

## Hilary Okunbor

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Dr. Hilary Okunbor, MBBS, MPH, is a member of the Epidemiological Society of Nigeria and the African Society of Laboratory Medicine. He has worked with patients, scholars, and communities around the globe his entire career. He is a resident doctor in the Department of Medical Microbiology and Parasitology, Babcock University Teaching Hospital, where he helped tracking antimicrobial resistance using Global Point Prevalence Survey (GPPS). Dr. Hilary Okunbor was the Head of Medical Services and a lecturer in the Department of Epidemiology, Lead City University, where he instituted Adolescent and Youth Friendly Healthcare Services, and implemented guidelines for treating sexually transmitted diseases. He was also, a member of Ethics Review Board of the University and was appointed a member of Surveillance Pillar, COVID-19 Emergency Operation Center, Nigeria, where he was involved in reviewing protocols, providing training and technical support to the stakeholders. Due, to his active role in combating infectious disease, he was awarded a travel grant, for Global Vector Control Response, Bill and Melinda Gate Foundation. In addition, He has been actively involved at regional, national, and international levels, as he is also a Member, Nigeria Medical Association, Nigeria Red Cross Society, Data Science Society of Nigeria, Bioethics Society of Nigeria. He is promoting the inclusion of stakeholders in reducing antimicrobial resistance through conference presentation, seminars and workshop. His researches were on antimicrobial resistance, COVID-19, Human Papillomavirus, Vitamin A, depression among perinatal Women Living with HIV, and prevalence of psychoactive substance abuse among undergraduate in a Tertiary.

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## Project

### **Prevalence and patterns of carriage of vancomycin -resistant *Staphylococcus aureus* among in-patients in a teaching hospital in South West Nigeria**

Multi-drug resistance organisms have devastating consequences in many healthcare facilities in Africa<sup>1</sup>. Methicillin-resistant *Staphylococcus aureus* (MRSA) is a ubiquitous organism in healthcare facilities, and its transmission is primarily via nasal carriage in both patients and healthcare workers<sup>2,3</sup>. The current empirical treatment for MRSA is vancomycin a drug with potential nephrotoxic effects<sup>4</sup>. However previous studies have shown the presence of Vancomycin-Resistant *Staphylococcus aureus* in clinical isolates from patients<sup>5,6</sup>. The emergence of VRSA may be largely due to selective pressure from antibiotic therapy with vancomycin. In addition, carriage of VRSA has been associated with significant morbidity and mortality in in- patients. There is however a paucity of data on the prevalence and pattern of carriage of Vancomycin-Resistant *Staphylococcus aureus* among in-patients on antibiotics. In addition there is also a paucity of data on the clinical outcomes of these patients. The research questions of this study are thus: amongst whom VRSA is common by exploring their socio-demographic and clinical characteristics. Secondly does nasal carriage of VRSA in patients result in worse outcomes. The objectives of this study therefore are: (1) to determine the prevalence of nasal carriage of VRSA in in-patients on antibiotics and those not on antibiotics. (2) To determine the pattern of nasal carriage of VRSA among in-patients. Data from this study will be useful in planning infection prevention and control protocols to reduce infections from VRSA.

## Methods

The study will be descriptive cross-sectional to determine the point prevalence and patterns of VRSA. Four hundred (400) patients admitted to five wards (two medical, two surgical and obstetric wards) of Babcock University Teaching Hospital will be included in the study on day 3 of admission. There will be 400 samples (nasal swabs) collected from inpatients. *Staphylococcus aureus* will be isolated, characterized and identified based on morphological and biochemical features. The antimicrobial susceptibility testing of the isolates will be done with 12 antibiotics using the Clinical and Laboratory Standards Institute (CLSI) guidelines. While the Etest will be conducted to determine resistance of *Staphylococcus aureus* to Vancomycin. This test will be confirmed by amplification of vanA gene.

Interviewer administered questionnaire will also be used to obtain information on their socio-demographics, antibiotic history, and diagnosis. Data will be analyzed using descriptive statistics, chi-square and binary logistic regression test at 95% confidence interval.

## Limitations

1. Because it is a cross-sectional study, they will be made to recall antibiotics use in the last 4 month which will be subject to recall bias.
2. In this study differences between community-acquired VRSA and hospital-acquired VRSA cannot be separated.

## References

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## Results

See Dummy table

## Conclusion

**Keywords:** prevalence, pattern, outcome, Vancomycin-resistant *Staphylococcus aureus*

## DUMMY TABLE

Table 1: Socio-demographic characteristics

CHARACTERISTICS	Frequency (n= 400)	Percentage (%)
<b>AGE</b> < 20year 20-29 year 30 - 39year 40-49 year 50 - 59year ≥60 years		
<b>GENDER</b> Male Female		
<b>ETHNICITY</b> Yoruba Hausa Ibo Others		
<b>RELIGION</b> Christianity Islam Traditional		
<b>OCCUPATION</b> Professional Skilled Semi-skilled Unskilled		
<b>MARITAL STATUS</b> Single Married Separated Widowed		
<b>LEVEL OF EDUCATION</b> No formal Primary Secondary Tertiary		
<b>OCCUPATION</b> Student lecturer Civil servant Unemployed Others		

Table 2: Prevalence of VRSA

Variable	VRSA	No VRSA	TOTAL
<b>AGE</b> < 20year 20-29 year 30 - 39year 40-49 year 50 - 59year > 60year			

<b>Variable</b>	<b>VRSA</b>	<b>No VRSA</b>	<b>TOTAL</b>
<b>GENDER</b> Male Female			
<b>ETHNICITY</b> Yoruba Hausa Ibo Others			
<b>RELIGION</b> Christianity Islam Traditional			
<b>OCCUPATION</b> Professional Skilled Semi-skilled Unskilled			
<b>MARITAL STATUS</b> Single Married Separated Widowed			
<b>LEVEL OF EDUCATION</b> No formal Primary Secondary Tertiary			
<b>OCCUPATION</b> Student lecturer Civil servant Unemployed Others			
<b>WARD</b> FMW MMW FSW MSW O AND G			
<b>ANTIBIOTICS USE IN THE LAST 4 MONTHS</b> Yes No			
<b>CHRONIC MEDICAL CONDITIONS</b> Hypertension Heart disease Diabetes mellitus Kidney disease Respiratory disease Hemoglobinopathy Others			
<b>Total</b>			