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Evaluation of Health Insurance Scheme on Quality of Healthcare Services among the Enrollees in Ebonyi State, Nigeria

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Abstract **Original Research**

The goal of universal health coverage, or UHC, is to offer communities and people high-quality healthcare services. Millions of people yet continue to receive subpar medical treatment. In Nigeria, the prevalence of out-of-pocket payments has been around 70% for a few of years. State Social Health Insurance Agencies must increase coverage under the National Health Insurance Authority Act of 2022. There is insufficient data to demonstrate the effects of the Ebonyi State Health Insurance Agency's (EBSHIA) increased enrolment in Ebonyi State. The purpose of this study was to assess how the Health Insurance Scheme affected the quality of healthcare services provided to Ebonyi State enrollees. Key informant interviews and a retrospective pre-post survey were employed in a mixed-methods analytical methodology. Multi-stage sampling was used to poll 528 persons from 24 certified sites who were registered in the Basic Health Care Provision Fund. Additionally, ten key informant interviews were carried out. McNemar's test was used to assess responses, while Fisher-Freeman-Halton exact test ($\alpha = 0.05$) was used to analyse associations. All 12 core indicator scores significantly rose after enrolment ($p < 0.001$). Perceptions of effective care rose from 50.6% to 96.6%, the percentage of people who thought the service was inexpensive improved from 26.7% to 97.5%, and the percentage of people who thought the service provided acceptable quality treatment grew from 37.7% to 97.0%. Income-related severe financial hardship fell from 86.2% to 6.4% and from 80.9% to 4.0% at the household level, respectively. Nevertheless, the study's 90% requirement was not met by availability (83.3%) or tolerable waiting times (78.8%). Interviews revealed that drug shortages, protracted payment delays, and understaffing all negatively impact the quality of the healthcare system. Even while reported access, financial security, and perceived quality of care all significantly improved after enrolment, funding is still needed for staffing, provider reimbursement, and medicine availability to keep these improvements going.

Keywords: Evaluation, Health Insurance Scheme, Quality Healthcare Services, Enrollees, Ebonyi State.

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INTRODUCTION

The right to the quality healthcare services is globally acknowledged as the basic human right. An optimum level of health for the population enables socio-economic development, improves human capital, increases productivity within the workforce and reduces intergenerational poverty. Therefore, governments around the world are focusing on health

policy reforms to ensure everyone has access to quality healthcare services, whilst protecting individuals from the financial risk associated with medical care. World Health Organisation (WHO) has explained the roles of Universal Health Coverage (UHC) as ensuring that all people and communities can access quality healthcare services without facing financial hardship (2021). UHC focuses on three key areas; increasing population coverage, increasing essential service provision and protecting individuals directly from financial risk.

Great strides have been made by many countries to achieve UHC by implementing health insurance schemes. Countries, such as Germany, Japan, South Korea, Canada, Thailand and Rwanda have demonstrated that with well-developed health insurance schemes, access can be significantly improved and financial barriers reduced. However, globally it is reported that many billions of people lack access to essential health interventions and millions are pushed into poverty due to direct out of pocket payments (WHO, 2021). This issue has led to many health financing reforms occurring in low and middle income countries.

Many LMICs, specifically sub-Saharan African countries face the majority of their healthcare being funded through out-of-pocket payments. Out-of-pocket payments are described as direct payments made to obtain healthcare services with no reimbursement. This often leads to catastrophic health expenditure (CHE), whereby large proportions of money are spent on healthcare leaving people having to forego other essential items for example food or education. Evidence has shown that out-of-pocket payments are a leading cause of impoverishment within households and limits access to healthcare (WHO, 2019; Wagstaff et al., 2020).

This has led to financial risk protection becoming a key goal in health financing reforms. Financial risk protection refers to individuals being able to access healthcare services without risk of falling into poverty. With adequate health insurance schemes in place, out-of-pocket payments will be reduced, the rate of CHEs reduced and overall improve welfare of people. Financial risk protection is one of the key indicators used to measure how far we are towards achieving UHC.

Many sub-Saharan African countries have decided to implement social health insurances in order to overcome issues with health system financing and reach UHC quicker. For example, countries such as Ghana with their National Health Insurance Scheme, Rwanda with their Community-Based Health Insurance Program and Kenya with their National Health Insurance Fund. Research has shown that health insurance improves access to healthcare services, maternal and child health, preventive measures and financial risk protection. However, there are still issues to overcome.

Nigeria have had a complex relationship with providing quality of healthcare services. They struggle with low public expenditure on health, poor infrastructure, lack of healthcare workers and out-of-pocket payments. For many years out-of-pocket payments have constituted to over 70% of health expenditure in Nigeria which made it very difficult for people to access healthcare. This resulted in poor health outcomes, low utilization and poverty.

In order to overcome this the government decided to implement the National Health Insurance Scheme (NHIS) in 2005 to ensure equal funding and therefore, provide quality healthcare services and remove financial barriers. However, after almost 20 years only around 5% of people were covered by the scheme (Alawode and Adewole, 2021). Main reasons behind this include voluntary registration, lack of awareness amongst the population, poor enforcement and inability to attract informal sector workers.

In order to overcome these issues and accelerate progress towards UHC, the National Health Insurance Authority (NHIA) Act was passed in 2022 to replace the National Health Insurance Scheme Act. This new Act will ensure a more holistic approach to health insurance in Nigeria. Key changes include compulsory coverage for all Nigerians and legal residents. The law also includes provisions for the creation of the Vulnerable Group Fund to subsidies health insurance for those in poverty.

The law also includes provisions for combining all health insurance schemes across the federal, state and

private sectors. It recognizes health insurance as a key factor in achieving UHC and reducing health inequalities. The NHIA Act also requires all states to develop or improve their State Social Health Insurance Agencies (SSHIAs).

As a result of the above legislation the Nigerian government have taken steps to improve health insurance within the country. In September 2025, President Bola Ahmed Tinubu mandated all Ministries, Departments and Agencies (MDAs) to implement compulsory registration and include health insurance verification within their processes. This should increase coverage within the population, reduce out-of-pocket payments, increase accountability and improve progress towards UHC.

In accordance with above legislation, Ebonyi State have created their own agency to manage health insurance within the state. The Ebonyi State Health Insurance Agency (EBSHIA) manages all health insurance services within Ebonyi State. Since its creation the Agency has organized numerous health insurance schemes to cover various groups within the population. These include civil servants, pregnant women, children under the age of 5, the elderly, those living with HIV/AIDS, vulnerable individuals and those working in the formal and informal sectors.

EBSHIA was created to overcome the issue of achieving UHC in Ebonyi State. Their mission is to work alongside healthcare providers to improve access, quality and affordability of healthcare for residents of Ebonyi State. Healthcare providers deliver services at all levels of the health system whilst healthcare insurance premiums are pooled together to fund healthcare for insured individuals. Despite great progress in increasing registrations, it is unclear whether the health insurance scheme in Ebonyi State is meeting its goals. Registration statistics are key in determining coverage but do not indicate anything about effectiveness of the scheme. It is important to look at each element individually to determine whether the health insurance scheme is improving access to healthcare services, providing financial risk protection and improving quality.

Access to healthcare refers to services being available, affordable, accessible, accommodating and acceptable. With a good health insurance scheme in place individuals should be able to overcome financial barriers and utilize healthcare services more. However studies have shown that simply having health insurance will not improve access to healthcare services if there are few healthcare facilities, staff and poor referral system in place within developing countries. Therefore it is important to analyse access to healthcare services for insured individuals.

Financial risk protection is another key factor. As health insurance reduces out-of-pocket payments and provides financial risk protection from CHE it would seem logical that insured individuals would pay little for healthcare. However studies have shown that insured individuals in numerous African countries still pay a lot for healthcare services. This includes co-payments, non-covered services, transport costs and informal payments. It is therefore important to analyse how much protection health insurance schemes provide individuals.

Quality of healthcare refers to effectiveness, safety, timeliness, patient centredness, efficiency and equity. Without considering quality of healthcare it will be impossible to overcome issues with increasing health insurance coverage. Poor quality may discourage individuals from utilizing services and reduce reputation of the health insurance scheme. Therefore it is important to understand peoples views on quality of healthcare.

The importance of health insurance in relation to quality of healthcare has become more prominent. Reimbursement, accreditation standards, quality assurance and monitoring will all impact behaviour of providers therefore it is important to analyse quality of care provided to EBSHIA beneficiaries.

Overall it is important to analyse access to healthcare, financial risk protection and quality of services provided, specifically in Ebonyi State due to their policies to achieve UHC by 2030. Findings from this evaluation can help shape policy, improve implementation, resource allocation and increase accountability.

This study will analyse the effect of the Health Insurance Scheme on access to healthcare, financial

risk protection and quality of healthcare services for enrollees in Ebonyi State, Nigeria. The aim of this study is to identify and create empirical evidence relating to key factors of UHC in order to improve health insurance implementation in Ebonyi State.

Quality of Healthcare Services

The effect of health insurance on quality of healthcare services is the least consistent. A systematic review of health insurance schemes for the informal sector in low and middle-income countries found that evidence was inconsistent (Acharya *et al.,* 2013). Evidence showed that there was much less evidence on quality of healthcare services (Spaan *et al.,* 2012). However, studies looking at individual schemes found that insured individuals had better experiences. In Vietnam insured individuals had increased satisfaction and easier access to qualified medical specialists (Jowett *et al.,* 2016). In Latin America health insurance was associated with improved continuity of service delivery, availability of essential medications and responsiveness from healthcare providers (Escobar *et al.,* 2010). In Ghana members of the National Health Insurance Scheme had high levels of trust from patients and improved medication availability however long waiting times were a common source of dissatisfaction (Dixon *et al.,* 2014).

However, a randomised phased roll-out of a community-based insurance scheme in rural Burkina Faso found there was no evidence that the scheme improved health outcomes (Fink *et al.,* 2013). This suggests that if quality of services and readiness are poor then health insurance will not improve outcomes. This is supported by reviews which concluded that quality of healthcare services depends heavily on infrastructure and quality assurance within facilities (Acharya *et al.,* 2013; Spaan *et al*., 2012).

Studies looking at quality of healthcare in Nigeria mainly look at patient satisfaction. Overall they found generally positive results however there were some variations. Enrollees from the formal sector programme had high levels of satisfaction due to technical skills from healthcare providers, availability of medications, responsiveness from healthcare providers and decreased financial barriers (Onoka *et al.,* 2022; Mohammed et al., 2021). Insured groups in South-East Nigeria had higher perceived quality however long waiting times and referrals were common sources of dissatisfaction (Umeh *et al.,* 2023). Patient satisfaction was impacted by healthcare provider responsiveness, availability of medications, communication and continuity of care (Eke and Ezeoke, 2022). However insured individuals still faced high workloads from healthcare providers and long referral times to specialists (Obikeze *et al.,* 2020). A systematic review found that long waiting times and limited service points within accredited facilities were a common issue causing dissatisfaction with the National Health Insurance Scheme in Nigeria over the last two decades (Nwanaji-Enwerem *et al.,* 2022).

Overall there is agreement that insured patients often report positive experiences however there are still issues with long waiting times, lack of medications and high workloads from staff. Most studies only looked at satisfaction as a measure of quality of healthcare and did not look at quality before enrolment. Little evidence was found looking at quality using an explicit quality framework such as the Donabedian Structure-Process-Outcome model. This study will therefore look at quality of healthcare using the structure, process and outcome aspects as outlined by Donabedian. Satisfaction and responsiveness were also looked at after enrolment. Qualitative information was collected from managers, healthcare providers and beneficiaries.

MATERIALS AND METHOD

Study Location

This study was carried out within the three senatorial zone within Ebonyi State, Ebonyi North, Ebonyi Central and Ebonyi South in the State. A sample of twenty four accredited healthcare facilities were selected using a multi-stage sampling techniques. The facilities were selected from tertiary, secondary and primary facilities to cover the wide range of health insurance members within the State.

Ebonyi North Senatorial Zone: Within this zone there are Facilities located in Abakaliki LGA, which contains a tertiary facility (National Obstetric Fistula Centre NOFIC 1), primary facilities include MCH Azuiyiokwu (7), Izzi Unuhu MDG PHC (8). Facilities located in Ebonyi LGA include AE-FUTHA (2), Little Seed Hospital (3), Salus Specialist Hospital (5), Hope Eye Clinic (6), Aboffia Health Centre (9). Facilities in Ohaukwu LGA include Pool of Bethesda specialist Hospital (4) and Ngbo Maternity Centre (11). Facilities within Izzi LGA include Onuebonyi health Centre (10).

Ebonyi Central Senatorial Zone: Within this zone there are members located within Primary facilities. Facilities located in Ezza North LGA include MCH Okposi (12) and Amuda health centre (13). Facilities located in Ikwo LGA include Inyimegu Ameka MDG PHC (14) and Elegu Ohankwu MDG PHC (15). Facilities located in Ezza South LGA include MCH Onuoke (16) and Okofia Amaudo MDG PHC (17). Facilities located in Ishielu LGA include Iduma MDG PHC (18).

Ebonyi South Senatorial Zone: Facilities located within this zone include primary facilities. Facilities located in Afikpo North LGA include Amachara Health Centre (19) and Unwana PHC (20). Facilities located in Afikpo South LGA include Amoso Etti model PHC (21). Facilities located in Ohaozara LGA include Ufuezereaku PHC (22). Facilities located in Onicha LGA include Oshiri model PHC (23). Facilities located in Ivo LGA include Isiaka model PHC (24).

Ebonyi State has a Health Insurance Agency known as EBSHIA. There are a number of schemes available including Formal Sector Programme, Informal Sector Programme, BHCPF Programme, Vulnerable Group Programme, Equity Fund Programme and specific schemes to support better healthcare coverage to achieve UHC. Therefore Ebonyi State is an ideal area to understand any changes in coverage, financial risk protection and quality of service provided to those on a health insurance scheme.

Data Collection Instruments

Quantitative Survey Questionnaire

Data collection was carried out using a paired retrospective structured questionnaire which was designed using a dual anchor approach. The tool captured the UHC indicators relating to (i) Access to Healthcare, (ii) Financial Risk Protection & (iii) Health Outcomes & Quality of Care for 12 UHC indicators. In addition, it also captured data on beneficiary satisfaction and responsiveness after enrolment. The 12 indicators were converted to a binary variable using the ordinal scale in a 2x2 comparison table with cut-off points defined by the study to assess changes in these indicators (whether positive or negative). These were done using a paired comparison with McNemar's test.

Quantitative Analysis

Quantitative data was analysed using IBM SPSS Statistics (Version 29.0).

Descriptive statistics were calculated to give an overview of how the respondents felt about their healthcare experience. This included frequencies and percentages.

The analysis focussed on the three main outcome areas:

1. Access to Healthcare
2. Financial Risk Protection
3. Healthcare Service Quality

Comparisons were made between the pre-enrolment and post-enrolment responses.

As the binary outcome variables were measured within the same respondents a McNemar’s test should be used. This tests whether there is a difference between the proportion of favourable outcomes before and after enrolment. Changes were presented as percentage point changes. Associations between socio-demographics and outcome indicators were analysed using the Fisher-Freeman-Halton exact test. This was done as there were less than 5 expected counts per cell. Statistical significance was set as 5%. Any p-values less than 0.05 were deemed

statistically significant. Where appropriate 95% Confidence Intervals were used.

Qualitative Analysis

Qualitative responses were transcribed verbatim and analysed using thematic analysis (Braun & Clarke, 2022). Thematic coding was carried out (both inductive and deductive) and responses were analysed to identify common themes relating to affordability of healthcare, healthcare utilisation, availability of services, quality of care, financial protection and challenges faced with healthcare provision. Qualitative results were combined with the quantitative results to give a better overall picture of the beneficiaries' experiences.

Ethical Issues

The David Umahi Federal University of Health Sciences, Uburu's Research Ethics Committee granted ethical permission. The Ebonyi State Health Insurance Agency (EBSHIA) and medical facilities, among other pertinent authorities, granted permission. The responders provided written informed consent. Respondents gave their consent to participate. Their answers were kept private. They were informed that leaving the research would not affect their insurance or health care benefits. Data was safely saved after being anonymised with special codes. The Declaration of Helsinki's ethical standards were adhered to in this investigation.

RESULTS

The results used a before and after design to examine twelve important UHC indicators. Before and after signing up for the health insurance program, each responder provided answers to two questions regarding their circumstances. They are regarded as paired because 528 respondents provided answers to both questions pertaining to each variable. This indicates that rather than using a standard chi square test, McNemar's test was employed. When analysing paired nominal variables with two categories, this non-parametric test is used. It seeks to determine whether the number of individuals who changed from one category to another (for example, from inadequate to adequate) and those who went in the opposite way differ significantly. People who stayed in the same category are disregarded.

Every McNemar test was two-tailed and performed at the significance threshold of 5% ($p < 0.05$). The improvements seen are very unlikely to have occurred by coincidence, as all twelve metrics had p values less than 0.001. They are not corrected for this, though, because the McNemar test does not take into account respondent clustering within the 24 facilities. Beneficiary satisfaction metrics are only described with 95% confidence intervals because they are only measured after enrolment. The Fisher-Freeman-Halton Exact Test was used to do association studies related to equity. Compared to the standard Pearson chi square test, this approach is more reliable. This accounts for cells in the cross tabulation that have low anticipated frequencies.

Initially, the respondents' answers were on a five-point rating system. Nevertheless, they have been divided into two groups (positive and negative) with rigid cutoff thresholds that the researcher has determined. For instance, services were only considered adequate if the respondent reported that they were always or most of the time available. Any other response—including occasionally—would be deemed insufficient. Following enrolment, the performance was compared to a benchmark of at least 90%. The World Health Organization does not formally set this criteria; rather, it was established by the researcher.

The WHO facility assessment methods (Service Availability and Readiness Assessment, World Health Organization, 2018) do not specify cut thresholds for patient-reported indicators. To guarantee that only unmistakably favourable comments are being acknowledged, strict cut points have been employed. This lessens the chance of overstating the scheme's impact.

Table 1: Effect of Health Insurance Enrolment on Health Outcomes and Quality of Healthcare Service Indicators (N = 528)

Indicator: Category	Before, n (%)	After, n (%)	Change (pp)	p-value	Study Benchmark	Met?
Health Improvement:						
Effective Care	267 (50.6)	510 (96.6)	46.0	<0.001	≥90%	Yes
Ineffective Care	261 (49.4)	18 (3.4)	-46.0			
Regular Check-up Frequency:						
Frequent	206 (39.0)	518 (98.1)	59.1	<0.001	N/A	N/A
Not Frequent	322 (61.0)	10 (1.9)	-59.1			
Physical Well-being:						
Improved	256 (48.5)	518 (98.1)	49.6	<0.001	N/A	N/A
Not Improved	272 (51.5)	10 (1.9)	-49.6			

Note. N = 528. McNemar's test for paired binary outcomes; p < 0.001 for all three indicators (unadjusted for facility-level clustering). Health Improvement (effective care) is judged against the study-defined ≥90% benchmark; Regular Check-up Frequency and Physical Well-being are reported without a benchmark (N/A) and interpreted directionally. All three are patient-reported indicators.

Health Improvement (Effective Care)

Prior to enrolment, just 267 respondents (50.6%) or one out of two said that healthcare access had made an effective and significant improvement on their health status, whereas 261 (49.4%) experienced ineffective care. Post-enrolment, effective care increased to 510 respondents (96.6%), which amounts to a 46.0 percentage increase (McNemar's $p < 0.001$), surpassing the ≥90% cut-off criterion set for the study. Based on the quality model put forth by Donabedian, this is an indicator of quality under the outcomes category. It can be seen from the finding that enrolment has been linked with positive changes in the perception of effectiveness of healthcare among the beneficiaries.

Regular Check-up Frequency (Preventive Health-Seeking Behaviour)

Prior to enrolment, only 206 people (39.0%) had frequent checkups regularly, while the remaining 322 (61.0%) did not have checkups often. After enrolment, the frequency of checking up increased to 518 people (98.1%), an increase of 59.1 percentage points ($p < 0.001$, McNemar). This variable is different from the frequency-of-visits-when-sick variable discussed in Objective One (Section 4.3.4), as it measures the preventative rather than curative health care seeking behaviour of individuals, and its higher level of change relative to the other variable means that health insurance enrollment influenced the proactive seeking of services.

Physical Well-being

Prior to enrolment, less than half of the respondents, 256 (48.5%), experienced improvements in their physical well-being because of the healthcare services rendered, while the rest, 272 (51.5%), did not experience any improvement or had deteriorated. Post enrolment, those experiencing improvement increased to 518 respondents (98.1%), showing an increase of 49.6 percent ($p < 0.001$ by McNemar's test).

Post-Enrolment Beneficiary Satisfaction and Health System Responsiveness

In addition to the pre/post variables identified in relation to the three specific objectives highlighted above, the questionnaire included six post enrollment variables on beneficiary satisfaction and health system responsiveness. According to the World Health Organization, health system responsiveness is the experience of the patients with the health care system covering issues of dignity, respect and patients' orientation and the WHO considers beneficiary satisfaction an essential criterion of effectiveness and sustainability of the program under consideration since any good program in terms of outcome will not be sustainable if it lacks the trust of the beneficiaries. There were six variables that were assessed; trust in the health insurance program, perception of improvement in the delivery of community service, willingness to recommend others to enroll, financial protection against high cost of services, fair treatment of insured patients, and attitudes of the healthcare workers. All these variables were measured post enrollment through a five-point scale (agree for Q44-Q48; attitude score for Q49), where positive responses were considered favorable, similarly to the other pre/post indicators presented in Sections 4.3-4.5. The results are summarized in Table 4.8 below together with the 95% confidence interval.

Table 2: Post-Enrolment Beneficiary Perceptions and Satisfaction (N = 528)

Indicator	Category	n (%)	95% CI
Trust in Health Insurance Programme	High Trust	522 (98.9)	97.8 – 99.5
	Low Trust	6 (1.1)	0.5 – 2.2
Perceived Community Service Improvement	High Agreement	520 (98.5)	97.2 – 99.2
	Low Agreement	8 (1.5)	0.8 – 2.8
Willingness to Encourage Others to Enrol	High Agreement	524 (99.2)	98.2 – 99.8
	Low Agreement	4 (0.8)	0.3 – 1.8
Perceived Financial Protection from High Expenses	High Agreement	523 (99.1)	98.0 – 99.7
	Low Agreement	5 (0.9)	0.4 – 2.0
Perceived Fair Treatment of Insured Patients	High Agreement	524 (99.2)	98.2 – 99.8
	Low Agreement	4 (0.8)	0.3 – 1.8

Healthcare Worker Attitude	Positive Attitude	495 (93.8)	91.5 – 95.5
	Negative / Neutral Attitude	33 (6.3)	4.5 – 8.5

Note. N = 528. All six indicators were measured post-enrolment only, using a five-point agreement scale (Q44–Q48) or a five-point attitude rating (Q49), dichotomised into a favourable and an unfavourable category. Confidence intervals were calculated for the favourable category using the normal approximation to the binomial distribution.

Discussion of Findings

The impact of the Health Insurance Scheme was assessed amongst a sample of 528 adult participants enrolled in the BHCPF from 24 accredited facilities in Ebonyi state via a mix-methods approach (retrospective pre/post-test and 10 Key Informant Interviews). The majority of participants were female (91.9%), low income earners (<NGN 30,000 monthly) (80.3%) and enrolled via BHCPF (98.1%).

Equity: No significant differences were found between length of enrollment, education level or income. However, perceived quality of care was linked to facility type ($p = 0.015$). Key informants noted that financial protection was the main success of the scheme. However, main issues faced were stock outs (mentioned by all 10), delayed reimbursements (3-4 months), lack of staff, long waiting times, travel costs and poor coverage within the informal sector.

Conclusion

This study set out to examine the impact of health insurance on access to healthcare, risk protection and quality of healthcare services for enrollees under the Health Insurance Scheme in Ebonyi State. The results showed significant improvements in the three aspects for BHCPF beneficiaries after enrollment. The cost of healthcare was reduced, hence there was an improvement in perceived health care cost, healthcare utilization, perceived risk protection, perceived efficacy of healthcare and improvement in self-reported physical health. Overall, the study shows that the scheme have been most successful in reducing costs of healthcare due to removal of cost barrier. However, healthcare availability and waiting times were not impacted as much due to issues with capacity, availability of drugs and staffing. This was supported by key informants who described issues with drug availability, delayed payments and staffing shortages. This study shows that a combination of funding for health insurance is needed alongside quality healthcare provision.

Whilst this was a retrospective study and lacked a comparative group, it does provide useful information to show that health insurance can improve the perceived healthcare experience for beneficiaries. In conclusion, health insurance needs to be increased in Ebonyi State, alongside sustained risk protection, access to healthcare and quality healthcare provision to move forward towards Universal Health Coverage.

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