



# Evaluation of Availability, Prices and Affordability of Breast Cancer Medicines in Kwara-Central Senatorial District, Nigeria

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## 1 Introduction

- Globally, Breast cancer (BCa) is the most diagnosed cancer in women representing 25% of cancers diagnosed among women. However, there are rare cases of BCa in men
- Breast cancer (BCa) prognosis has been revolutionized by chemotherapeutic agents
- However, inadequate availability, high prices and unaffordability of BCa medicines (BCMs) constitute public health challenge.
- Dearth of information on availability, prices and affordability BCMs in Kwara-Central Senatorial District, Nigeria, necessitated this study.

## 2 Objectives

- Evaluation of the
  - availability,
  - prices, and
  - affordability
- of BCMs in Kwara-Central Senatorial District, Nigeria

## 3. Methods

- Multicenter study involved eligible 9 private (PR) and 1 public (PU) sector pharmacies.
- Adapted World Health Organization/Health Action International methods.
- Evaluated the availability, prices and affordability of 44 BCMs in stock on a one-time visit to the pharmacies.
- Determination of availability of surveyed BCMs, obtaining their prices & computation of the median price ratios (MPRs)
- Statistical comparisons of the median buyer's prices in PR and PU sector pharmacies & determination of median price difference among all pharmacies using Mann-Whitney U & Kruskal-Wallis tests respectively.
- Computation of BCMs treatment affordability.
- Study's ethical approval obtained from an Institutional Ethical Review Committee (ERCPAN/2022/02/0245).
- Informed consents were obtained from the pharmacists and business owners of the eligible PR & PU sector pharmacies.

## 4a. Results

- Only 40.9% of surveyed medicines were available with PU and PR sector pharmacies contributing 15.9% and 38.6% respectively.
- Fifty-percent of surveyed BCa medicines had fairly high



Figure 1. Percentage availability of BCa Medicines with fairly high availability

- Originator brand docetaxel 80 mg/4 ml had the highest price (N 55, 000 [\$132.50]) while generic tamoxifen tablet 20 mg had the lowest (N 38 [\$ 0.092]).

## 4b. Results

- Median price ratio (MPR) ranged 0.31-26.06 while only 27.8% of BCMs had less than 1 MPR

Table 1. Breast cancer medicines with MPR less than 1

Products	Median Price Ratio
Goserelin Injection 3.6 mg	0.8
Cyclophosphamide powder for injection 500 mg/ vial	0.55
Docetaxel injectable solution 20 mg/ml	0.31
Docetaxel injectable solution 40 mg/ml	0.64
Epirubicin powder for reconstitution 50 mg (2 mg/ml)	0.95

- No statistically significant median buyer price difference among the pharmacies nor between the public and private sector pharmacies.
- The lowest-paid government employee in Nigeria required more than 1 day's wage (N 1000 [\$2.41]) to purchase 94.4% of the BCMs.
- Only methotrexate tablet 2.5mg had affordability of less than 1 day's wage.

## 5. Conclusions

- BCMs are inadequately available
- BCMs have high prices
- BCMs are unaffordable in the surveyed Senatorial District of a state in Nigeria.
- Further studies should be conducted to identify factors responsible for the inadequate availability and high prices of BCMs.

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