

Billing the Insured: An Assessment of Out-of-Pocket Payment by Insured Patients in Ghana

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ABSTRACT

BACKGROUND: The Ghana National Health Insurance Scheme was introduced in 2003 to provide financial protection to the population. While the Scheme has made strides in improving access to healthcare there have been a few challenges including out of pocket charges to insured patients with weak client power. The study investigated the catastrophic nature of the out-of-pocket charges, the factors affecting the charges and the client power.

METHODOLOGY: We used primary data collected in 3 administrative regions: Greater Accra, Ashanti and the Northern regions, within the period April and June 2022 to compute catastrophic expenditure of the out-of-pocket healthcare expenditure on household expenditure on food and non-food. In addition, multivariate logistic regressions and a linear regression were run to examine the incidence of the practice and client power.

RESULTS: The results showed that on average the insured paid out-of-pocket charges with a probability of 66%. The probability was highest (80%) in the Greater Accra, followed by Ashanti region (66.6%) and (52.9%) in the Northern region. The out-of-pocket charges were found to be catastrophic with incidence rate between 48.2% and 26.1% for the 5% and 20% thresholds; the overshoots ranged between 34.1% and 26.9% for the thresholds; the poor were more disadvantaged than the rich. Patients reported the out-of-pocket charges to the NHIA with probability of 1.9%, but the NHIA did not respond to 81% of the reported cases. Knowledge of the benefit list is likely to motivate the insured to report out-of-pocket charges, while cordial relationship between the NHIA staff and the insured deters providers from charging out-of-pocket.

CONCLUSION: The out-of-pocket charges occur extensively across health facilities and is impoverishing. A close collaboration between the NHIA and the insured is needed to reduce the incidence and hold providers accountable.

KEYWORDS: Out-of-pocket payment, insurance, client power, catastrophic expenditure

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Introduction

The Ghana National Health Insurance Scheme (NHIS) was established in 2003 with the objective of providing financial protection for health care across the population. The NHIS is managed by the National Health Insurance Authority (NHIA). The Scheme's introduction was timely as patients, before its implementation, were required to pay out of pocket for service. This system of financing (locally known as the 'cash and carry' system) required patients to make payment before health care was provided and resulted in significant burden to patients with several people unable to access health care when needed.^{1,2} Since its establishment, the NHIS has provided financial protection to its members by offering healthcare in more than 3000 accredited health facilities.³ While the scheme is touted as the most important health financing reform in the history of the country, it has also faced several challenges including unapproved out of pocket (OOP) charges on the part of providers.^{4,5}

Out of pocket charges for insured patients is particularly concerning as it has the potential to derail the county's efforts towards universal health coverage (UHC) goals. Aside the

financial implications such charges have on insured patients, they also send bad signals to subscribers about the effectiveness of the scheme. Such charges also have the possibility of exacerbating the financial risks faced by patients, especially the poor and vulnerable, in accessing healthcare. By design, registered members of the NHIS are not required to make any form of co-payment for services covered under the scheme,⁴ hence making OOP charges for insured services is considered illegal.

Previous studies have examined the practice of OOP charges on insured services and found it widespread across NHIS accredited health facilities.^{6–8} Other studies have shown that NHIS members paid significantly lower out of pocket fee than uninsured patients.^{9,10} These concerns about illegal charges are well known as the NHIA has publicly condemned the practice.¹¹ However, providers have publicly complained about NHIS' delays in claims payment and in many instances threatened to withdraw services from NHIS members.^{12,13} The OOP charges are inefficient for 3 reasons. First, charging insured patients fees undermines the very reason for the existence of the NHIS which is to provide financial risk protection



to its members.¹⁴ The OOP charges then expose the insured to the financial risk from which the insured sought protection.¹⁵ Secondly, the possible resulting underutilization of healthcare by the members is welfare decreasing to members. Thirdly, in addition to charging OOP, providers also make claims for the services provided to the NHIA for payment, resulting in double payment for services. The overpricing implies that too many resources are used for the provision of services. Even if the OOP payment of the insured is less than that of the uninsured,⁹ and the premium of the scheme is not catastrophic,¹⁶ members may still face catastrophic expenditure in paying for services OOP.

While previous studies have examined this practice of OOP charges to insured clients, the catastrophic nature of the illegal OOP payment for these insured services and factors that can motivate members to report such providers to the NHIA have not been examined. Sataru et al¹⁷ used data from round 7 of the Ghana Living Standard Survey (GLSS) to show a general downward trend in catastrophic health expenditure in Ghana, but higher among the poor. The GLSS data may not be adequate for studying OOP payment for NHIS members because the data does not indicate the services received by patients, making it difficult to know whether OOP payments were for insured services. This study fills this gap by (i) verifying the existence of OOP payment among insured patients, (ii) estimating the extent to which it imposes catastrophic expenditure on members and (iii) identifying factors that motivate members to report such incidents to the NHIA.

Because OOP charges and other provider patient interactions occur at the blind side of the NHIA, the NHIA has set up a call centre where its members could hold providers accountable by reporting poor performance of providers to the NHIA including the charging of illegal fees. In addition, the NHIA has made its benefit packages available to its members. Patients are supposed to use the information to challenge providers demands for payment and therefore use their client power to ensure accountability of the provider.¹⁸ The NHIA, in turn, is expected to hold the providers accountable for any poor performance reported, by punishing wrongdoing. It is therefore curious that insured patients continue to incur unapproved fees at the point of care.

Fear of negative response from providers has been given as a reason for the weak client power.⁷ This reveals the power imbalance that exists between the provider and the patient who is supposed to be protected by the NHIA. Patients know that incurring the wrath of the provider could be detrimental to their own health and so they pay without complaint and, in some cases, end up reducing utilization of essential care due to inability to pay. However, such power imbalance can persist if NHIS members do not believe in the NHIA's ability or commitment to provide the needed protection for them should they report. In this regard, this study also extends existing studies by investigating the extent to which a cordial relationship

between the NHIA staff and NHIS members can reduce illegal OOP charges and motivate NHIS members to report such incidents.

Methodology

Data analysis

To achieve our research objectives, we conduct the analysis in three-fold; first is the computation of catastrophic expenditure imposed by OOP payment for NHIS subscribers. Second is a series of regression estimations on factors affecting the decision and magnitude of such payments. Finally, we present evidence on the voice power of the NHIS clientele. We discuss these techniques in further detail as follows.

Catastrophic health expenditure

The first step was to compute catastrophic head count which involved the computation of a variable, E_i which equalled 1 if healthcare payment as a fraction of household income exceeded a threshold, z , and 0 otherwise. The sample mean of E_i is called the head count: H . In addition, the catastrophic payment overshoot which determines the degree by which a particular OOP payment exceeded the threshold was also computed. The catastrophic payment overshoot was computed as $O = \frac{1}{N} \sum O_i$ where $O_i = E_i \left(\frac{T_i}{x_i} - z \right)$ is the household catastrophic overshoot, T_i is OOP expenditure, x_i is the household total expenditure on food and non-food items. The O and H are related through the means positive overshoot, $MPO = \frac{O}{H}$, which provides information on average overshoot of those who exceeded the thresholds.

Concentration indices were then computed for E_i and O_i , as C_E and C_O , respectively to provide information on the distribution of the catastrophic payment according to income. Thus, a negative C_E implies that the poor are more likely to exceed the threshold than the rich. Similarly, a negative C_O means that the poor are more likely to overshoot the threshold than the rich. The rank head count H^W ($H^W = H(1 - C_E)$) was also computed to take into account the distribution of catastrophic expenditure. The rank head count puts greater weight on the poor household that incur catastrophic expenditure than the rich $H < H^W$. Similarly, the rank overshoot, $O^W = O(1 - C_O)$ puts greater weight on the poor households than the rich.

Regression analysis

The regression equation was specified as:

$$y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \beta_8 X_{8i} + e_i$$

where X_{1i} represents the age of respondent in years, X_{2i} represents a categorical variable on the respondents' highest level of

education (primary, secondary and tertiary), with the control group being the uneducated. X_{3i} is a dummy variable which takes the value of 1 if the respondent is a female and 0 otherwise. The next variable, X_{4i} is a dummy variable with a value of 1 if the respondent is in an urban area and 0 otherwise. The variable, X_{5i} is a categorical variable on facility type: teaching hospital and district hospital, with health centre as the control group. The next variable, X_{6i} is a categorical variable on facility ownership: private and mission with public ownership as the control group. X_{7i} is a categorical variable for region of residence: Ashanti and Greater Accra regions with Northern region as the control group. X_{9i} is also a categorical variable of 6 dummy variables on factors that could affect the respondent's tendency to report the behaviour of providers to the NHIA. These dummy variables include 2 quality indicators; the first equals 1 if the respondent found the attitude of health workers to be friendly and 0 otherwise, while the other indicator equals 1 if the respondent found the attitude of NHIA workers to be friendly and 0 otherwise. The next 2 dummy variables focus on how active the respondent was in ensuring proper behaviour. The first dummy variable in this group equals 1 if the respondent checked to know the list of services covered by the scheme and 0 otherwise while the other dummy variable equals 1 if the respondent checked to know the list of drugs covered by the scheme. Such behaviours are supposed to empower the patient to confront the provider for wrongful charges. The last 2 dummy variables are on the respondent's ability to report provider's behaviour to the NHIA. The first dummy variable here equals 1 if the respondent knew that he or she can report providers' behaviour to the NHIA and 0 otherwise, while the other dummy variable equals 1 if the respondent knew how to report and 0 otherwise.

To estimate the equation we run 3 separate regressions as the dependent variable (y_i) represents 3 different outcomes. The first outcome variable is binary and takes the value of 1 if an NHIS member paid OOP for services and 0 otherwise. We therefore used logistic regression technique to estimate this model. In the second model, the outcome variable is continuous and measures the natural log of the amount of OOP payment made by an NHIS subscriber. We estimate this model using Ordinary Least Squares (OLS). The third model has a binary outcome variable with a value of 1 if an NHIS member reported wrong charges to the NHIA and 0 otherwise. A Logistic regressions technique was, therefore, used to estimate the third model.

To prevent selection bias, since the focus was on NHIS members who had used health facilities within 3 months before the interview, a Heckman Selection model 2 stage approach was used for the estimation. The selection equation had health facility utilization as the dependent variable (which includes members who have used or not used health facility) and the independent variables are health status, region of residence, level of education, gender and how active the respondent was in

checking the benefit and medicine lists. The inverse mills ratio was then computed and then added to the outcome equation as specified above.

Data

Data was collected from 3 administrative regions, namely Ashanti, Greater Accra and Northern regions during the period April–June, 2022. In each region, 2 rural and 1 semi-rural areas from 3 different districts and the capital city of the region, were selected. Respondents were randomly selected in their communities and they consisted of NHIS members who had used health facility within 3 months before the interview. In each capital city, half of the interviewees were selected from every other block of the main street of the commercial areas. The remaining interviewees were selected from 4 randomly selected residential areas in the city. Four blocks within each selected residential area were randomly selected and a house was also randomly selected within the block for interviews. At each stage of the random selection, the areas to be selected were numbered, written on pieces of papers, folded, tossed and selected. A similar process was followed for the rural areas which often had fewer (mostly 1) commercial and residential areas.

The sample size per region was 500 making the total sample size 1500. The sample size per region is greater than the 384 computed using the population, assuming a 95% confidence level and 5% confidence interval, hence improving the confidence in the ability of the sample to predict the population. Interviews were not restricted to specific number of respondents per health facility type because the random nature of the data collection was supposed to bring out the proportionate use of the health facility types in the communities. The short recall period was to ensure that recall bias is minimized.

Structured questionnaires were used to collect data on respondents' demographic and socio-economic characteristics, out of pocket payment made at the facility, as well as knowledge of their rights and obligations regarding NHIS. In addition, information on ownership of health facility used by respondents was also recorded. Since the respondents were restricted to those who have used a health facility, NHIS members who have not used health facilities during the period were excluded by self-selection. To enable the study to deal with the possible self-selection bias problem, additional data were collected on members who had not used health facility 3 months before the interview.

Results

Descriptive statistics

Table 1 presents descriptive statistics of variables included in the analysis of data on NHIS members who used a health facility at least 3 months before the interview. The descriptive statistics show that average age among respondents was

Table 1. Descriptive statistics.

CHARACTERISTIC	PERCENTAGE
Age (mean in years)	35.61
Gender	
Male	59.00
Female	41.00
Education	
Tertiary	25.00
Secondary	37.00
Primary	23.80
Location	
Urban	69.53
Rural	30.47
Ownership	
Public	73.87
Mission	3.64
Private	22.49
Region	
Greater Accra	31.36
Ashanti	33.77
Northern	34.87

about 36 years which is above the median age of 21.5 years in Ghana. This is expected because respondents' age was restricted to be 18 years and above. Majority of the respondents were male and mostly literate (85.8) which is above the 69.8% literacy rate in the country.¹⁹ That majority of the respondents lived in urban areas reflects the urban nature of the Ghanaian economy. A large proportion of the respondents (73.87%) used public health facilities closely followed by private with 22.49%. The lowest proportion is mission with 3.64%. This proportion is consistent with health facility utilization in the general Ghanaian population.²⁰ All these confirm that the sample used is a good representation of the population. The sample sizes for the 3 regions were well balanced.

The results in Table 2 show that more than half of the respondents paid out of pocket while insured. The percentage of respondents who paid for services ranged between 38.2% in the Greater Accra region, 34% in the Ashanti region and 27.8% in the Northern region, with an average payment of GHC267.66 (USD45.36), GHC189.30 (USD32.08) and GHC29.90 (USD5.07) in the 3 regions, respectively. The Greater Accra region therefore had the largest average fee,

Table 2. Incidence of OOP payment of the Insured.

CHARACTERISTIC	PERCENTAGE	AVERAGE PAYMENT (GHC)
Members who have been billed	66.16	159.45
Greater Accra Region	38.2	267.66
Ashanti Region	34.0	189.30
Northern Region	27.8	29.90
Disease of members who paid		
Malaria	48.9	
Diarrhoea	6.0	
Hypertension	9.1	
Maternal care	10.7	
Other	25.3	
Reported to the NHIA	1.9	
Know that they can be reported	21.9	
Know how to report	13.6	
NHIA's Response		
Followed up for refund	15.6	
Did Nothing	81.3	
Clarification	3.1	

with the average fee of the Northern region far below those of the other 2 regions.

Table 2 also shows that more than 50% of the respondents who made OOP payment received treatment for malaria and maternal care. Only 1.9% of those who made OOP payment, however, reported such behaviour to the NHIA. Even though about 21.9% of respondents knew they could report extra payments, only 13.6% knew how to report. Out of those who reported only 15% had their case followed up by the NHIA and received their refunds. About 81% of them reported that NHIA did not do anything about it while about 3% of them reported that NHIA clarified any confusion about need for payment.

In Table 3, we report further summary details on OOP payments and income of insured respondents. The results show that average monthly income of respondents was about GH¢949.87(\$157.03) with minimum and maximum value of GH¢20 (\$3.3) and GH¢4500 (\$743.80) respectively, with a large standard error representing high income inequity among the respondents which is consistent with the extreme income inequity in the population.²¹ On average, the highest OOP payment was made on antenatal care (GH¢200; US\$33.06) the purchase of medicine (GH¢123.84; US\$20.47) followed by diagnosis (GH¢107.30; US\$17.74) and consultation (GH¢33.68; US\$5.57)

Table 3. Income and OOP payments.

VARIABLE	MEAN (GH¢)	STANDARD DEVIATION	MINIMUM (GH¢)	MAXIMUM (GH¢)
HH monthly income	949.87	1491.23	20	45 000
Amount paid for consulting	33.68	51.91	0	500
Amount paid for diagnosis	107.30	294.53	1	2100
Amount paid for medicine	123.84	232.33	2	4010
Amount paid for antenatal	190.77	363.68	1	1600

Regression results

As shown in Table 4 below, the binary logistic regression results, Model 1, on insured patients who were charged OOP, revealed that insured patients in rural areas were 2.237 times (OR=2.237; P -value < .01) as likely to be charged OOP as those in urban areas. Patient characteristics including age, the level of education, gender and income status did not affect the likelihood of being charged OOP in the health facilities. Respondents from Ashanti region were 25% (OR=1.247; P -value < .01) more likely to be charged OOP than those in the Northern region while those in the Greater Accra region were 5.183 times (OR=5.183; P -value < .01) as likely to be charged a fee as those in the Northern region. Respondents who sought care from the teaching hospitals were 17.88 times (OR=17.88; P -value < .01) as likely to be charged OOP as those who sought care in Health centres while those who sought care in district level Hospitals were 63.96 times (OR=63.96; P -value < .01) as likely to be charged as those who sought care in Health centres. A likelihood ratio test of the equality of the odds ratios of teaching hospitals and district level hospitals show that they are statistically different implying that it is more likely for insured patients to be charged OOP in district hospitals than teaching hospitals. Private health facilities were 89% (OR=1.89; P -value < .01) more likely than public health facilities to charge insured patients OOP. There was no statistically significant difference between the likelihood of charging OOP in public and faith-based facilities.

While the attitude of health workers towards patients did not affect the likelihood of being charged OOP, the likelihood of being charged decreased by 45.8% (OR=0.542; P -value < .01) when NHIA staff were friendly towards the insured. Lastly, patients' knowledge of covered services and medicines did not affect the likelihood of being charged OOP. The results also confirmed the descriptive statistics that charging the insured OOP is practiced extensively in the Greater Accra region than the Ashanti region. The estimated mean probability of being charged OOP was 0.661 which is about the same as that of the descriptive statistics. We also found that members are also charged regardless of demographics, educational or financial status. Thus, the decision to charge a fee to members does not depend on the characteristics of the patients but on provider related factors.

The results of Model 2 showed that the amount charged did not vary according to patient characteristics except for age which showed that a year increase in patient age led to about a 1% (β = .010; P -value < .05) increase in the amount paid. The results also showed that OOP payment in the Ashanti region was about 85% (β = .851; P -value < .01) higher than that in the Northern region while the OOP in the Greater Accra region exceeded that of the Northern region by more than 100% (β = 1.032; P -value < .01). While OOP payment did not vary across health facilities according to ownership, it varied according to capacity. Thus, OOP charged by teaching hospitals exceeded that of the health centres by 57% (β = .567; P -value < .01) while that of district level health facilities exceeded that of health centres by about 25% (β = .245; P -value < .01).

The results from Model 3 show that there is no statistically significant difference between the likelihood of patient reporting being charged OOP and any of the variables in the model except the tendency for the patient to check the list in the benefit package to be able to determine what services are covered. According to the results, such a patient is 6.408 (OR=6.408, P -value < .01) times as likely to report illegal charges as those who did not check.

Catastrophic health expenditure

Table 5 shows results of catastrophic spending from OOP payments for insured persons. The results suggest that at the 5% threshold about 48% of insured respondents experienced catastrophic spending as a result of OOP payment. This declined over the 10% threshold (38%), 15% threshold (31%) and 20% threshold (26%). Catastrophic overshoot also declined though marginally as the threshold increased. The low standard deviations indicate the high precision of the estimation. With regard to inequality, the negative signs of the concentration indices in Table 5 indicate that both catastrophic spending and overshoot concentrated among the poor. When adjustments were made for the inequality of distribution of the catastrophic expenditure, those who experienced catastrophic expenditure, H^W , ranged between 60.1% (5% threshold) and 40.5% (20% threshold). Similarly, the adjusted overshoot, O^W , ranged between 31.4% for the 5% threshold and 26.9% for the 20% threshold. This implies that H and O both understate the incidence and

Table 4. Regression results of factors that influence OOP payment by insured patients.

VARIABLE	MODEL 1	MODEL 2	MODEL 3
	ODDS RATIO	COEFFICIENTS	ODDS RATIO
Age	0.997	0.010*	0.982
Education			
Basic	0.714	0.037	0.728
Secondary	0.851	0.019	1.001
Tertiary	0.926	0.029	1.010
Female	0.942	0.089	0.711
Income	1.000	0.0001	1.000
Rural	2.370**	0.029	1.554
Ashanti Region	1.247**	0.851**	0.697
Greater Accra Region	5.183**	1.032**	4.784
Inverse Mills Ratio	61.09**	0.635	0.003
Faith Based facility	0.819	-0.269	1.451
Private	1.898**	0.125	1.149
Hospital type			
Teaching hospital	17.888**	0.567**	2.236
District Hospital	63.960**	0.245**	0.871
Attitude			
Health Workers Attitude	1.420	-0.181	0.723
NHIS Workers Attitude	0.542**	-0.005	2.608
Client Power			
Checked benefit list	2.036	-0.001	6.408*
Checked medicine list	0.368	0.354	0.827
Knows one can report	0.767	0.337*	1.372
Knows how to report	1.317	-0.039	3.423
Constant	0.266*	2.529**	0.001**

Model 1 is a logistic regression with binary outcome (equals 1 if insured patient paid OOP). Model 2 is an OLS estimation using total OOP paid as outcome. Model 3 is also a logistic regression with a binary outcome which takes 1 if insured patient reported illegal charges to the NHIA

**P-value < .01. *P-value < .05.

the overshoot. Catastrophic expenditures were also computed using annual household expenditures to compare the long term and short-term effects of OOP payment. The discussion of the results focused on the results that adjusted for the distribution of the catastrophic expenditure.

Discussion

The results have shown that contrary to the policy that providers should not subject NHIS patients to co-payment for services that are covered by the NHIS, the average NHIS patient is 66% likely to make OOP payment irrespective of the

characteristics of the patient. This is consistent with the 'less than 68' percent found in Abuosi²² which also studied 3 regions different from those used for the current study but selected from the coastal, the forest and the northern belts of the country as done in the current study. That the probability of paying out of pocket is less than 100% suggests that not all insured patients paid out of pocket. In the case in which all un-insured patients have to pay for healthcare services that are covered by the NHIS, the results also suggest that despite the existence of OOP payment, the insured are better off than the uninsured since there is 34% probability of not paying for services.

Table 5. Catastrophic Out-of-Pocket health expenditure.

	THRESHOLD					
	MONTHLY EXPENDITURE				ANNUAL EXPENDITURE	
	5%	10%	15%	20%	5%	20%
Incidence (<i>H</i>)	0.482	0.377	0.307	0.261	0.124	0.063
Standard deviation	0.499	0.484	0.461	0.439	0.330	0.242
Overshoot (<i>O</i>)	0.253	0.233	0.218	0.205	0.03	0.007
Standard deviation	1.753	1.748	1.744	1.739	0.142	0.132
Mean Positive overshoot (<i>MPO</i>)	0.524	0.618	0.710	0.785	0.242	0.111
Average expenditure	0.574	0.718	0.860	0.985	0.292	0.311
Concentration index for <i>E</i> (C_E)	-0.209	-0.239	-0.279	-0.307	-0.403	-0.793
Rank Weighted incidence (H^w)	0.583	0.476	0.393	0.341	0.174	0.113
Concentration index for <i>O</i> (C^o)	-0.244	-0.266	-0.307	-0.252	-0.400	-0.714
Rank Weighted overshoot (O^w)	0.314	0.295	0.285	0.269	0.042	0.012

However, the high probability of the insured making OOP payment could be welfare decreasing. The results from the catastrophic expenditure shows that the incidence of the catastrophic expenditure of the OOP payment on the insured patients ranged between 34.1% and 58.3% of the insured who made OOP payment corresponding to thresholds ranging between 20% and 5% respectively. These results indicate that the OOP payment for majority of low income insured patients who received covered services exceeded 5% of their monthly household expenditure on food and non-food items within the month in which they used healthcare. Many households' needs must thus have been sacrificed in the month in which a member of the household consumed healthcare. Even when the annual household expenditure on food and non-food items was used, the incidence rate ranged between 11.8% and 17.4%, corresponding to the 20% and 5% thresholds, which remained high. This implies that the OOP payment is high enough to push many people towards poverty in the short run and even in the long run. The high incidence rates show how extensively the OOP payment is imposing a burden on the insured. The negative concentration indices show that the OOP payment put the poor in a greater disadvantage than the rich. This implies that most of those who experienced catastrophic expenditure from the OOP payment were poor. Previous studies (eg, Agbanyo²³) have shown how the introduction of the free maternal care programme implemented through the NHIS increased institutional deliveries in the early stages of the programme. The current study has also shown that the services may not be free to many NHIS members as maternal care patients also paid OOP. The OOP charges then could reduce the utilization of maternal care and minimize any gain from the programme. Any evaluation of the free maternal care programme should first establish that the programme is actually being implemented.

The results from the regressions show that OOP payment is charged mostly in the Greater Accra Region followed distantly by the Ashanti region and then the Northern region. In fact, the disaggregation of the probabilities showed 80.4% for Greater Accra region, 66.6% for Ashanti region, and 52.9% for the Northern region. This is consistent with Akweongo et al⁸ which found that Ashanti region was more likely to charge OOP payment than the Northern region. The current study has added that insured patients in the Greater Accra region were more likely to be charged OOP than the Ashanti and Northern regions. In addition, the Greater Accra region charged the highest fee for the same service, followed by the Ashanti region, with the Northern region charging the lowest. According to Agyepong and Nagai⁷, providers charged insured patients' fees due to uncertain and delayed reimbursement from the NHIS. The Ghana Statistical Services has also shown that the Greater Accra region has the highest cost of living in the country.²⁴ Thus, to the extent that the insured are charged fee to cover the cost of services, the motivation to charge such a fee should be highest in the Greater Accra region where the cost of living is the highest in the country. Given this, it is also not a surprise that the Greater Accra region charges the highest fee.

The current study also found that the probability of making OOP payment did not vary according to the characteristics of the patient, implying that OOP payment is driven by the provider rather than the patient. The OOP payment was found to be common among insured patients who used private health facilities than public or faith-based health facilities. In addition, insured patients who received treatment from district level health facilities, followed by teaching hospitals were more likely to pay OOP than those who received care from health centres. Even though teaching hospitals were less likely to

charge fee than district hospitals, teaching hospitals' fees were higher than those of the district hospitals. To the extent that the OOP charges are to cover the cost of care, the fee differential across hospital types is consistent with the variations in the costs of running the hospital types. The cost of care in a teaching hospital exceeds that of a district hospital followed by a health centre.²⁵

It was found that OOP payment was more than twice as likely to occur in rural areas as urban areas. The reason could be that insured patients in rural areas are less likely to have alternative health facilities with insurance than in urban areas. There was no statistically significant difference in the magnitude of the fee between rural and urban areas. Given a higher poverty rate of 37.9% in rural areas, compared to the 10.6% in urban areas (Gallagher²⁶) and that the OOP payment disadvantages the poor than the rich, the results of the current study imply that the rural insured patients are more likely to incur catastrophic expenditure from the OOP payment than urban insured.

The results from the catastrophic expenditure also show that the OOP payment did not only affect a good percentage of patients it was impoverishing as well. The overshoot of catastrophic expenditure showed that the extent by which the OOP payment as a share of total household expenditure on food and other essential items exceeded the thresholds ranged between 31.4% and 26.9%. This implies for example that for those with 5% threshold, the OOP expenditure on insured services exceeded the threshold by as much as 31.4%. The intensity of the impoverishing effect is confirmed by the *MPO* which exceeded 50% in the short run irrespective of the threshold. The results show that in the short run, the average insured patient whose OOP expenditure exceeded the 5% threshold for example on average spent 57.4% of their household total expenditure on insured services while those who spent more than 20% of their household budget spent as much as 98.5%. Even though the intensity eased in the long run with overshoots of about 4% and 1% for the 5% and 20% thresholds respectively, the average expenditure of those spending more than 5% of their household expenditure on insured services spent about 29% in the long run, which is still high. The financial burden of healthcare expenditure extends to the long run for the insured. Thus, insured households must have had to sacrifice other needs in order to access insured healthcare or become impoverished. Previous studies have not examined the catastrophic nature of the illegal charges. The only study that was close to examining it was Akweongo et al⁸ which stated the amount that the poor paid OOP, which does not actually show how much the charges are a burden to households.

Given that OOP payment is practiced extensively one would expect patients to report to the NHIS. Previous studies (eg, Agyapong and Nagai⁷) have shown that patients did not report for fear of being blacklisted by providers. This is confirmed by the current study in that the results show that

the probability of an insured patient reporting OOP payment to the NHIS is very low, less than 2%. Even patient's knowledge of the procedure for reporting, as well as those who make the effort to check the medicine list did not affect the probability to report OOP payment to the NHIS. However, the current study has also shown that patients who checked the benefit list were more than 6 times as likely to report OOP payment to the NHIS compared to those who did not check the list. This implies that patients are more likely to report for being charged for insured services than covered medicine. The reason could be that patients can buy medicine from outside the health facility, in the community pharmacy shops, should they find the prices at the facilities to be too high. The low probability to report OOP payment is consistent with NHIS' report on the list of issues that are reported at the call centre in that the list did not include illegal fees.²⁷ However, inquiries about the benefit package were included in the list and the implication from the current study is that such inquiries could lead to reporting about illegal fees.

Another important result from the study is that providers are 45% less likely to charge OOP payment when the attitude of the NHIA staff towards the insured is friendly. A cordial relationship between NHIS members and the NHIA is a sign of collaboration between the 2 to fight illegal behaviour. Such a relationship could reduce the fear of providers' negative reaction towards patients and encourage patients to report illegal charges, which could in turn make providers afraid of being reported and hence reduce the behaviour. However, the results of patients experience with the NHIA shows that in more than 80% of the reported cases, the NHIA did not do anything, hence making the reporters vulnerable to the wrath of the providers. The low probability of reporting then is significantly due to NHIA's low commitment to collaborating with the NHIS members.

Conclusion

The study has shown that OOP charges is practiced extensively to the detriment of NHIS members especially the poor due to the catastrophic nature of the fees, and NHIS patients do not report to the NHIA due to perceived lack of commitment from the NHIA to respond accordingly. The study also suggests that the tendency for providers to bill insured patients, as well as the magnitude of the bill was correlated with the cost living of the location. While the bill decreased with facilities that received public support, it increased the capacity of the facility. A cordial relationship between NHIS members and NHIA deterred facilities from charging. The NHIA's commitment to deterring OOP charges is weak.

The study therefore concludes that OOP charges are detrimental to NHIS members, especially the poor. Ghana cannot achieve universal health coverage without addressing the issue. Additionally, the study infers that providers may be charging


OOP to meet their financial obligations. NHIA's lack of commitment to addressing OOP charges contributes to the lack of willingness to report of the NHIS members.

The study recommends that in setting tariffs, the NHIA may have to ensure that some facilities are not disadvantaged by their location and capacity. That the NHIA collaborates strongly with the members to fight illegal fees charged by providers. The NHIA needs to regularly respond to reported cases, punish wrongdoing and publicise, by 'naming and shaming' to deter further offence.

Author Contributions

EA1 conceived the idea; did the data analysis and drafted the article; EA2 managed the data collection and edited the article; JN titled and edited the article; All authors read and accepted the final draft.

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