HFA	No	Yes	No	Yes	No	No	No	No	No	2	0	Partially functional BEmONC
1103	16.06.15	NGA038011	Ikom	MODEL PHC OKINI	Primary Facility	LGA PH Centre	Government	5.943430	8.629505	656964.93	458993.04	HFA	Yes	Yes	No	No	No	No	No	No	No	2	0	Partially functional BEmONC
1107	16.06.15	NGA038011	Ikom	PRIMARY HEALTH CTR EKPOKP	Primary Facility	LGA PH Centre	Government	6.005985	8.611668	663881.40	457023.66	HFA	Yes	Yes	No	No	No	No	No	No	No	2	0	Partially functional BEmONC
1217	16.06.15	NGA038013	Obubra	OBUBRA VILLAGE HEALTH PST	Primary Facility	LGA PH Post	Government	6.092038	8.322787	673425.67	425064.17	HFA	Yes	Yes	No	No	No	No	No	No	No	2	0	Partially functional BEmONC
1477	19.06.15	NGA038016	Ogoja	PHC EKUMTAK	Primary Facility	LGA PH Centre	Government	6.545299	8.881811	723485.26	486933.67	HFA	No	Yes	No	Yes	No	No	No	No	No	2	0	Partially functional BEmONC
1460	17.06.15	NGA038016	Ogoja	NDOK HEALTH CENTRE	Primary Facility	LGA PH Centre	Government	6.586541	8.792423	728047.57	477053.27	HFA	Yes	No	No	Yes	No	No	No	No	No	2	0	Partially functional BEmONC
1332	08.07.15	NGA038018	Yala	PRIMARY HEALTH C UGAGA	Primary Facility	LGA PH Centre	Government	6.677454	8.739429	738100.38	471200.26	HFA	Yes	No	No	No	Yes	No	No	No	No	2	0	Partially functional BEmONC
1352	22.06.15	NGA038018	Yala	PHC MFUMA	Primary Facility	LGA PH Centre	Government	6.373654	8.456308	704541.05	439871.27	HFA	Yes	Yes	No	No	No	No	No	No	No	2	0	Partially functional BEmONC
1300	16.06.15	NGA038018	Yala	PHC OKUKU	Primary Facility	LGA PH Centre	Government	6.721803	8.768738	743001.37	474441.98	HFA	Yes	No	No	Yes	No	No	No	No	No	2	0	Partially functional BEmONC
1287	02.07.15	NGA038018	Yala	C.H.C WANIHEM	Primary Facility	LGA PH Centre	Government	6.710463	8.454355	741775.30	439695.67	HFA	Yes	Yes	No	No	No	No	No	No	No	2	0	Partially functional BEmONC
1495	22.06.15	NGA038005	Bekwara	OCHAGBE PHC	Primary Facility	LGA PH Centre	Government	6.597102	8.891931	729211.56	488053.72	HFA	Yes	No	No	No	No	No	No	No	No	1	0	Partially functional BEmONC
1518	19.06.15	NGA038005	Bekwara	KADUNA HEALTH POST	Primary Facility	LGA PH Post	Government	6.603927	8.907898	729965.67	489818.90	HFA	No	Yes	No	No	No	No	No	No	No	1	0	Partially functional BEmONC
1519	19.06.15	NGA038005	Bekwara	ABUBE HEALTH FACILITY	Primary Facility	LGA PH Post	Government	6.634926	8.871070	733393.36	485748.76	HFA	Yes	No	No	No	No	No	No	No	No	1	0	Partially functional BEmONC
1430	06.07.15	NGA038014	Obudu	KUTIANG 2 HEALTH POST	Primary Facility	LGA PH Post	Government	6.529528	9.160174	721743.14	517708.53	HFA	Yes	No	No	No	No	No	No	No	No	1	0	Partially functional BEmONC
1450	24.06.15	NGA038016	Ogoja	OGBERIA-OGANG HC MBUBE	Primary Facility	LGA PH Centre	Government	6.578093	8.981231	727108.96	497925.14	HFA	No	No	No	No	Yes	No	No	No	No	1	0	Partially functional BEmONC
1306	15.06.15	NGA038018	Yala	COMMUNITY HEALTH ITEGA	Primary Facility	LGA PH Post	Government	6.584641	8.686039	727843.67	465292.76	NMIS	Yes	No	No	No	No	No	No	No	No	1	0	Partially functional BEmONC
1153	16.06.15	NGA038007	Boki	DIVINE GRACE CLINIC	Secondary Facility	Private Hospital	Private for profit	6.441297	8.795222	711991.44	477356.18	HFA	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	6	2	Partially functional CEmONC
1094	30.06.15	NGA038011	Ikom	MELROSE HOSPITAL	Secondary Facility	Private Hospital	Private for profit	5.960199	8.732249	658812.07	470365.90	HFA	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	6	2	Partially functional CEmONC
1080	29.06.15	NGA038011	Ikom	HOLY FAMILY IKOM	Secondary Facility	Faith Based Hospital	Faith Based Organization	5.955836	8.715233	658330.71	468482.34	HFA	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	6	2	Partially functional CEmONC
1081	29.06.15	NGA038011	Ikom	COUNTY SPECIALIST HOSPITA	Secondary Facility	Private Hospital	Private for profit	5.970765	8.725916	659980.42	469665.55	HFA	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	6	2	Partially functional CEmONC
1092	01.07.15	NGA038011	Ikom	INTERGRITY HOSPITAL	Secondary Facility	Private Hospital	Private for profit	5.977533	8.717991	660729.02	468788.82	HFA	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	6	2	Partially functional CEmONC
1203	15.06.15	NGA038013	Obubra	DR EYABA MEMORIAL CLINIC	Secondary Facility	Private Hospital	Private for profit	6.068172	8.335737	670785.50	426493.95	HFA	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	6	2	Partially functional CEmONC
1379	15.06.15	NGA038014	Obudu	FOUNTAIN CLINIC OBUDU	Secondary Facility	Private Hospital	Private for profit	6.671066	9.177810	737390.14	519652.76	HFA	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	6	2	Partially functional CEmONC
1480	22.06.15	NGA038016	Ogoja	GENERAL HOSPITAL OGOJA	Secondary Facility	State Hospital	Government	6.652320	8.794391	735319.05	477273.83	HFA	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	6	2	Partially functional CEmONC
1443	16.06.15	NGA038016	Ogoja	SANTA MARIA CLINIC	Secondary Facility	Private Hospital	Private for profit	6.615206	8.786283	731216.64	476375.88	HFA	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	6	2	Partially functional CEmONC
1357	08.07.15	NGA038018	Yala	LUTHERAN HEALTH CENTRE	Primary Facility	LGA PH Centre	Government	6.678109	8.438663	738200.52	437957.27	HFA	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	6	1	Partially functional CEmONC
1083	06.07.15	NGA038011	Ikom	GOSHEN MATERNITY	Primary Facility	Private Health Centre	Private For Profit	5.976965	8.722735	660665.96	469313.84	HFA	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	5	2	Partially functional CEmONC
1539	26.06.15	NGA038005	Bekwara	PATIENCE MATERNITY	Primary Facility	Private Health Centre	Private for profit	6.683096	8.884470	738717.96	487231.17	HFA	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes	5	1	Partially functional CEmONC
1202	15.06.15	NGA038013	Obubra	EKANA MEDICAL CENTRE	Secondary Facility	Private Hospital	Private for profit	6.058158	8.343037	669677.47	427300.45	HFA	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	4	2	Partially functional CEmONC
1368	22.06.15	NGA038018	Yala	LUTHERAN HOSPITAL	Secondary Facility	State Hospital	Government	6.469563	8.497156	715139.03	444399.31	HFA	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	4	2	Partially functional CEmONC
1526	29.06.15	NGA038005	Bekwara	GAKEM PHC	Primary Facility	LGA PH Centre	Government	6.761348	8.983245	747366.88	498148.47	HFA	No	No	No	No	No	No	No	No	No	0	0	No signal functions
1195	02.07.15	NGA038007	Boki	FSP EBOK	Primary Facility	LGA PH Centre	Government	6.289417	8.927249	695198.08	491953.03	HFA	No	No	No	No	No	No	No	No	No	0	0	No signal functions
1425	16.06.15	NGA038014	Obudu	BEBUABONG PRIMARY HEALTH	Primary Facility	LGA PH Centre	Government	6.663343	9.166093	736535.95	518358.00	HFA	No	No	No	No	No	No	No	No	No	0	0	No signal functions
1479	22.06.15	NGA038016	Ogoja	PMC IDUM	Primary Facility	LGA PH Centre	Government	6.538972	8.895250	722785.51	488419.27	HFA	No	No	No	No	No	No	No	No	No	0	0	No signal functions

Annex 4 - Availability of motorized vehicles and communication media in EmONC facilities

Unique ID	Facility Name	EmONC status	Motor vehicle (4 wheels)	Motorized tricycle (3 wheels)	Functioning motorized vehicle available	Landline in the maternity area	Landline elsewhere in the facility	Cell phone owned by facility	Cell phone owned by individual	Cell phone signal available	Functioning phone (landline and/or Cell) available	Functioningtwo-way radio available
2371	UCTH	Partialy functional BEmONC	Available and functioning	Not available	Yes	Available but not functioning	Available and functioning	Available and functioning	Available and functioning	Available and functioning	Yes	Available and functioning
2144	DANEX MEDICAL CENTRE UGEP	Partialy functional BEmONC	Available and functioning	Missing data	Yes	Available and functioning	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Missing data
2142	UBI MEDICAL CONSULT	Partialy functional BEmONC	Available and functioning	Not available	Yes	Available and functioning	Available and functioning	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
1097	BENSON CLINIC	Fully functional CEmONC	Available and functioning	Not available	Yes	Available but not functioning	Available but not functioning	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2157	BLESSED SEATOE CLINIC	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Missing data	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
1426	SACRED HEART HOSPITAL	Fully functional CEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
1368	LUTHERAN HOSPITAL	Partialy functional CEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
1117	EYO MEDICAL CENTER	Fully functional CEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2231	IMMANUEL INFORMARY	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2191	VICTORIA ITAM SPECI HOSP	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2107	FAITH FOUNDATION CLINIC	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2363	GENERAL HOSPITAL	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2242	146 BATALLION MEDICAL CEN	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2377	GENERAL HOSPITAL UGEP	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2219	GENERAL HOSPITAL	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available but not functioning	Available and functioning	Available and functioning	Yes	Not available
2148	PHC UGEP	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2320	ST JOSEPH HOSPITAL	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1324	ELAHEN HEALTH CENTRE	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1081	COUNTY SPECIALIST HOSPITA	Partialy functional CEmONC	Available and functioning	Not available	Yes	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1083	GOSHEN MATERNITY	Partialy functional CEmONC	Available and functioning	Not available	Yes	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1357	LUTHERAN HEALTH CENTRE	Partialy functional CEmONC	Available and functioning	Not available	Yes	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1539	PATIENCE MATERNITY	Partialy functional CEmONC	Available and functioning	Not available	Yes	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2333	PHC AKPET 1	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2128	EJA MEMORIAL JOINT HOSPIT	Partialy functional BEmONC	Available and functioning	Not available	Yes	Not available	Not available	Available but not functioning	Available and functioning	Available but not functioning	No	Not available
2133	PHC EMIN EBOL	Partialy functional BEmONC	Available and functioning	Missing data	Yes	Not available	Not available	Not available	Available and functioning	Available but not functioning	No	Not available
2211	PHC USUNG ESUK	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Available and functioning
2305	MODEL PHC IMABANA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Missing data
2156	EVANGEL MODEL CLINIC	Partialy functional BEmONC	Available but not functioning	Not available	No	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2202	PHC MKPANI	Partialy functional BEmONC	Not available	Not available	No	Available but not functioning	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2368	PHC IDOMI	Partialy functional BEmONC	Not available	Missing data	No	Not available	Available but not functioning	Not available	Available and functioning	Available and functioning	Yes	Not available
2146	HEALTH POST KETABEBE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2162	PHC IKOT OFFIONG AMBAI	Partialy functional BEmONC	Available but not functioning	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1107	PRIMARY HEALTH CTR EKPOKP	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1138	PRIMARY HC CLINIC WULA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1238	PHC OCHONG	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1271	PRIMARY HEALTH C AGBOKIM	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1287	C.H.C WANIHEM	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1300	PHC OKUKU	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1317	PHC OLACHOR	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1331	CHC WANIKADE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1352	PHC MFUMA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1495	OCHAGBE PHC	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2316	IKPALEGWA PHC	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2138	HEALTH CENTER NGARABE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2282	P.H.C ADADAMA ATANI	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2254	PHC IDUNDU	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2297	HEALTH CENTRE IKOT IWANG	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2126	PHC IKANG CENTRAL	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2178	PHC ABANWAN	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2344	PHC AGWAGUNE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2176	ABARIBARA HEALTH CENTRE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2181	URUGBAM PHC	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2208	PHC NKO	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2150	PHC ASSIGA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2366	PHC AJERE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2348	IJIMAN PHC	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2209	PHC EKORI	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2374	ANSOR CLINIC	Partialy functional BEmONC	Not available	Not available	No	Not available	Available and functioning	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
1379	FOUNTAIN CLINIC OBUDU	Partialy functional CEmONC	Not available	Not available	No	Not available	Available and functioning	Not available	Available and functioning	Available and functioning	Yes	Not available
1152	OMEGA CLINIC	Fully functional CEmONC	Not available	Not available	No	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
1080	HOLY FAMILY IKOM	Partialy functional CEmONC	Not available	Not available	No	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
1443	SANTA MARIA CLINIC	Partialy functional CEmONC	Not available	Not available	No	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available

Nigeria - Accessibility to EmONC facilities for the Cross River State

Unique ID	Facility Name	EmONC status	Motor vehicle (4 wheels)	Motorized tricycle (3 wheels)	Functioning motorized vehicle available	Landline in the maternity area	Landline elsewhere in the facility	Cell phone owned by facility	Cell phone owned by individual	Cell phone signal available	Functioning phone (landline and/or Cell) available	Functioningtwo-way radio available
2101	CANNAN CLINIC	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2106	AMAZING GRACE SPECIALIST	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2235	MARY MOTHER OF MERCY CLNC	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
2143	ANGELS' CLINIC	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Available and functioning	Available and functioning	Available and functioning	Yes	Not available
1479	PMC IDUM	No signal functions	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1526	GAKEM PHC	No signal functions	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1494	PHC UGBORO	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2278	P.H.C EDIBA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2129	HEALTH CENTER ANONG EZEKE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2255	HEALTH CENTRE IKOT-EKPO	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2234	IKOT ANSA PHC	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2376	PHC OKOMASI	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1095	AWUKAM CLINIC	Fully functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1452	MATERNITY HOSP MONIAYA	Fully functional CEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1425	BEBUABONG PRIMARY HEALTH	No signal functions	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1061	PHC NDE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1071	PHC OFUN NTA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1103	MODEL PHC OKINI	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1126	MODEL PHC KATCHUAN IRRUAN	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1133	PRY HEALTH CENTRE OGEP	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1137	HEALTH POST MGBABESHA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1140	PHC BANSAN OSKOM	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1154	PHC OKUNDI	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1193	PHC ISOBENDEGHE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1217	OBUBRA VILLAGE HEALTH PST	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1267	PHC CENTRE AJASSOR	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1306	COMMUNITY HEALTH ITEGA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1332	PRIMARY HEALTH C UGAGA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1340	HEALTH CENTER IGBEKURIKOR	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1460	NDOK HEALTH CENTRE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1477	PHC EKUMTAK	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1481	PMC IBIL 1	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1492	UTUKWE HEALTH POST	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1502	AGIM HEALTH POST	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1506	ANYIKANG ROADSIDE H.CENTR	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1518	KADUNA HEALTH POST	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1092	INTERGRITY HOSPITAL	Partialy functional CEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1094	MELROSE HOSPITAL	Partialy functional CEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1153	DIVINE GRACE CLINIC	Partialy functional CEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1203	DR EYABA MEMORIAL CLINIC	Partialy functional CEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2283	P.H.C EBOM	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2286	COMPREHENSIVE H.C EDIBA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2289	HEALTH CLINIC USUMUTONG	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2134	HEALTH CENTER AGBARA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2108	PHC AKAMKPA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2115	PHC IKO EKPEREM	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2116	PHC IKO ESAI	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2258	PHC IDEBE IKOT WAKANDA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2345	PHC ADIM	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2201	PHC ABINI	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2362	AKIM HEALTH CENTRE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2370	HEALTH CENTRE IKOT ISHIE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2248	PHC EKPO ABASI	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2147	PHC NTANKPO	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2350	PHC AGOI EKPO	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
2205	HEALTH POST ASSIGA OLD TO	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available and functioning	Yes	Not available
1224	HEALTH FACILITY OFAT	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Not available	No	Available and functioning
2334	PHC, IWURU	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Not available	Available and functioning	No	Available and functioning
1230	PRIMARY HEALTH C ABABENE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Not available	No	Not available
2227	PHC ANINGEJE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available but not functioning	No	Not available
2182	AFONO HEALTH CENTER	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Available but not functioning	No	Not available
1195	FSP EBOK	No signal functions	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Not available	No	Not available
1111	PHC EMANGABE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Not available	No	Not available
1184	PHC OKUBUCHI IRRUAN	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Not available	No	Not available
1269	PRIMARY HEALTH C ABIA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Not available	No	Not available
1430	KUTIANG 2 HEALTH POST	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Not available	No	Not available
1450	OGBERIA-OGANG HC MBUBE	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Not available	No	Not available
1519	ABUBE HEALTH FACILITY	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Not available	No	Not available
1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	Not available	Not available	No	Not available	Not available	Not available	Available and functioning	Not available	No	Not available
1011	NKST PHC	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Not available	Not available	No	Not available
1262	PRIMARY HEALTH C ITAKA	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Not available	Not available	No	Not available
2314	AFAFANYI PHC	Partialy functional BEmONC	Not available	Not available	No	Not available	Not available	Not available	Missing data	Available and functioning	Missing data	Not available

Annex 5 - Accessibility coverage for BEmONC facilities

Fully functional BEmONC, including CEmONC, facilities

			1 hour		2 hours		3 hours		4 hours	
LGA Code	LGA Name	Pregancies 2015	Nbr	%	Nbr	%	Nbr	%	Nbr	%
NGA038001	Abi	9,092	0	0.0	8,599	94.6	9,077	99.8	9,091	100.0
NGA038002	Akamkpa	9,432	1	0.0	434	4.6	3,581	38.0	4,912	52.1
NGA038005	Bekwara	6,647	6,374	95.9	6,644	100.0	6,647	100.0	6,647	100.0
NGA038006	Biase	10,592	0	0.0	4,140	39.1	7,108	67.1	8,825	83.3
NGA038007	Boki	11,757	4,876	41.5	6,447	54.8	7,467	63.5	8,202	69.8
NGA038008	Calabar South	12,066	0	0.0	0	0.0	11,894	98.6	12,033	99.7
NGA038009	Calabar-Municipal	11,573	0	0.0	0	0.0	11,430	98.8	11,536	99.7
NGA038010	Etung	5,043	3,042	60.3	3,705	73.5	4,129	81.9	4,346	86.2
NGA038011	Ikom	10,313	8,864	85.9	9,709	94.1	9,995	96.9	10,110	98.0
NGA038012	Obanliku	6,907	3,713	53.8	5,051	73.1	5,685	82.3	6,045	87.5
NGA038013	Obubra	10,871	5,273	48.5	8,756	80.6	9,846	90.6	10,289	94.6
NGA038014	Obudu	10,172	8,132	79.9	9,168	90.1	9,722	95.6	9,994	98.2
NGA038015	Odukpani	12,152	0	0.0	14	0.1	7,890	64.9	10,985	90.4
NGA038016	Ogoja	10,810	9,411	87.1	10,630	98.3	10,810	100.0	10,810	100.0
NGA038017	Yakurr	12,366	1,082	8.7	9,071	73.4	10,126	81.9	10,748	86.9
NGA038018	Yala	13,329	8,970	67.3	13,070	98.1	13,319	99.9	13,329	100.0
NGA038XXX	Akpabuyo/Bakassi	19,147	0	0.0	0	0.0	11,230	58.7	17,774	92.8
	State level	182,269	59,738	32.8	95,440	52.4	149,955	82.3	165,677	90.9

Fully and partially functional BEmONC, including CEmONC, facilities

			1 hour		2 hours		3 hours		4 hours	
LGA Code	LGA Name	Pregancies 2015	Nbr	%	Nbr	%	Nbr	%	Nbr	%
NGA038001	Abi	9,092	8,882	97.7	9,085	99.9	9,092	100.0	9,092	100.0
NGA038002	Akamkpa	9,432	3,898	41.3	4,995	53.0	5,626	59.7	6,058	64.2
NGA038005	Bekwara	6,647	6,470	97.3	6,645	100.0	6,647	100.0	6,647	100.0
NGA038006	Biase	10,592	5,662	53.5	8,086	76.3	9,337	88.2	10,048	94.9
NGA038007	Boki	11,757	5,326	45.3	6,772	57.6	7,718	65.6	8,413	71.6
NGA038008	Calabar South	12,066	12,023	99.6	12,039	99.8	12,045	99.8	12,049	99.9
NGA038009	Calabar-Municipal	11,573	11,504	99.4	11,548	99.8	11,567	99.9	11,572	100.0
NGA038010	Etung	5,043	3,184	63.2	3,781	75.0	4,177	82.8	4,390	87.1
NGA038011	Ikom	10,313	9,021	87.5	9,760	94.6	10,018	97.1	10,120	98.1
NGA038012	Obanliku	6,907	4,447	64.4	5,375	77.8	5,879	85.1	6,148	89.0
NGA038013	Obubra	10,871	7,557	69.5	9,416	86.6	10,117	93.1	10,410	95.8
NGA038014	Obudu	10,172	8,506	83.6	9,395	92.4	9,877	97.1	10,035	98.6
NGA038015	Odukpani	12,152	8,292	68.2	10,857	89.3	11,728	96.5	12,059	99.2
NGA038016	Ogoja	10,810	9,930	91.9	10,728	99.2	10,810	100.0	10,810	100.0
NGA038017	Yakurr	12,366	9,188	74.3	10,251	82.9	10,806	87.4	11,157	90.2
NGA038018	Yala	13,329	12,167	91.3	13,238	99.3	13,329	100.0	13,329	100.0
NGA038XXX	Akpabuyo/Bakassi	19,147	17,225	90.0	18,437	96.3	18,679	97.6	18,914	98.8
	State level	182,269	143,281	78.6	160,410	88.0	167,451	91.9	171,252	94.0

Fully and partially functional BEmONC, including CEmONC, facilities and non-functional EmONC

			1 hour		2 hours		3 hours		4 hours	
LGA Code	**LGA Name**	**Pregancies 2015**	**Nbr**	**%**	**Nbr**	**%**	**Nbr**	**%**	**Nbr**	**%**
NGA038001	Abi	9,092	8,882	97.7	9,085	99.9	9,092	100.0	9,092	100.0
NGA038002	Akamkpa	9,432	3,898	41.3	4,995	53.0	5,626	59.7	6,058	64.2
NGA038005	Bekwara	6,647	6,506	97.9	6,645	100.0	6,647	100.0	6,647	100.0
NGA038006	Biase	10,592	5,662	53.5	8,086	76.3	9,337	88.2	10,048	94.9
NGA038007	Boki	11,757	5,349	45.5	6,807	57.9	7,735	65.8	8,423	71.6
NGA038008	Calabar South	12,066	12,023	99.6	12,039	99.8	12,045	99.8	12,049	99.9
NGA038009	Calabar-Municipal	11,573	11,504	99.4	11,548	99.8	11,567	99.9	11,572	100.0
NGA038010	Etung	5,043	3,184	63.2	3,781	75.0	4,177	82.8	4,390	87.1
NGA038011	Ikom	10,313	9,021	87.5	9,760	94.6	10,018	97.1	10,120	98.1
NGA038012	Obanliku	6,907	4,449	64.4	5,375	77.8	5,879	85.1	6,148	89.0
NGA038013	Obubra	10,871	7,557	69.5	9,416	86.6	10,117	93.1	10,410	95.8
NGA038014	Obudu	10,172	8,513	83.7	9,396	92.4	9,877	97.1	10,035	98.7
NGA038015	Odukpani	12,152	8,292	68.2	10,857	89.3	11,728	96.5	12,059	99.2
NGA038016	Ogoja	10,810	9,932	91.9	10,729	99.3	10,810	100.0	10,810	100.0
NGA038017	Yakurr	12,366	9,188	74.3	10,251	82.9	10,806	87.4	11,157	90.2
NGA038018	Yala	13,329	12,178	91.4	13,238	99.3	13,329	100.0	13,329	100.0
NGA038XXX	Akpabuyo/Bakassi	19,147	17,225	90.0	18,437	96.3	18,679	97.6	18,914	98.8
	State level	182,269	143,361	78.7	160,448	88.0	167,469	91.9	171,263	94.0

Annex 6 - Accessibility coverage for CEmONC facilities

Fully functional CEmONC facilities

			1 hour		2 hours		3 hours		4 hours	
LGA Code	LGA Name	Pregancies 2015	Nbr	%	Nbr	%	Nbr	%	Nbr	%
NGA038001	Abi	9,092	0	0.0	8,599	94.6	9,077	99.8	9,091	100.0
NGA038002	Akamkpa	9,432	1	0.0	434	4.6	3,581	38.0	4,912	52.1
NGA038005	Bekwara	6,647	6,374	95.9	6,644	100.0	6,647	100.0	6,647	100.0
NGA038006	Biase	10,592	0	0.0	4,140	39.1	7,108	67.1	8,825	83.3
NGA038007	Boki	11,757	4,874	41.5	6,445	54.8	7,466	63.5	8,201	69.8
NGA038008	Calabar South	12,066	0	0.0	0	0.0	11,894	98.6	12,033	99.7
NGA038009	Calabar-Municipal	11,573	0	0.0	0	0.0	11,430	98.8	11,536	99.7
NGA038010	Etung	5,043	3,041	60.3	3,705	73.5	4,128	81.9	4,346	86.2
NGA038011	Ikom	10,313	8,861	85.9	9,708	94.1	9,995	96.9	10,110	98.0
NGA038012	Obanliku	6,907	3,713	53.8	5,051	73.1	5,685	82.3	6,045	87.5
NGA038013	Obubra	10,871	5,273	48.5	8,756	80.6	9,846	90.6	10,289	94.6
NGA038014	Obudu	10,172	8,132	79.9	9,168	90.1	9,722	95.6	9,994	98.2
NGA038015	Odukpani	12,152	0	0.0	14	0.1	7,890	64.9	10,985	90.4
NGA038016	Ogoja	10,810	9,411	87.1	10,630	98.3	10,810	100.0	10,810	100.0
NGA038017	Yakurr	12,366	1,082	8.7	9,071	73.4	10,126	81.9	10,748	86.9
NGA038018	Yala	13,329	8,970	67.3	13,070	98.1	13,319	99.9	13,329	100.0
NGA038XXX	Akpabuyo/Bakassi	19,147	0	0.0	0	0.0	11,230	58.7	17,774	92.8
	State level	182,269	59,732	32.8	95,437	52.4	149,953	82.3	165,676	90.9

Fully and partially functional CEmONC facilities

			1 hour		2 hours		3 hours		4 hours	
LGA Code	LGA Name	Pregancies 2015	Nbr	%	Nbr	%	Nbr	%	Nbr	%
NGA038001	Abi	9,092	4,675	51.4	8,952	98.4	9,085	99.9	9,092	100.0
NGA038002	Akamkpa	9,432	1	0.0	1,879	19.9	4,251	45.1	5,260	55.8
NGA038005	Bekwara	6,647	6,443	96.9	6,645	100.0	6,647	100.0	6,647	100.0
NGA038006	Biase	10,592	941	8.9	5,555	52.4	7,954	75.1	9,251	87.3
NGA038007	Boki	11,757	4,900	41.7	6,461	55.0	7,474	63.6	8,209	69.8
NGA038008	Calabar South	12,066	0	0.0	0	0.0	12,019	99.6	12,038	99.8
NGA038009	Calabar-Municipal	11,573	0	0.0	1,765	15.3	11,507	99.4	11,547	99.8
NGA038010	Etung	5,043	3,053	60.5	3,710	73.6	4,132	81.9	4,347	86.2
NGA038011	Ikom	10,313	8,871	86.0	9,713	94.2	9,998	96.9	10,111	98.0
NGA038012	Obanliku	6,907	3,738	54.1	5,065	73.3	5,692	82.4	6,049	87.6
NGA038013	Obubra	10,871	6,904	63.5	9,163	84.3	9,994	91.9	10,346	95.2
NGA038014	Obudu	10,172	8,175	80.4	9,177	90.2	9,728	95.6	9,995	98.3
NGA038015	Odukpani	12,152	0	0.0	2,353	19.4	9,718	80.0	11,434	94.1
NGA038016	Ogoja	10,810	9,627	89.1	10,659	98.6	10,810	100.0	10,810	100.0
NGA038017	Yakurr	12,366	7,569	61.2	9,563	77.3	10,424	84.3	10,902	88.2
NGA038018	Yala	13,329	11,740	88.1	13,195	99.0	13,328	100.0	13,329	100.0
NGA038XXX	Akpabuyo/Bakassi	19,147	0	0.0	0	0.0	16,047	83.8	18,218	95.1
	State level	182,269	76,636	42.0	103,854	57.0	158,808	87.1	167,584	91.9

Annex 7 - Travel time from each BEmONC facility and the nearest CEmONC facility taking into account both fully, partially and non-functional facilities as well as the availability of a motorized vehicle and communication media on site

BEmONC facility code	BEmONC facility name	BEmONC facility status	Functioning motorized vehicle at BemONC site	Functioning phone (landline and/or Cell) available at BEmONC site	Code of the nearest CEmONC facility	Name of the nearest CEmONC	CEmONC facility status	Functioning motorized vehicle available at nearest CEmONC site	Functioning phone (landline and/or Cell) available at CEmONC site	Travel time to the nearest CEmONC facility if motorized vehicle available at BEmONC site (min)	Code of the nearest facility with functioning motor vehicle and phone (landline/cell)	Name of the nearest facility with functioning motor vehicle and phone (landline/cell)	EmONC Status of the facility	Travel time between this facility and the BEmONC facility (min)	Final estimated travel time for the referral (min)
2320	ST JOSEPH HOSPITAL	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	138.1	2320	ST JOSEPH HOSPITAL	Partialy functional BEmONC	0.0	138.1
2157	BLESSED SEATOE CLINIC	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	127.7	2157	BLESSED SEATOE CLINIC	Partialy functional BEmONC	0.0	127.7
2363	GENERAL HOSPITAL	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	127.2	2363	GENERAL HOSPITAL	Partialy functional BEmONC	0.0	127.2
2371	UCTH	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	126.6	2371	UCTH	Partialy functional BEmONC	0.0	126.6
2107	FAITH FOUNDATION CLINIC	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	124.7	2107	FAITH FOUNDATION CLINIC	Partialy functional BEmONC	0.0	124.7
2191	VICTORIA ITAM SPECI HOSP	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	124.3	2191	VICTORIA ITAM SPECI HOSP	Partialy functional BEmONC	0.0	124.3
2242	146 BATALLION MEDICAL CEN	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	120.4	2242	146 BATALLION MEDICAL CEN	Partialy functional BEmONC	0.0	120.4
2231	IMMANUEL INFORMARY	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	117.6	2231	IMMANUEL INFORMARY	Partialy functional BEmONC	0.0	117.6
2219	GENERAL HOSPITAL	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	94.5	2219	GENERAL HOSPITAL	Partialy functional BEmONC	0.0	94.5
2333	PHC AKPET 1	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	55.4	2333	PHC AKPET 1	Partialy functional BEmONC	0.0	55.4
2133	PHC EMIN EBOL	Partialy functional BEmONC	Yes	No	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	52.0	2148	PHC UGEP	Partialy functional BEmONC	11.7	52.0
2128	EJA MEMORIAL JOINT HOSPIT	Partialy functional BEmONC	Yes	No	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	50.4	2148	PHC UGEP	Partialy functional BEmONC	10.1	50.4
2144	DANEX MEDICAL CENTRE UGEP	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	41.3	2144	DANEX MEDICAL CENTRE UGEP	Partialy functional BEmONC	0.0	41.3
2377	GENERAL HOSPITAL UGEP	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	41.3	2377	GENERAL HOSPITAL UGEP	Partialy functional BEmONC	0.0	41.3
2142	UBI MEDICAL CONSULT	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	40.6	2142	UBI MEDICAL CONSULT	Partialy functional BEmONC	0.0	40.6
2148	PHC UGEP	Partialy functional BEmONC	Yes	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	40.4	2148	PHC UGEP	Partialy functional BEmONC	0.0	40.4
1324	ELAHEN HEALTH CENTRE	Partialy functional BEmONC	Yes	Yes	1357	LUTHERAN HEALTH CENTRE	Partialy functional CEmONC	Yes	Yes	1.0	1357	LUTHERAN HEALTH CENTRE	Partialy functional CEmONC	0.0	1.0
2255	HEALTH CENTRE IKOT-EKPO	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	161.9	2320	ST JOSEPH HOSPITAL	Partialy functional BEmONC	25.9	187.8
2126	PHC IKANG CENTRAL	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	152.9	2320	ST JOSEPH HOSPITAL	Partialy functional BEmONC	16.6	169.5
2258	PHC IDEBE IKOT WAKANDA	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	150.3	2320	ST JOSEPH HOSPITAL	Partialy functional BEmONC	14.1	164.3
2297	HEALTH CENTRE IKOT IWANG	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	148.4	2320	ST JOSEPH HOSPITAL	Partialy functional BEmONC	11.9	160.3
2211	PHC USUNG ESUK	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	127.4	2231	IMMANUEL INFORMARY	Partialy functional BEmONC	30.2	157.7
2254	PHC IDUNDU	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	132.8	2231	IMMANUEL INFORMARY	Partialy functional BEmONC	16.8	149.6
2162	PHC IKOT OFFIONG AMBAI	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	133.6	2320	ST JOSEPH HOSPITAL	Partialy functional BEmONC	4.5	138.1
2362	AKIM HEALTH CENTRE	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	126.6	2371	UCTH	Partialy functional BEmONC	2.8	129.4
2156	EVANGEL MODEL CLINIC	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	126.7	2157	BLESSED SEATOE CLINIC	Partialy functional BEmONC	1.6	128.2
2106	AMAZING GRACE SPECIALIST	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	123.7	2107	FAITH FOUNDATION CLINIC	Partialy functional BEmONC	4.2	127.9
2248	PHC EKPO ABASI	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	125.7	2157	BLESSED SEATOE CLINIC	Partialy functional BEmONC	2.0	127.7
2370	HEALTH CENTRE IKOT ISHIE	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	123.9	2191	VICTORIA ITAM SPECI HOSP	Partialy functional BEmONC	3.8	127.7
2235	MARY MOTHER OF MERCY CLNC	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	122.9	2191	VICTORIA ITAM SPECI HOSP	Partialy functional BEmONC	2.7	125.7
2101	CANNAN CLINIC	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	124.5	2191	VICTORIA ITAM SPECI HOSP	Partialy functional BEmONC	1.2	125.6
2234	IKOT ANSA PHC	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	121.0	2242	146 BATALLION MEDICAL CEN	Partialy functional BEmONC	2.7	123.7
2116	PHC IKO ESAI	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	84.4	2333	PHC AKPET 1	Partialy functional BEmONC	31.5	115.9
2108	PHC AKAMKPA	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	95.5	2219	GENERAL HOSPITAL	Partialy functional BEmONC	3.5	98.9
2115	PHC IKO EKPEREM	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	75.8	2333	PHC AKPET 1	Partialy functional BEmONC	21.7	97.5
2181	URUGBAM PHC	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	67.7	2144	DANEX MEDICAL CENTRE UGEP	Partialy functional BEmONC	26.5	94.2
1138	PRIMARY HC CLINIC WULA	Partialy functional BEmONC	No	Yes	1379	FOUNTAIN CLINIC OBUDU	Partialy functional CEmONC	No	Yes	44.7	1426	SACRED HEART HOSPITAL	Fully functional CEmONC	45.9	90.6
2129	HEALTH CENTER ANONG EZEKE	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	63.4	2148	PHC UGEP	Partialy functional BEmONC	23.1	86.5
2350	PHC AGOI EKPO	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	49.0	2148	PHC UGEP	Partialy functional BEmONC	34.1	83.1
2138	HEALTH CENTER NGARABE	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	60.3	2148	PHC UGEP	Partialy functional BEmONC	20.0	80.3
2178	PHC ABAN WAN	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	60.5	2144	DANEX MEDICAL CENTRE UGEP	Partialy functional BEmONC	19.4	79.9
2134	HEALTH CENTER AGBARA	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	59.3	2148	PHC UGEP	Partialy functional BEmONC	19.0	78.3
1137	HEALTH POST MGBABESHA	Partialy functional BEmONC	No	Yes	1379	FOUNTAIN CLINIC OBUDU	Partialy functional CEmONC	No	Yes	38.4	1426	SACRED HEART HOSPITAL	Fully functional CEmONC	39.4	77.9
2283	P.H.C EBOM	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	57.9	2148	PHC UGEP	Partialy functional BEmONC	17.3	75.2
2176	ABARIBARA HEALTH CENTRE	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	55.9	2144	DANEX MEDICAL CENTRE UGEP	Partialy functional BEmONC	14.7	70.6
2344	PHC AGWAGUNE	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	52.7	2144	DANEX MEDICAL CENTRE UGEP	Partialy functional BEmONC	11.5	64.2
1193	PHC ISOBENDEGHE	Partialy functional BEmONC	No	Yes	1117	EYO MEDICAL CENTER	Fully functional CEmONC	Yes	Yes	31.9	1117	EYO MEDICAL CENTER	Fully functional CEmONC	31.9	63.8
2316	IKPALEGWA PHC	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	46.1	2148	PHC UGEP	Partialy functional BEmONC	17.7	63.8
1306	COMMUNITY HEALTH ITEGA	Partialy functional BEmONC	No	Yes	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	Yes	Yes	31.8	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	31.8	63.6
2282	P.H.C ADADAMA ATANI	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	45.3	2148	PHC UGEP	Partialy functional BEmONC	16.9	62.3
1271	PRIMARY HEALTH C AGBOKIM	Partialy functional BEmONC	No	Yes	1094	MELROSE HOSPITAL	Partialy functional CEmONC	No	Yes	31.0	1097	BENSON CLINIC	Fully functional CEmONC	31.1	62.1
2368	PHC IDOMI	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	51.0	2142	UBI MEDICAL CONSULT	Partialy functional BEmONC	10.8	61.8
2305	MODEL PHC IMABANA	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	39.8	2148	PHC UGEP	Partialy functional BEmONC	20.9	60.7
1126	MODEL PHC KATCHUAN IRRUAN	Partialy functional BEmONC	No	Yes	1153	DIVINE GRACE CLINIC	Partialy functional CEmONC	No	Yes	24.0	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	36.4	60.4
2205	HEALTH POST ASSIGA OLD TO	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	37.1	2148	PHC UGEP	Partialy functional BEmONC	22.1	59.2
2286	COMPREHENSIVE H.C EDIBA	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	49.5	2148	PHC UGEP	Partialy functional BEmONC	8.7	58.2
2289	HEALTH CLINIC USUMUTONG	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	49.1	2148	PHC UGEP	Partialy functional BEmONC	8.8	57.8
2278	P.H.C EDIBA	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	48.8	2148	PHC UGEP	Partialy functional BEmONC	8.5	57.4

Nigeria - Accessibility to EmONC facilities for the Cross River State

BEmONC facility code	BEmONC facility name	BEmONC facility status	Functioning motorized vehicle at BemONC site	Functioning phone (landline and/or Cell) available at BEmONC site	Code of the nearest CEmONC facility	Name of the nearest CEmONC	CEmONC facility status	Functioning motorized vehicle available at nearest CEmONC site	Functioning phone (landline and/or Cell) available at CEmONC site	Travel time to the nearest CEmONC facility if motorized vehicle available at BEmONC site (min)	Code of the nearest facility with functioning motor vehicle and phone (landline/cell)	Name of the nearest facility with functioning motor vehicle and phone (landline/cell)	EmONC Status of the facility	Travel time between this facility and the BEmONC facility (min)	Final estimated travel time for the referral (min)
2150	PHC ASSIGA	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	36.4	2148	PHC UGEP	Partialy functional BEmONC	19.0	55.4
2201	PHC ABINI	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	51.6	2333	PHC AKPET 1	Partialy functional BEmONC	3.8	55.4
1481	PMC IBIL 1	Partialy functional BEmONC	No	Yes	1153	DIVINE GRACE CLINIC	Partialy functional CEmONC	No	Yes	26.0	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	29.3	55.3
1140	PHC BANSAN OSKOM	Partialy functional BEmONC	No	Yes	1153	DIVINE GRACE CLINIC	Partialy functional CEmONC	No	Yes	16.6	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	38.4	55.1
1071	PHC OFUN NTA	Partialy functional BEmONC	No	Yes	1117	EYO MEDICAL CENTER	Fully functional CEmONC	Yes	Yes	27.1	1117	EYO MEDICAL CENTER	Fully functional CEmONC	27.1	54.1
2345	PHC ADIM	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	46.8	2144	DANEX MEDICAL CENTRE UGEP	Partialy functional BEmONC	5.7	52.5
1317	PHC OLACHOR	Partialy functional BEmONC	No	Yes	1368	LUTHERAN HOSPITAL	Partialy functional CEmONC	Yes	Yes	25.9	1368	LUTHERAN HOSPITAL	Partialy functional CEmONC	25.9	51.9
1238	PHC OCHONG	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	25.2	1097	BENSON CLINIC	Fully functional CEmONC	26.1	51.4
2202	PHC MKPANI	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	34.9	2148	PHC UGEP	Partialy functional BEmONC	14.1	48.9
1217	OBUBRA VILLAGE HEALTH PST	Partialy functional BEmONC	No	Yes	1203	DR EYABA MEMORIAL CLINIC	Partialy functional CEmONC	No	Yes	4.0	2148	PHC UGEP	Partialy functional BEmONC	44.7	48.7
2376	PHC OKOMASI	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	31.0	2148	PHC UGEP	Partialy functional BEmONC	16.7	47.7
2209	PHC EKORI	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	37.1	2148	PHC UGEP	Partialy functional BEmONC	9.6	46.7
2366	PHC AJERE	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	37.0	2148	PHC UGEP	Partialy functional BEmONC	8.5	45.5
1479	PMC IDUM	No signal functions	No	Yes	1153	DIVINE GRACE CLINIC	Partialy functional CEmONC	No	Yes	21.1	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	24.2	45.3
1495	OCHAGBE PHC	Partialy functional BEmONC	No	Yes	1452	MATERNITY HOSP MONIAYA	Fully functional CEmONC	No	Yes	22.5	1539	PATIENCE MATERNITY	Partialy functional CEmONC	22.7	45.1
2348	IJIMAN PHC	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	41.0	2142	UBI MEDICAL CONSULT	Partialy functional BEmONC	0.8	41.8
1267	PHC CENTRE AJASSOR	Partialy functional BEmONC	No	Yes	1094	MELROSE HOSPITAL	Partialy functional CEmONC	No	Yes	19.9	1097	BENSON CLINIC	Fully functional CEmONC	21.7	41.6
2147	PHC NTANKPO	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	39.3	2148	PHC UGEP	Partialy functional BEmONC	1.9	41.3
2143	ANGELS' CLINIC	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	40.8	2142	UBI MEDICAL CONSULT	Partialy functional BEmONC	0.5	41.2
1477	PHC EKUMTAK	Partialy functional BEmONC	No	Yes	1153	DIVINE GRACE CLINIC	Partialy functional CEmONC	No	Yes	18.9	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	22.1	41.0
2146	HEALTH POST KETABEBE	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	40.3	2142	UBI MEDICAL CONSULT	Partialy functional BEmONC	0.5	40.7
2208	PHC NKO	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	26.9	2148	PHC UGEP	Partialy functional BEmONC	13.5	40.4
2374	ANSOR CLINIC	Partialy functional BEmONC	No	Yes	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	38.7	2148	PHC UGEP	Partialy functional BEmONC	1.7	40.4
1107	PRIMARY HEALTH CTR EKPOKP	Partialy functional BEmONC	No	Yes	1083	GOSHEN MATERNITY	Partialy functional CEmONC	Yes	Yes	19.3	1083	GOSHEN MATERNITY	Partialy functional CEmONC	19.3	38.6
1518	KADUNA HEALTH POST	Partialy functional BEmONC	No	Yes	1539	PATIENCE MATERNITY	Partialy functional CEmONC	Yes	Yes	18.8	1539	PATIENCE MATERNITY	Partialy functional CEmONC	18.8	37.6
1133	PRY HEALTH CENTRE OGEP	Partialy functional BEmONC	No	Yes	1153	DIVINE GRACE CLINIC	Partialy functional CEmONC	No	Yes	5.6	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	27.6	33.2
1340	HEALTH CENTER IGBEKURIKOR	Partialy functional BEmONC	No	Yes	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	Yes	Yes	16.1	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	16.1	32.3
1332	PRIMARY HEALTH C UGAGA	Partialy functional BEmONC	No	Yes	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	Yes	Yes	14.7	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	14.7	29.4
1154	PHC OKUNDI	Partialy functional BEmONC	No	Yes	1153	DIVINE GRACE CLINIC	Partialy functional CEmONC	No	Yes	3.7	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	25.5	29.3
1526	GAKEM PHC	No signal functions	No	Yes	1539	PATIENCE MATERNITY	Partialy functional CEmONC	Yes	Yes	10.1	1539	PATIENCE MATERNITY	Partialy functional CEmONC	10.1	20.1
1287	C.H.C WANIHEM	Partialy functional BEmONC	No	Yes	1357	LUTHERAN HEALTH CENTRE	Partialy functional CEmONC	Yes	Yes	9.7	1324	ELAHEN HEALTH CENTRE	Partialy functional BEmONC	9.6	19.3
1352	PHC MFUMA	Partialy functional BEmONC	No	Yes	1368	LUTHERAN HOSPITAL	Partialy functional CEmONC	Yes	Yes	9.4	1368	LUTHERAN HOSPITAL	Partialy functional CEmONC	9.4	18.7
1103	MODEL PHC OKINI	Partialy functional BEmONC	No	Yes	1080	HOLY FAMILY IKOM	Partialy functional CEmONC	No	Yes	8.8	1097	BENSON CLINIC	Fully functional CEmONC	9.1	17.9
1300	PHC OKUKU	Partialy functional BEmONC	No	Yes	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	Yes	Yes	8.1	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	8.1	16.2
1061	PHC NDE	Partialy functional BEmONC	No	Yes	1083	GOSHEN MATERNITY	Partialy functional CEmONC	Yes	Yes	7.3	1083	GOSHEN MATERNITY	Partialy functional CEmONC	7.3	14.6
1502	AGIM HEALTH POST	Partialy functional BEmONC	No	Yes	1539	PATIENCE MATERNITY	Partialy functional CEmONC	Yes	Yes	7.3	1539	PATIENCE MATERNITY	Partialy functional CEmONC	7.3	14.5
1460	NDOK HEALTH CENTRE	Partialy functional BEmONC	No	Yes	1443	SANTA MARIA CLINIC	Partialy functional CEmONC	No	Yes	4.5	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	6.8	11.3
1494	PHC UGBORO	Partialy functional BEmONC	No	Yes	1452	MATERNITY HOSP MONIAYA	Fully functional CEmONC	No	Yes	5.4	1539	PATIENCE MATERNITY	Partialy functional CEmONC	5.6	11.0
1331	CHC WANIKADE	Partialy functional BEmONC	No	Yes	1357	LUTHERAN HEALTH CENTRE	Partialy functional CEmONC	Yes	Yes	4.4	1324	ELAHEN HEALTH CENTRE	Partialy functional BEmONC	4.4	8.8
1506	ANYIKANG ROADSIDE H.CENTR	Partialy functional BEmONC	No	Yes	1452	MATERNITY HOSP MONIAYA	Fully functional CEmONC	No	Yes	1.8	1539	PATIENCE MATERNITY	Partialy functional CEmONC	4.5	6.3
1492	UTUKWE HEALTH POST	Partialy functional BEmONC	No	Yes	1452	MATERNITY HOSP MONIAYA	Fully functional CEmONC	No	Yes	1.4	1539	PATIENCE MATERNITY	Partialy functional CEmONC	4.4	5.8
1425	BEBUABONG PRIMARY HEALTH	No signal functions	No	Yes	1426	SACRED HEART HOSPITAL	Fully functional CEmONC	Yes	Yes	1.6	1426	SACRED HEART HOSPITAL	Fully functional CEmONC	1.6	3.3
1095	AWUKAM CLINIC	Fully functional BEmONC	No	Yes	1083	GOSHEN MATERNITY	Partialy functional CEmONC	Yes	Yes	1.0	1083	GOSHEN MATERNITY	Partialy functional CEmONC	1.0	2.0
1450	OGBERIA-OGANG HC MBUBE	Partialy functional BEmONC	No	No	1539	PATIENCE MATERNITY	Partialy functional CEmONC	Yes	Yes	32.5	1539	PATIENCE MATERNITY	Partialy functional CEmONC	32.2	94.7
1519	ABUBE HEALTH FACILITY	Partialy functional BEmONC	No	No	1539	PATIENCE MATERNITY	Partialy functional CEmONC	Yes	Yes	11.0	1539	PATIENCE MATERNITY	Partialy functional CEmONC	11.0	52.1
1111	PHC EMANGABE	Partialy functional BEmONC	No	No	1117	EYO MEDICAL CENTER	Fully functional CEmONC	Yes	Yes	11.0	1117	EYO MEDICAL CENTER	Fully functional CEmONC	11.0	52.1
1262	PRIMARY HEALTH C ITAKA	Partialy functional BEmONC	No	No	1080	HOLY FAMILY IKOM	Partialy functional CEmONC	No	Yes	41.8	1097	BENSON CLINIC	Fully functional CEmONC	41.9	113.6
1011	NKST PHC	Partialy functional BEmONC	No	No	1379	FOUNTAIN CLINIC OBUDU	Partialy functional CEmONC	No	Yes	41.6	1426	SACRED HEART HOSPITAL	Fully functional CEmONC	42.6	114.3
1195	FSP EBOK	No signal functions	No	No	1153	DIVINE GRACE CLINIC	Partialy functional CEmONC	No	Yes	39.4	1117	EYO MEDICAL CENTER	Fully functional CEmONC	50.4	119.8
1184	PHC OKUBUCHI IRRUAN	Partialy functional BEmONC	No	No	1153	DIVINE GRACE CLINIC	Partialy functional CEmONC	No	Yes	32.2	1480	GENERAL HOSPITAL OGOJA	Partialy functional CEmONC	41.5	103.7
1269	PRIMARY HEALTH C ABIA	Partialy functional BEmONC	No	No	1094	MELROSE HOSPITAL	Partialy functional CEmONC	No	Yes	30.1	1097	BENSON CLINIC	Fully functional CEmONC	30.9	90.9
1430	KUTIANG 2 HEALTH POST	Partialy functional BEmONC	No	No	1379	FOUNTAIN CLINIC OBUDU	Partialy functional CEmONC	No	Yes	23.4	1426	SACRED HEART HOSPITAL	Fully functional CEmONC	24.4	77.8
2227	PHC ANINGEJE	Partialy functional BEmONC	No	No	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	135.3	2320	ST JOSEPH HOSPITAL	Partialy functional BEmONC	28.4	193.6
2182	AFONO HEALTH CENTER	Partialy functional BEmONC	No	No	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	68.3	2144	DANEX MEDICAL CENTRE UGEP	Partialy functional BEmONC	27.1	125.4
2334	PHC, IWURU	Partialy functional BEmONC	No	No	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	77.3	2219	GENERAL HOSPITAL	Partialy functional BEmONC	17.2	124.5
2314	AFAFANYI PHC	Partialy functional BEmONC	No	No	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	55.2	2148	PHC UGEP	Partialy functional BEmONC	14.9	100.0
1230	PRIMARY HEALTH C ABABENE	Partialy functional BEmONC	No	No	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	20.5	2148	PHC UGEP	Partialy functional BEmONC	23.9	74.4
1224	HEALTH FACILITY OFAT	Partialy functional BEmONC	No	No	1202	EKANA MEDICAL CENTRE	Partialy functional CEmONC	No	No	20.4	2148	PHC UGEP	Partialy functional BEmONC	23.9	74.3