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PRESCRIPTIONS

POLICY BRIEF

Assessing the Value for Money and Affordability of Health Interventions

In the continuum of research efforts to identify the most burdensome diseases, their cost-effective facility-based interventions and corresponding resource requirements, this study identified the associated costs in treating these diseases. The study recommends to PhilHealth and the Department of Health to explore the development of a consistent system of gathering costs from hospitals.

POLICY LESSONS

- **Regulation, standardization and harmonization of records and information systems**

Most information exists but are not readily available because hospitals are not reporting it. DOH should also monitor reporting of records and information since hospitals have the tendency to not report information that are not being required by DOH regardless of their importance (e.g. clinical data on morbidity and mortality).

- **Development of a Universal Cost Accounting System**

Difficulty in collecting data specific to the various cost centers was compounded by the amount of time and resources necessary to collect such data. In order to address this, a standard method of collecting pertinent data should be developed. Collation and evaluation of the best costing practices across sample hospitals is recommended in order to aid in this endeavor.

- **Identify Cost Items to be Covered by Payors**

The study assumed that all cost items are included, however PhilHealth may want to identify which items they are willing to cover especially that they are not the only purchaser that funds hospitals to provide healthcare services.

INTRODUCTION

By the end of 2015, the number of Filipinos covered by the National Health Insurance Program (PhilHealth) increased to 92% of the entire population (93.4 million members and dependents) (Philippine Health Insurance Corporation Annual Report, 2015). The development of benefit packages for primary care services, as well as the coverage of various inpatient medical conditions, surgical conditions, and ambulatory surgeries within set case rates, aimed to expand health care delivery while maintaining financial risk protection to the patients. The All Case Rates System was implemented with the hopes of decreasing out of pocket spending, making in-patient, primary health care more accessible to every Filipino. However, due to budget constraints and inflation (amongst other factors), PhilHealth was faced with another challenge -- how can financial risk protection be upheld whilst maintaining internal financial sustainability?

In October 2015, John Q. Wong, MD, MSc of EpiMetrics, Inc. identified the 48 most burdensome diseases, which were grouped under the Guaranteed Health Benefits Package. Cost effective analysis and budget impact analysis was done, and interventions along all levels of care for the disease were identified. Identified in this prior study were resource requirements, clinical practice guidelines and standards of care. This brought to the attention the need to identify the associated direct and indirect costs in the management of these disease.

The study aimed to identify resource items, unit costs and their respective resource volumes and, ultimately, to determine the total cost of treatment per disease.

METHODS

The initial study population included all PhilHealth Accredited public health facilities including hospitals from all levels of care (DOH-Retained and Provincial) and rural health units across the Philippines. From an initial sample size of 79 hospitals, 38 responded and participated in the research team's series capacity-building facility-based costing workshop, as part of the first phase of data collection. Prior to these workshops, data availability checklists were accomplished by the hospitals, and corresponding follow-ups were done for deficiencies in data.

For the second phase of data collection, a list of 15 representative hospitals (one per level, per geographic zone) were sampled for data validation and further data collection due to data quality issues as well as time and budget constraints.

Costing Model

The Joint Learning Network Step-Down Cost Accounting Model was used to estimate the intermediate and final costs using the top-down approach. This method generated the unit costs that was used to estimate disease-based cost. It also computed for the weight coefficients that can be used in rate setting, specifically in DRG-rate setting.

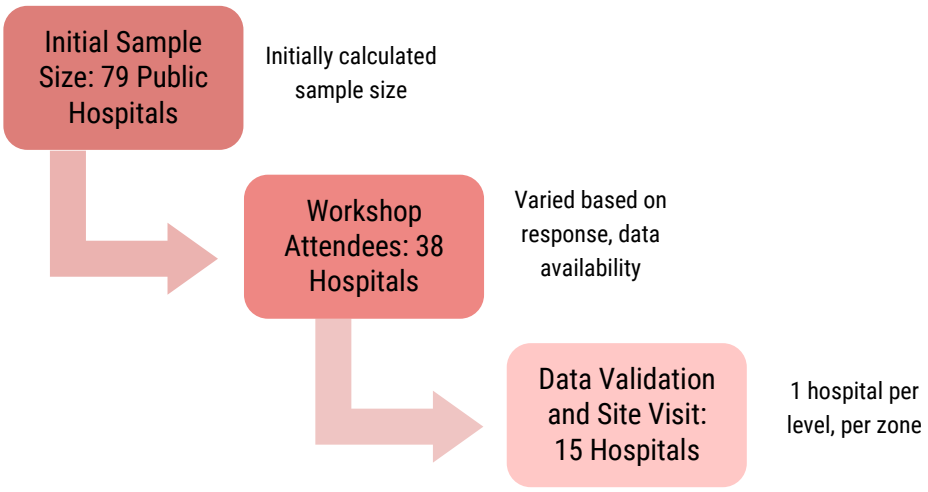

Figure 1. Study Workflow (Sampling Design)

Table 1. List of 15 Representative Hospitals

HOSPITAL	LEVEL OF CARE	ZONE
Andres Bonifacio Memorial Medical Center	L1	NCR
Jose N. Rodriguez Memorial Hospital	L2	NCR
Valenzuela Medical Center	L3	NCR
Dr. PJGMRMC - Talavera Extension Hospital	L1	North Luzon
Southern Isabela General Hospital	L2	North Luzon
Ilocos Training and Regional Medical Center	L3	North Luzon
Gumaca District Hospital	L1	South Luzon
Laguna Medical Center	L2	South Luzon
Bicol Regional Training and Teaching Hospital	L3	South Luzon
Schistosomiasis Hospital	L1	Visayas
Eastern Samar Provincial Hospital	L2	Visayas
West Visayas State University Medical Center	L3	Visayas
Compostela Valley Provincial Hospital – Montevista	L1	Mindanao
Davao Oriental Provincial Medical Center	L2	Mindanao
Davao Regional Medical Center	L3	Mindanao

Several steps (Langenbrunner, n.d.) were necessary to compute for the intermediate and final costs:

1. Determination of Cost Items - Personnel Services, Maintenance and Operating Expenses and Capital Outlay
2. Definition of Cost Centers - Administrative, Ancillary and Clinical Departments
3. Determination of Total Costs - Direct and Indirect
4. Allocation of Costs and Inputs to Intermediate Cost Centers - Based on predetermined allocation rules
5. Allocation of All Costs to Final Cost Centers
6. Computation of Unit Costs for Each Final Cost Center

After these steps, estimated intermediate costs were multiplied by quantity of resource items defined in a previous study by Wong (2016).

CONCLUSION

Computed unit costs per department are shown in the table below (Table 2).

The table shows the average cost per bed day for the different wards across different levels of care. It is important to note that for this study, the cost centers or departments were standardized in order to generate comparable results.

Tertiary hospitals with more than 4 departments like neurosurgery and orthopedics were merged with Surgery, while others with ENT and Psychiatry were merged with the Medicine department.

Aside from cost per bed day, unit costs per prescription, laboratory and imaging, outpatient visits, and surgery was also generated from the step-down cost accounting tool.

The intermediate unit costs for ancillary departments (pharmacy, laboratory, imaging, OR, OPD, ER) widely varies across all hospitals from all levels of care. The median intermediate costs presented in Tables 3-4 determined the unit costs needed to compute for the cost per condition.

In general, tertiary hospitals costs more because of the complexity of diseases that they treat that requires more advanced and specialized services and specialization. However, Table 2 shows that it costs more in level 1 facilities and this may be due to the low generating capacity of these hospitals. Tertiary hospitals are able to capitalize on their economies of scale which may have led to a lower cost. Across levels of care, Surgery and Obstetrics and Gynecology wards are the most costly. However, it is more costly in Level 1 facilities than in Level 2 or 3. Medicine and Pediatrics costs less in Level 1 and Level 2 facilities as compared to Level 3 facilities.

Table 2. Average cost per bed day per ward, by level of facility (Php)

	LEVEL 1	LEVEL 2	LEVEL 3
Medicine	1,599.04	1,773.00	2,062.60
Pediatrics	1,166.27	1,933.80	1,905.60
Surgery	5,583.78	3,035.00	2,413.20
Obstetrics and Gynecology	3,635.66	2,420.20	2,546.80

Table 3-4. Median Intermediate Unit Costs

	COST PER UNIT			
	PRESCRIPTION	LABORATORY	IMAGING	SURGERY
Median L1	₱ 113.00	₱ 152.00	₱ 699.00	₱29, 680.00
Median L2	₱ 264.00	₱ 109.00	₱ 484.00	₱6,923.00
Median L3	₱ 103.00	₱ 219.00	₱928.00	₱4,841.00
Median For All	₱ 141.00	₱ 178.00	₱ 857.00	₱7,272.50

	COST PER UNIT		
	VISITS (OPD)	VISITS (ER)	DENTAL VISIT
Median L1	₱ 472.00	₱ 634.00	₱ 132.00
Median L2	₱ 488.00	₱ 514.00	N/A
Median L3	₱ 935.00	₱ 713.50	₱ 1,062.00
Median For All	₱ 634.00	₱ 634.00	₱ 835.00

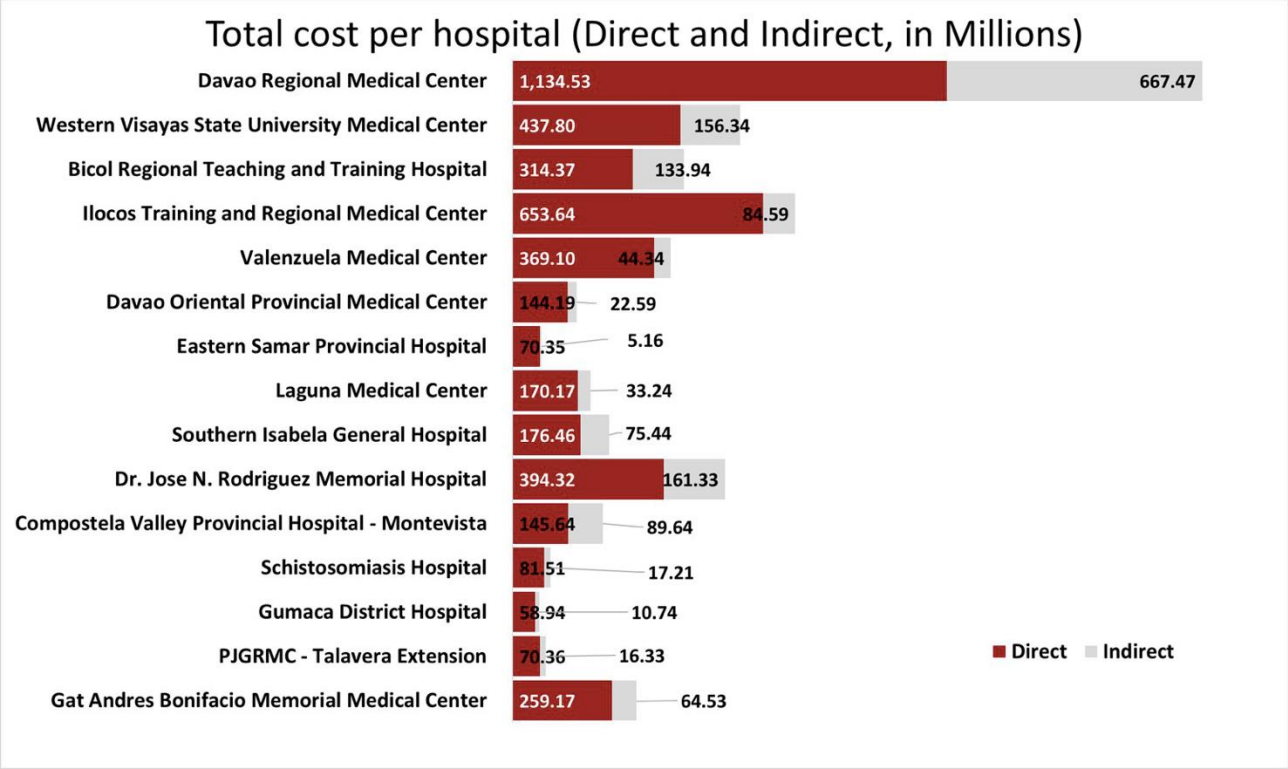

Figure 2. Total Costs in Peso (%Direct vs. %Indirect)

- Around 60-80% of total costs are direct costs. The smaller the total cost, the higher the proportion of direct costs vs. indirect costs.

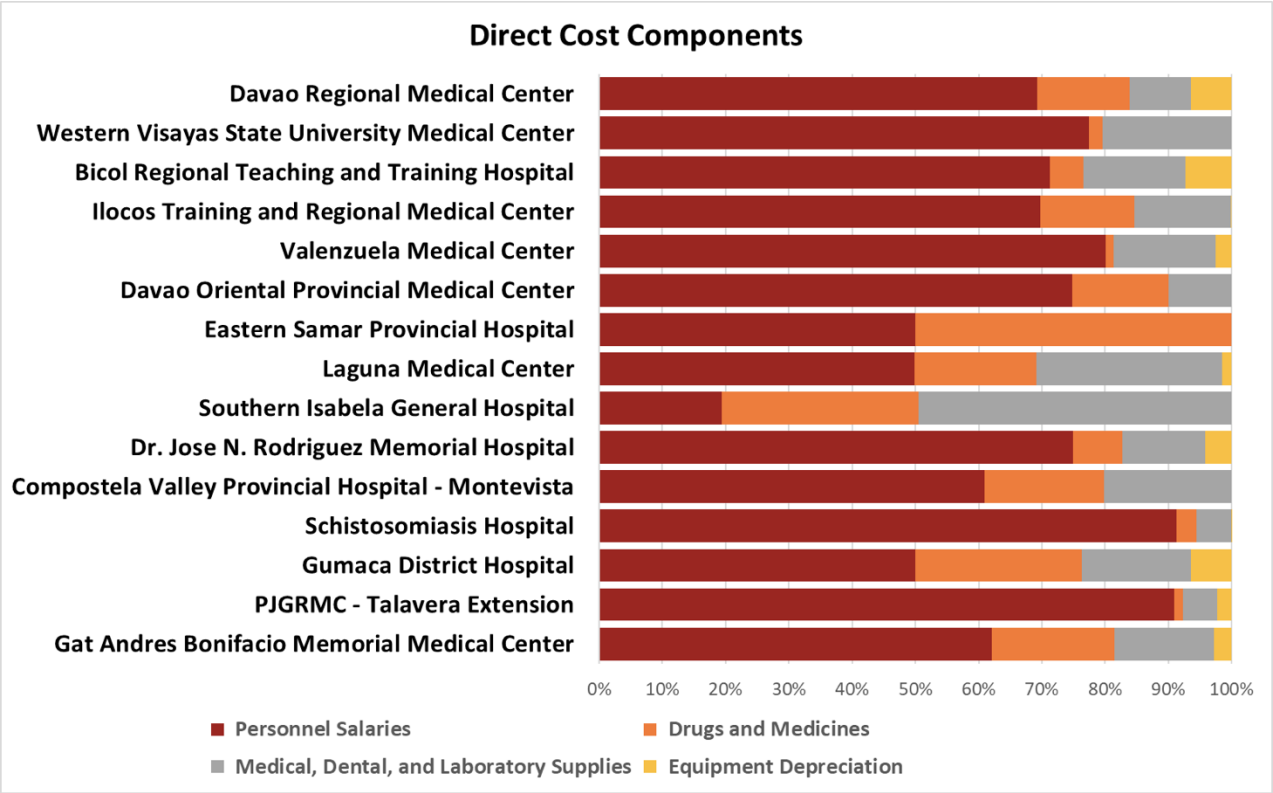

Figure 3. Direct Cost Breakdown

- More than 50-90% of direct costs can be contributed to personal salaries, followed by medical supplies and drugs and medicines.

Because of the nature of the study and the limitations in data availability, the study does NOT recommend that these obtained and calculated quantitative data be taken at face value. However, several policy, action and research recommendations have surfaced in light of the study.

REOMMENDATIONS

The cost per bed day results of this costing study, should NOT be taken at face value, due to the limitations in data availability and the number of assumptions that had to be made in order to complete the variables necessary for computing unit costs. However, the results of the study could be used for the following purposes:

- **Development of a Universal Cost Accounting System**

  One of the limitations of the All Case Rate system, as currently implemented is that these rates for these should be used for one year only, and these rates should be updated systematically. With the challenges encountered in this costing study being able to cost yearly to compute for treatment costs for various diseases is highly unlikely .

  The main reason for this is difficulty in collecting data specific to the various cost centers, compounded by the amount of time and resources necessary to collect such data.

- **Regulation, Standardization and Harmonization of Records and Information Systems**

  One main challenges that the costing team encountered is the difficulty to get information from the facilities. Most information exists but are not readily available because hospitals are not reporting it. DOH should also monitor reporting of records and information since hospitals have the tendency to not report information that are not being required by DOH regardless of their importance.

- **Identify Cost Structure and Cost Items to be Covered by Payor**
  PhilHealth may want to identify which items they are willing to cover especially that they are not the only purchaser that funds hospitals to provide healthcare services.

- **Validation of Assumptions**

  The primary value of this study lies not only in the quantitative output, but in the relationship built with the various sample hospitals. Perhaps with a deeper understanding of the results, recommendations for higher efficiency and opportunities to gather beneficial data could be presented and explored.

- **Development of a Costing Library**
  With the implementation of a system that is consistent across geographical zones and hospital levels, the next step would be to collate the cost data gathered from the various institutions. These surveys have a low yield of data in relation to the cost needed to carry them out. In collating such large amounts of data, cost-effectiveness, data yield and data quality have to be prioritized.

- **Multiple Payer System vs. Single Payer System**
  Further research should be made on which costs should be paid for by other payors and by how much, especially when transitioning to other payment mechanisms.

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Original Research
Wong, J.Q., Lucas, J.M, Mendoza, N.B, et al. 2018. "*Facility-Based Intervention Costing of the 48 Highest Burden Diseases in the Guaranteed Health Benefit Package of the Department of Health and the Philippine Health Insurance Corporation*", EpiMetrics Inc., Philippines.