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GOVERNMENT EXPENDITURES ON HOSPITALS*

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This abridged paper studies government spending on hospitals across the thirteen regions of the Philippines. Attention is not only on the distribution of expenditures across regions but also on finding an alternative source of financing public hospital services other than relying on our overburdened tax system. The study advocates user charges where the poor is protected through a sliding scale of fees.

Why Study Public Expenditure on Hospitals?

Public expenditures on hospitals may be considered as an obscure subject matter but because of its economic and political implications it has become a subject of interest to policy analysts. Economists are particularly concerned with rising costs of health care. Part of hospital cost inflation has been blamed on overexpenditure by the government--especially affluent governments. The remaining is borne, among other factors, by insurance which leads to abuses of services (which we call moral hazard), and by doctors themselves when they generate demand for their own services (this one we call supplier-induced demand). Whenever demand exceeds supply--be it the work of government, insurance, or doctors--pressure is created on scarce resources as producers bid for them in order to meet the demand for delivery of the goods. As a result, prices increase.

The political side of the issue concerns politicians who have used it (i.e., public expenditure on hospitals or, in general, on health) to solicit votes during electoral campaigns. Promises of new hospitals are really music to the ears of the poor population. But how can one

convince the people of the government's ability to deliver health services when it cannot even guarantee the right not to starve?

Just to make comparisons among countries, let us see Table 1 for some health indicators. Industrial market economies, on the average, have governments which put more importance on health--as the last two columns depict--than low- or middle-income countries. However, this importance grew by only 12% from 1972 to 1983 in industrial market economies while it expanded by a tremendous 112.5% in the Philippines for the same period. The phenomenal rise calls for a serious study of government spending on the area of health.

Scope

The present paper focuses on hospitals, particularly, government hospitals. The aim is to arrive at unit cost figures across regions in the Philippines. The ideal unit cost is cost per service per visit. However, our data allowed us to compute only cost per hospital bed. But we were able to impute capital service cost, aside from calculating the recurrent cost.

This study is not a cost-benefit analysis or a feasibility study. It is a descriptive analysis of cost, using most recent (1987-1988) data from the Department of

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Health. From the data set, we derived policy implications pertaining to financing.

Table 1.
Economic and Health Indicators

	GNP per capita:		Life expectancy at birth (years)	% of central gov't expenditure allocated to health	
	Dollars	Average annual growth rate (%)		1972	1983
Low-income economies[a]	260	2.8	60	4.6	2.7
Philippines (middle-income economy)	660	2.6	63	3.2	6.8
Industrial market economies[b]	11,430	2.4	76	10.0	11.2

^a Low-income countries include Ethiopia, Bangladesh, Mali, Zaire, Sri Lanka, Uganda, and India

^b Industrial market economies include Italy, Japan, Sweden, and the United States.

Sources: Akin, Birdsall and de Ferranti (1987) and UNICEF (1987)

Basic Concepts

Defined below are terms used repeatedly in the paper:

(1) *Cost*--a production-oriented concept referring to the use of resources to deliver an output. The cost of something is the total monetary value of all resources required to produce it.

(2) *Recurrent cost* -- cost of all resources involved in using the new production capability or keeping it operationally ready for use over its intended life. Also known as operating costs.

(3) *Capital cost*--cost of acquiring a durable asset with a life of more than one year, such as land, building, equipment, vehicles and furniture. Its crucial characteristic is its long-term nature. This is also known as investment cost.

Methodology

We compute unit cost differently from the way the Department of Health does. Its cost per bed is MOOE (maintenance and other operating expenditures) divided by number of beds. The resulting figure is divided by 365 to obtain cost per day. Their cost per bed per day is just

our recurrent cost. In addition, we impute flow of services from capital. The imputed value is what is known as capital service cost.

Building a hospital or buying a new laboratory equipment is analogous to building a house or purchasing a home computer. We expect the house to render a flow of services over the years, not just on the year it was finally built or bought. The same argument holds for the construction of a hospital. This long-term nature of capital implies that we cannot impute the entire capital expenditure (e.g., value of the house) on the year it was spent. Instead, only a percentage of its value can be used as an appropriate measure of cost. This percentage has come to be known as the rate of replacement of capital. In the literature, it is common to use 4% for depreciation plus the current treasury bills rate (13%) to come up with the replacement rate. Hence, capital service cost per bed is imputed as follows:

$$(\text{capital outlay} / \text{number of beds}) \times (4\% \text{ depreciation} + 13\% \text{ treasury rate})$$

The Health Situation

Let us view the health scenario in the 13 regions of the Philippines as a background to the cost calculations in the succeeding sections.

Morbidity. Incidence of diseases, or morbidity, is still the most common indicator of health. It is lamentable to note that communicable but preventable diseases are still among the the most prevalent. In 1986, bronchitis, influenza, pneumonia, and tuberculosis were the leading diseases in each of the country's thirteen regions.

Southern Mindanao had the highest incidence of bronchitis. Bicol was second, followed by the National Capital Region.

The highest incidence of influenza occurred in Western Mindanao. Bicol came next, followed by Central Mindanao.

Pneumonia claimed the most number of victims in Southern Mindanao. Central Mindanao was next, with Central Visayas third.

Tuberculosis was highest in the Bicol region. Western Visayas was second, followed by Central Mindanao.

Measles was prevalent in nine of the regions, particularly the regions of Mindanao. Malaria and heart disease were leading causes of morbidity in eight regions.

Mortality. Pneumonia killed the greatest number of people in each of the regions. This trend dates back to 1970. For 1986, the highest number of deaths due to pneumonia was in the National Capital Region; the lowest was in Central Mindanao.

Deaths caused by tuberculosis, malignant neoplasm (cancer), and accidents/violence were prevalent in twelve regions, with the National Capital Region ranking first in all three cases.

Crude death rate is a measure of the impact of mortality (i.e., the number of deaths per 1,000 population). For 1986, the Central Mindanao, Western Mindanao, and Southern Mindanao regions registered the highest death rates. This is a complete reversal from 1975 when these regions had the lowest death rates.

The *infant mortality rate* indicates the magnitude of the risk of dying of infants less than one year of age. The Department of Health considers the infant mortality rate as the most sensitive measurement of health of the entire population as well as of the community itself. The rate has gone down from 75 infant deaths per 1,000 live births in 1975 to 55 in 1986, and is estimated at 54 for 1987.

The region with the highest infant mortality rate is Central Mindanao, followed by Western Mindanao and then Southern Mindanao. The lowest was registered by the National Capital Region; next was Central Luzon followed by Southern Tagalog.

Average Life Expectancy. The average life expectancy at birth for the Filipino is estimated at 63.7 years in 1987, up from 60.0 in 1973. The National Capital Region has always had the highest life expectancy among the regions. In 1987, Western Mindanao and Central Mindanao had the lowest life expectancy; in 1973, Cagayan Valley had the lowest.

Hospitals. Health care services are provided mainly through a network of public and private hospitals, rural health units, barangay health stations, and private physicians. In 1986, there were 617 government hospitals with a total bed capacity of 48,906. In addition, there were 1,229 private hospitals with 40,265 beds. The hospital bed-to-population ratio for the country was one bed for every 628 persons. It was only the Metro Manila area that had a better ratio (1:246) than the national average.

About 64% of the total hospital beds are in Luzon. The National Capital Region alone had 33% of the total beds. Most of the well-equipped hospitals are also in Metro Manila. Among the regions, Western Visayas had the lowest bed-to-population ratio (1:1082) largely because it had the least number of hospitals (4% of the total number of hospitals in the country) and was thickly populated. Central and Southern Mindanao had the least number of government hospital beds, whereas Eastern Visayas and Western Mindanao had the least number of private hospital beds. Likewise, Eastern Visayas and Western Mindanao had a low bed-to-population ratio; they were among those regions with the least number of hospital beds. From 1982 to 1986, Western Visayas, Eastern Visayas, and Western Mindanao had the poorest bed-to-population ratio compared to other regions.

Comparing this health indicator with those of other countries of the ASEAN (Association of South East Asian Nations), the hospital bed-to-population ratio of the Philippines in 1981 fared as favorably as those of Thailand and Malaysia, but was worse than those of Indonesia and Singapore.

Prices. The 1985 prices of medicinal supplies were more than three times those in 1978. In Central Luzon, what could have cost one peso in 1978 was worth 3.53 pesos by 1985.

Medical services also had their share of cost increases. The price of medical services increased over threefold from 1978 to 1985. In Western Mindanao, the rise in the cost of medical services was enormous. Medical services in 1985 cost almost four-and-a-half times that of 1978.

Findings

As mentioned earlier we compute unit costs differently from the way DOH (Department of Health) does. What DOH calls unit cost (or cost per bed per day), we call unit recurrent cost (or recurrent cost per bed per day). In this study, unit cost is the sum of unit recurrent cost and unit capital service cost (or capital service cost per bed per day).

Let us first look at the outlay columns (Table 2). Should higher figures make one happy or sad? What do higher values mean anyway? Do higher expenditures indicate more people getting hospitalized, hence the need for higher spending? Or was more spending induced by high hospital inflation? Would more spending mean higher cost inflation in the next round? The problem of causation is beyond the scope of this study. What we attempted to find out here is what determines the allocation of health resources across regions--that is, what are the government's criteria of distribution?

DOH announced recently that it will allocate health resources to the regions based on the size of the population and the incidence of poverty in these areas. The regions which accounted for the largest percentage of poor people, according to rank, are:

Region 4	:	14.1%
6	:	12.8%
7	:	10.1%
5	:	9.9%
11	:	8.0%
3	:	7.8%
8	:	7.1%
10	:	7.1%
1	:	6.4%
9	:	6.3%
12	:	5.8%
2	:	4.6%

Table 2
Unit Cost of Public Hospitals, 1988

(1) Region	(2) Bed Capacity	(3) Recurrent Outlay or M O O E	(4) Capital Outlay	(5) Capital Service Cost per bed per day [a]	(6) Recurrent Cost per bed per day [b]	(7) Total Unit Costs [c]
N C R	18,342	54,265,000	10,000,000	0.25	8.11	8.36
1	2,570	164,297,000	27,675,000	5.04	175.15	180.19
2	1,940	114,642,000	24,201,000	5.84	161.90	167.74
3	2,320	171,454,000	34,241,000	6.91	202.47	209.38
4	5,480	274,655,000	58,637,000	5.01	137.31	142.32
5	1,810	144,286,000	34,143,000	8.83	218.40	227.23
6	2,455	165,668,000	38,173,000	7.27	184.88	192.15
7	2,890	129,486,000	30,174,000	4.88	123.09	127.97
8	2,025	107,475,000	30,213,000	6.98	145.41	152.39
9	1,820	102,002,000	31,213,000	8.02	153.55	161.57
10	1,695	121,351,000	34,143,000	9.42	196.15	205.57
11	1,360	129,189,000	45,803,000	15.76	260.25	276.01
12	1,200	79,512,000	38,073,000	14.84	181.53	196.37

Note:

$$\text{a Column (5)} = \frac{\text{Capital outlay/number of beds}}{365 \text{ days}} \times (4\% + 13\%)$$

$$\text{b Column (6)} = \frac{\text{M O O E / number of beds}}{365 \text{ days}}$$

$$\text{c Column (7)} = \text{Column (5)} + \text{Column (6)}$$

The National Capital Region was not included in the priority listing because its health operations receive a special budget. Based on the third column of Table 2, Southern Tagalog (Region 4) had the highest recurrent outlay, Central Luzon (Region 3) was second, followed by Western Visayas (Region 6). Based on the fourth column of the same table, the highest capital expenditures were incurred by Southern Tagalog (Region 4). Southern Mindanao (Region 11) came next, followed by Western Visayas (Region 6).

As far as total outlays are concerned, the government's action is consistent with its announced objective.

Let us turn our attention to the per unit columns (Tables 2 and 3). In general, these figures were obtained by dividing total outlays by bed capacity (and further divided by 365 days). The number of beds signals potential rather than actual service to people. If data were not a problem, the ideal denominator would be patients served and/or services rendered. It would have been more meaningful to talk about cost per unit per service. What we have instead is a figure of cost which does not distinguish out-patient check-up from in-patient stays, nor a tooth extraction from a maternal delivery. To reiterate the limitations of our measure: first, it is not an efficiency measure as we know of unit cost figures -- the lower, the more efficient -- from basic microeconomics, simply because our denominator is not actual but potential output; second, it is not specific enough.

Table 3.
Recurrent Cost per Bed per Day
(pesos)

Region	1986	1987	1988
1	55.75	74.80	175.15
2	48.68	53.13	161.90
3	58.87	67.44	202.47
4	55.69	61.63	137.31
5	53.90	57.97	218.40
6	68.01	73.36	184.88
7	58.78	56.76	123.09
8	48.95	55.25	141.41
9	73.64	56.34	153.55
10	56.70	60.40	196.15
11	61.25	68.34	260.25
12	53.84	60.64	181.53

Sources: 1986 and 1987 data are from DOH

A different interpretation of unit cost is possible due to public finance. Imagine yourself as a patient of a government hospital. The benefit you get from a hospital bed (or a service, for that matter) can be calculated as the value of resources the government spent in order to make that bed (or service) available to you. It is not difficult to measure benefit with cost once we realize that two

different parties are involved. What is cost to government is actually benefit to the user or patient of a public hospital.

If data were available on unit private payment--that is, the amount spent by the patient out of his own pocket in order to avail of the hospital--then we could subtract it from unit benefit (or unit cost) and come up with unit subsidy. But we do not have private payment data. Nevertheless, we can infer from Table 4 that unit private payment is most likely small relative to unit benefit. Hence, subsidy is large. Since the government's provision of health services comes from the people's taxes, not only equitable distribution across regions but also alternative forms of financing is important.

Table 4.
Revenue from User Charges as a Percent
of Expenditure on Government Health Services

Country	% of Total Expenditure	% of Recurrent Expenditure
Indonesia 1982/83	12.9	15.5
Philippines 1981	6.4	6.8 (Down from 14% in 1978)

Source: De Ferranti (1984)

Going back to unit cost when interpreted as unit benefit, we can point out another shortcoming. Suppose there are two regions with the same total outlay. The first region may have a higher unit benefit simply because it has a lower bed capacity than the second region. The interpretation is not clear. We therefore refrain from ranking the regions as far as unit costs are concerned. (The limitations discussed also apply to DOH's measure of unit cost.)

Policy Implications

As mentioned in the findings, the present study has some policy implications on financing. Recall that we inferred the following: the amount we pay for utilizing the government hospital--should we be charged--is so small compared to the amount that the government spends to provide the hospital services; hence, the net subsidy is large. Since the government finances health services primarily from people's taxes, alternative forms of financing should be explored.

It is also common knowledge that some politicians promise health facilities such as hospitals and clinics to gain patronage. Some consider it a right of the citizenry to have health care and thus attempt to provide free services to everyone through frequently overburdened tax systems.

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Instituting user charges is one policy reform implied by the present study. It is in fact one of four policy reforms suggested by a World Bank policy study (Akin, Birdsall and deFerranti 1987).

Before implementing this reform, the government must first devise a method of identifying who are the poor, and then use differential fees--the higher your income, the more you have to pay--to protect the poor. It has been pointed out in past studies that in private informal health systems such as with the *hilot* or *herbolarios*, it is easier to charge different amounts depending on patient's income since any household's ability to pay is widely known at the village level. However, in a formal public system, a sliding scale of fees would be costly to administer.

One practical approach would be to base fees on the user's place of residence. Another option is to issue vouchers to low-income households, based on certification by local community leaders such as barangay captains.

*The reforms are: (1) institute user charges, (2) provide for risk coverage, (3) use non-government resources effectively, and (4) decentralize government health services.

The next question is what type of services must be charged? Drugs and curative care of the rich. In other words, services that solely benefit individuals and their families, or what we call "private goods." This would free resources of current government expenditures on health to basic preventive care for the poor.

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