



Research Article

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# Sources of Payment for Cardiac Intervention in Nigeria

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## Abstract

**Background:** Cardiovascular diseases such as acute coronary syndrome, symptomatic bradycardia, sudden cardiac arrest and advanced heart failure are common in low resource country like Nigeria. The objective of the study aims at evaluating the modes of payment for cardiovascular intervention in south-south Nigeria.

**Methods:** This is a retrospective study and it evaluate the various modes and sources of payment of cardiovascular interventions over the last 8 years of cardiovascular interventions in the south-south.

**Results:** The various sources of payment of cardiovascular interventions include out of pocket expenses, insurance coverage, and government programs. The out-of-pocket payment account for 78%, private insurance 7% and NGOs ie near free interventions 12%. There was no coverage of public insurance or Government program on the cardiovascular interventions.

**Conclusion:** The commonest source of payment is out of pocket payment.

## Introduction

Cardiovascular diseases such as acute coronary syndrome, ischemic strokes, acute limb ischemia, critical limb ischemia, massive pulmonary embolism and extensive deep venous thrombosis [1-3]. The CAD burden is projected to disproportionately affect Africa, with a doubling of its mortality by 2030 [4,5]. Acute Coronary Syndrome (ACS) is the major contributor to CAD mortality [6]. Only a small proportion of the study populations in the South African arm of ACCESS (Acute Coronary Events—A Multinational Survey of Current Management Strategies) were indigenous Black African people [7]. Coronary Artery Disease (CAD) in Nigeria is experiencing a rising prevalence due to urbanization and lifestyle changes, with approximately 25% of adult Nigerians now at risk [8-10]. While historically considered rare, CAD now accounts for about 2.82% of total deaths in Nigeria, often presenting with significant risk factors like hypertension, obesity, and diabetes [8-10]. With the increase in coronary artery disease in Nigeria, and increase in

number of cardiac catheterization laboratories, the mode of payment is still very weak with most patient paying from their pocket. This study investigated the modes of payment from a single cardiac catheterization laboratory in the south-south region of Nigeria.

## Method

### Study Design

This study is retrospective and descriptive cross-sectional. It evaluated the healthcare financing of Percutaneous Coronary Intervention in one centre in Nigeria. This study used a descriptive cross-sectional study design and it evaluates the various modes and sources of payment of cardiovascular interventions over the last 8 years of cardiovascular interventions in the south-south.

### Study Population

The study population included the those with coronary

intervention or cardiac devices referred our centre in Port Harcourt. The study population consisted of individuals seeking cardiovascular interventions in the cardiac catheterization laboratory at Anderson and Save A life hospitals in Port Harcourt. A survey questionnaire was used to fill the questionnaire with a well-trained researcher. The information was sourced from patient file and account unit on mode of payment. The number of interventions covered include coronary, pacemaker, ICD, CRTs, peripheral, venous and pulmonary interventions. All payments were made in Naira. The study period ranged from January 2024 to May 31st, 20205 Modes of payment included out of pocket [cash or transfer from patient, relative or close person], government or public insurance and private insurance.

## Inclusion and Exclusion Criteria

The subjects with aged 18 years and above who presented to the two hospital facilities for cardiovascular interventions i.e. coronary interventions, pacemaker, ICD and cardiac Resynchronization Therapy. Respondents were considered eligible to participate if he/she is 18 years and older and have consented to fill the form. Excluded included those whose mode of payment were not clearly stated.

## Data Analysis

A baseline characteristic of respondents was presented using percentages and proportions. The out-of-pocket payments, private and government insurance were presented in proportions as needed.

## Results

### Socio Demographic Characteristics of the Study Group

In the socio demographic characteristics, age 40 years and

below accounts for 15.5% 40-50years accounts for 13.1%, 51-60 years accounts for 29.1%, 61-70 years account for 31.1% while 71 years and above accounts for 10.7%. This is shown in table 1. Female accounts for 52.4% and male: accounts 47.6% (Table 1).

### Mode and Source of Payment of Cardiovascular Intervention

The various sources of payment of cardiovascular interventions include out of pocket expenses, insurance coverage which may be Government and private. The out-of-pocket payment account for 78%, private insurance 7% and NGOs i.e. near free interventions 12%. There was no coverage of public insurance or Government program on the cardiovascular interventions. This is shown on table 2 and figure 1.

#### Out-of-Pocket Payment

This remains one of the most common sources of financing for healthcare services in Nigeria. Patient and their families often rely on personal savings or loan to pay for cardiac procedures.

#### Government or Public Funding

Government funding for cardiac interventions occur through federal and state healthcare programs. Some teaching hospitals offer subsidized cardiac procedures. However, government funding remains insufficient due to limited healthcare budgets and competing health priorities.

#### International Medical Missions

International cardiac missions organized by foreign medical teams and non-profit organization also contribute to the provision of cardiac care in Nigeria. These missions provide free or subsidized surgeries while also training local healthcare professionals (Table 2) & (Figure 1).

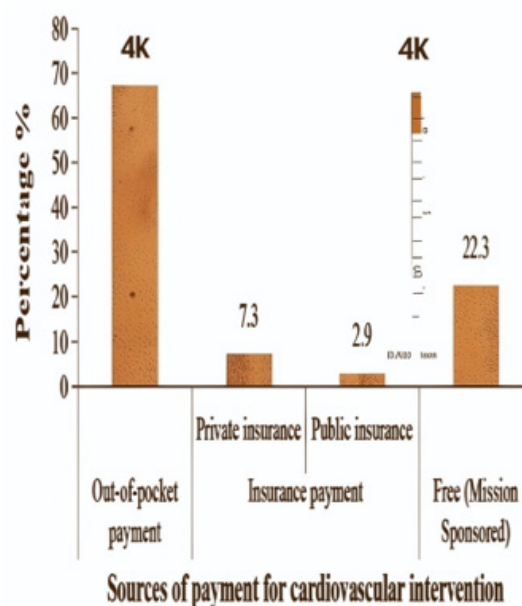


Figure 1: Source of payment for cardiovascular intervention.

**Table 1:** Socio demographic characteristics of the study population.

| Variables (N=206)         | Frequency | Percentage |
|---------------------------|-----------|------------|
| <b>Age category</b>       |           |            |
| <40years                  | 32        | 15.5       |
| 40 - 50years              | 27        | 13.1       |
| 51-60years                | 60        | 29.1       |
| 61 - 70years              | 65        | 31.6       |
| >7 years                  | 22        | 10.7       |
| <b>Gender</b>             |           |            |
| Female                    | 108       | 52.4       |
| Male                      | 98        | 47.6       |
| <b>Educational Level</b>  |           |            |
| No formal education       | 25        | 12.1       |
| Primary                   | 56        | 27.2       |
| Secondary                 | 66        | 32         |
| Tertiary                  | 59        | 28.6       |
| <b>Marital Status</b>     |           |            |
| Single                    | 74        | 35.9       |
| Married                   | 119       | 57.8       |
| Divorced                  | 5         | 2.4        |
| Widow/Widower             | 8         | 3.9        |
| <b>Occupation</b>         |           |            |
| Employed under Government | 21        | 10.2       |
| Employed privately        | 40        | 19.4       |
| Self-employed             | 66        | 32         |
| Unemployed                | 73        | 35.4       |
| Retired                   | 6         | 2.9        |

**Table 2:** Sources of payment of cardiovascular intervention in Nigeria.

| Variable(N-206)          | Frequency | Percentage |
|--------------------------|-----------|------------|
| Out-of-pocket payment    | 139       | 67.5%      |
| Insurance payment        |           |            |
| Private insurance        | 15        | 7.3%       |
| Public insurance         | 6         | 2.9%       |
| Free (Mission Sponsored) | 46        | 22.3%      |
| <b>Total</b>             | 206       | 100.0%     |

## Discussion

Out of pocket payment is the commonest source in modes of payment in Nigeria. Adeniji et al in a study of Burden of out-of-pocket payments among patients with cardiovascular disease in public and private hospitals in Ibadan, South West, Nigeria: a cross-sectional study reported P2P as the most common form of payment in Nigeria [1]. Several other studies have also reported that out-of-pocket payment remains the most dominant method

of financing cardiac intervention in Nigeria [11,12]. Ogah et al., reported that majority of patients pays directly for cardiac intervention, medication and follow up care due to limited coverage of health insurance schemes [12]. The main sources of payment for cardiovascular interventions in the USA are Medicare, private insurance, and Medicaid with Medicare being the largest payer and private insurance also covering a significant portion [11]. In the USA, Medicare is the largest payer for cardiovascular care, covering a significant portion of hospitalizations and services [11] Private

Insurance formed a substantial payer, covering a large percentage of cardiovascular intervention costs, particularly for non-Medicare beneficiaries. Medicaid Covers cardiovascular care for eligible low-income individuals and is a significant payer, though smaller than Medicare or private insurance [11]. Uninsured portion of costs is paid out-of-pocket or by other means for individuals who lack insurance [11].

## Conclusion

The commonest source of payment in Nigeria is out of pocket payment.

## Acknowledgement

None.

## Conflict of Interest

None.

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