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Effectiveness of the Philippine Health Insurance Corporation Case Rate System for Thyroidectomy in a Tertiary Government Hospital

ABSTRACT

Objective: To determine the effectiveness of the Philippine Health Insurance Corporation (PhilHealth) case rate system in reducing out-of-pocket expenses among non-no balance billing (NBB) patients undergoing thyroidectomy under the Department of Otorhinolaryngology – Head and Neck Surgery of the Baguio General Hospital and Medical Center from February to September 2018.

Methods:

Design: Prospective Cross- Sectional

Setting: Tertiary Government Hospital

Participants: Sixty-four (64) randomly selected patients with PhilHealth who underwent thyroidectomy who agreed to participate and reveal their statements of accounts

Results: Among the study population, 20% belonged to the no balance billing (NBB) category, with zero out-of-pocket expenses during their confinement. Eighty percent (80%) belonged to the non-NBB category and also incurred zero hospital charges. In addition, there was no significant difference in the individual categories of the hospital expenses between the two groups except for the surgical procedures ($p = .018$, 95% CI). The accumulated total expenses also did not significantly differ between the two groups ($p = .063$, 95% CI). The minimum amount billed was PhP 1,984.95, while the maximum amount charged was PhP 38,898.65, with a median of PhP 18,703.28 and interquartile range of PhP 4,251.78 (X_U : PhP 20,848.74, X_L : PhP 16,596.96). There were no reported out-of-pocket expenses from non-NBB patients. The actual cost of thyroidectomy did not differ significantly from the case rate provided by PhilHealth among all the RVS categories.

Conclusion: The PhilHealth case rate system is effective in reducing out-of-pocket expenses among non-NBB patients who underwent thyroidectomy in our institution during the study period.

Keywords: *out-of-pocket expenses; thyroidectomy; health care financing; health expenditures; universal health coverage*

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The creation of the Philippine Health Agenda in 2016 has re-emphasized the need for accessible health care through a universal health insurance.¹ The Philippine Health Insurance Corporation (PhilHealth) was seen as the gateway to free affordable care using No Balance Billing (NBB) for the poor or basic accommodation and fixed co-payment for non-basic accommodation.² The NBB policy provides that no other fees or expenses shall be charged or paid for by indigent patients above and beyond the packaged rates during their confinement period.³ The limited depth and breadth of coverage, however, has resulted in high levels of out-of-pocket payments, which continue to rise despite the enormous programmatic and policy reforms in the health financing system.

This problem has been observed in our local setting. Among the 600 patients who underwent surgery in the Department of Otorhinolaryngology- Head and Neck Surgery during the previous year, a significant percentage of non-NBB patients was noted to have large out-of-pocket expenses for a myriad of reasons. These unnecessary expenses can be highly catastrophic and impoverishing. Patients were noted to have a higher risk to forgo care, delay health seeking and become non-compliant.

This study aims to determine the effectiveness of the PhilHealth case rate system in reducing out-of-pocket expenses among non-NBB patients undergoing thyroidectomy. This may be used to create a standardized process by which hospital charges can be based. Once standardized, process defects, as well as processing time will be reduced. Policies can be created to reduce out-of-pocket expenses to rational levels. Strategies may be identified to expand PhilHealth benefits to cover a broader range of services. These can help make health care more equitable, inclusive, transparent and accountable in line with the Philippine Health Agenda for 2016- 2022.

METHODS

This is a prospective cross-sectional study carried out in a tertiary public hospital. The population was composed of the statements of accounts of public (charity) patients who underwent thyroidectomy from February to September 2018.

The charts of patients that were included in the study must have fulfilled the following criteria: (1) must have PhilHealth listed as the health insurance; (2) must indicate that the patient underwent any of the following types of thyroidectomy: (a) partial thyroid lobectomy, unilateral, with or without isthmusectomy (RVS: 60210), (b) partial thyroid lobectomy, unilateral, with contralateral subtotal lobectomy, including isthmusectomy (RVS:60212), (c) total thyroid lobectomy, unilateral, with or without isthmusectomy (RVS: 60220), (d) total

thyroid lobectomy, unilateral, with contralateral subtotal lobectomy, including isthmusectomy (RVS: 60225), (e) thyroidectomy, total or complete (RVS: 60240), (f) thyroidectomy, removal of all remaining thyroid tissue following previous removal of thyroid (RVS: 60260) or (g) thyroidectomy, total or subtotal for malignancy, with limited neck dissection (RVS: 60252). The following exclusion criteria were applied: (1) use of other health insurances aside from PhilHealth; (2) presence of other co-morbid conditions in the final diagnosis; (3) more complicated types of thyroidectomy, including the following: (a) thyroidectomy, total or subtotal for malignancy, with radical neck dissection (RVS: 60254), (b) thyroidectomy, including substernal thyroid gland; sternal split or transthoracic approach (RVS: 60270) or (c) thyroidectomy, including substernal thyroid gland; cervical approach (RVS: 60271); and (4) incomplete charts.

We limited the study to 64 billing statements which was computed using the prevalence of patients that underwent thyroidectomy for the year 2016 (N=76), a confidence interval of 95%, a margin of error of 5% and a power of 80%. The billing statements were selected using a table of random numbers.

After obtaining approval from the Institutional Technical Review Board and Research Ethics Committee, informed consent was obtained from the participants. Upon admission, data such as employment (unemployed/ contractual/ self-employed/ employed), salary in Philippine Pesos (PhP) per month (no fixed income/ less than PhP 10,000/ PhP 10,000 - 19,999, PhP 20,000 – 29,999, PhP 30,000 and above), PhilHealth membership classification (employed/ individually paying/ overseas Filipino worker/ sponsored/ indigent/ lifetime/ senior citizen) and billing classification (NBB/ non-NBB), were obtained using a questionnaire. On the day of the patient's discharge, the procedure performed (i.e., type of thyroidectomy) and statement of account were obtained, including particular expenses (room and board, drugs and medicine, supplies, radiology, laboratory and ancillary procedures, use of the operating room, and surgical procedures) and any out-of-pocket payments.

Descriptive statistics were calculated including the comparison of the cost of hospitalization and the PhilHealth case rate. Descriptive summary measures for continuous variables were presented in terms of mean \pm standard deviation or median and interquartile ranges; and for categorical variables, summaries were presented in frequency counts and proportions. Comparisons between the cost of hospitalization among NBB and non-NBB patients and associations of the items included in the PhilHealth case rate and actual cost of thyroidectomy utilized the independent t-test. All data were encoded in Microsoft Excel for Mac 2011 Version 14.4.0 (Microsoft Corporation, Redmond,



WA, USA). Statistical analysis was performed using IBM SPSS Statistics for Windows Version 20.0 (IBM Corp., Armonk, NY, USA). All hypotheses tests used a 0.05 α - level of significance.

RESULTS

A total of 64 patients met the inclusion criteria and consented to participate in the study. The profile of the participants based on the employment status, monthly income, PhilHealth membership classification, billing classification and procedure performed is presented in *Table 1*.

The comparison of the average cost of hospitalization between NBB and non-NBB patients indicate that there was no significant difference in the individual categories of hospital expenses, except for the surgical procedures ($p = .018$, 95% CI). The accumulated total expenses also did not differ significantly between the two groups ($p = .063$, 95% CI) as shown below in *Table 2*.

The minimum amount billed was PhP 1,984.95 while the maximum amount charged was PhP 38,898.65 with a median of PhP 18,703.28 and interquartile range of PhP 4,251.78 (X_U : PhP 20,848.74, X_L : PhP 16,596.96). There were no reported out-of-pocket expenses from non-NBB patients.

The comparison of the average actual cost of thyroidectomy and the PhilHealth case rate is also shown in *Table 3*.

Based on the average cost of thyroidectomy procedures, RVS 60225 (total thyroid lobectomy, unilateral, with contralateral subtotal lobectomy including isthmusectomy) had the highest average cost at PhP 21,556.30 while RVS 60220 (total thyroid lobectomy, unilateral, with or without isthmusectomy) had the lowest value at PhP 16,282.12. The actual cost of thyroidectomy did not differ significantly from the case rate provided by PhilHealth among all the RVS categories.

DISCUSSION

The Philippine Health Agenda was launched to achieve universal health care for all Filipinos through the achievement of three health system goals.¹ Among these, financial risk protection through the national health insurance program (NHIP) is PhilHealth's primary responsibility.⁴ This aims to protect Filipinos especially the marginally poor against the catastrophic cost of illness. Through the NHIP, resources need to be generated to improve the provision of public health services to consequently achieve the Millennium Development Goals.⁵

Health insurance coverage is measured at the individual level to include both public insurance (through PhilHealth) and private insurance

Table 1. Clinico- demographic profile of patients who underwent thyroidectomy at the Baguio General Hospital and Medical Center from February to September 2018

	FREQUENCY	PROPORTION (%)	
EMPLOYMENT			
Unemployed	35	=64	=100
Contractual	0		
Self- Employed	25		
Employed	4		
MONTHLY SALARY			
No Fixed Income	31	=64	=100
< PHP10,000	11		
PHP 10,000 - 19,999	20		
PHP 20,000 – 29,999	2		
≥PHP 30,000	0		
PHILHEALTH MEMBERSHIP CLASSIFICATION			
Employed	7	=64	=100
Individually Paying	35		
OFW	0		
Sponsored	2		
Indigent	13		
Lifetime	0		
Senior Citizen	7		
BILLING CLASSIFICATION			
NBB	13	=64	=100
Non- NBB	51		
PROCEDURE PERFORMED			
RVS 60210	4	=64	=100
Partial Thyroid Lobectomy, Unilateral, with or without Isthmusectomy			
RVS:60212	0		
Partial Thyroid Lobectomy, Unilateral, with contralateral subtotal lobectomy, Including Isthmusectomy			
RVS: 60220	14		
Total Thyroid Lobectomy, Unilateral, with or without isthmusectomy			
RVS: 60225	2		
Total Thyroid Lobectomy, Unilateral, with contralateral subtotal lobectomy, Including Isthmusectomy			
RVS: 60240	25		
Thyroidectomy, Total or Complete			
RVS: 60260	14		
Thyroidectomy, Removal of all Remaining Thyroid Tissue following previous removal of thyroid			
RVS: 60252	5		
Thyroidectomy, Total or Subtotal for Malignancy, with Limited Neck Dissection			

Table 2. Comparison of the average cost of hospitalization between NBB and non-NBB patients undergoing thyroidectomy

PARTICULARS	NBB in PhP (N=51)	NON-NBB in PhP (N=13)	P-VALUE
Professional Fee	0.00	0.00	.000
Surgical Procedures	2,176.97	2,576.63	.018
Use of Operating Room	4,661.96	4,569.23	.415
Radiology, Laboratory and Other Ancillary Procedures/ Clinical Laboratory Expenses	545.76	786.08	.434
Medical Supplies	1,273.73	1,522.83	.165
Drugs and Medicine	2,138.92	2,002.74	.113
Room and Board	1,769.23	1,879.69	.169
ACCUMULATED TOTAL EXPENSES	12,556.57	13,337.20	.063

Table 3. Comparison of the actual cost of thyroidectomy and PhilHealth case rate

	AVERAGE ACTUAL COST OF THYROIDECTOMY (PhP)	CASE RATE FROM PHIC (PhP)	P-VALUE
RVS 60210*	18,660.85	31,000.00	.210
RVS 60220+	16,282.12	31,000.00	.212
RVS 60225#	21,556.30	31,000.00	.208
RVS 60240\$	19,857.07	31,000.00	.210
RVS 60260¶	21,200.26	31,000.00	.203
RVS 60252#	20,800.98	31,000.00	.209

*Partial thyroid lobectomy, unilateral, with or without isthmusectomy.
 †Total thyroid lobectomy, unilateral, with or without isthmusectomy.
 ‡Total thyroid lobectomy, unilateral, with contralateral subtotal lobectomy, including isthmusectomy.
 §Thyroidectomy, total or complete.
 ¶Thyroidectomy, removal of all remaining thyroid tissue following previous removal of thyroid.
 #Thyroidectomy, total or subtotal for malignancy, with limited neck dissection.

(through private health maintenance organizations (HMOs).⁶ Out-of-pocket health expenditure is defined as direct purchases by households of health services or goods, like medicines, hospital room charges, consultation fees and diagnostic tests. It excludes dental charges, food supplements, various alternative therapies and transportation for medical care.⁶ Purchasing of health services is particularly relevant in the thrust of financial risk protection.⁵ The focus of social health insurance in the Philippines has long been on expanding membership, but as coverage approached 80-90 percent of the population, this has shifted to increasing the reimbursement rate (or the so-called “support value”). Through this, health insurance indeed reduced a household’s probability of falling into poverty due to a member’s illness.⁷ Along with the introduction of case payment is the introduction of the No Balance Billing (NBB) policy, which provides that no other fees or expenses shall

be charged or be paid for by indigent patients above and beyond the packaged rates during their confinement period.³

Among the patients who underwent thyroidectomy from February to September 2018, 20% belonged to the NBB category with zero out-of-pocket expenses during their confinement. Eighty percent (80%) belonged to the non- NBB category which also incurred zero hospital charges. The average cost of hospitalization did not differ significantly between the NBB and non- NBB patients. This, however, seems to contradict the fact that patients still complain of the high cost of out-of-pocket expenses in the outpatient department especially for laboratories, clearances and medications prior to their surgery. The compensation provided for by the PhilHealth case rate for thyroidectomy covers only the expenses during the patient’s confinement. It excludes those incurred during the patient’s consult in the outpatient department. The current setup for patients scheduled for thyroidectomy is to perform all diagnostic workups on an outpatient basis. These include but are not limited to neck ultrasound, thyroid function tests (FT4, TSH), fine needle aspiration biopsy (FNAB), complete blood count (CBC), urinalysis (UA), 12-lead electrocardiogram (ECG) and chest x-ray. Should there be any derangement in the patient’s laboratory results that would warrant treatment, the patients are prescribed medications and are advised to have their laboratory tests repeated at the out-patient department (OPD) on follow-up. A patient who needs to undergo treatment for abnormalities in thyroid function (i.e., hyperthyroidism or hypothyroidism) for instance, would need to take medications daily for 2-6 weeks before a repeat laboratory testing could be done. Such expenditures were therefore not considered “out-of-pocket expenses” in this study since they were incurred prior to the patient’s confinement.

Despite a uniform case rate for simple thyroidectomy cases, there exists a wide standard deviation in the hospital bill charged ranging from PhP 1, 984.95 to PhP 38, 898.65. Variations in charges commonly came from procedures, drugs and medicine, and operating room supplies like oxygen, which could be caused by the lack of a uniform system of charging in the materials used. Each particular expenditure category (i.e., room and board, drugs and medicines, supplies, radiology, laboratory and ancillary procedures, use of the operating room, and surgical procedures) could not be compared to a standard, since the given PhilHealth case rate does not include a breakdown of its coverage. Nevertheless, the case rate provided by PhilHealth for all RVS cases used in this study is effective in terms of reducing the out-of-pocket expenses among non-NBB patients during their confinement.

Our study limitations include design bias, since it did not account for all of the expenses incurred for thyroidectomy particularly the out-of-pocket expenses in the out-patient department. The lack of a



standard by which expenditure categories could be compared to also pose another limitation. It is therefore our recommendation to include all outpatient expenses in the case rate coverage to reduce the out-of-pocket expenditures further. There should also be a standardized system of charging of supplies used to maximize the case rate, probably through the use of OR packages for thyroidectomy. Further studies are also encouraged to determine if the PhilHealth case rate is effective for private patients undergoing thyroidectomy and for other conditions or procedures.

In conclusion, the PhilHealth case rate system is effective in reducing out-of-pocket expenses among non-NBB patients who underwent thyroidectomy in our institution from February to September 2018.

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