INNOVATIONS IN CHILD HEALTH CARE IN ASIA

PAUL C.Y. CHEN

DELIVERING CHILD HEALTH CARE IN ASIA IN THE RECENT PAST

The delivery of child care has traditionally taken the form of "vertical" programmes with "standard" technical contents, largely based upon a few models from the developed countries. These models were based on the provision of continuous supervision and preventive care for mothers and children in affluent societies where coverage is good. Consequently, during even recent decades, child health care has been delivered through highly trained professionals such as paediatricians supported by nurses and paramedics operating out of hospitals, out-patient departments, specialised child health clinics and MCH clinics, located both in towns as well as rural areas.

In more recent years, these vertical programmes have been integrated into rural health care systems developed in the form of health centres, sub-centres and aid-posts, whilst others have been extended largely in the form of vertical programmes into rural areas.

Paul C.Y. Chen, MD, MPH, MSc, FFCM
Professor, Social & Preventive Medicine Department
Faculty of Medicine
University of Malaya
59100 Kuala Lumpur, Malaysia

Such developments have been a positive step forward and there has been an impressive impact on health, and infant deaths began a steep decline in Africa, Asia and Latin America. From around 200 per 1000 live births in 1950, for example, the infant mortality rate in the poorer half of the world fell to around 100 by 1975 – a drop of 50% in only a quarter of a century and success seemed to be within reach. In 1980, the General Assembly of the United Nations adopted the target of reducing infant mortality to 50 or less per 1000 live births in all nations by the year 2000.

Inability to Achieve Health for All by 2000 AD

However, latest estimates indicate that more than 70 nations of which 18 are in Asia, will not be able to achieve the target in the year 2000 unless drastic changes occur in the delivery system of the countries (Table I). In the poorest of these countries, the drop in the infant mortality rate has begun to slow and the outlook remains bleak.[1]

The questions that arise are: "Why has the infant morality rate of many countries begun to plateau off?"; "Are these diseases not preventable?"; "Don't we already have the technologies to prevent them?".

Much of the technology is already available. However these technologies remain inaccessible

TABLE I
COUNTRIES OF ASIA UNLIKELY TO REACH AN INFANT MORTALITY RATE OF 50 BY 2000 AD WITHOUT RE-ORGANIZING THEIR HEALTH CARE SYSTEMS

Country	Infant mortality rate (1982)	Predicted infant mortality rate by 2000 AD
Afghanistan	200	162
East Timor	—	135
Dem. Kampuchea	170	102
Yemen	160	111
Nepal	150	110
Bhutan	150	110
Bangladesh	130	102
Dem. Yemen	140	98
Pakistan	120	88
Laos	120	85
India	120	84
Oman	120	83
Turkey	110	74
Saudi Arabia	100	70
Burma	100	69
Papua New Guinea	100	66
Iran	100	64
Vietnam	90	62

to a vast proportion of those who need them most in many of the poorest countries known as the least developed countries. They continue to remain largely inaccessible economically, geographically and technologically, simply because the health care systems used by a majority of countries in Asia still remain based upon models adopted from developed countries. Hospitals continue today to remain the focal points of child health care. "Standard" technical contents are based upon the provisions of continuous supervision and preventive care for mothers and children in affluent societies where coverage is good. However, applied to different communities where socio-economic conditions are poor and the quantum of disease is great, these vertical programmes with technical contents borrowed from the developed world, have failed to provide minimum meaningful coverage to solve the priority problems of the majority of children. These programmes have often been dependent upon health workers whose training has remained inadequate and irrelevant to the needs of the local situation.

Further, resources are extremely limited in many countries of Asia where it is estimated that in 1982, 5% of people in Asia were so poor that they were unable to meet basic needs of life.

Limited Economic Resources

Many Asian countries have always had to live with a disadvantaged economic position. For example, the GNP in 1982 in seven countries in Asia namely Afghanistan, Bangladesh, Bhutan, Burma, Kampuchea, Laos and Nepal, was less than US$200 per year, which is less than 1/50 of the GNP of Japan (Table II). To compound the hardship of low income, these and many developing countries in Asia and the rest of the world continue to suffer the effects of the backlash of the world's longest economic recession since the 1930's. Rising protectionism, falling imports and higher interest rates in the industrialised nations have eroded the Third World's earnings and increased its debt problems. The result is a fall in the real income of the majority of poorer nations.

Thus the paradox is that it is estimated that for the least developed countries where infant mortality rates average 160 per 1000 live births, the public expenditure on health is a mere US$1.70 per capita compared with the developed countries where infant mortality rates average 19 per 1000, the expenditure on health is US$244 per capita.

Added to the above wide economic gap is the problem that hospitals in the developing countries absorb a disproportionately high proportion of the budget. Thus it is estimated that in 1982, 53% of the health budget was absorbed by hospitals in the Philippines while only 29% were spent on field health services. In Ghana in 1978, 85% of the budget was spent on hospitals that served 10% of the population while 15% of the budget was spent on primary health care meant for 90% of the population. In Western Samoa, 70% of the health budget is absorbed by the national hospital located in Apia, the capital of Western Samoa, leaving 30% of the budget for 70% of the people living outside Apia.

TABLE II
SOME BASIC INDICATORS RELEVANT TO HEALTH IN ASIA

Country	Infant mortality rate (1982)	GNP (US$) 1982	Expectation of life at birth (1982)
Afghanistan	200	170	37
Kampuchea	170	—	42
Bhutan	150	80	46
Nepal	150	170	46
Bangladesh	130	140	48
India	120	260	52
Laos	120	80	49
Pakistan	120	380	50
Turkey	110	1,370	63
Burma	100	190	55
Iran	100	2,160	60
Papua New Guinea	100	820	53
Indonesia	90	580	52
Philippines	50	820	64
Thailand	50	790	63
China	39	310	67
Sri Lanka	39	320	67
Korea, Dem. Rep.	32	1,130	64
Korea, Rep. of	30	1,910	67
Malaysia	29	1,860	67
Singapore	11	5,910	72
Japan	7	10,080	76

Such a maldistribution of economic resources will usually lead to geographical inaccessibility. 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, and China's $5 has a high mortality and an expectation of life at birth of a mere 53 years compared with 67 years in China and Sri Lanka. 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 III) in the Province of Western Highlands.

TABLE III
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.

The subprovince of Hagen Central, with its hospital, is a sharp contrast to either Jimi or Tambul where "safe" maternal deliveries amount to a mere 8% and 3% respectively. In contrast, it will be found that in China and Sri Lanka the emphasis is on simple basic health care readily accessible to all people.

Geographical Inaccessibility

Geographical inaccessibility is another problem not taken into account in the models of health care systems that have been advocated in the past it has been repeatedly shown that attendances at a clinic are directly associated with distances of the clinic from the home. For example, Rahman has shown the relationship between distance from clinic, attendance rates, and deaths from diarrhoeal diseases.[2] However, in many parts of the world, travel time is more important than geographical distance as there are vast differences between areas that are well supplied with roads and public transport and those where natural barriers such as hills and rivers may mean that the travel time may be considerable. Thus in Sabah (Table IV), it was noted that beyond a travel distance of half-an-hour, the clinic was inaccessible to women in child labour.[3]

TABLE IV
NUMBER OF "SAFE" AND "UNSAFE" DELIVERIES CONDUCTED IN AREA AROUND TONGOD DISPENSARY AND VGSC, 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.

Technological Inaccessibility

In addition to economic problems and geographical inaccessibility, children in the poorer nations have little or no access to the technologies already developed. This is because health technology has always remained largely in the hands of professional and the official health system. For example until quite recently, the knowledge and means of family planning was the sole prerogative of professionals such as doctors and nurses. Even traditional birth attendants were excluded from promoting family planning. Then some 20 years ago, there began a move to put the knowledge and means of family planning at the disposal of millions of people in the low-income world. As a result family planning which spread only slowly in the 1950's and 1960's began to spread rapidly. For example in Thailand, under the leadership of Mechai, pills and condoms were being sold in bazaars, corner-stores, cigarette kiosks, vending machines and gas stations. Advertisements in movie theatres, newspapers, and "question and answer" shows on radio and T.V., songs sung by little school children, began to put the knowledge and the means of birth control into the hands of the ordinary people who mattered most.

In other words, the child health care delivery system in many parts of Asia, based on hospitals and health centres, and dependent upon the use of professionals, paramedics and auxiliaries is a good infrastructure but inadequate for most countries in the developing world, if our target is Health for All by the Year 2000. There is a need for a number of dramatic breakthroughs if Health for All is to be achieved by the year 2000.

AVAILABILITY OF HEALTH TECHNOLOGIES

Before we examine the question of re-organizing health care so as to deliver appropriate technologies to those who need it most, it will be necessary to ask if appropriate technologies are available in the first place. Appropriate technologies are now available for prevention of many of the important childhood diseases facing the poorer countries of Asia. These technologies have been advocated by UNICEF and are summarised by the acronym GOBI, and consist of (G) growth monitoring to detect early malnutrition, (O) oral rehydration for diarrhoea, (B) breast feeding, and (I) immunization.[4]

The question we are now compelled to examine is the question of the practicability of disseminating this technology in the face of the severe economic recession that faces the world and the problems that have been considered in terms of geographical, economic and technological inaccessibility. In other words can technology such as GOBI really be made accessible in the light of economic resource and man-power

resource limitations and geographical inaccessibility of the official health care system as it exists in many parts of rural Asia? Can this technology be made accessible, and be accepted without a further increase in economic resources? In short, can it be achieved without an increase in financial allocation to health?

NEW SYSTEMS OF DELIVERING CHILD HEALTH CARE IN ASIA

A look at existing health care services indicates that they are important and have contributed to an improvement in health, yet they are not enough. It is estimated that two-thirds of the population of Asia have no regular access to modern health care facilities such as hospitals, health centres and MCH clinics. With no hopes of dramatically increasing incomes and economic resources, there is no choice but to redesign health care systems so that present knowledge and techniques of child health can be placed in the hands of mothers and families. This can be achieved through four complementary innovations. Firstly, mothers must become the focal point of child health and be empowered with all the knowledge necessary to implement technologies such as GOBI. Secondly, women and mothers must be provided with social, moral and technical support by the community, particularly men, so as to enable women and mothers to effectively be the focal point of child health.

Thirdly, PHC workers must be trained at the village level to support the implementation of GOBI by mothers. Fourthly, the technologies such as GOBI must be socially marketed so much so that they become as easily accessible as sugar and salt in the village store.

Mothers The Focal Point of Child Health

Historically there have been a number of new technologies relevant to the needs of the poor and the sick. However, they often reach only a minority of the developing world's people since they are either too expensive or can only be made available through hospitals, health professionals or clinics. On the other hand, GOBI will be made so simple, practical and inexpensive that almost any family in the poorest countries will be able to afford and use them. For example, oral rehydration salts are locally produced by 16 countries in Asia with a cottage industry approach being used in Bangladesh, China, Kampuchea and Mongolia. For mild diarrhoea, oral rehydration in the form of home prepared fluids such as coconut water, rice water, salt-sugar-solutions and teas can be readily made and used by any mother who has been taught this simple technique.

On the negative side, one can also argue that almost all low-cost approaches require more of the mothers. Breast-feeding, oral rehydration, prevention of malnutrition through regular growth monitoring and immunization of the child, all demand more effort and time of mothers. Already mothers and women are overworked. How can they cope with any additional burden?

Mothers Need Social, Moral and Technical Support

In as much as empowering mothers with new knowledge and techniques for child protection is the key to improved child health, the support of society is an important ingredient to the success (Fig. 1). The mother will not only need moral and social support but the practical support of all those around her — her husband, her parents-in-law, her friends, her neighbours, her community as well as the support of political and social leaders. She will also need access to better education, earning opportunities and basic technologies such as better water supplies in order to reduce the time and effort spent on carrying water supplies. However, as outlined by UNICEF, the three most important kinds of support will be female education, family spacing and food supplements for at-risk pregnant women.

Support From Village Health Workers

In addition to making mothers the focal point of child health, health care delivery systems will

Fig. 1 Kashmiri women loaded with heavy bundles of fire-wood return home in the evening. Unless such women receive social, moral and technical support, the burden of child care can be overwhelming.

need to mobilise village health workers. Not only will these villages' health workers be a direct source of health care, but they will serve as an invaluable support for the millions of mothers who will be mobilised as focal points of child health. These mothers will need reassurance and social support from village health workers. Armed only with a few weeks of training and a few inexpensive items of equipment, village health workers can provide the knowledge and technology to help families enhance the health of their children (Fig. 2). Supported by the community, backed by referral services from health centres and hospitals, the element of primary health care will have to been set up.

20 years ago, there were only a handful of village health workers. Today countless numbers have been trained. In Indonesia 400,000 volunteers have been trained, while in Pakistan 12,000 traditional birth attendants have been trained. In Thailand over 400,000 village-based health workers have similarly been trained. In the state of Sarawak, Malaysia, with a population of one million, 500 village health promoters have been trained and a further 1,500 will be trained in the next few years (Fig. 3 & 4). In Karnataka, India, 86,000 village "promoters" have been trained to make ORT available to families. In Sri Lanka, 6,000 volunteers have been trained by the Sarvodaya movement to implement GOBI.

The scope for such non-conventional approaches to the re-organization of health care services in many countries is very great indeed, when one realises that voluntary organizations concerned with such approaches to health care have grown overnight to the point that they are now among the most important resources for national development. In India there are now more than 12,000 private voluntary organizations. In Bangladesh, there are more than 6,000.

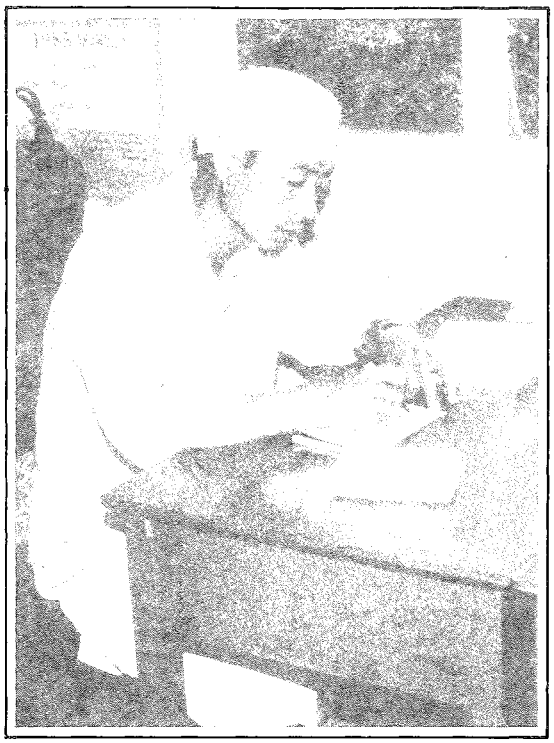

Fig. 2 Chinese "bare-foot" doctor, the proto-type of primary health care workers.

Social Marketing of Appropriate Technology

Based on the successes of family planning which put the knowledge and means of family planning at the disposal of millions of people in the low-income world, one is compelled to come to the conclusion that the technology of GOBI should also be made available to millions of parents. There is no convincing medical reason to retain oral rehydration salts in the hands of professionals or to make it available only through hospitals, health centres and clinics. GOBI should become available to the majority of people. Mass information campaigns should create a demand for

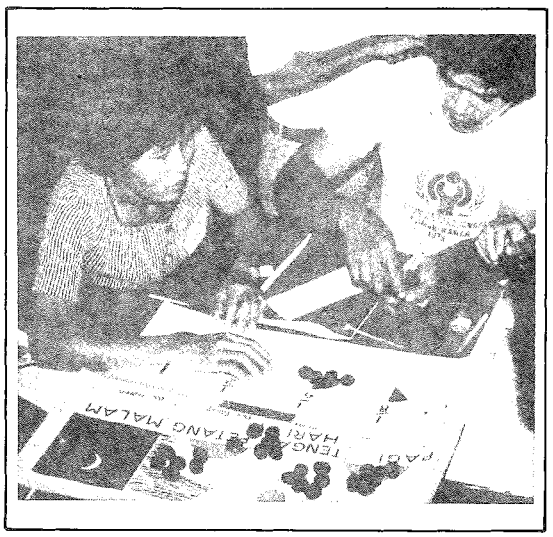

Fig. 3 Penan village health workers from Sarawak being trained in treatment of locally endemic diseases.

GOBI so much so that it is as readily available as salt, sugar, tea, soap, or matches. It should be available at street corner stores, bazaars, grocery stalls, hawker stalls and markets.

The end result of all these innovations will be a re-organized health care system in which professionals and paramedics operating out of hospitals, health centres and clinics work in support of village health workers, the PHC workers present in every community, one of whose main functions will be to support the focal point of child health, the millions of mothers now empowered with the knowledge and technology to provide child health to every individual child in even the remotest and poorest community in Asia. Only with this new re-organized system of child health delivery can the whole of Asia hope to achieve "Health for All by the Year 2000".

Fig. 4 An Iban village health worker from Sarawak treats the wound of a fellow Iban.

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