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AVAILABILITY OF EQUIPMENT IN PRIMARY HEALTH CARE FACILITIES IN ABIA SOUTH SENATORIAL DISTRICT

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ABSTRACT: *A responsive health system ensures that communities have fair access to necessary medical equipment that is guaranteed to be safe, effective, and of high quality. Medical equipment is a crucial instrument for health interventions and is utilized in illness prevention, diagnosis, treatment, and patient rehabilitation. This study seeks to evaluate the availability of equipment in the primary health care in Abia South Senatorial District. The study was conducted in Abia South Senatorial Zone, which comprises of six Local Government Areas: Aba North, Aba South, Obingwa, Ugwunagbo, Ukwa East, and Ukwa West. There are 81 government-owned Primary Healthcare Centres distributed across various wards in these areas. A total of 26 Primary Healthcare Centers and 52 midwives were selected for this study. An observation checklist, adapted from the National Primary Health Care Development Agency Minimum Standard Checklist, was used to assess the equipment in each of the 26 PHCs. The analysis shows that the six Primary Healthcare Centers in Obingwa, Ugwunagbo, Aba North, Aba South, Ukwa East and Ukwa West Local Government Areas are critically under-equipped with only 14.55%, 21.91%, 4.56%, 13.50%, 17.49% and 16.49% respectively. In conclusion, our findings revealed the overall state of equipment in Primary Healthcare Centers across Abia South senatorial district in Abia State falls below National Primary Health Care Development Agency minimum standards. The availability of essential medical equipment across Primary Healthcare Centers in Abia South was generally low, with most facilities possessing only basic items such as gloves, artery forceps, and dressing.*

KEYWORDS: Local Government Areas, Abia South Senatorial District, Primary Health Care, Medical equipment, Availability, Abia State.

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INTRODUCTION

As recognized by the World Health Organization (WHO), health is a fundamental right for all individuals. A responsive health system ensures that communities have fair access to necessary medical equipment that is guaranteed to be safe, effective, and of high quality (Woldeyohanins et al., 2025). The continuous advancements in science, medical equipment, and technology used for healthcare services should be of high quality and used appropriately to address global health challenges (Adam & Nwaogwugwu, 2020).). Medical equipment is a crucial instrument for health interventions and is utilized in illness prevention, diagnosis, treatment, and patient rehabilitation (Moyimane et al., 2017). The utilization of medical equipment involves standardization, maintenance, restoration and operator training. However, in low- and middle-income nations, it might be difficult to obtain functional medical equipment (Ademe et al., 2016).

Universal Health Coverage (UHC) has gained global prominence, particularly after adopting the Sustainable Development Goals (SDGs) in 2015. It represents a commitment to ensuring all individuals have access to the healthcare services they need without experiencing financial hardship (World Health Organization (WHO, 20211). This vision encompasses providing financial support and effective policy guidance to health facilities, especially in underserved regions. In many cases, political agendas tend to influence health sector decisions, creating inconsistencies in policy implementation. Additionally, limited national budgets and unexpected economic pressures hinder the realization of comprehensive healthcare for all. (World Bank 2020). In Nigeria, investing in a solid healthcare system, is vital for the country's economic progress. However, every healthcare system needs solid equipment to function well. This includes aspects of quality services, technical resources, and the physical comfort of healthcare facilities. These systems need to work together smoothly, adapting to new technologies as they come along. Persistent issues such as poor maintenance, underfunding, and insufficient replacements of outdated equipment have contributed to a noticeable decline in the quality of healthcare services. In Nigeria, these systemic problems have been widely reported, with health outcomes consistently reflecting this poor availability of medical equipment (Uzochukwu et al, 2015).

The World Health Organization (WHO) presents a sobering statistic: although Nigeria represents less than 1% of the global population, it accounts for approximately 19% of all maternal deaths worldwide, with an estimated 576 maternal deaths per 100,000 live births (WHO, 2022). Similarly, the United Nations Children's Fund (UNICEF) reports that "each year, approximately 262,000 babies die at birth," placing Nigeria as the country with the second-highest neonatal mortality figure globally. Uzochukwu et al, 2015 found that private health facilities typically offer better services than public ones. Similarly, Eboreime et al. (2015) showed that "services at healthcare facilities vary widely across the country's regions". This uneven access is a major barrier for many people who need healthcare. In some areas, there's a shortage of necessary staff, equipment, and medicines in Nigeria's health system (Adejoh et al., 2022).

Abia State, located in the southeastern region of Nigeria, was created from Imo State in 1991. It shares boundaries with Enugu and Ebonyi States to the north, Akwa Ibom State to the south-south, Rivers and Imo States to the southwest. The region features tropical rainforests and woodlands and is rich in natural resources. Most residents engage in agriculture as their primary occupation. Aba town is notable for its textile and shoe manufacturing industries, with the main

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industrial area situated near the railway that connects to Port Harcourt. Adequate equipment is one of the prerequisites for an effective and responsive healthcare system. Unfortunately, many PHC facilities in Nigeria, including those in Abia South, appear to fall short of these essential standards. This inadequacy continues to hinder the delivery of quality healthcare services and poses a significant challenge to the improvement of maternal and child health outcomes in the region. Therefore, this study seeks to evaluate the availability of equipment in the primary health care in Abia South Senatorial District.

METHODOLOGY

This study adopted a descriptive cross-sectional design. The study was conducted in Abia South Senatorial Zone, which comprises of six Local Government Areas (LGAs): Aba North, Aba South, Obingwa, Ugwunagbo, Ukwa East, and Ukwa West. There are 81 government-owned Primary Healthcare Centres (PHCs) distributed across various wards in these areas. A total of 26 Primary Healthcare Centers and 52 midwives were selected for this study. Two midwives were chosen from each of the 26 PHCs through a random sampling technique. The names of the PHCs were written on slips of paper, mixed in a container, and randomly picked to ensure an unbiased selection process. An ethical approval letter was obtained from the Ethical Research Committee of the University of Port Harcourt. This was presented to the Health Authority Secretaries of the six Local Government Areas within Abia South Senatorial Zone. Formal permission was granted for the conduct of the study and for data collection in the selected Primary Health Centres.

An observation checklist, adapted from the National Primary Health Care Development Agency (NPHCDA) Minimum Standard Checklist, was used to assess the equipment in each of the 26 PHCs. The data collection process lasted two months. The instruments were reviewed by research experts and the research supervisor to ensure validity.

Data collected from the 26 PHCs were sorted, coded, and analyzed using frequency distribution tables and simple percentage methods.

RESULT

Table 1: EQUIPMENT IN OBINGWA L.G.A (6 PHCs – Semi-Urban)

Item Description	Required for 1 PHC	Required for 6 PHCs	Available	Percentage (%)
Female Ward	65	390	174	44.62
Labour	92	552	204	36.96
First Stage Room	61	366	0	0.00
Laboratory (available but not equipped)	140	840	0	0.00
Dressing / Injection Rooms	118	708	162	22.88
Family Planning	39	234	90	38.46
Others*	53	318	8	2.52

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Item Description	Required for 1 PHC	Required for 6 PHCs	Available	Percentage (%)
Antenatal / Interview Room	124	744	55	7.39
Nutrition	62	372	0	0.00
Sterilization	33	198	0	0.00
Records	7	42	0	0.00
Total	**794**	**4,764**	**693**	**14.55**

Others include: communication facility e.g mobile phones or radio, motorcycle, bicycle and solar refrigerator.

Source: *survey 2025*

The analysis shows that the six PHCs in Obingwa L.G.A are critically under-equipped, with only 14.55% of the required medical equipment available and functioning.

TABLE 2: EQUIPMENT IN UGWUNAGBO L.G.A (5 PHCs – Rural)

Item Description	Required for 1 PHC	Required for 5 PHCs	Available	Percentage (%)
Female Ward	65	260	168	64.62
Labour	92	368	204	55.43
First Stage Room	62	244	0	0.00
Laboratory (available but not equipped)	140	560	0	0.00
Dressing / Injection Rooms	118	472	144	30.51
Family Planning	39	156	39	25.00
Others	53	212	4	1.89
Antenatal / Interview Room	124	496	136	27.42
Nutrition	62	248	1	0.40
Sterilization	33	132	0	0.00
Records	7	28	0	0.00
Total	**795**	**3,176**	**696**	**21.91**

Others include: communication facility e.g. mobile phones or radio, motorcycle, bicycle and solar refrigerator.

Source: *survey 2025*

The analysis shows that the five PHCs in Ugwunagbo L.G.A are critically under-equipped, with only 21.91%, of the required medical equipment available and functioning.

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TABLE 3: EQUIPMENT IN ABA NORTH L.G.A (5 PHCs – Urban)

Item Description	Required for 1 PHC	Required for 5 PHCs	Available	Percentage (%)
Female Ward	65	325	0	0.00
Labour	92	460	0	0.00
First Stage Room	61	305	0	0.00
Laboratory (available but not equipped)	140	700	0	0.00
Dressing / Injection Rooms	118	590	0	0.00
Family Planning	39	195	181	92.82
Others	52	265	0	0.00
Antenatal / Interview Room	124	620	0	0.00
Nutrition	62	310	0	0.00
Sterilization	33	165	0	0.00
Records	7	35	0	0.00
Total	**793**	**3,970**	**181**	**4.56**

Others include: communication facility e.g mobile phones or radio, motorcycle, bicycle and solar refrigerator.
Source: *survey 2025*

The analysis shows that the five PHCs in Aba North L.G.A are poorly equipped, with only 4.56%, of the required medical equipment available and functioning.

TABLE 4: EQUIPMENT IN ABA SOUTH L.G.A (4 PHCs – Urban)

Item Description	Required for 1 PHC	Required for 4 PHCs	Available	Percentage (%)
Female Ward	65	325	0	0.00
Labour	92	469	115	25.00
First Stage Room	61	305	0	0.00
Laboratory (available but not equipped)	140	700	0	0.00
Dressing / Injection Rooms	118	590	96	16.27
Family Planning	39	195	139	71.28
Others	53	265	111	41.89
Antenatal / Interview Room	124	620	76	12.26
Nutrition	62	310	0	0.00
Sterilization	33	165	0	0.00
Records	7	35	0	0.00
Total	**794**	**3,979**	**537**	**13.50**

Others include: communication facility e.g mobile phones or radio, motorcycle, bicycle and solar refrigerator. Source: *survey 2025*

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The overall percentage of equipment available and functioning in the PHCs in Aba South Local Government is 13.50%.

Table 5: EQUIPMENT IN UKWA WEST L.G.A (6 PHCs – Urban)

Item Description	Required for 1 PHC	Required for 6 PHCs	Available	Percentage (%)
Female Ward *(Not available)*	65	325	0	0.00
Labour	92	460	183	39.78
First Stage Room *(Not available)*	61	305	0	0.00
Laboratory *(Available but not equipped)*	156	780	0	0.00
Family Planning	39	195	128	65.64
Others	53	265	138	52.08
Antenatal / Interview Room	124	620	156	25.16
Nutrition *(Equipment not available)*	62	310	0	0.00
Sterilization *(Equipment not available)*	33	165	0	0.00
Records *(Equipment not available)*	7	35	0	0.00
Total	**692**	**3460**	**605**	**17.49**

Others include: communication facility e.g mobile phones or radio, motorcycle, bicycle and solar refrigerator.

Source: *survey 2025*

The total percentage of overall equipment available and functioning was 17.49%.

TABLE 6: EQUIPMENT IN UKWA EAST L.G.A (3 PHCs – Rural)

Item Description	Required for 1 PHC	Required for 3 PHCs	Available	Percentage (%)
Female Ward	65	325	0	0.00
Labour	92	456	129	28.29
First Stage Room	61	305	0	0.00
Laboratory	118	590	140	23.73
Dressing / Injection Rooms	39	195	94	48.20
Family Planning	53	265	105	39.62
Others	124	620	124	20.00
Antenatal / Interview Room	62	310	0	0.00
Nutrition	33	165	0	0.00
Sterilization	7	35	0	0.00

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Item Description	Required for 1 PHC	Required for 3 PHCs	Available	Percentage (%)
Records	65	325	0	0.00
Total	**719**	**3,591**	**592**	**16.49**

Others include: communication facility e.g mobile phones or radio, motorcycle, bicycle and solar refrigerator.

Source: *survey 2025*

The total percentage of overall equipment available and functioning were put at 16.49%.

DISCUSSION OF FINDINGS

Suboptimal access to diagnostic and therapeutic tools hampers the ability of healthcare providers to deliver timely and accurate care, potentially compromising patient outcomes and leading to low levels of patient satisfaction and preventable deaths (Woldeyohanins et al., 2025). Research on the usage of medical equipment contributes valuable insights for improvements in the health service delivery system. Observations revealed that most PHCs across Abia South District possess only a limited range of basic medical equipment such as artery forceps, dressing scissors, gloves, stainless trays, kidney dishes, syringes, vaginal speculums, umbilical cord clamps, and weighing scales. These represent a small fraction of the required minimum equipment standard set by NPHCDA for effective service delivery.

The study aligns with Damilola (2026) who showed that due to shortages of basic medical equipment in Nigeria, improvisation has become a persistent feature in the Nigerian health system 31.9% and 22.78% of 2,480 Nigerian health facilities did not have sphygmomanometers and functional stethoscopes respectively. Woldeyohanins et al., 2025 revealed that the availability of at least one piece of capital medical equipment in the surveyed hospitals was only 25.6%, and the average availability of medical equipment in comprehensive systemic hospitals was only 55.93%, which indicates a notable deficiency in this fundamental aspect of healthcare infrastructure. They further showed that the availability of critical medical equipment, such as machines for CT scans, MRI, x-ray radiography with digital fluoroscopy, and x-ray mammography, was inadequate across most of the hospitals. This finding correlates with the present study.

The current result was consistent with the result of another study conducted in Ethiopia, it showed the presence of average availability of medical equipment at the health facilities (Moyimane et al., 2017). A noteworthy observation from our study was the substantial variability in the availability of medical equipment among the surveyed PHCs. The observed inadequacies in medical equipment availability have profound implications for healthcare delivery in primary health care. This finding is in line with the result of similar studies conducted in Jimma University Specialized Hospitals and Nekemte General Hospital, indicating a consistent trend of poor availability that varies across institutions (Ademe et al., 2016). In addition, a study conducted in South Africa supported the result of the current study in that there was a lack of availability and inadequate maintenance of medical equipment in hospitals. Thus, the intended service could not be delivered in each hospital due to either the non-availability of medical equipment or a non-functionality problem (Moyimane et al., 2017).

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The inadequate medical equipment observed in the current study could be linked to the fact that, the government may not be providing an adequate budget for the sector. Thus, the poor availability has seemingly occurred without the concurrent provision of essential medical equipment and other service requirements. The availability of equipment standards is an important factor when making an informed choice about what to buy to meet priority health needs and avoid wasting limited resources on devices that will not promote quality care, which is one of the main pillars of universal health coverage (Adams, 2008).

A previous study also indicated that in Ethiopia, medical equipment development plans were not found in half of the surveyed public hospitals (W.H.O 2016). However, lack of guidelines, which are important for complying with standards, could be a significant barrier to the acquisition of medical equipment in accordance with established guidelines. The absence or poor state of equipment significantly hampers service efficiency across antenatal, postnatal, and child health units.

IMPLICATION TO RESEARCH AND PRACTICE

This research represents the first known comprehensive investigation into availability of equipment in primary health care within Abia State. The findings and recommendations generated from this study provide valuable insights that can support improvements in healthcare delivery across Nigeria's six geopolitical zones, including Abia South.

CONCLUSION

In this study, the availability of medical equipment at PHCs in Abia South senatorial district in Abia State were assessed, and the study revealed the overall state of equipment in PHCs across the district falls below NPHCDA minimum standards. The availability of essential medical equipment across PHCs in Abia South was generally low, with most facilities possessing only basic items such as gloves, artery forceps, and dressing. The Challenges include the absence of a well-equipped and standardized maintenance workshop, training gaps, maintenance and installation issues, and budget constraints. Addressing these challenges requires a collaborative effort, strategic investments, and future research to broaden the scope and consider a wider range of healthcare settings. Therefore, the Abia State Government should work cooperatively with the Abia South senators, house of representatives and local government chairmen of these LGAs to exert maximal effort to improve the availability and accessibility of medical equipment through the allocation of an adequate budget, implement regulations and policies on medical equipment utilization and management practices, provide regular capacity building and training programs for biomedical technicians, and to improve equipment maintenance facilities at each PHCs.

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