THE DEVELOPMENT, GROWTH, AND DISTRIBUTION OF PUBLIC AND PRIVATE MEDICAL RESOURCES IN THE PHILIPPINES

by

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ABSTRACT

Countries typically plan their medical care systems by focusing on broad measures of health status, geographic accessibility of government facilities, and general theories of how health services should be delivered. Health planners rarely take into account economic data on demand, existing use patterns, or alternative sources of care. We focus on the latter, by assembling provincial level data on the public and private hospital systems in the Philippines. We find enormous growth and change in the private sector, contradicting population notions that private systems are concentrated exclusively in high-income urban areas. Additional data on personnel, clinics, and service characteristics suggest that the development of the Philippine health system could be improved by broadening the scope of information used in planning.

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INTRODUCTION

A striking feature of primary health programs and more generally, of government health planning, is a failure to realize that the government is one among many providers of health services in developing countries. Even if we disregard the "informal" parts of medical systems -- traditional healers and midwives, private drug sellers, and after-hours practices of government physicians -- in most countries sizable numbers of modern allopathic providers and facilities operate fee-for-service, charitable, or mission facilities outside the government's system.

Although a few governments in Africa coordinate their health activities with mission facilities, and South American countries depend partially on the private sector to deliver health services for their social security systems, for the most part governments and the international health community have neglected these other providers and how people use them. This is particularly true of the private sector, which is often assumed to be small and to serve only an elite urban clientele. Recently the debate over the public and private medical sectors in developing countries has intensified. Some seek to assert more control over it, others see its growth as a natural reaction to the government's inability to provide adequate services, and still others continue to view it as largely irrelevant to health policy.

Yet few countries have collected data about nongovernment health providers, so they have almost no information about the size, distribution, and service characteristics of the private system. What little information is available is only suggestive and indirect.

For example, a recent examination of the literature on use patterns shows surprisingly high patronage of nongovernment providers in both urban...
and rural areas of many developing countries (Akin et al. 1985). Aggregate expenditure estimates indicate that private spending as a proportion of total health expenditures is highest among the poorest countries (World Bank 1987). Household expenditure surveys in a number of countries also suggest that the poorest households often spend higher percentages of their incomes on health care than do high income households, even when free government care is available (Griffin 1987).

Such use and expenditure patterns are signals that the nongovernment sector is a significant part of many health systems and may serve a broader spectrum of the population than is generally believed. This possibility raises a number of health policy questions, including the proper role of government in providing and financing curative care, whether governments duplicate or complement other service delivery systems, which income groups actually receive public subsidies that are intended for the poor, the relative efficiency of government and private systems, and whether planned public systems perform better than private systems in achieving stated health sector goals. For the most part, these issues cannot be evaluated until information about the private sector is collected.

This paper is primarily a descriptive exercise that demonstrates the types of information that can be collected and what the data reveal about the Philippine health care system. We briefly explore the historical development of public and private medical services in the Philippines. Then we analyze the size, distribution, and growth of the public and private hospital systems. We also assemble survey data describing availability and services of the public and private sectors in one region. We conclude by
describing the distribution of personnel and lower level facilities in the country.

**INTERNATIONAL COMPARISONS**

Some aspects of the Philippines' medical system are compared in table 1 with those of its sister countries in the Association of Southeast Asian Nations (ASEAN) and two high-income countries, Japan and the United States, to provide background information. Malaysia, Thailand, and the Philippines have roughly comparable life expectancy statistics that are 10 to 12 years lower than in the U.S. and Japan. Singapore stands out because it has achieved parity with the two high income countries on most measures of health, but at much lower levels of per capita income. Indonesia also stands out because its mortality statistics are considerably worse than its neighbors.

Relative to ASEAN countries other than Singapore, a high proportion of the Philippine population lives in urbanized areas, and the country is densely settled. Even though the per capita supply of physicians in the Philippines ranks near the middle, these settlement patterns mean that even urban-based physicians will be accessible to a relatively high percentage of the Filipino population. One remarkable aspect of the statistics is the low ratio of physicians to nurses in the Philippines, a situation which will be discussed in more detail later. Private hospitals account for no less than a third of hospital facilities in the countries selected for this table.
Table 1. Comparison of Philippine Medical Statistics with those of Other ASEAN Nations, Japan, and the United States

<table>
<thead>
<tr>
<th>Measures of Health</th>
<th>Government Expenditures</th>
<th>Income</th>
<th>Demography</th>
<th>Facilities and Personnel</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>% Gov't exp. to central to health gov't</td>
<td>GNP $ per capita</td>
<td>Pop. density per km²</td>
<td>Pop. per doctor</td>
</tr>
<tr>
<td>Indonesia 102</td>
<td>53</td>
<td>2.5</td>
<td>27</td>
<td>580</td>
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<tr>
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<td>67</td>
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<td>41</td>
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<tr>
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<td>5.0</td>
<td>13</td>
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<tr>
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<td>25</td>
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<tr>
<td>Thailand 51</td>
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<td>4.3</td>
<td>19</td>
<td>790</td>
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<td>Japan 7</td>
<td>77</td>
<td>-</td>
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<td>United States 11</td>
<td>75</td>
<td>10.7</td>
<td>23</td>
<td>13160</td>
</tr>
</tbody>
</table>

HISTORICAL DEVELOPMENT OF THE PHILIPPINE MEDICAL SYSTEM

The Government Sector

Under American colonial rule, the first 9 government hospitals opened between 1898 and 1923, and provincial and municipal boards of health were established. Between 1923 and 1957, a period spanning both the Japanese occupation during World War II and the end of American colonial rule in 1946, over 70 additional hospitals were built. A substantial public hospital infrastructure was in place, therefore, by the early 1950s, and it has continued to expand, reaching 506 hospitals and 35,334 beds by 1983.

Rural Health Units (RHUs), government-run clinics providing general outpatient, maternal, and preventive care, were established in 1953. By 1954 there were 81 RHUs, expanding to 1,991 RHUs by 1983. In 1978, as part of the Philippines primary health care strategy, the health system was restructured so that the term RHU was divorced from the actual clinic and now encompasses not only the clinic itself (the Main Health Center) but also Barangay Health Stations staffed by trained midwives. Each midwife

1 This total includes 39 provincial hospitals for which the national government contributed up to 70 percent of construction costs and 50 percent of first-year operating costs. In 1957, the national government took total responsibility for hospital construction, adopting the goals of one free bed for every 5,000 people and the requirement that 90 percent (later reduced to 70 percent) of all beds be reserved for charity cases. Provinces were required to earmark 5 percent of their general funds to hospital operating costs and were free to build, at their own expense, hospital beds in excess of the national standards (Adorna 1976).

2 The goal of the RHU system has been to provide at least one clinic in each municipality containing more than 5,000 people. This goal appears to have been met by the middle 1970s. RHUs are generally located in the one or two largest towns in each municipality and are financed primarily from Ministry of Health funds, although they depend partially on local appropriations for drugs, supplies, and RHU personnel who are employed by provincial or municipal health offices (ROP, DOH, NEDA 1975).
supervises several Barangay Health Workers, which are the main practitioners in the Philippines' primary health strategy. By 1981 over 7,000 Barangay Health Stations and more than 30,000 Barangay Health Workers had been deployed.

The overwhelming problem with the government's rural health system is unfilled positions. In 1974, 15 percent of physician positions and 38 percent of nursing positions were unfilled (Valenzuela et al. 1981). Since 1976, medical and nursing school graduates have been required to work in the rural health system as part of the licensing procedure. An annual average of 1391 underboard doctors and 18,000 underboard nurses, as they are called, were rotated through the rural health system from 1979 to 1981. (ROP, NEDA 1979, 1980, 1981b).

The Private Sector

At the end of Spanish rule in 1898, there were 13 independent, nongovernment hospitals in the Philippines (Adorna 1976). By 1954, there were 222 private hospitals (compared to 80 government hospitals). Thirty percent of the private hospitals were in Manila; the rest were in the provinces (Human Relations Area Files 1955). The private system expanded more rapidly than the government system, reaching 1,192 hospitals and 43,625 beds by 1983.

A 1948 tally counted 3,478 total physicians (Human Area Relations Files 1955). Given that 668 physicians were reported employed by the government in 1963 (Chaffee et al. 1969), backward extrapolation suggests that the 1948 statistic contains a high proportion of private physicians.
The first medical school began operating in 1871; by 1960, there were 6 private medical schools, 1 government-supported medical school (Chaffee et al. 1969), and 30 nursing schools (Valenzuela et al. 1981). An average of over 1,400 new physicians were registered each year from 1956 through 1967 (ROP, NEDA 1984). These numbers indicate a vigorous medical education sector and a rapidly increasing potential supply of private physicians during the postwar years.

Output of private medical services (measured by value added) increased at an annual average rate of 16 percent from 1970 to 1983. From 1981 to 1985, at time period over which GNP fell, output in the private medical sector continued to grow, and the proportion of all health expenditures accounted for by the private sector increased from 68 to 76 percent.

**Interface Between Public and Private Sectors**

As far back as 1925, Puericulture Centers, which were forerunners of Rural Health Units, provided mother-and-child care in the main towns of many municipalities. Although Puericulture Centers receive some public funding, principally from local governments, they have historically depended on voluntary private contributions and the services of local private physicians and nurses (ROP, DOH, NEDA 1975). By 1935, when the RHU system was just

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3 There are now 23 medical schools and 132 nursing schools. Almost all medical schools are private, as are all of the nursing schools (Paqueo 1985, Valenzuela et al. 1981).

4 An incentive for medical education in the Philippines is emigration. However, what little data are available suggest that many medical personnel do not leave. It is estimated that 20 percent of medical school graduates emigrated between 1962 to 1967 (Ghosh 1984, 438). Between 1967 and 1969, 2041 physicians emigrated to the U.S., which would be about half of new graduates. From 1975 to 1981, 1642 physicians were placed overseas by government overseas placement agencies (Valenzuela et al. 1981).
getting started, there were already 531 Puericulture Centers (Human Area Relations File 1955), and their numbers have stabilized at about 774 over the last decade.

The most recent public-private initiative, which has far-reaching implications for the future of the medical system, was the establishment in 1972 of Medicare, a national health insurance program. The Medicare system covers about half the working population for inpatient care, functioning as a coinsurance plan that is financed by a payroll tax. Beneficiaries are free to choose public or private providers, with the Philippine Medical Care Commission, a semi-autonomous unit of the Ministry of Health, regulating the system.

Accounting data indicate that about 90 percent of Medicare benefits are spent for care from the private sector (Griffin and Paqueo 1985). In order to provide services to beneficiaries in rural areas, and in anticipation of eventually expanding coverage to the whole population, the Medicare system built 81 10-bed Community Hospitals and Health Centers in rural municipalities during the 1970s. It also provided construction loans for some private hospitals (Sen 1975).

**Organization of the System**

Each public hospital operates under one of several government agencies -- the Ministry of Health, the Office of the President, the Ministry of Justice, the Ministry of National Defense, and city governments. The Ministry of Health operated 90 percent of the public hospitals in 1978 (ROP, NEDA, NCSO 1979a). Private hospitals are licensed by the Ministry of
Health; they must be licensed by law but also have a pecuniary incentive to do so in order to receive Medicare payments.

Public hospitals have a 3-tiered fee structure -- free or low prices for ward patients, Medicare reimbursable prices for Medicare patients, and similarly priced services in pay wards. In 1979, 65 percent of public hospital patients were accommodated in charity wards, 22 percent were Medicare patients, and 13 percent were in pay wards (Azurin 1980). In areas where public charity wards are not readily accessible, charity beds in private hospitals are underwritten. Charity ward patients accounted for about 7 percent of private hospital patients in 1980 (Azurin 1980).

The public system is formally but loosely organized into a pyramidal referral network with Barangay Health Workers at the bottom and the Philippine General Hospital in Manila at the top. Hospitals are differentiated by their status as primary, secondary, or tertiary according to the increasing complexity of care offered. This is a typical organizational pattern, with the bottom of the pyramid broadened recently by village-level primary health workers.

The charitable sector includes the Philippine Tuberculosis Society, the Philippine National Red Cross, and the Philippine Heart Center for Asia, most of which receive some governmental funds. In addition, there are many other governmental programs that have not been mentioned, such as a mental health hospital, malaria control units, chest clinics, schistosomiasis units, leprosaria, immunization drives, and family planning clinics. Moreover, the government requires private businesses, schools, and other large institutions to provide certain medical services to their employees or
students. We have not mentioned the most ubiquitous private practitioners, traditional healers and midwives.

PROVINCIAL DISTRIBUTION OF HOSPITAL BEDS, 1972 AND 1983

To better understand the public and private sectors, we discuss in this section the provincial distribution of hospitals and hospital beds in 1972 and 1983. Although we also assemble data for the distribution of personnel and clinics, the hospital data are reliable, disaggregated, and consistent for the two years, so we concentrate on hospitals.

Combining both public and private hospital beds, there were an average of 751 people per bed in 1972. The left panel in figure 1 shows how provinces ranked in terms of people per bed in that year. The map shows the 10 provinces with the fewest people per bed (horizontal lines), the 10 provinces with the most people per bed (solid), and the 46 provinces that lie between (clear). We use this simple comparative approach because there is no predetermined standard for people per bed against which to judge these statistics.

Urbanized provinces (Manila and Cebu) do well, as would be expected, but so do a number of relatively sparsely populated northern Luzon provinces. The provinces which were poorly endowed with beds in 1972 were concentrated in Central Mindanao and in a band spanning Southern Luzon and the Eastern Visayas. Only 7 out of 66 provinces did better than the national average of 751 people per bed because the national average is strongly weighted downward by Manila's 166 people per bed.5

5 The legend in the figure shows the range for people per bed.
FIGURE 1. NUMBER OF PEOPLE PER HOSPITAL BED, 1972 (Panel 1)
FIGURE 1: NUMBER OF PEOPLE PER HOSPITAL BED, 1983 (GROUPINGS BASED ON 1972 DATA)
(Pop. Per Bed)
- 121 to 498
- 503 to 1041
- 1075 to 3173
The right panel in figure 1 displays 1983 population-to-bed ratios using the same cutoff points as in 1972 in order to illustrate the dramatic changes in hospital coverage that took place over the 11-year interval. By 1983, despite a 31 percent increase in population, the national average dropped by 20 percent to 609 people per bed, and all but one province achieved a population-to-bed ratio under 2000. The delimiter for the ten best-endowed provinces in 1972 was low enough to include 38 provinces in 1983. The bottom province in 1983 had half the population-to-bed ratio of the bottom province in 1972, and the gap separating the best from the worse was cut in half.

Figure 2 shows the top and bottom 10 provinces in terms of change in hospital bed coverage over the 11 year period (horizontal lines signify provinces with the largest improvement; solid, smallest). Generally, the patterns in figure 2 are the opposite of those in the first panel of figure 1, indicating that hospital bed expansion tended to occur in places where it was most needed, particularly in Mindanao. An example is Agusan del Sur, where population grew by 52 percent but the number of beds increased by 891 percent. It moved from the bottom 10 in 1972 to the top 10 in 1983. In Manila, in contrast, the total population grew by 55 percent, but the number of beds actually fell by 1 percent, due to a decrease in government beds.

These trends show up clearly in the national averages. As mentioned earlier, there was an average of 751 people per bed in 1972. If each province is weighted equally in calculating that average (in order to remove the strong effect of Manila's extremely low people-per-bed ratio), there
FIGURE 2. PERCENT CHANGE IN PEOPLE PER HOSPITAL BED, 1972 TO 1983
was a national average of 1657 people per bed in 1972. In 1983, although the weighted average\textsuperscript{6} dropped by 19 percent to 609, the unweighted average\textsuperscript{7} dropped by 51 percent to 816. The divergence between the two calculations narrowed in 1983 because of the huge gains made by the provinces relative to Manila. The improvement can easily be seen in figure 3.

These statistics demonstrate the problem of evaluating and planning programs on the basis of highly aggregative national statistics. While the national people-per-bed average changed only slightly from 1972 to 1983, that number masks tremendous growth in the medical system through which the extraordinary redistribution of hospital resources away from the capital was accomplished. It also masks the fact that availability of those resources improved dramatically all over the country but especially in several provinces which were in the worst shape in 1972. This is a remarkable redistribution of health infrastructure toward the provinces that needed investments the most, accomplished in only one decade.

PUBLIC VERSUS PRIVATE DISTRIBUTION OF HOSPITAL BEDS

Was the government responsible for these changes, was it the private sector, or both? In trying to answer the question, we discuss a number of measures of growth, coverage, and dispersion of hospitals.

\textsuperscript{6} The weighted average is the total number of people divided by the total number of beds, which implicitly weights each province by its population.

\textsuperscript{7} The unweighted average removes the implicit population weight by calculating people per bed for each province, then averaging that figure across provinces.
Figure 3. People-per-_bed Averages, Philippines, 1972 and 1983.
Growth

Over the 1972-83 period, the number of public hospitals rose nationally by 81 percent, but private hospitals proliferated at twice that pace, by 167 percent. Public beds increased by 29 percent; private beds, by 104 percent. Thus, about 77 percent of the growth in numbers of hospitals and 74 percent of the growth in beds originated in the private sector.

Relative Size and Level of Care

Although most large hospitals were expanded over the period, the bulk of the construction was new, smaller hospitals in both the public and private sectors. The average number of beds per government hospital fell by 29 percent from 1972 to 1983, and the average size of private hospitals fell by 23 percent. In terms of the conventional wisdom on this matter, the decline in average hospital size is a desirable trend because it means a more dispersed system delivering a level of care thought to be more appropriate to the needs of a developing country.

The average private hospital was about 50 percent smaller than the average public hospital in 1983. Outside Manila, average beds per hospital were 51 in the public sector and 25 in the private sector. Private hospitals offered a more basic level of care, with 59 percent (compared to 38 percent of public hospitals) classified as primary level facilities capable of supporting only minor surgery and a few basic laboratory tests (ROP, PMCC 1984).
**Distribution: Manila versus Provinces**

In 1972, Manila accounted for 55 percent of all government beds, 47 percent of all private beds, and 11 percent of the population. In 1983, it contained 31 percent of all government beds, 31 percent of the private beds, and 13 percent of the population. Although the mix of beds in the capital changed, with a 26 percent decrease in government beds and a 35 percent increase in private beds, growth in both sectors took place principally outside the National Capital Region.

**Distribution: What Happened in the "Worst 10" Provinces?**

The "worst 10" provinces for population per bed in 1972 (see figure 1) might reasonably have been targeted for infusions of public resources. This appears to have been true. While the number of public hospitals and beds increased nationally by 81 and 29 percent, respectively, they increased by 167 and 141 percent in the worst-off group. However, private hospitals, which increased nationally by 167 percent, increased by 555 percent in the worst-off group. Private beds increased by 104 percent nationally but by 465 percent in the bottom group. To illustrate the phenomenon, in Lanao del Sur, the province at the bottom of the people-per-bed rankings in 1972, the public sector grew from 75 beds in 2 hospitals to 115 beds in 3 hospitals. The private sector, starting with 0 beds in 1972, expanded to 183 beds in 9 hospitals by 1983.

Similarly, neither the public nor the private sector targeted the best-off group for 1972 for construction of new hospitals or beds. The differences in hospital bed construction nationally, for the best-off group,
and for the worst-off group, are clearly shown in figure 4. In every group, private construction accounted for over 70 percent of all new beds. By 1983, only 2 provinces, the islands of Romblon and Camiguin, had no private hospitals, compared to 9 provinces with none in 1972.

ACCESS AND URBAN/RURAL DISTRIBUTION

"People per bed" is generally used as a measure of bed supply, but we can create other measures that add detail to our understanding of how hospital resources are distributed in the country.

Geographic coverage

One measure of geographic coverage is the number of square kilometers per hospital. While this measure is insensitive to hospital location, it does add information when considered in conjunction with the people-to-bed ratio. A province with many people per bed and many square kilometers per hospital would have poor access to the few available beds. A province with many people per bed and few kilometers per hospital would have good access to relatively few hospitals.

Figure 5 displays the top and bottom ten by this square kilometers-per-bed ratio. The area around Manila does extremely well by this measure. Three provinces rank in the bottom group both for people per bed and area per hospital, and another 12 are in the bottom group for one or the other measure. These 15 provinces would be obvious candidates for additional

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8 It is a very imperfect measure because it does not take economic efficiency into account: an unused bed by this measure is preferable to no bed.
Figure 4. Distribution of New Public and Private Beds in the Philippines, 1972–1983
FIGURE 5. SQUARE KILOMETERS PER HOSPITAL, 1983
allocations of public resources because they fall into the category of relatively many people and many square kilometers per bed. However, the public share of beds in those provinces fell at a slightly faster rate than the national average during the 1970s, suggesting that the private sector was more responsive to potential demand for new services.

**Urban versus Rural**

Another measure of access is the percentage of beds located in urban areas. An urban area in the Philippines is not a city -- any municipality in which more than 28 percent of the people are located in towns is classified as urban. By this definition, 61 percent of public, and 67 percent of private beds were urban in 1983, compared to 31 percent of the people. However, a much smaller 31 percent of public, and 46 percent of private hospitals were in urban areas. Thus, beds were more concentrated than hospitals, which is not surprising because larger hospitals are presumably built in urban areas for economic reasons. Smaller hospitals, especially smaller public sector hospitals, were more dispersed.

A summary urban measure is the ratio of the percentage of urban beds to the percentage of urban people in a province. A value of 0 indicates no urban beds; a value of 1 indicates equal percentages of beds and people in towns; and larger values indicate higher and higher concentrations of hospital beds relative to people. For the Philippines in 1983, the values ranged from 0 to 7, with the highest value indicating that hospital beds were 7 times more concentrated than people. Figure 6 displays this measure in a slightly different manner from previous figures. Provinces filled with horizontal lines have ratios from 0 to 1.4 and are deemed to have bed
FIGURE 6. RATIO OF PERCENT URBAN BEDS TO PERCENT URBAN PEOPLE, 1983
distributions that are consistent with the urban/rural distribution of people. This category contains a large group of provinces -- both the most urban, where both beds and people are urban, and the most rural, where both beds and people are rural.

In the solid-filled provinces, beds are 3 to 7 times more concentrated in urban areas than are people; they are provinces in which the hospitals tend to be in a few cities, while the people live in the countryside. It is interesting to note that for this group of 10 provinces, 42 percent of public hospitals and 54 percent of private hospitals are urban, which is not much higher than the national averages. The problem, therefore, must be greater dispersion of the people. It is less economic to locate hospitals where population densities are relatively low. From a planner's perspective, these provinces would be prime targets for government or private investments in rural clinics.

Proportion of Beds in Largest Provinicial City

Finally, an alternative to the "degree of urbanity" measure is to calculate the proportion of hospital beds located in the largest provincial city. Thirty-five percent of public beds (16 percent of hospitals) and 43 percent of private beds (28 percent of hospitals) fell into this category in 1983. In other words, slightly over a third of all beds and about a fifth of hospitals were located in the largest town in each province, with the public system performing slightly better on this measure. While the "urban" measure discussed in the previous section suggests that two-thirds of beds were in urbanized areas, the "largest city" measure indicates that
these hospitals were dispersed among a number of cities and not all concentrated in the same place.

COSTS AND SERVICES IN THE PUBLIC AND PRIVATE SECTORS

This provincial-level analysis provides much more detail than is usually available on the distribution of the public and private systems, but it does not give an idea of differences in the two sectors in terms of accessibility, quality, prices, and services. This information must be culled from facility-level surveys, which are rare indeed. One representative sample of facilities and practitioners in the Bicol region (see figure 1 for its location) in 1981 provides a glimpse of the type of information that could be collected (Griffin et al. 1981). This survey inventoried the medical facilities available to a representative sample of 100 barangays by asking officials to identify practitioners, clinics, and hospitals used by local people. Each facility was visited to collect price and service data, a subset of which is displayed in table 2. Although 66 public facilities and 103 private facilities were visited, the private sector was actually under-sampled because of cost constraints. For hospitals, 75 percent of public facilities, but 44 percent of private facilities were surveyed.

The data indicate that the public and private sectors were approximately equally accessible geographically to the sample villages. Staffing patterns were quite different, with private clinics oriented primarily to physician services rather than to nurses and midwives. Outpatient visit costs were much higher in the private sector (about US$2 in
Table 2. PUBLIC AND PRIVATE HEALTH FACILITY CHARACTERISTICS, BICOL REGION, PHILIPPINES, 1981

<table>
<thead>
<tr>
<th></th>
<th>Public Clinics</th>
<th>Private Clinics</th>
<th>Public Hospitals</th>
<th>Private Hospitals</th>
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<tr>
<td>Average distance to sample barangay (km.)</td>
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<td>3.7&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>Physicians</td>
<td>58</td>
<td>69</td>
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<tr>
<td>Nurses</td>
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<td>Outpatient services</td>
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<tr>
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<td>Physicians usually attends (%)</td>
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<td>(Sample size)</td>
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<td>(63)</td>
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1/ Urban barangays.
2/ Rural barangays.

Source: Griffin et al. (1981). For more discussion and additional data, see Akin et al. (1985).
1981), but paying for care in the private sector assured attendance by a physician. Moreover, over three quarters of private physicians adjusted their fees to patients' ability to pay and accepted in-kind payment. In fact, a problem in administering the survey was getting a single response on prices from private physicians, who not only adjusted prices, but also treatment, length of care, and choice of drugs to patients' ability to pay.

While both public and private hospitals were open 24 hours a day, public clinics were open for business only 61 percent as many hours as were private clinics during a typical week. Private clinics also tended to provide service after hours and on holidays, which was rarely done in public clinics.

The Bicol region is one of the poorest in the Philippines in terms of per capita income, and over 80 percent of the population lives in the countryside. However, in terms of people-per-bed statistics and public/private mix of hospitals, it is near the national average. It is certainly not a wealthy urbanized area, yet this survey suggests wide availability of private clinic and hospital services. Household surveys in the Bicol region have shown high use of the private sector by both the poor and rich (Akin et al. 1985). The distinct differences in service characteristics between the public and private sectors are indicative that people face a range of choices and amenities in the private sector that may make use of private services competitive with free public care.
Physicians

Several different tallies of physicians are available: an apparently exhaustive inventory of physicians in 1970 by the Association of Philippine Medical Colleges (Adorna 1976), a Department of Health (DOH) inventory from 1973, and the membership of the Philippines Medical Association (PMA) for 1974 through 1983. However, none of the tallies allows us to discern the public and private distribution of physicians, nor do they allow reliable comparisons for two points in time.

Nationally, there were 2694 people per physician in 1973. If provincial averages are weighted equally, the ratio rises nearly two-thirds to 4301. Extrapolating from the 3 different data sources, we estimate that the total number of physicians rose at an annual average rate of from 4.3 percent to 8.4 percent between 1972 and 1983, implying population-to-physician ratios of from 2,580 to 2,000 in 1983, a slight improvement over 1973.

Figure 7 shows the top and bottom 10 provinces ranked by population per physician in 1973. Six of the ten provinces with the most physicians per capita were adjacent to Manila. Although Manila itself accounted for 31 percent of the nation's physicians, the shaded area around the capital accounted for 42 percent of the total.

About 64 percent of the doctors lived in urban municipalities, but if the provinces are equally weighted with Manila, 46 percent of physicians would be classified as urban. While physicians were about twice as likely
FIGURE 7. NUMBER OF PEOPLE PER PHYSICIAN, 1973
as the general population to live in urban municipalities in 1973, the proportion in rural areas was considerable.

The worst-off provinces in figure 6 include the same few in southern Luzon and the Visayas that did poorly for hospital coverage (see figure 1). However, fewer of the provinces in Central Mindanao were in the bottom category. The relative abundance of doctors in that region in the early seventies may help to explain its strong performance in private hospital construction during the decade. One other interesting detail from the map is that two northern Luzon provinces with low bed-to-population ratios in 1972 had high population-to-physician ratios, which suggests that the hospitals could not have been heavily used.

Nurses and Midwives

The DOH inventory of medical personnel in 1973 indicates that the Philippines had more active physicians than nurses or midwives. Figures 8 and 9 present the data for population per nurse and midwife using the same cutoff points as for physicians. Comparing the 3 personnel maps demonstrates how much worse the availability of these auxiliary personnel is, relative to doctors. Population per nurse and midwife puts the majority of provinces in what would be the worst group for population per physician.

Other surveys confirm these low ratios of nurses and midwives to physicians. In 1978 there were 3,821 physicians, 6,584 nurses, and 224 midwives in MOH hospital employment, yielding ratios of 1.4 nurses and .06 midwives per physician in government employment (ROP, NEDA, NCSO 1979). A survey of the whole range of public and private facilities, from RHUs to hospitals, in one region of southern Luzon counted about 1.5 nurses and 2
FIGURE 8. NUMBER OF PEOPLE PER NURSE, 1973
FIGURE 9. NUMBER OF PEOPLE PER MIDWIFE, 1973
### TABLE 7. PRIMARY CARE CLINICS, PHILIPPINES, 1974, 1981, AND 1983

<table>
<thead>
<tr>
<th>REGION</th>
<th>( \text{RHU} ) 1974</th>
<th>( \text{RHU} ) 1981</th>
<th>% CHANGE</th>
<th>( \text{PUERI-} ) CULTURE 1974</th>
<th>( \text{PUERI-} ) CULTURE 1981</th>
<th>% CHANGE</th>
<th>( \text{BARANGAY} ) HEALTH ST. CLINICS 1974</th>
<th>( \text{PRIVATE} ) CLINICS 1974</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. ILOCOS</td>
<td>130</td>
<td>205</td>
<td>58</td>
<td>48</td>
<td>95</td>
<td>98</td>
<td>759</td>
<td>29</td>
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<tr>
<td>II. CAGAYAN VALLEY</td>
<td>116</td>
<td>116</td>
<td>0</td>
<td>44</td>
<td>40</td>
<td>-9</td>
<td>567</td>
<td>292</td>
</tr>
<tr>
<td>III. CENTRAL LUZON</td>
<td>88</td>
<td>179</td>
<td>103</td>
<td>131</td>
<td>116</td>
<td>-11</td>
<td>881</td>
<td>1112</td>
</tr>
<tr>
<td>IV. SOUTHERN TAGALOG</td>
<td>161</td>
<td>578</td>
<td>259</td>
<td>202</td>
<td>192</td>
<td>-5</td>
<td>964</td>
<td>775</td>
</tr>
<tr>
<td>V. BICOL</td>
<td>96</td>
<td>115</td>
<td>20</td>
<td>46</td>
<td>36</td>
<td>-22</td>
<td>658</td>
<td>452</td>
</tr>
<tr>
<td>VI. WESTERN VISAYAS</td>
<td>106</td>
<td>127</td>
<td>20</td>
<td>94</td>
<td>72</td>
<td>-23</td>
<td>767</td>
<td>787</td>
</tr>
<tr>
<td>VII. CENTRAL VISAYAS</td>
<td>129</td>
<td>138</td>
<td>7</td>
<td>67</td>
<td>73</td>
<td>9</td>
<td>638</td>
<td>215</td>
</tr>
<tr>
<td>VIII. EASTERN VISAYAS</td>
<td>120</td>
<td>150</td>
<td>25</td>
<td>43</td>
<td>38</td>
<td>-12</td>
<td>504</td>
<td>190</td>
</tr>
<tr>
<td>IX. WESTERN MINDANAO</td>
<td>64</td>
<td>87</td>
<td>36</td>
<td>50</td>
<td>7</td>
<td>-30</td>
<td>130</td>
<td>357</td>
</tr>
<tr>
<td>X. NORTHERN MINDANAO</td>
<td>106</td>
<td>124</td>
<td>17</td>
<td>62</td>
<td>51</td>
<td>-18</td>
<td>609</td>
<td>293</td>
</tr>
<tr>
<td>XI. SOUTHERN MINDANAO</td>
<td>77</td>
<td>82</td>
<td>6</td>
<td>47</td>
<td>39</td>
<td>-17</td>
<td>508</td>
<td>128</td>
</tr>
<tr>
<td>XII. CENTRAL MINDANAO</td>
<td>70</td>
<td>90</td>
<td>29</td>
<td>47</td>
<td>15</td>
<td></td>
<td>368</td>
<td></td>
</tr>
<tr>
<td>NATIONAL</td>
<td>1263</td>
<td>1991</td>
<td>58</td>
<td>754</td>
<td>774</td>
<td>-3</td>
<td>7353</td>
<td>4630</td>
</tr>
</tbody>
</table>

**NOTE:** CITY HEALTH OFFICES AND SEPARATE FAMILY PLANNING CLINICS ARE NOT INCLUDED.

**SOURCE:** ROP, DOH, NEDA 1975
ROP, TFHS, DAP 1975
PUERICULTURE LEAGUE 1984
midwives per doctor (Griffin et al. 1981). A similar survey in Cebu City found 1.8 nurses but only .4 midwives per doctor (Akin et al. 1982).

The extraordinary aspect of the nurse and midwife data is that so few are employed while so many are trained (at their own expense). From 1977 to 1981, an average of 12,188 graduates passed the nursing exam and 4540 passed the midwifery exam annually (Valenzuela et al. 1981). In 1980, 51,750 nurses renewed their licenses. Although at least 11,586 nurses were placed overseas from 1975 through 1979, that is not even one year's graduating class. It does no violence to the available data to conclude that the Philippines has a huge reservoir of trained nurses and midwives who are not working in their chosen professions and who have not figured in the government's primary health care strategy over the last decade.

**PRIMARY CARE FACILITIES**

As with personnel, clinic numbers and distribution are unreliable and not readily available. Table 3 presents the available clinic statistics by region. The private sector accounted for 69 percent of all clinics in 1974. Nearly 100 percent of private clinics were general practice offices (ROP, DOH, NEDA 1975). About 41 percent of private clinics were in the environs of Manila in 1974, compared to 20 percent of RHUs. Otherwise both systems were fairly evenly distributed across regions.

The RHU system expanded by 58 percent from 1974 to 1981, an 8.3 percent annual average rate, slightly larger than the 7.4 percent annual average for public hospitals. However, an extraordinary 70 percent of the growth in RHUs took place in the area surrounding and just north of Manila that was
already well covered by hospitals, public clinics, private clinics, private physicians, and private hospitals. From 1974 to 1981, the area around Manila increased its share of RHUs from 20 to 38 percent of the national total! This odd expansion pattern is inconsistent with the stated goals of the health system and the opposite of changes in the hospital sector. Unfortunately, we cannot compare it with changes in the distribution of private clinics because no data are available. Quite obviously, government resources in the rural sector during the late 1970s were devoted to creating Barangay Health Stations and deploying the associated personnel, which were nonexistent in 1974.

CONCLUSION

Our ability to generalize from the Philippine experience is often discounted by international health experts because the country has substantial medical resources and exports medical personnel. However, the apparent abundance of facilities and personnel have not prevented those same planners from advocating an enormous volunteer-based primary health policy for the country. Moreover, the Philippines is not so atypical as is usually claimed. Its aggregate health statistics are similar to those for other countries in Southeast Asia and, except for much higher population densities in the Philippines, are similar to South American statistics. Thus the findings in this research might be instructive for many other countries in similar circumstances.

Our hospital data suggest a huge improvement in the availability and distribution of Philippine medical resources since 1972, growth that was led
by the private sector. The heavy weight of the private sector in total

growth of the health sector means that it played a much larger role than the

public sector in the expansion and geographic equalization that took place
during the 1970s.

Both sectors built many smaller hospitals instead of concentrating
resources in large centralized institutions. However, the private sector
was far more successful in targeting new construction to provinces that
needed it most. This is a surprising finding, in that it is usually
believed that the government must compensate for the urban and high-income
orientation of the private sector. Moreover, public investment decisions
were a highly centralized, planned activity, while growth in the private
sector was the result of many small uncoordinated decisions. By every
supply measure we were able to develop -- urban location, largest city
location, area covered -- the private sector seems to perform as well or
better than the public sector.

For clinic facilities, growth in the government's RHU system seems to
have been concentrated around Manila, which is a very odd pattern. In
addition, huge numbers of Barangay Health Stations were fielded all over the
country. We cannot compare private investments in clinics, but if our data
from the Bicol region are an indication, and if private clinics have

9 We should add that because our government hospital numbers include
military hospitals and several other hospitals to which the general public
does not enjoy ready access, our statistics slightly overstate growth in the
governmental sector, because all of it is not strictly comparable to the
private sector.

10 The Development Bank of the Philippines mounted a lending program
for private hospitals during the time period spanned by our data. We cannot
evaluate the effects of this program on the growth or distribution of the
private sector, however.
expanded at a pace anywhere near that of private hospitals, it would seem likely that the number and distribution of private clinics improved over the period.

For personnel, we can only make an informed guess that there has been considerable growth in the supply of physicians. Thousands of nurses and midwives have been trained since 1970, yet the Philippines is nowhere near an international average of about 4 or 5 working nurses to a doctor. For midwives, the gap between large numbers of graduates and few domestic employment opportunities is at least as large as for nurses. As a consequence, the country appears to have huge reserves of untapped human medical resources in the form of people who have financed their own training at the college level but are not working in their professions. At the same time that this growth in numbers of medical professionals was taking place, the government, international donors, and health experts embarked on a program to recruit and train tens of thousands of volunteer village health paraprofessionals.

The data suggest that the government could have been more effective in planning its system if it had taken account of private sector growth and better targetted its curative care investments to the few provinces which consistently rank at the bottom of our measures. Nevertheless, simply by reducing the concentration of public beds in Manila, the government improved the distribution of its resources, although the concentration of new rural health clinics near the capital offset the improvement.

Without the type of information discussed in this paper, health planners can only be guided by "stylized facts" about medical systems. They are also bound by preconceived notions about the services people should
have, notwithstanding what those same people may already be purchasing for themselves or what other providers are already delivering. Even the poorest countries generate epidemiological, demographic, and census data, but little is known about the economic dimensions of the medical sector in poor and rich countries alike.

Although our data are not adequate to rigorously analyze the determinants of the situation we describe or the effects of the organization and financing of the medical system on health outcomes, even descriptive information provides useful insights and a number of surprises. More detail would be helpful for planning, such as being able to predict where the private sector will develop, whether private expansion into underserved areas was permanent or led to bankruptcies, and how road construction affects access of urban-based facilities.
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