

# Integrated Service Delivery in Primary Health Care: Urban and Rural Perspectives from Southeastern Nigeria

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**Abstract: Background:** Integrating health services in primary health care (PHC) enhances efficiency, access, and comprehensive care, playing a vital role in achieving equity, universal health coverage (UHC), and better population health outcomes.

**Objective:** This study examined the differences in integrated health service delivery between urban and rural PHC facilities in Anambra State, Nigeria.

**Methods:** Interviewer-administered questionnaires and observation checklists assessed variations in service availability, workforce practices, and patient experiences across urban and rural PHC facilities. Health workers and clients were selected using probability and convenience sampling, respectively. Data were analysed using descriptive statistics and Chi-square tests at a 5% significance level.

**Results:** Health workers provided specific services on designated days, with over 91% of clients having been turned away and asked to return for services on scheduled days. Urban PHC facilities had a statistically significant advantage over rural ones in human resource availability, frequency of basic service provision, and implementation of a two-way referral system.

**Conclusion:** Strengthened policies, ongoing capacity building, and strong monitoring systems are vital for effective PHC service integration.

**Keywords:** Integrated health services, Primary health care, urban-rural comparison, health workers, southeastern Nigeria.

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## I. INTRODUCTION

Following the Alma-Ata Declaration, many countries, including Nigeria, adopted PHC to expand coverage and equity. Nigeria's initial implementation efforts in 1976 and 1986, however, were unsuccessful [1], [2], [3], [4], [5], [6], [7], [8], [9], [10]. PHC is the foundation of Nigeria's health system and a globally recognized, equitable, and cost-effective route to

achieving UHC and health-related SDGs [10], [11], [12]. Although PHC facilities make up about 85% of Nigeria's health infrastructure, only an estimated 20% were fully functional by 2024, hindered by low utilization, skills gaps, long wait times, inadequate staffing, and inconsistent drug supply [11], [12]. Most PHC facilities in Nigeria are severely underutilized, serving just 5–10% of their capacity—largely due to public distrust, inadequate funding, and weak community engagement [13].

Currently, most PHC services are delivered through parallel vertical programs, leading to duplication and resource waste [3]. Integrating these services is essential for better coordination and efficient resource use. Service integration refers to delivering comprehensive health care daily to defined communities, simultaneously, in one location, by the same personnel [1], [3]. This setup benefits clients by allowing access to multiple services in a single [3]. Integrated health service delivery ensures a seamless, patient-centered experience by coordinating care across prevention, treatment, rehabilitation, and palliative services—replacing fragmented, siloed systems with continuous, holistic care. Service integration is supported by a cohesive health team, active ward system, structured supervision, and a functional two-way referral system [3].

Referral is the process by which a health worker seeks support from a better-resourced colleague at the same or higher level to manage a client's case when resources—such as equipment, skills, or knowledge—are lacking [14], [15]. A two-way referral system is a structured relationship between health workers at the same or different system levels, enabling mutual case management and feedback [15], [16]. A two-way referral system requires prompt referrals from the initial provider and feedback from the receiving provider after treatment, including findings, investigations, and care given [15], [16]. This promotes continuity of care and builds the referring provider's capacity. This study aimed to assess and compare the delivery of integrated health services in urban and rural PHC facilities in Anambra State.

## II. METHODS

This study was conducted in PHC facilities in six Local government areas (LGAs) of Anambra State in southeastern Nigeria. The State is made up three Senatorial zones, 21 LGAs, 330 wards and 177 communities, with the capital at Awka [17]. This was a facility based descriptive cross-sectional study. The study population included health workers at PHC facilities in the LGAs, as well as clients accessing services at those facilities. A sample size of 300 (health workers) was calculated using the appropriate Cochran's formula [18],  $n_0 = Z^2pq/e^2$ .

A multistage sampling technique was used to select six LGAs (three urban and three rural) and 30 wards across Anambra State. At each stage, simple random sampling via balloting was applied. Five wards were chosen per LGA, and two PHC facilities per ward, yielding a total of 60 facilities. Health workers within these facilities were selected through simple random sampling. Additionally, four clients per facility were selected for exit interviews using convenience sampling. Data were collected using semi-structured, interviewer-administered questionnaires for health personnel and clients, alongside an observational checklist to assess staffing, daily service provision, and available resources in the selected facilities.

Data collection tools were reviewed daily for accuracy and completeness. Data were entered and analyzed using SPSS version 20. Descriptive statistics—frequencies, percentages, means, and standard deviations—were used to summarize variables. Chi-square tests assessed significant differences and associations, with a significance level set at 0.05.

## III. RESULTS

Table 1 presents the sociodemographic profile of the health workers, all of whom were female. The majority were aged between 33 and 44 years, with over half having more than 10 years of service. Most were employed as CHEWs. Table 2 presents the demographic characteristics of facility clients, with the majority being female and aged between 35 and 44 years. Table 3 highlights statistically significant differences between urban and rural health workers in key service delivery practices, including completion of referral forms, provision and receipt of feedback, and delivery of health education services—all of which were more prevalent among urban workers. Table 4 reveals statistically significant differences in service access between urban and rural clients. Table 5 shows statistically significant differences in the availability of implants and Standing orders between urban and rural facilities. Table 6 shows a significant difference in urban and rural PHC facilities in the clear labelling of service areas.

**Table 1: Demographic characteristics of health workers at the PHC facilities**

Variable	Frequency (n = 300)	Percent
<b>Age (years)</b>		
23 – 33	10	3.3
34 – 44	149	49.7
45 – 55	127	42.3
>55	14	4.7
Mean age ± SD	44.36 ± 6.46	
<b>Marital status</b>		
Never married	15	5.0
Ever married	285	95.0
<b>Cadre of health worker</b>		
JCHEW	67	22.3
CHEW	145	48.3
CHO	39	13.0
Nurse/Midwife	49	16.3
<b>Number of years in service as a health worker</b>		
1 – 5 years	19	6.3
6 – 10 years	122	40.7
>10 years	159	53.0

\*SD = Standard deviation, JCHEW = Junior community health extension worker, CHEW = Community health extension worker, CHO = Community health officer

**Table 2: Demographic characteristics of PHC facilities' clients**

Variable	Frequency (n = 240)	Percent
<b>Age (years)</b>		
25 – 34	43	17.9
35 – 44	86	35.8
45 – 54	63	26.3
55 – 64	32	13.3
>64	16	6.7
Mean age ± SD	45.14 ± 11.254	
<b>Gender</b>		
Male	34	14.2
Female	206	85.8
<b>Marital status</b>		
Never married	10	4.2
Ever married	240	95.8

**Table 3: Comparison of some services provision between urban and rural PHC workers**

Variable	Urban PHC n (%)	Rural PHC n (%)	X <sup>2</sup>	p-value
<b>Do you fill referral forms for clients?</b>				
Yes, always	11 (7.3)	9 (6.0)		
Yes, sometimes	125 (83.3)	90 (60.0)		
No	14 (9.3)	51 (34.0)	<b>26.959</b>	<b>0.000</b>
<b>Do you give feedback to facilities?</b>				
Yes, always	13 (8.7)	12(8.0)		
Yes, sometimes	107 (71.3)	74 (49.3)		
No	30 (20.0)	64 (42.7)	<b>18.354</b>	<b>0.000</b>

<b>Do you get feedback from facilities?</b>				
Yes, always	12 (8.0)	4 (2.7)		
Yes, sometimes	105 (70.0)	90 (60.0)		
No	33 (22.0)	56 (37.3)	<b>11.098</b>	<b>0.003</b>
<b>Do you expect feedback from facilities?</b>				
Yes, always	14 (9.3)	13 (8.7)		
Yes, sometimes	111 (74.0)	84 (56.0)		
No	25 (16.7)	53 (35.3)	<b>13.827</b>	<b>0.001</b>
<b>Do you provide health education daily?</b>				
Yes	132 (88.0)	103 (68.7)		
No	18 (12.0)	47 (31.3)	<b>16.517</b>	<b>0.000</b>

**Table 4: Comparison of some services accessed by facility clients in urban and rural PHC**

Variable	Urban PHC n (%)	Rural PHC n (%)	X <sup>2</sup>	p-value
<b>Are labour &amp; delivery services available daily?</b>				
Yes	93 (77.5)	65 (54.2)		
No	27 (22.5)	55 (45.8)	<b>14.523</b>	<b>0.000</b>
<b>Are health education services available daily?</b>				
Yes	84 (70.0)	56 (46.7)		
No	36 (30.0)	64 (53.3)	<b>13.440</b>	<b>0.000</b>
<b>Ever been referred to another facility?</b>				
Yes	77 (64.2)	105 (87.5)		
No	43 (35.8)	15 (12.5)	<b>17.825</b>	<b>0.000</b>
<b>Were you given a referral letter?</b>				
Yes	33 (42.9)	36 (34.3)		
No	44 (57.1)	69 (65.7)	1.387	0.239
<b>Ever returned with feedback?</b>				
Yes	23 (29.9)	26 (24.8)		
No	54 (70.1)	79 (75.2)	0.589	0.500

**Table 2: Comparison of available Material resources between urban and rural PHCs**

Variable	Urban PHC (%)	Rural PHC (%)	X <sup>2</sup>	p-value
Operation of an effective drug revolving fund	80.0	90.0	1.176	0.278
Standing Orders available	56.7	80.0	<b>3.774</b>	<b>0.052</b>
Standing Orders utilized	20.0	10.0	0.523*	0.470
Two-way referral forms available	26.7	13.3	1.667	0.197
Two-way referral forms utilized	6.7	0.0	0.517*	0.472
Essential drugs available	90.0	100.0	1.404	0.236
Vaccines available	100.0	100.0	0.000	1.000
Thermometer available	100.0	100.0	0.000	1.000
Functioning weighing scale available	93.3	96.7	0.351	0.554
Fetoscope available	100.0	100.0	0.000	1.000
Functioning BP apparatus available	93.3	96.7	0.351	0.554
Oral contraceptive pills available	93.3	93.3	0.000	1.000
Condoms available	93.3	93.3	0.000	1.000
Injectable (contraceptives) available	96.7	93.3	0.000	1.000
IUCD available	53.3	36.7	1.684	0.194
Implants available	83.3	60.0	<b>4.022</b>	<b>0.045</b>

\*Continuity Correction

**Table 3: Comparison of other services and ancillary resources between urban and rural PHCs**

Variable	Urban PHC (%)	Rural PHC (%)	X <sup>2</sup>	p-value
Supervisory schedules available	66.7	66.7	0.000	1.000
Supervisory schedules effectively implemented	13.3	3.3	0.873	0.350
Supervisory checklists available	76.7	56.7	2.700	0.100
Supervisory checklists utilized	10.0	0.0	1.404*	0.236
Service areas clearly labelled	50.0	16.7	<b>7.500</b>	<b>0.005</b>
Facility clean and well maintained	90.0	86.7	0.000	1.000

\*Continuity Correction

#### IV. DISCUSSION

Integrated service delivery promotes efficient use of scarce resources while enhancing client convenience and satisfaction [1], [3]. It enables families to access diverse services for members of all ages and genders in a single visit, thereby improving service uptake, reducing loss to follow-up, and strengthening continuity of care at individual, family, and community levels.

All health care workers reported having designated days for specific services, with over 99% admitting to turning away clients and asking them to return on scheduled days. Similarly, over 91% of clients confirmed being turned back for this reason. Such practices risk missed care opportunities, as many clients may not return due to personal, financial, logistical, or geographic barriers. Labour and delivery (93.3%), treatment of common ailments (91.3%), and health education (78.3%) were the most frequently reported daily services by health workers. Clients similarly identified treatment of common ailments (93.3%), labour and delivery (65.8%), and health education (58.3%) as routinely accessible. The gap in daily provision of health education highlights systemic inefficiencies in promoting health and preventing disease, underscoring a missed opportunity in comprehensive PHC delivery. Health education is a vital tool for disease prevention, early detection, and effective management [19]. Its inconsistent daily delivery may stem from some health workers' limited awareness of its central role in client care. Many tend to prioritize curative services, often overlooking the preventive and promotive aspects that rely heavily on education and communication.

Referral forms are essential documents in patient transfers between health facilities. They communicate the working diagnosis, requested investigations and results, management plan, and challenges faced by the referring provider. This enables the receiving health worker to build on existing care, address any gaps, and ensure improved patient outcomes. Only 6.7% of health personnel consistently complete referral forms for referred clients, while over 84% are unaware of their importance. Consequently, just 5.3% regularly receive feedback from referral facilities—likely due to the absence of referral documentation, which leaves receiving providers unsure of whom to address. These findings align with similar studies across Africa, highlighting systemic gaps in referral communication and documentation [15], [20]. Alarming, only 9% of health care providers expect feedback from referral facilities. Just 37.9% of referred clients received referral forms, and only 26.9% returned with feedback. These figures highlight the breakdown of the two-way referral system, which likely undermines care continuity and compromises the overall quality of services provided to clients.

A significantly higher proportion of urban PHC facilities had CHEWs and nurse/midwives compared to rural ones ( $p = 0.022$ ). These cadres constitute the core of the PHC workforce, indicating a concentration of human resources in urban areas. Contributing factors may include poor road access, inadequate educational infrastructure, and limited social amenities in rural settings. The resulting manpower shortage in rural areas likely compromises service quality and may explain why JCHEWs and VHWs are confined to facility-based roles, neglecting essential community outreach services.

There were no significant differences between urban and rural PHC facilities in the overall availability of basic health care services. However, community mental health services were absent across both settings, and follow-up services were available in fewer than 24% of facilities. Statistically significant differences were observed in the number of days per week that services such as immunization, adolescent health, home visits, geriatric care, food demonstrations, and growth monitoring were offered—these were more frequently available in urban facilities. This disparity may be attributed to higher population density in urban areas, which sustains greater service demand and utilization compared to sparsely populated rural communities.

Most urban and rural PHC facilities operated an effective drug revolving fund scheme, ensuring consistent availability of essential drugs and materials for quality patient care. While Standing Orders for patient management were more available

in rural facilities ( $p = 0.052$ ), their utilization remained low—only 10% in rural and 20% in urban settings—likely due to inadequate post-employment orientation. Similarly, two-way referral forms were scarcely available, with just 6.7% of urban facilities reporting usage. This mirrors findings from other African studies and reflects poor perception and insufficient capacity building among health care providers [20], [21].

There were no significant differences in the availability of modern contraceptives between urban and rural PHC facilities, except for implants, which were more available in urban settings ( $p = 0.045$ ). This disparity may stem from a lack of trained personnel in rural areas or client-related factors such as low education levels and cultural beliefs. While over 66% of both categories of facilities had supervisory schedules and 56% had checklists, implementation was poor—only 10% of urban facilities used the checklists. Additionally, significantly more urban facilities had clearly labelled service areas ( $p = 0.005$ ), which supports efficient service delivery and reduces client waiting time by improving facility navigation.

A significantly higher proportion of urban PHC workers complete referral forms for referred clients ( $p = 0.000$ ) and provide feedback to referring facilities ( $p = 0.000$ ) compared to their rural counterparts. Consequently, more urban providers also receive feedback from referral destinations ( $p = 0.003$ ), while fewer rural workers expect such feedback ( $p = 0.001$ ). These findings suggest that two-way referral practices are more robust in urban settings. Additionally, daily provision of health education services is significantly more common among urban PHC workers ( $p = 0.000$ ), highlighting disparities in preventive care delivery. A significantly higher proportion of urban clients accessed daily health education and labour and delivery services compared to rural clients ( $p = 0.000$ ). Conversely, a greater percentage of rural clients reported having been referred to other facilities for further care ( $p = 0.000$ ). However, there were no significant differences between urban and rural clients regarding receipt of referral letters or return with feedback, indicating a systemic gap in referral documentation and follow-up across both settings.

## V. CONCLUSION

This study reveals a lack of integrated service delivery across PHC facilities, as most clients reported being asked to return on specific days for certain services. Urban PHC facilities demonstrated a statistically significant advantage over rural counterparts in terms of human resource availability, frequency of basic service provision, and adherence to two-way referral practices. These disparities highlight systemic inefficiencies and inequities that hinder the delivery of comprehensive, client-centered care.

This study recommends targeted training and capacity building for health workers to improve their understanding and implementation of integrated service delivery. It also calls for stronger political commitment and equitable resource allocation to ensure consistent availability of essential services, particularly in underserved areas. Strengthening supervision and revitalizing the referral system are essential for enhancing service quality and continuity of care.

### Declarations

#### Ethical consideration

Ethical approval for the study was obtained from the Health Research Ethics Committee of Chukwuemeka Odumegwu Ojukwu University Teaching Hospital (COOUTH/CMAC/ETH.C/VOL.1/FN:04/134). Permission was also granted by the Anambra State Primary Health Care Development Agency. Written informed consent was obtained from all participants, and participation was entirely voluntary.

#### Competing interests

The authors declare that there are no competing interests.

#### Funding

This study had no external funding.

#### Author contributions

IAN conceived the study and was involved in all processes of initial manuscript development, data collection, analysis, and interpretation of the results. HNO, CCN, IGE, CAE, CUN, IVO and KCN collected and analysed data, and developed the final manuscript. All authors critically reviewed the contents of the manuscript.

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