

EDITORIAL: ON WHOM AND HOW SHALL WE SPEND OUR DOLLARS?

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GOVERNMENT EXPENDITURE ON HEALTH

It is sobering to look around the world and to compare the per capita government expenditure on health in a number of countries and the relative health status of these countries.

For 86 developing countries examined by the World Bank, 22 in 1976 spent US\$1.00 or less per capita per year on health, the average being US\$6.00, Malaysia being one of 14 countries that spent between US\$11.00 to \$20.00 per capita per year. In other words, for most of the developing countries medical care must be provided for with budgets that average US\$6.00 per capita per annum but for about one-quarter of the developing countries, the expenditure in 1976 was US\$1.00 or less per capita per annum. Examples of such countries include Pakistan, Afghanistan, Nepal, Bhutan, Bangladesh, Burma, Laos, Cambodia, Vietnam, Indonesia, Korea, Mali, Upper Volta, Niger, Chad, Ethiopia, Rwanda, Burundi, Zaire, Mozambique, Yemen, Syria and Haiti (World Bank, 1980).

Looking at some developing and developed countries (Table I), it is noted that the range of per capita government expenditure on health in 1976 varies from a low of US\$1.00 to a high of US\$550 (Sweden), with Malaysia spending the equivalent of US\$13 per capita per annum in 1976 (World Bank, 1980). From the Malaysian point of view it is important to bear in mind that the developed countries spent the equivalent of US\$217 to \$550 per capita per annum on health, and that this is 17 to 42 times what Malaysia can afford.

An examination of the relationship between health status, GNP and per capita government expenditure on health shows that there are some very serious problems facing the very poor

countries and that, in spite of attempts to provide modern medical care, the expectation of life at birth remains very low. It is estimated that 700 million people live in absolute poverty and that in 1981, 12 million children will die from disease and malnutrition, this being in part due to the fact that 86% of the world's children live in developing countries. However, not only is there an unequal distribution of wealth and resources between the developing and developed countries, but inequalities exist between areas within countries.

In looking at the relationship between the health status and the health care system, we have to bear in mind the following. Firstly, the cost of treating an illness varies widely. For example in Kenya, it was noted (Fendall, 1963) that a minor illness can be handled at a dispensary for US\$ 0.23, or a health centre for US\$ 0.56. An illness requiring hospitalization costs between US\$12 and \$52, depending on whether it involves a district hospital, regional hospital or a national hospital. The question is how to distinguish between minor problems that can be handled in a smaller facility and complex life-compromising problems that must be handled in hospitals. This is one of the challenges of providing medical care.

Secondly, distances are also very important. Studies have shown that a distance of 3 miles is about the distance a patient will travel to a health centre while a distance of 10 miles is about the distance the majority of patients will travel to reach a hospital. Thirdly, the economic resources available for medical care vary widely from country to country.

In other words, the equation must take into account the amount of money available, the optimal mix of health care resources and the distances the patient will travel to obtain care.

TABLE I

MEASURE OF HEALTH STATUS BY LEVEL OF PER CAPITA GROSS NATIONAL PRODUCT AND PUBLIC EXPENDITURE ON HEALTH IN SOME SELECTED COUNTRIES

Country	Per capita GNP [US \$] 1977	Life expectancy at birth 1977	Per capita public expenditure on health [US \$] 1976	Mortality
Bangladesh	90	47	1	High
Ethiopia	110	39	1	High
Zaire	130	46	1	High
Burma	140	52	1	High
India	150	51	2	High
Afghanistan	190	42	1	High
Sri Lanka	200	69	4	Low
Sudan	290	46	2	High
Indonesia	300	48	1	High
China	390	64	5	Medium
Thailand	420	61	2	Medium
Yemen	430	47	2	High
Philippines	450	60	3	Medium
Papua New Guinea	490	48	14	High
Cuba	910	72	19	Low
P. Malaysia	930	67	13	Low
Algeria	1,100	56	13	High
Iraq	1,550	55	8	High
Iran	2,160	52	27	High
Singapore	2,880	70	40	Low
USSR	3,020	70	90	Low
UK	4,420	73	204	Low
Australia	7,340	72	307	Low
USA	8,520	73	259	Low
Sweden	9,250	75	550	Low
Kuwait	12,270	69	244	Low

UNEQUAL DISTRIBUTION OF HEALTH CARE

Comparison between such countries as Sri Lanka, China, Thailand, Cuba and Peninsular Malaysia on the one hand with countries such as Sudan, Indonesia, Yemen, Papua New Guinea, Algeria, Iraq and Iran, show that even countries

within the same economic range have very different mortalities. A close look at these countries show that those with relatively high mortality, more often than not, place an unduly high emphasis on developing a few expensive and sophisticated urban hospitals, while neglecting simple basic health care that is readily accessible to the vast majority of people.

TABLE II
PERCENTAGE OF "SAFE" MATERNAL DELIVERIES IN
1979 IN THE PROVINCE OF WESTERN HIGHLANDS,
PAPUA NEW GUINEA.

Subprovince	Population	Estimated No. Of Births	Percentage of "Safe" deliveries
Hagen Central*	57,530	1,726	59%
Minj	46,137	1,384	25%
Hagen North	54,256	1,628	8.5%
Jimi	26,810	804	8%
Tambul	22,641	679	3%
Western Highlands	207,374	6,221	26%

* Most medical resources are concentrated at the Mt. Hagen Hospital.

For example, Papua New Guinea, at Independence in 1975, inherited a number of highly sophisticated and expensive hospitals patterned after the Australian system, but serving only a very small proportion of the people. Saddled with these expensive hospitals, Papua New Guinea, in spite of the fact that it spends the equivalent of US\$14 per capita on health, compared with Sri Lanka's \$4, China's \$5 and Thailand's \$2, has a high mortality and an expectation of life at birth of a mere 48 years. A disproportionately large portion of government expenditure on health care goes to maintain a few expensive hospitals. Consequently the maldistribution of medical care is acute as exemplified by the proportion of "safe" maternal deliveries in 1979 (Table II) in the Province of Western Highlands (Chen 1980a).

The subprovince of Hagen Central, with its hospital, is a sharp contrast to either the Jimi or Tambul where "safe" maternal deliveries amount to a mere 8% and 3% respectively. Similar pictures appear when Iran and Algeria are examined. In contrast, it will be found that in China and Cuba the emphasis is on simple basic health care readily accessible to all people. The success of providing simple basic health care for all versus the development of a few centres of high sophistication located in the cities is shown by the relatively high expectation of life seen in

China (64 years) and Cuba (72 years). In many parts of the world, this is being increasingly recognised and governments are beginning to show a political will to provide health care for all at the latest by the year 2000. For example, the Philippines realizing that in 1980 about 33% of its people do not receive basic health care, is re-organising its health care system to include community participation and self-reliance through village aides known as *barangay* health workers, and is in the process of training all its estimated 39,000 *hilots*, traditional birth attendants (Chen, 1980b) to ensure that maternal deliveries are "safe".

PRIMARY HEALTH CARE IN MALAYSIA

If we look closely at Malaysia, we find that the availability of basic health care is also uneven, and that this is reflected in the expectation of life at birth in the different regions. Thus for Sabah and Sarawak, the expectation of life at birth is estimated to be about 50 years, and studies carried out in 1979 indicate that the percentages of rural people who do not have access to basic health care in Peninsular Malaysia, Sabah and Sarawak are 6.3%, 41.2% and 68.1% respectively (Table III).

With the assistance of UNICEF, a short-term consultant (Chen, 1980c) was asked to look into

TABLE III
EXTENT OF UNDERCOVERAGE IN MALAYSIA BASED
ON GEOGRAPHICAL DELINEATION

Region	No. [%] of villages geographically underserved		No. [%] of people geographically underserved		Mean size of underserved villages
Peninsula Malaysia	2,421	(15.1%)	460,743	(6.3%)	190
Sabah	2,151	(65.2%)	385,403	(41.2%)	179
Sarawak	3,702	(74.7%)	563,942	(68.1%)	152
Total	8,274		1,410,088		

the problem and to recommend the course of action to be taken in the Fourth Malaysia Plan, 1981-1985. The problem was that the underserved villages differed from the usual rural communities that had been serviced thus far. In the underserved areas, villages tend to be very small and widely scattered, the mean size varying from a high of 190 people in Peninsular Malaysia to a low of 152 in Sarawak. However, this in itself is misleading and it is estimated that about 40% of villages in Sabah and Sarawak have less than 100 people, that is, less than 20 households. Even in the more densely populated state of Johor, 40% of the underserved villages have less than 100 people while 24% have less than 50 people. In the district of Labuk Sugut, Sabah, 70% of the underserved villages have less than 100 people while 36% have less than 50 people, (that is, less than 10 households per village).

Villages in the underserved areas (Fig. 1) also tend to be widely scattered, the problem being particularly acute in Sabah and Sarawak where the population density is 28 persons and 23 persons per square mile compared with 195 persons per square mile in Peninsular Malaysia. However, variation can be considerable even within the same state. Thus in Sarawak the First Division has a density of 118 persons per square mile whereas the Seventh Division has only 4 persons per square mile.

Underserved areas also tend to be highly traditional and are usually located in economically depressed areas where transportation can be a major problem. In the underserved areas of

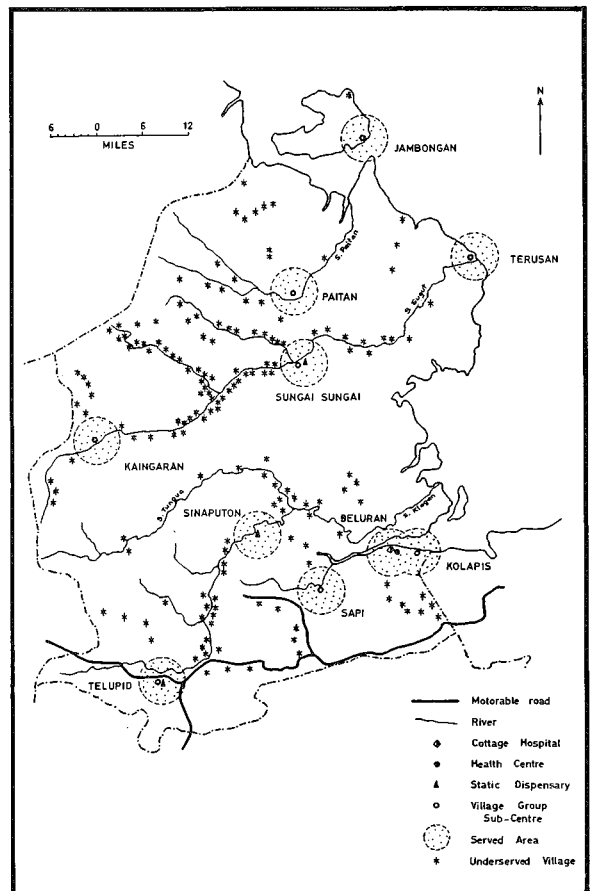


Fig. 1 - Map of Labuk Sugut, Sabah, showing served areas and underserved villages that do not receive basic health care.

Sabah and Sarawak, roads are few and the main means of communication is by river and air. However, it should be noted that riverine transportation is usually about five times more expensive and five times slower than road

TABLE IV
NUMBER OF "SAFE" AND "UNSAFE" DELIVERIES CONDUCTED
IN AREA AROUND TONGOD DISPENSARY AND VILLAGE GROUP
SUB CENTRE, KINABATANGAN, SABAH, IN 1979.

Travelling Time	Name of Village	No. of deliveries		
		"safe"	"unsafe"	Total
0 - ½ hr	Tongod	13	18	31
1 hr	Nikupang and Teck Heng Loong	—	15	15
1½ hr	Bulot and Malagatan Kecil	—	10	10
2 hrs	Sogosogo and Sinoa	—	3	3
4 hrs	Ketumbalang	—	3	3
6 hrs	Tempasak, Menanam and Lang Kabang Bahru	—	42	42
8 hrs	Liam Pang Pang	—	2	2
1½ days	Minisu and Malagatan Besar	—	18	18
Total		13 (10%)	111 (90%)	124

Obtained by examining records of Registrar of Births.

transportation. Consequently, these poor underserved families are severely restricted to their immediate surroundings and unless medical care is provided at their door step, it usually remains inaccessible. This is well illustrated by the fact that all 13 (10%) "safe" maternal deliveries in the Tongod area (Table IV) occurred within a 30-minute (one and a half miles) distance of the clinic, even though villages as far as a 1½ day journey away were under the jurisdiction of this clinic (Chen, 1980c).

The question is, how does one provide basic health care to these traditionally conservative little villages, widely scattered in an economically depressed area in which transportation and communication are major problems? One could begin by looking at the quantity and type of medical needs such villages would have. A village of 150 people would have 5 births, one death, 350 minor illnesses and about 4 serious illnesses requiring hospital care per year.

For such problems, what kind of a health worker and system does one need? It should be noted that there are a total of over 8,000 underserved villages with a total of 1.4 million people scattered in small numbers over more

than half the land surface of Malaysia, and that these people do not receive even the simplest form of basic medical care.

Some doctors would have us believe that only the highest quality of medical care should be provided and by doctors and that any other form of medical care is an unacceptable alternative. Firstly, doctors alone cannot be the solution to the problem. Even nurses, hospital assistants and midwives cannot provide the complete answer to the problem. The underserved populations are so thinly spread that there is just insufficient work in each geographical area bounded by a radius of 3 miles to keep a community nurse-midwife fully active all year round. Currently a community nurse-midwife is located in communities of at least 1,500 people, whereas in the underserved areas, a radius of 1½ miles (30 minutes travelling time) normally encompasses no more than about 200 people. Secondly, the use of paramedics such as nurses and hospital assistants, and auxiliaries such as a community nurse-midwife or midwife, is not an alternative to medical care by the doctor but an extension of his capability. In other words, different levels of skills and complexities are arranged in a pyramidal form to enable the doctor to extend his capability and are not an alternative to him. The doctor is the leader of the

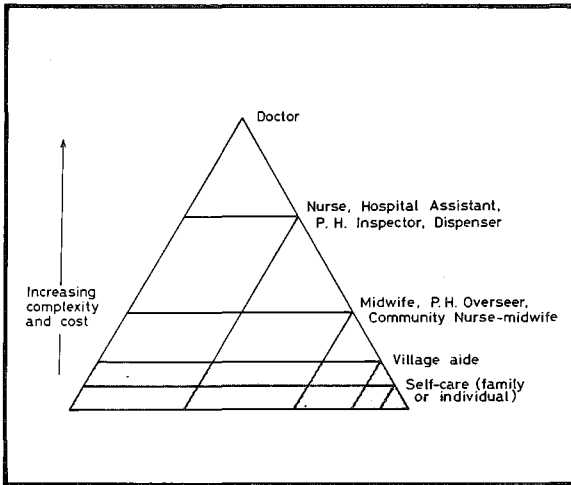


Fig. 2 - The skill pyramid with village aides and self care [family and individuals] added to the base to extend health care into the homes.

team that enables basic health care to be provided in an extensive and comprehensive manner.

In addition to this team, in the underserved areas, we must add a further layer at the base, consisting of village aides and the people themselves (Fig. 2). Village aides are part-time assistants selected by the village from the village and trained to assist mobile teams in providing simple maternal and child care, treatment of minor ailments, first aid and health promotion particularly in terms of home economics, sanitation and nutrition (Chen, 1980c).

In other words, the health care system must be extended to reach every home through community participation and self-help. Such village aides are not alternatives to the health care system but are an extension of the system (Fig. 3), so that basic health care, health education, nutrition education and maternal and child health care as well as simple medical care for the treatment of common ailments will be available all year round in these remote areas. As it is, studies show that in Sarawak, 40% of illnesses are self-treated and 30% are treated by traditional medicine-men and that only 8% of illnesses are treated by mobile medical teams (road, riverine and helicopter) since for most of the time, treatment for minor ailments are not

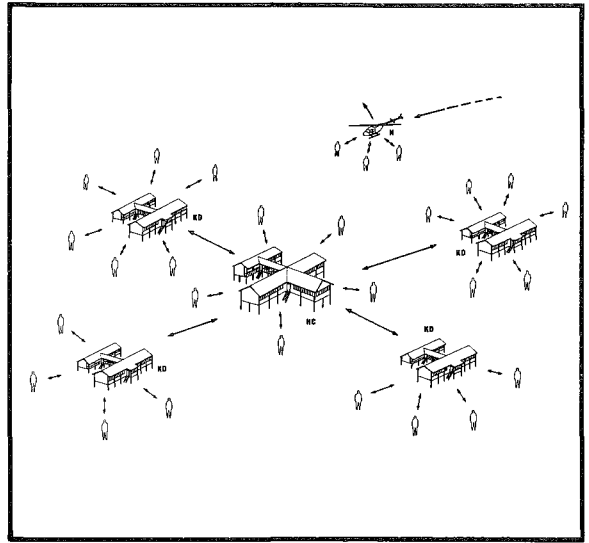


Fig. 3 - Tiered health care system with a HC: health centre [with a doctor and dental surgeon]; four KD: klinik desa [manned by paramedics and auxiliaries and providing comprehensive health care]; surrounded by trained village aides selected by the people. In remote areas, mobile teams travel by road, river and air [H: helicopter] to provide health care and to supervise village aides who continue to serve these villages in between visits by the mobile team.

available to the villagers when they fall ill, mobile teams being only available about once every 4 to 8 weeks.

Village aides will be trained by the health team responsible for that area. These same mobile teams travelling by river, road or air will also regularly visit the village, provide supervision and continued in-service training of aides as well as medical care, immunization, maternal and child care and other health services when they visit the village (Chen, 1980c). The village aides will be responsible for informing villagers of the scheduled visit of the mobile team, providing assistance during the visit, follow-up after the visit, and will mobilize the village in self-help projects concerned with environmental health measures such as for water supplies, agricultural projects to plant food and cash crops and organize them to carry out other health programmes as may be decided by the village (Fig. 4). Of particular importance is the fact that each village aide should be selected by the people and be ultimately responsible to the people. Such village aides could

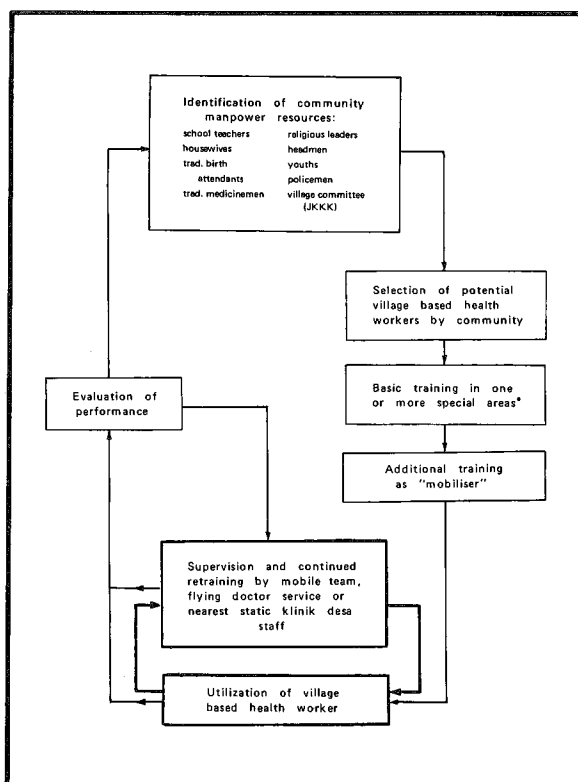


Fig. 4 - The processes of identification, selection, training, utilization, supervision, retraining and evaluation of village aides.

include housewives, leaders, youths, or traditional birth attendants. To compensate these village aides for loss of income while they are engaged in such work, each should receive a monthly allowance of M\$40 to M\$150 depending on a variety of factors.

THE FUTURE

As populations become increasingly concentrated and roads become available, it will become increasingly easy to provide medical care. Travel times will decrease simultaneously with costs, and coverage will thus increase. Quality of care can then be up-graded and the village aide can be replaced with auxiliaries such as the community nurse-midwife and paramedics such as the hospital assistant can be replaced by the doctor,

and *klinik desa* can be up-graded into health centres. In the meanwhile, the people cannot wait. Every day while basic health services are not available children are dying. No doubt, Malaysia must provide medical care on a per capita health budget of about M\$45.00 while countries like Sweden spend as much as M\$1,200 per capita. The challenge is to find, within the economic provision, an optimal mix of health care facilities and manpower so that at least basic health care can be provided to all the people and not just the urban rich. To provide the highest standard of medical care comparable to what is available in the developed world for a few in the urban areas while large numbers of the people do not receive even the simplest form of basic medical care is no standard at all. To quote Dr. Hafden Mahler, Director-General of the World Health Organization:

"We must succeed. The children of today, and those who have not yet been born but who will comprise more than one-third of the people living in the year 2000, will never forgive us if we do not."

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