EFFECT OF PHILHEALTH ENROLMENT IN THE DELAY IN DISCHARGE OF PEDIATRIC PATIENTS WITH ACUTE ILLNESS IN A GOVERNMENT TERTIARY HOSPITAL

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ABSTRACT

BACKGROUND: Philhealth, the national health insurance program, aims to reduce out-of-pocket expenditures by subsidizing hospital admission expenses. A possible determinant of its success is the timeliness of management and prevention of discharge delay.

OBJECTIVES: To determine the effect of Philhealth enrollment on the timeliness of discharge of patients with acute illness in a government tertiary hospital

METHODS: A retrospective cohort study involving 98 patients (49 Philhealth members and 49 non-Philhealth members) was done. Data including age, sex, admitting diagnosis, social service classification, and type of Philhealth membership, were collated from the database of patients from the admitting section. Reasons for delay in discharge and number of days delayed from discharge point were obtained. Comparison of baseline characteristics was analyzed using independent t-test for quantitative variables, and Fisher's exact test for qualitative variables. Association between PhilHealth coverage and hospital delay was analyzed using logistic regression analysis.

RESULTS: Discharge delay is 3 times more likely to occur among non-Philhealth members as compared to the Philhealth group. Other variables were not significantly associated with discharge delay.

CONCLUSIONS: Discharge delay is significantly associated with non-membership to Philhealth. Further investigation through focus group discussions with patients' families may be done to uncover other possible causes for discharge delay.

INTRODUCTION

Hospital length of stay has been used as an indicator of efficiency of hospital resource utilization [4, 14]. Although it is largely affected by disease severity and other non-patient factors, it has reflected how proficiently the hospital processes are carried out from the time of admission to discharge. Needless to say, any delay in such processes ultimately leads to prolonged hospital stay.

Hospital length of stay has been unnecessarily prolonged by delay in discharge. [5]. Such administrative dilemma of many hospitals is translated to bed unavailability, which in turn, leads to longer waiting times for patients at the emergency room or outpatient department to be admitted in the wards, ultimately delaying the delivery of health care to the patients. Hence, proper discharge planning, vis-à-vis, identifying and addressing the impediments to timely discharge should be done in every hospital admission.

Financial barrier is only one of the factors identified to contribute to extension of patients' hospital stay. However, in the Philippine setting, it may be deemed as the major consideration as far as delays in discharge are concerned. The "fear of incurring a significant financial burden for health care or falling into a 'medical poverty trap' can cause ill individuals to either delay or refrain from seeking essential medical services " [11]. The same rationale may explain to some extent, the delays encountered in performing necessary procedures and administering essential medications in the in-patient setting. Moreover, patients who delay consult for any condition are more likely to present with more severe manifestations and complications as compared to those who seek healthcare early into the disease. The size of out-of-pocket payments varied widely, hence beneficiaries are uncertain about how much they will have to pay from their own pockets until they receive the bill [11]. As a result, the patient and/or his family may need more time to procure funds that would cover for expenses incurred above the insurance coverage. This translates to additional time, more often days of hospital stay beyond the point of discharge. Hence, a reliable source of funding expedites both the admission and the discharge process.

The National Health Insurance Program embodied by the Philippine Health Insurance Corporation (Philhealth), is the government's effort to have a universal healthcare coverage for all Filipinos in order to eliminate finances as a stumbling block for health utlization. Since Philhealth is able to cover the expenses for laboratory work-up and medications, utilization of its benefits reduces the financial burden of patients. However, since majority of the health expenditure still comes from out-of-pocket resources, the effect of having Philhealth coverage on the health outcomes is yet to be established. Therefore, this study aims to determine the effect of Philhealth benefit availment in the timeliness of discharge of patients admitted for acute conditions.

This study will highlight the advantage of Philhealth enrolment and availing its benefits during hospital admissions. The results of this study would also help determine whether enrolment of patients to Philhealth contribute to maximization of the hospitals resources, particularly bed turnover. Also, this study may be able to elucidate other bottlenecks in the discharge planning process, which may be discussed and addressed in succeeding studies.

Rather than a mere event, discharge can be viewed as a process which involves clinical, financial, legal and administrative and recordkeeping aspects [6]. A delay in discharge can be a reflection of bottlenecks in the process, which could be improved.

Particular interest has been placed on the length of hospital stay as an indirect measure of discharge delay and a parameter of health resource efficiency. It is the most common measure of how resources are used to produce health care [3]. A number of studies have investigated factors affecting patient's hospital length of stay including patient factors, physician factors, hospital factors and source & type of payment [1, 13]. Each of these factors have been shown to contribute to over- or under-hospitalization of patients, both status have their disadvantages. Nevertheless, the degree to which each factor influences the length of hospital stay is yet to be determined.

Under-hospitalization occurs when the patient is prematurely discharged from the hospital. It has been observed to sometimes result from cost-containment strategies but could lead to unsatisfactory outcome [1]. For instance, patients who are discharged prior ascertainment of recovery could rebound to their ill state due to inadequately treated conditions. In the setting of

infectious diseases, insufficiently given antibiotics could lead to drug resistance which poses a problem during readmission. On the other hand, prolonged hospitalization carries the disadvantage of higher cost and increased risk of nosocomial infections and iatrogenic complications [1]. In this light, a timely discharge has always been the target of an efficient hospital management. Timely discharge may be defined as being sent home from the hospital on the same day that a discharge order is made.

There have been a number of studies done to determine the factors affecting the length of hospital stay and causes of delay in discharges. Nonetheless, such researches are limited to foreign data. To date, no investigation has been made on the causes of delay in discharge of patients admitted in hospitals in the Philippines.

Philhealth is a "single-fund social health insurance that covers families, wherein the primary member and his dependents (declared children below 21 and parents above 65) can avail of the in-patient and outpatient PhilHealth benefits" [8]. In the study by Quimbo et al. in 2008, Philhealth support rates in the study hospitals average only 30% [7]. Data lifted from the Asia Pacific Observatory on Health Systems and Policies published in 2013, showed that majority of the health expenditure still comes from out-of-pocket sources. Although funds from Philhealth increase through time, it is still far from its target of 30% coverage of total national health expenditure [15].

Given this statistic, it is expected that a lesser number of poor, sick Filipinos, particularly children are able to access health care in times of illness, primarily because of financial limitations. This poses a challenge to the health sector given that hospitalized children without insurance or other source of health funding has increased mortality because of higher disease severity [8]. Also, based on the study of the Children's Health Insurance Program (CHIP), it was found that children who receive health insurance from the government were "more likely than uninsured children to receive well-child care, see a specialty doctor, avail of dental care service and be fully immunized" [8]. In the same way, a Philippine study by the Quality Improvement Demonstration Study (QIDS) showed that low-income children that have Philhealth coverage had greater long-term health improvements compared to those without health insurance [8].

Conversely, it was also found that the length of hospital stay influences the decision to avail Philhealth benefits in that, patients are more likely to make use of their Philhealth accounts to pay for hospital expenses if they were admitted for a longer period of time (average of 5 days) [8]. However, the length of confinement in the said study was used as a determinant of disease severity rather than a marker of hospital resource efficiency. Hence, another conclusion made from the same investigation is that, Philhealth benefits are more of use to those with more morbid conditions.

Objectives of the Study

General Objective

To determine the effect of Philhealth enrollment on the timeliness of discharge of patients with acute illness in our institution

Specific Objectives

1) To present the demographic profile of patients who have utilized Philhealth benefits during their admission

2) To demonstrate how many patients stayed more than 1 day after being given a send home order
3) To determine how many patients who have Philhealth accounts overstayed

4) To identify other reasons for delay in discharge of patients with acute illness

METHODOLOGY

A retrospective cohort study was done to determine which among those children who were admitted for acute illness were enrolled and availed of Philhealth benefits and were discharged timely.

The sample population was randomly selected from the database of admitted patients from January 2016 to June 2016. All private patients were excluded. Those patients who have chronic illness as co-morbidities (i.e. all forms of malignancy, cardiac conditions, neurologic conditions) as well as neonates will be excluded. However, those patients who are admitted for acute exacerbations of a chronic illness are included (i.e. bronchial asthma).

Using NCSS-PASS 2013, the minimum sample size requirement is at least 98 based on the percentage of uninsured patients with hospital delay = 32.2% [15] and odds ratio= 4.51 [12] with level of significance= 5% and power= 80%.

The service patients were classified as to having Philhealth membership or not. From the list of patients with Philhealth, 49 were randomly selected. The same number was randomly selected from the list of non-Philhealth patients. All patients who are enrolled at the beginning of the study, except those who expired, were analyzed at the end of the study regardless of outcome (i.e. acute illness which complicated during admission).

The demographic profile (age, sex), the acute condition for which the patient was admitted, the social service classification and the Philhealth membership type were taken from the patient database from the Admitting section. The discharge delay form was duly accomplished based on such data.

A list of discharge clearances during the time period of the study was obtained from the Social Services Unit. From such list, each patient included in the study was cross-referenced to determine delay in discharge. If the patient was not in the list, the patient was considered able to go home on the day the discharge order was made. On the other hand, if the patient's name is on the discharge clearance list, the number of discharge clearances was noted. This was noted in the discharge delay form. The number of discharge clearances was equivalent to the number of days that the patient's discharge was delayed from the time the order for discharge was made. The reason for the delay is also noted in the discharge clearance list provided by the Social Service Unit. Moreover, fund sources (PCSO, DSWD, etc.) for settling the hospital bill of patients who were unable to go home at the discharge point were recorded in the said document.

The protocol underwent approval of the Institutional Review Board (IRB) prior to execution. The primary investigator had no conflict of interest in conducting this study. Permission from the departments from which data were collected (Medical Records, Social Service, Admitting section and Philhealth section) was sought in order to access the charts and other records of the patients. The patients' identity was not disclosed in the publication of the results of this research. To ensure patient confidentiality during data processing, the patients were number codes so as to avoid revealing their identity. The research s carried

out in accordance to the guidelines stated in the Good Clinical Practice as per Global Health Network.

Data analysis was performed in Stata SE version 13. Quantitative variables were summarized as mean and standard deviation, while qualitative variables were tabulated as frequency and percentage. Comparison of baseline characteristics was analyzed using independent t-test for quantitative variables, and Fisher's exact test for qualitative variables. Association between PhilHealth coverage and hospital delay was analyzed using logistic regression analysis. The level of significance was set at 5%.

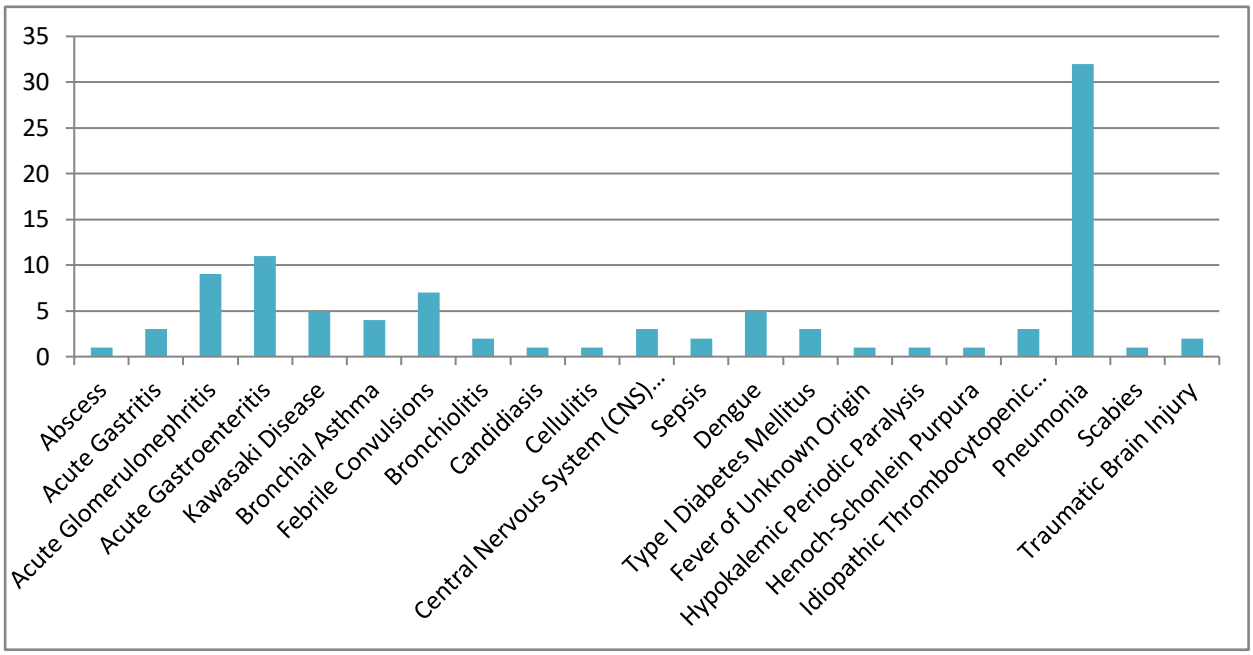
RESULTS

There are 3,302 patients who were admitted at the service wards from January – June 2016. Of these patients, 2,845 or 86% were enrolled to Philhealth, while the remaining 457 or 14% were non-Philhealth members. There were a total of 98 patients included in the study, 49 are enrolled in Philhealth while the remaining are non-Philhealth members. Approximately 45% of the patients belong to the 1 – 4 years old age group. Majority of the patients included in the study are females, comprising 62% (Table 1). The most common conditions of patients included in the study are pneumonia (32%), acute gastroenteritis (11%) and acute glomerulonephritis (9%). This finding is reflective of the hospital-wide data, which also shows these conditions to be the most prevalent diagnoses of admitted patients (Figure 1)

Table 1. Demographic Profile of Subjects with Philhealth and Non-Philhealth

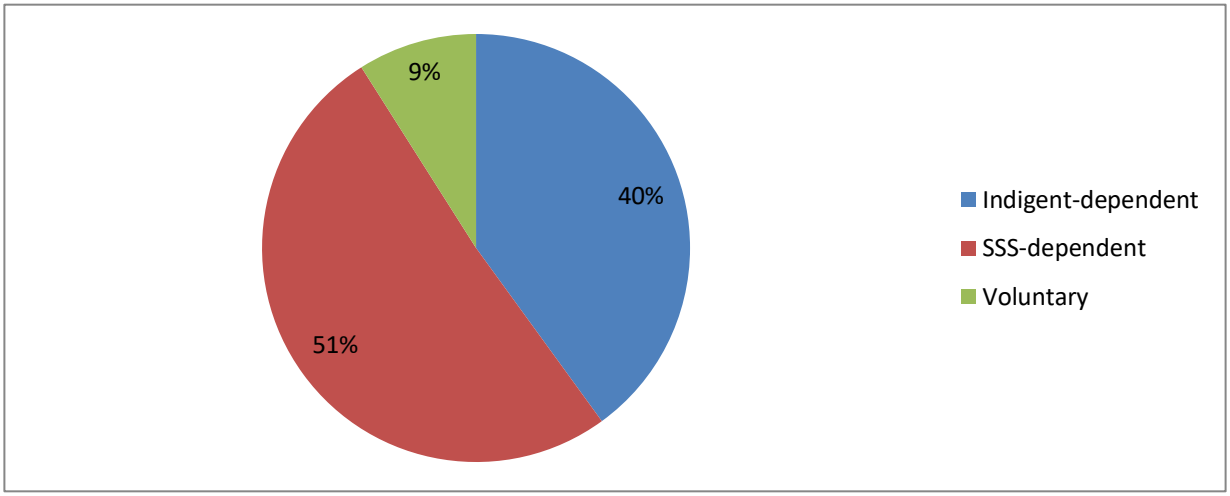
	With Philhealth (n = 49)	**Without Philhealth (n = 49)**	**p-value**
Age			
1 mo – 11 mos	13 (26.53%)	15 (30.61%)	
1 – 4 years old	26 (53.06%)	18 (36.73%)	0.332
5 – 9 years old	4 (8.16%)	10 (20.41%)	
10 – 13 years old	3 (6.12%)	4 (8.16%)	
14 – 18 years old	3 (6.12%)	2 (4.08%)	
Sex			
Male	19 38.78%)	18 (36.73%)	1.00
Female	30 (61.22%)	31 (63.27%)	
Social Service Classification			
C1	0 (0%)	1 (2.04%)	
C2	15 (30.61%)	8 (16.33%)	
C3	34 (69.39%)	40 (81.63%)	0.152

Figure 1. Acute Conditions of Patients in the Study.



Based on the social service classification, most of the patients (75%) are classified as C3, indicating that a considerable number of patients belong to the lower income bracket. However, it is of note that there are more patients in the C3 group who do not have Philhealth. This contrasts with the other social service classification group (C2), which shows that there are more patients who are enrolled to Philhealth than those who are non-members. Further classification of the Philhealth group based on the membership type showed that the most common membership type is the SSS-dependent type comprising 51% of the said group (Figure 2), while indigent-dependent members and those who have voluntary contributions consist 40% and 9%, respectively.

Figure 2. Distribution of Patients with Philhealth based on Membership Type



The characteristics of enrolled patients such as age, sex and acute illness for which they are admitted were analyzed against discharge delay so as to identify other contributory factors. However, none of them demonstrated any significant association. However, analyzing Philhealth enrolment against delay in discharge showed that non-membership to Philhealth is a risk factor for delay in discharge, in that those without Philhealth are 3 - 4 times more likely to experience delay in discharge (OR 3.6, p-value = 0.03) compared to those with Philhealth (Table 2). Comparing the number of days delayed between Philhealth and non-Philhealth groups, there is no significant difference in the number of days delayed (1 vs. 1.33 days). On the average, those who experience delay in discharge stay in the hospital for 1-2 days after being given the discharge order.

Table 2. Discharge Delay among Study Patients.

	With delay (n = 16)	**Without Delay (n = 82)**	**P-value**
Age			
1 mo – 11 mos	3 (18.75%)	25 (30.5%)	
1 – 4 years old	9 (56.3%)	35 (42.7%)	
5 – 9 years old	0 (0%)	14 (17.1%)	0.08
10 – 13 years old	3 (18.75%)	4 (4.88%)	
14 – 18 years old	1 (6.25%)	4 (4.88%)	
Sex			
Male	7 (43.7%)	30 (36.6%)	0.58
Female	9 (56.3%)	52 (63.4%)	
Acute Illness			
Abscess	0 (0%)	1 (1.22%)	
Acute Gastritis	0 (0%)	3 (3.66%)	
Acute Glomerulonephritis	0 (0%)	9 (10.98%)	
Acute Gastroenteritis	2 (12.5%)	9 (10.98%)	
Kawasaki Disease	0 (0%)	5 (6.10%)	
Bronchial Asthma	0 (0%)	4 (4.88%)	
Febrile Convulsions	3 (18.75%)	4 (4.88%)	
Bronchiolitis	0 (0%)	2 (2.44%)	
Candidiasis	0 (0%)	1 (1.22%)	
Cellulitis	0 (0%)	1 (1.22%)	
Central Nervous System (CNS) Infection	0 (0%)	3 (3.66%)	
Sepsis			
Dengue	1 (6.25%)	1 (1.22%)	0.59
Type I Diabetes Mellitus	1 (6.25%)	4 (4.88%)	
Fever of Unknown Origin	1 (6.25%)	2 (2.44%)	
Hypokalemic Periodic Paralysis	0 (0%)	1 (1.22%)	
Henoch-Schonlein Purpura	1 (6.25%)	0 (0%)	
Idiopathic Thrombocytopenic Purpura			
Pneumonia	0 (0%)	1 (1.22%)	
Scabies			
Traumatic Brain Injury	0 (0%)	3 (3.66%)	
	7 (43.75%)	25 (30.49%)	
	0 (0%)	1 (1.22%)	
	0 (0%)	2 (2.44%)	
Philhealth Membership			
With Philhealth	4 (25%)	45 (54.9%)	0.03
Without Philhealth	12 (75%)	37 (45.1%)	

Table 3. Non-Philhealth Sources of Funding Among Patients with Delay

Source of Funding	With Philhealth (n = 4)	Without Philhealth (n = 12)
Out-of-pocket	4 (100%)	10 (83%)
PCSO	0 (0%)	1 (8.3%)
DSWD	0 (0%)	1 (8.3%)

All patients who experienced delay in discharge identified financial constraint as the reason for delay. The patients' discharges were facilitated by securing funds out-of-pocket and from government agencies such as the Philippine Charity Sweepstakes Office (PCSO) and Department of Social Welfare and Development (DSWD). For the Philhealth group, all patients who experienced delay utilized out-of-pocket resources to fund their hospital bill. Similar findings were seen in the non-Philhealth group - 83% of those who had delay in discharge used out-of-pocket resources to pay for their hospital bill. Other sources of funding identified in this study were PCSO and DSWD (Table 3).

DISCUSSION

Delay in discharge contributes to the cascade of administrative concerns of hospitals, especially in the setting of resource scarcity. Discharge delays have been shown to increase the cost of treatment and even aggravate the patients' outcome (15). In the study by Gaughan et al., the cost of delay in discharge is identified as both financial and clinical. The hospital tend to unnecessarily spend resources for a patient who is deemed clinically fit for discharge by allotting a bed which could have been occupied by another patient who has a greater need for medical service. Its clinical implication is also note-worthy as patients who experience delay in discharge may acquire hospital-associated infections, leading to a prolonged hospital stay than expected.

Studies have been made in an attempt to elucidate the factors contributing to discharge delays so as to adequately address them. Most researches conclude that majority of discharges are delayed due to medical causes (awaiting laboratory results, managing complications, awaiting consultants' opinion). However, little is known regarding non-medical causes of discharge delay, more so in the Philippine setting.

Financial capacity to access healthcare has been identified in several studies to cause delay in seeking treatment (11, 16). Social health insurance health programs have been developed and encouraged so as to alleviate the financial burden that has been an impediment to healthcare access, especially by the poor. In the study by Fowler et al., being uninsured was identified as a risk factor for discharge delay presumably because these patients arrive in the hospital in a more critical state, needing more intensive management due to delay in initial medical consult. However, the direct effect of health insurance status and its utilization to health outcomes has not been thoroughly looked into, especially in the local setting.

An indicator of a successful national health insurance program is a decreased percentage of out-of-pocket expenditure (16).

Therefore, reinforcing the national health insurance program through Philhealth benefit utilization is one strategy to alleviate the financial concerns of the patients and expedite the diagnosis, management and ultimately the discharge of these patients.

During the study period, 86% of admitted patients are Philhealth members while the remaining are non-Philhealth members. This is comparable to the statistics released by Philhealth where approximately 9 out 10 Filipinos are covered by Philheatlh. By increasing their coverage, Philhealth comes close to achieving its aim to for universal healthcare by easing the financial burden imposed by healthcare costs. Aside from voluntary and compulsory contributions, the government also subsidizes funding of the said program especially for those belonging to the lowest economic quintiles through the Indigent Program (IP). Despite these efforts, there are still a number of Filipinos who remain non-members or become members but do not utilize the benefits of Philhealth to avail healthcare services. In the 2015 Philhealth statistics, only 12% of total eligible Philhealth members utilize its benefits. In this research, however, it is assumed that Philhealth membership is equivalent to utilization of its benefits during the admission. Philhealth members who did not avail of Philhealth benefits were not identified in this paper.

The reasons for non-enrolment to Philhealth are beyond the scope of this study. However, there were endeavors to give light to this phenomenon. In a study by Faraon et al., sex, income and type of Philhealth membership were identified variables to be significantly associated with underutilization of Philhealth. The outcome of this study had a similar result. Based on the patients' social service classification, vis-à-vis their income status, most of non-Philhealth members belong to C3 or the lowest income group. Such finding may be supposed to be also linked to the educational attainment and subsequently, the knowledge and awareness of the families of these patients regarding the Philhealth benefits and how to avail them. In the same study by Faraon et al., other reasons for underutilization of Philhealth are as follows:

- Lack of knowledge on benefits
- Lack of knowledge on filing claims
- Lack of cooperation from doctors in getting required documents
- Cumbersome or unmanageable process
- High transaction costs compared to benefits
- Ineligible claim

In this study, most patients are subscribed to Philhealth by compulsory contributions through the employer, also known as SSS-dependent members, comprising 51% of the sample population. However, latest Philhealth data demonstrates that majority of covered members are indigents, comprising 49%. This discrepancy may be explained by the fact that some patients are initially admitted as non-Philhealth members and are only enrolled to Philhealth during admission, through the assistance of the social service unit. These patients are usually indigents who are granted a no balance billing status (NBBB) during their stay. Such enrolment mechanism is noted in the records of social service and the admitting section. However, none of the patients who are included in this study experienced said mechanism of enrolment to Philhealth. All non-Philhealth members remained unenrolled to Philhealth until discharge.

Those patients who experienced delay in discharge reported financial setback as the reason for the delay. Data from the social service unit showed that majority of these patients still resorted to out-of-pocket resources

to settle their hospital bill, regardless of their Philhealth membership. However, there are 2 patients who sought financial assistance from PCSO and DSWD. This agrees with the finding that household budget for healthcare is still mostly out-of-pocket (16). This reliance on out-of-pocket sources for healthcare has detrimental effects. In the study by Ulep and Dela Cruz, high out-of-pocket expenditure for health needs can:

- redistribute income "in the wrong direction" (i.e., from chronically ill to healthy individuals and, typically, from the relatively poor to the relatively affluent groups [Plumper and Neumayer 2012])
- lead people to make tough choices concerning their health such as not complying with prescribed drug use due to high costs, forgoing necessities, or borrowing money to pay for prescriptions;
- affect women and minorities who may forgo critical prevention screenings and skimp on medications due to high costs; and
- increase the financial burden on those with valid insurance (Aji et al. 2013).

CONCLUSION

In summary, this study demonstrated that Philhealth enrolment and its subsequent utilization affect timeliness of discharge of pediatric patients admitted for acute illnesses. Non-membership to the national health insurance program increases the risk of discharge delay three-fold. Other patient factors such as age, sex, social service classification and the acute illness for which the patients are admitted did not show any significant association with discharge delay.

Further investigations can be made to elucidate on other factors affecting discharge delay. This study is limited to review of patients' records from the admitting section and social service unit. It is recommended that a prospective study be done in order to identify the reasons for delay in discharge as will be reported by patients' families, which may not be solely financial in nature. Focus group discussions among the patients' parents may be done in order to fully understand the reasons for delay. Such method of study can also give light to the reasons for non-Philhealth membership. Recognizing other variable affecting discharge delay may be helpful for the hospital administration and even the national government, to draft policies and systems to improve the health insurance program so as to achieve universal healthcare for all.

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