ECONOMIC REVIEW

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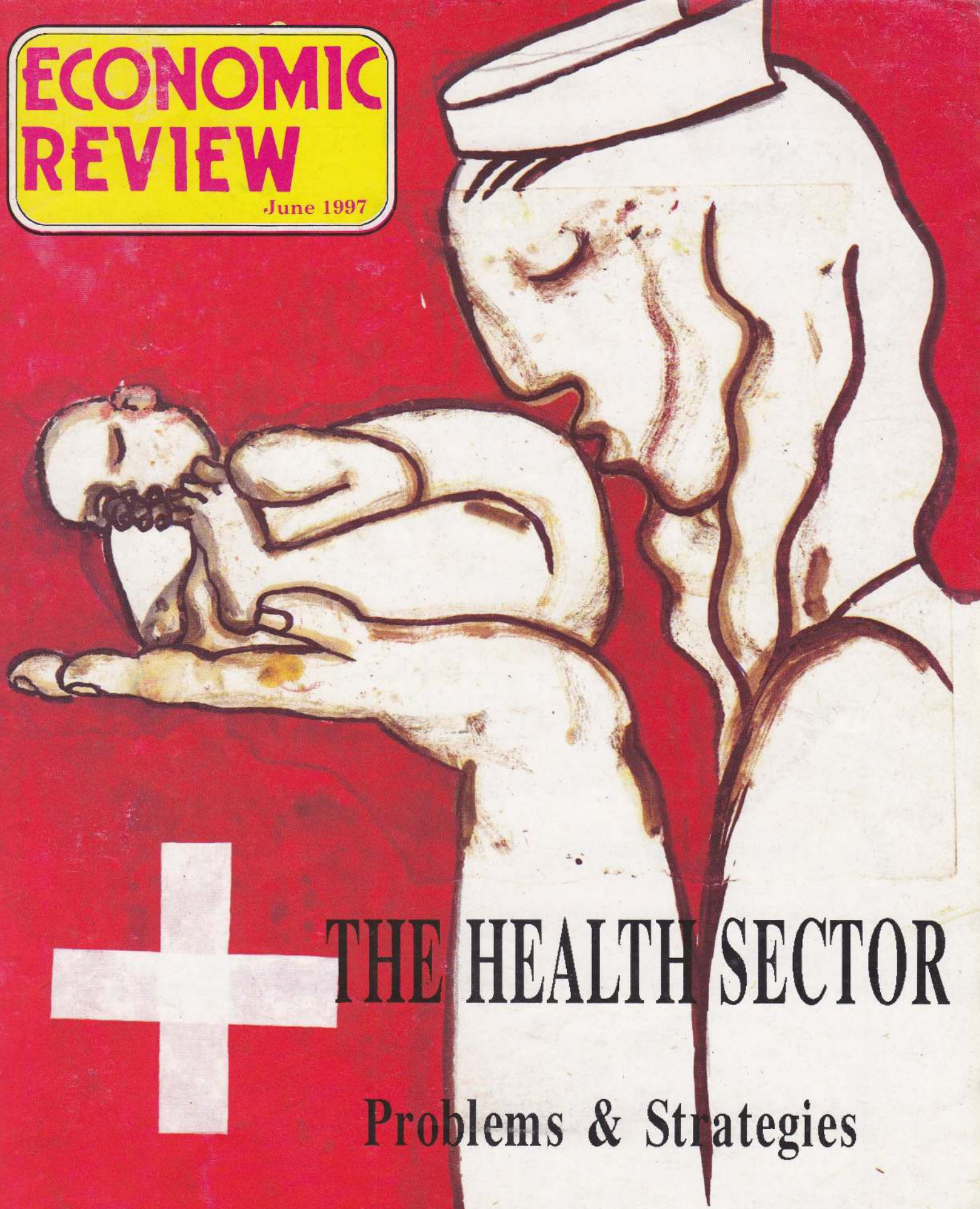
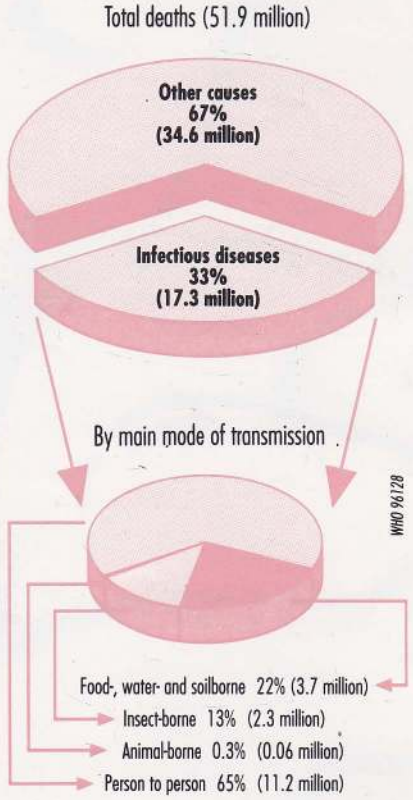


THE HEALTH SECTOR

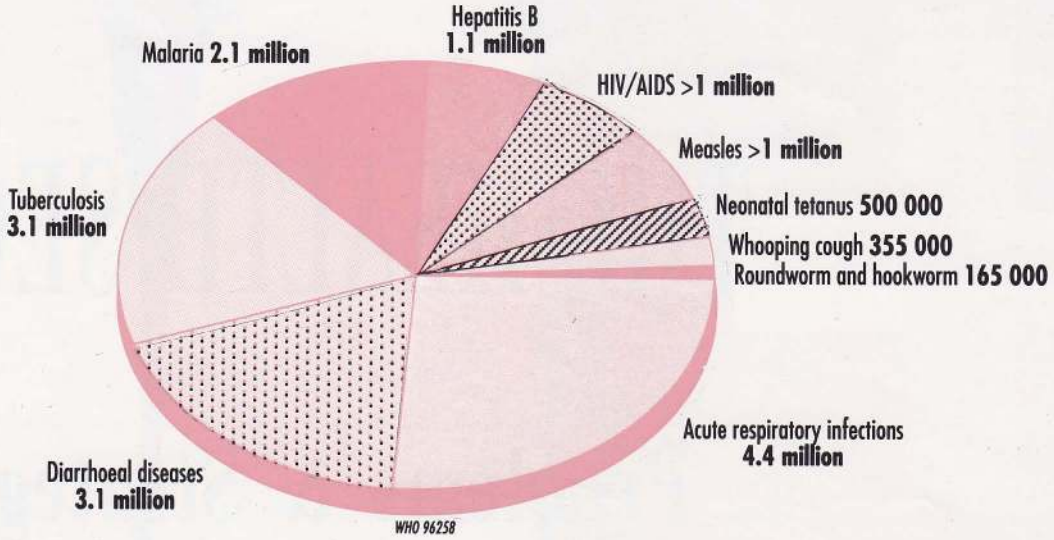
Problems & Strategies

A People's Bank Publication

Deaths due to selected infectious diseases, 1995 estimates



The 10 biggest killers



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THE SRI LANKAN HEALTH SECTOR:

Policy Perspectives and Reforms

by Dr Nimal Attanayake

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This is a summary of a paper which will be published elsewhere. This summary was prepared by Mr P.A. Fernandopulle, Department of Economics, University of Colombo.

In many developed and developing countries health sector reform (HSR) has been on the policy agenda for some time, and in many of these countries, especially in sub-Saharan Africa, reforms are now being implemented (Cassels 1995). In contrast in Sri Lanka pressure for HSR has been less intense, from both donors and internal sources. However, the appointment of a Presidential Task Force on the Implementation of National Health Policy recently is a first sign that Sri Lankan policy-makers are seriously addressing HSR. The main purpose of this article is to explore current trends in the provision and financing of health care services in Sri Lanka with a view to assessing whether the health sector is really moving along the path of reforms and if so its progress. This would lead to the identification of issues which policy forums should address in reforming the health sector.

Forms of Health

Inefficient use of scarce resources, lack of access to health care, and services which are unresponsive to the needs of the people are problems encountered by the health sector in many developing countries. The need to achieve an equitable distribution of health care service benefits has further accentuated the challenges faced by governments in developing countries. In attempting to address these problems, largely with the assistance of donor agencies, governments have started to reform mechanisms for the provision and financing of health care services. This process has gone beyond redefinition of policy objectives and focused much on drastic changes in organisational structures and management systems to meet the challenges of the sector. These fundamental and purposive changes to promote the achievement of broad health policy objectives have formed the general framework of HSR; health sector reforms are concerned with defining priorities, refining policies and reforming the institutions through which those policies are implemented (Cassels, 1995).

HSRs could be considered an integral component of IMF-World Bank structural adjustment policies introduced in Sri Lanka in the late 1970s. In general, their purpose is to reduce the direct role of government in the provision of health service and stimulate a range of other private and NGO providers to increase competition and efficiency. Donor agencies are indeed playing a decisive role in the reform process. The World Development Report, Investing in Health, of 1993 has prescribed a series of health service financing and provision reforms (World Bank, 1993).

Zwi and Mills (1995) have categorised HSR packages into four elements (Figure 1). The first, identifying and responding to major health problems, refers to the World Bank's view for setting priorities through the application of cost-effectiveness analysis on the basis of disease burden: the newly developed cost-effectiveness indicator called disability adjusted life years (DALYs) (World Bank, 1993). The second set of reforms consists of organisational and management changes which assume that greater competition and decentralised management authority will improve incentives, efficiency and responsiveness. The third set, health financing strategies, aims to increase the financial contributions of those who are willing and able to pay more for government health services, which would also allow resources to be targeted at those who cannot afford to pay. Improvement of quality in care is categorised as the final element, and this again includes measures to reduce the role of government and promote private sector provision.

It is clear that a variety of HSRs exist and that countries have the option of choosing the most appropriate policy measures, giving due consideration to local epidemiological conditions, public and private preferences and resources (World Bank, 1993). Nevertheless these new measures pose formidable challenges to national governments. They require governments to play new but vital roles in the health sector. They envisage moving away from traditional service provision and administrative roles, and creation of new organisational and management systems which are essential for the implementation of reforms. This raises the critical question of governments' capacity to perform new roles (Russell and Attanayake 1997). For example, for the proper implementation of devolved functions under decentralisation, managerial, organisational and planning skills at provincial and divisional levels would have to be improved substantially. Or new skills would be required for administrators

Figure 1: Elements of health sector reform packages

Identifying and responding to major health problems
Changing sectors or priority areas - global and national burden of disease estimation, cost and cost-effectiveness analysis
Increasing awareness of consumer preferences

Organisational and management changes
Decreased privatisation of provision, broadening the mix of providers
Closer alliance or competition between providers
Contracting out of services
Improved planning systems (by health needs, burden of disease and cost-effectiveness analysis)
Improving decentralised governance
Decentralisation with increased accountability
Building capacity in the institutions through which policy is made and implemented
Increasing responsibilities to local contexts e.g. hospital boards and local governments

Health financing strategies
Community financing of services
User charging strategies including complete or incomplete exemptions
User fees
Tax financed concentrated on the poorest
Increased public sector income
Increased and/or fee health services

Improving quality of care
Publicly funded care restricted to cost-effective treatments
Packages of essential health services
Accreditation and quality assurance measures
Incentives for private sector involvement in promotive and preventive care
Making service providers more responsive to purchasers and consumers
Source: Ziai and Mills (1995)

both at national and regional levels for designing and managing contracts. Thus a central issue for HSR is the capacity or the ability of governments in the developing world to assume these new roles.

Sri Lankan experience

The objective of government's National Health Policy is to promote the harmonious coexistence and growth of both the public and private sectors and to reduce the government's burden in the provision of free health services (Dalpatadu and Perera, 1997). However, the prospects look bleak. Few attempts have been made in Sri Lanka at the policy making level to learn from HSR experience in other developing countries. Further none of the proposals of the Task Force appointed by President Premadasa were fully implemented. In general, no HSR strategies or initiatives have been designed or implemented in Sri Lanka. However, in the past two decades, several changes similar to those highlighted in the above section are taking place in Sri Lanka. Two of the most noteworthy developments are the rapid expansion of the private sector and decentralisation. But neither can be considered as pre-designed policy strategies of the Ministry of Health (MoH). Rather they represent non-purposive directions of change in the provision and financing of health service which are the result of broader economic and political processes.

Only very recently has the MoH shown inclination towards monitoring which would lead to encouragement and regulation of the private sector. Similarly, some discussion now seems to be taking place in health policy forums on greater decentralisation and management autonomy. In the following two sections these two issues will be examined.

Private sector involvement

A substantial increase in the involvement of the private sector in the provision of health care services is clearly evident. At present 85 private hospitals with a bed capacity of 2,000 are functioning in different parts of the island (Dalpatadu and Perera, 1997). 682 retail pharmacies and a few diagnostic laboratories are additional facilities in the private health service network in which about 1000 general private practitioners along with a large number of government doctors, including specialists provide service.

Attendance figures of patients in the public health sector institutions can be considered as a basis to indicate the trends and estimate the size and growth of the private sector. During the period 1982-95, outpatient visits to the public sector recorded an annual growth rate of only 1%, while inpatient attendance grew at a rate of 1.95%. It is a common belief among policy makers that at present about half of all outpatient visits are made to the private sector. This estimate is based on the findings of few studies. For instance, in 1990, almost 40% of all types of patient visits in the Gampaha district were made to the private sector (de Silva and Attanayake, 1992). In 1993, 35% of suspected malaria patient visits in the Matale district were made to private sector facilities (Attanayake, 1994). This percentage was about 30% for the Anuradhapura district in 1996 (Attanayake forthcoming). The above figures suggest that rapid private sector expansion has absorbed a large proportion of outpatient visits (due to several reasons, which will be referred to later), while inpatient care at public hospitals still seems to remain the first choice except for those with very high income and/or those who can get reimbursed for the cost of private care through health insurance.

Many factors explain private sector expansion. A turning point was in 1977, when government doctors were allowed to engage in private practice to discourage brain drain abroad. Channelling Centres as well as private clinics of government doctors soon became the level of first entry point in the health sector, especially for inpatient care at public hospitals. In this con-

text, private sector has also been publicly sponsored: firstly, channelling centres and private clinics are an entry point for patients to receive better care at public hospitals. This indicates a complementarity between private practice and publicly provided services. Secondly, the cost of training of almost all doctors engaged in private practice is borne by the government.

A large number of supply side factors appear to have induced patients movement towards the private sector. In public facilities weaknesses such as overcrowding, drug shortages, lack of some essential equipment and limited service hours are clearly inducement factors of this movement. With respect to demand factors, a specific characteristic of the Sri Lankan community is a high sensitivity towards illness, and hence perceived quality of private sector care appears to be a prime reason for the prime reason for it being preferred (Caldwell et al, 1989 and Attanayake 1991): a more cordial relationship with and more attention given by the private doctor seem to be reasons for the continuous expansion of the private sector, especially for primary level care.

Advocates of the growth of the private sector argue that it enables the financial burden of health care provision to be shifted from the government to those who are willing and able to pay for the care. In this context the question whether the rapid expansion of the private sector has indeed reduced the financial burden on the government merits consideration. Firstly, government expenditure on health has increased at a rate of 4% during the period from 1987 to 1996 in real terms whilst this rate was 15.5% in monetary terms. On the other hand, during the past decade, the share of government expenditure on health as a percentage of GDP and total government expenditure remained at around 5% and 1.5%, respectively. Whilst 55 new hospitals and 60 central dispensaries and maternity homes (CD&MHs) were added to the health service network (except Northeast Province), the health workforce expanded substantially during the period from 1988 to 1995 the number of doctors (2,318 to 4,627), nurses (8,317 to 13,403) and public health midwives (3,209 to 4,353) increased at annual average rates of 12.2%, 8.3% and 5.3%, respectively. Nothwithstanding such an expansion of the public sector, absorption of about half of patient load by the private sector, especially in primary care, could be considered as positive evidence that the financial burden on the government has been reduced. Nevertheless, in any judgement from a societal point of view, the complementarity between private and private care and hence the cost borne by patients for private care in conjunction with the utilisation of public health services should also be taken into account.

It is worth mentioning that the growth of the private sector has not been confined to clinical services. Contractual arrangements with the private sector, particularly for non-clinical services such as provision of raw or cooked food for hospitals, laundry services, cleaning and security services appear to have expanded substantially during the past decade. But these developments too have been non-purposive. For instance, closure of the Marketing Department led to more involvement of the private sector in the provision of food to hospitals on a contractual basis. And following the general trends in the country, security services in large medical institutions and administrative offices have been given to the private sector. At present, involvement of the private sector is being sought on a contractual basis for sophisticated surgery, but only in a few cases.

The MoH seems to have deliberately played a very limited role in both regulating and encouraging the private sector (Russell and Attanayake 1997):-

"The rapid growth of the private sector in the 1980s was not monitored, co-ordinated or regulated. The slow response of the MoH in the past has made it more difficult now to regulate or promote the private sector. It has grown large and complex, and provider and user interests have become more established and diverse. Only now is the MoH formulating new legislation to regulate private medical institutions. However, the capacity of the MoH to implement the new law in an effective manner still remains unproven, and what it can do may be too little, too late (Russell and Attanayake 1997).

Decentralisation

Decentralisation can be defined as the transfer of responsibility for planning, management and resource mobilisation and allocation from the central government and its agencies to sub- national agencies including non-governmental, private or voluntary organisations (Rondinelli 1981). Thus, a common aim of decentralisation is to bring government nearer the people and to encourage community involvement (Mills 1994). It could take several forms such as deconcentration, delegation, devolution and privatisation. In principle, the potential benefits of decentralisation include greater management authority and flexibility to respond to local needs and weaknesses, greater responsiveness to service users, and therefore more efficient and accountable use of resources (Mills et al 1990). However, the requirement of management skills in a large number of small units, difficulties for the higher levels to interact with a large number of local units and difficulties in organising services that can be provided efficiently only for a reasonably large population could be considered as some drawbacks of decentralisation (Mills 1994).

Therefore before implementation, the levels to which authority is decentralised have to be determined very carefully.

In Sri Lanka, decentralisation of management and administration of public health services was initiated in 1987 following the 13th amendment to the constitution. Responsibility for a set of functions including health was granted to the Provincial Councils which were set up in 1987. Subsequently, in 1992, all the administrative bodies in each province were brought under a formal organisational framework with the setting up of Divisional Secretariats: administration and management of health services were assigned to Divisional Directors of Health Services (DDHS). Vertical programmes such as the Anti-Malaria Campaign were abolished in the late 80s and both curative and preventive services were brought under the direct control of DDHSs.

Critically, in Sri Lanka, decentralisation can be largely considered a political manoeuvre under external

pressure, to devolve power to the provinces as a remedial measure to the ethnic conflict, rather than a deliberate attempt to reform the organisational structure of public services (Russell et al 1996). In the health sector, as in any other public service, changes in the organisational structure of the MoH were imposed from elsewhere. Before implementation, the technical, management and organisational feasibility of decentralisation was not properly examined. In fact the MoH appeared to be quite resistant to such changes (Russell et al 1996). For example, allocation as well as administration of some vital resources such as manpower is still in the hands of central agencies. In other words, decentralisation was not a purposive attempt to reform the health sector and delegation and devolution have not been operationalised to an adequate extent for the sub-national agencies to carry out their functions smoothly.

Although the decentralisation process has been ongoing for a decade, it still seems to be in its infancy: apart from formal deconcentration (e.g., DDHSs) and devolution (e.g., Provincial Councils), no concrete measures have so far been adequately taken to delegate responsibility for defined functions to relatively autonomous entities. At the divisional level, political and administrative bodies are still apart. Even though the provinces have shown some improvements in upgrading their capacities, with the assistance from the centre, particularly in planning and management, they still have a long way to go in successfully carrying out their devolved functions. This is largely explained by central level administrators as well as politicians' lack of motivation to accelerate the decentralisation process. Moreover, there seems to be a centralisation tendency at the provincial level as well, due to lack of capacity at divisional and secondary hospital levels. With all these weaknesses, in general, health sector decentralisation in Sri Lanka has taken a form which looks more like a deconcentrated structure than a devolved one (Russell et al 1996). An assessment whether decentralisation has achieved its objectives is therefore rendered difficult. Therefore the following section, brings out the trends of some indicators related to the provision of services across provinces, for the purpose of illustration.

Table 1
Share of public health expenditure in GDP and government expenditure, 1975-95

Year	Public health expenditure as a % of total government expenditure	Public health expenditure as a % of GDP
1975	3.2	1.0
1976	3.5	1.0
1980	2.6	1.4
1981	3.[illegible]	1.2
1982	3.4	1.4
1983	4.3	1.8
1984	3.4	1.3
1985	3.[illegible]	1.4
1986	3.9	1.4
1987	5.[illegible]	1.7
1988	5.3	1.8
1989	5.6	1.8
1990	5.[illegible]	1.5
1991	4.6	1.4
1992	5.5	1.5
1993	4.9	1.4
1994	5.5	1.6
1995	5.2	1.6

Source: Annual Reports, Central Bank of Sri Lanka

With respect to resource allocations, in 1995 the North Central Province received the highest per capita allocation (Rs.439). When recurrent expenditure of hospitals managed by the MoH is added to provincial totals, except Central and North Central Provinces, others appear to have received substantially low per capita allocations compared to the Western Province. The high allocation to the North Central province is primarily due to the large amounts of additional inputs to its provincial hospital (Anuradhapura), which serves injured armed services personnel as it is the tertiary level public hospital closest to the war zone. In 1995, total recurrent expenditure of this hospital stood at about Rs 136 million, which was indeed the highest total for any hospital outside the Western Province (Uni Quest, 1996). Trends in provincial disparities were further examined with respect to the availability of and hence access to services (Table 3). During the period concerned, whilst the number of beds per 1,000 population (BPOP) increased slightly from 2.81 to 2.84, the number of beds per 1,000 inpatients (BINP) decreased from 16.58 in 1987 to 16.42 in 1995. The low annual growth rate of estimated population (1.3%) compared to inpatient load (1.6%) is one important reason for the different changing patterns of these two indicators. Even though BINP at national level has recorded a decline, a highly irregular pattern can be observed in the changes of its annual average growth rates across provinces. An increase in BINP associated with an increase inpatient load was recorded only in three provinces and the combination of Matale and Polonnaruwa districts.

The national level averages of both the number of doctors per 10,000 outpatients (DOP) and the number of doctors per 1,000 inpatients (DINP) have increased from 0.62 and 0.07 to 1.12 and 0.13, respectively. However, both of them have changed in a highly irregular pattern across provinces. For

Table 2
Resource allocation patterns to the health sector across provinces in 1995 (Rs)

Province	Provincial health expenditure		Provincial health expenditure and recurrent expenditure of the hospitals handed by the Ministry	
	Total (million)	Per capita	Total (million)	Per capita
North Central	187	439	502	438
[illegible]	173	398	334	278
North Western	334	363	[illegible]	263
Central	[illegible]	317	380	323
South	451	299	690	290
North Eastern	455	177	845	315
Western	587	148	2005	479
Total	2482	214	6277	336

Source: Provincial Statistical Office of the Provincial Ministries of Health Services, Ministry of Health and Uni Quest (1996)

Table 3
Some indicators of variations in the distribution of doctors and hospital beds with respect to population and patients' attendances in public hospitals across provinces from 1987 to 2000

Province/District	BPOP			BINP			DOP			DINP			1987	1995	GR 87-95
	1987	1995	GR* 87-95	1987	1995	GR 87-95	1987	1995	GR 87-95	1987	1995	GR 87-95			
Western	3.69	3.75	0.2	20.34	18.74	-1.5	0.57	1.55	50.9	0.14	0.12	-3.8	1.87	2.49	3.5
Central	3.16	3.38	0.8	17.87	15.01	-1.0	1.23	2.43	11.8	0.09	0.14	12.1	1.68	1.25	18.5
South	2.37	2.33	-1.0	14.79	14.48	-0.3	0.84	1.81	16.0	0.06	0.12	17.3	0.92	1.12	12.2
Sabaragamuwa	2.39	2.84	-1.8	20.71	16.93	-3.3	0.49	0.46	-0.5	0.03	0.07	9.5	0.51	0.38	2.9
Northern	2.39	2.47	0.4	12.96	10.96	2.2	0.84	1.19	9.8	0.03	0.07	12.5	0.27	0.61	16.3
North Western	2.57	2.11	0.6	11.90	13.72	1.5	0.89	1.44	12.7	0.05	0.06	10.4	0.37	0.49	4.7
Uva	2.92	2.95	0.0	12.83	15.26	2.4	0.80	1.38	13.2	0.03	0.07	15.4	0.20	0.18	8.5
Sabaragamuwa	2.42	2.38	-0.2	13.70	15.88	0.3	0.30	1.41	13.9	0.01	0.05	11.6	0.05	0.06	14.5
Matale & Polonnaruwa	2.47	2.36	1.4	12.53	15.85	3.2	0.73	1.72	16.8	0.03	0.09	18.3	0.22	0.74	29.1
Average	2.81	2.84	0.3	16.58	16.42	-0.1	0.59	1.20	16.3	0.05	0.11	18.2	0.62	1.12	[illegible]

BPOP = number of beds per 1,000 population
BINP = number of beds per 1,000 inpatients
DOP = number of doctors per 10,000 population
DINP = number of doctors per 1,000 inpatients
DINP = number of doctors per 10,000 population
* Growth rate
Source: Medical Statistics Unit, Ministry of Health

outpatient attendance, whilst a positive annual average growth rate of 7.1% was reported for the Western Province, the Northeast and the Northwest Provinces, and the combination of Matale and Polonnaruwa districts had negative rates of 0.01%, 1.7% and 2.6%, respectively. Similarly, whilst the very high growth rate of inpatient attendance in the Western Province (6.3%) has brought down the annual average growth rate of its DHN's, low or negative growth rates of inpatient attendance in most of the other provinces have moved up the growth rates of their DHN's.

The disparities demonstrated by the indicators related to population are, however, somewhat different. For instance, although the national average of the number of doctors per 10,000 population (DPOP) has almost doubled from 1.19 in 1987 to 2.20 in 1995 with an annual average growth rate of 10.7, an irregular pattern can be observed across provinces. Except the lowest value of 0.83 in Northeast Province, it varies from 0.98 (Northwest) to 16.63 (Polonnaruwa).

Concluding Remarks

The Sri Lankan health sector has not undergone any significant or purposive changes to overcome inefficiency, low quality and inequity in the delivery of its services. Whilst the expansion of the private sector can be largely attributed to private practice by public service doctors, the roots of decentralisation were political. The expansion of some forms of public-private mix such as contracting out non-clinical services to the private sector, is also due to a more general shrinking of the size of public sector as part of the liberalisation process. However, none of these changes was well designed or even piloted before implementation. Thus, in general, most changes in health service provision and financing have occurred in a haphazard manner. Even though provincial disparities in resource allocation, access to health care, quality of care etc., appear to have eased out to some extent during the decentralisation period, there is still a continuation of trends which had prevailed before decentralisation (Attanayake and de Silva 1989).

Lack of purposive reform in the past has given rise to many obstacles in their tasks to policy makers as well as health managers. Moreover, expansion of private practice and lack of sufficient legislative power to regulate the private health sector has led to the formation of a deformed private health care market the passive sponsor of which has been the government and it has emerged as an entry point for some services provided by public medical institutions.

The key challenges to reforms in the health sector in Sri Lanka now centre around the expansion of the private sector and decentralisation. Even if the very meaning of HSR is fundamental change, the highly segregated health system which is still under a traditional administrative framework means that Sri Lanka may have to adopt a package of incremental changes for the reform of the system. Gradual restructuring of the whole health system, with due recognition given to provincial autonomy, and formulation and implementation of a strategy for strengthening capacity at provincial, divisional, institutional and programme levels, critical issue in decentralisation. And with respect to the private sector, better regulatory and co-ordination mechanisms, supported by a health information system, are essential. All the changes require gradual increase in MoH capacity at all levels if policy design and implementation are to be effective.

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The hospital system in Sri Lanka

Shortcomings and remedies

by

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The origin of hospitals can be traced back to about the sixth century B.C., in places far apart both in the West and the East.

In ancient times the hospitals were symbiotic with religions and beneficient rulers since patient-care was recognised as a noble, meritorious act.

In Sri Lanka they were associated with Buddhism and with the kings who ruled the country. King Dutugemunu, 160 B. C. is recorded to have maintained hospitals in 18 places. King Buddhadasa in 341 A.D., not only provided hospitals for men and animals, but as history and legend have it, himself practised medicine and surgery.

From time immemorial, hospitals have occupied a prominent place in the health service systems and the economics of all societies. Hospital services are indispensable for patient-care.

In Sri Lanka the systems of medicine practised, to varying extents, include Western (Allopathic), Ayurvedic, Unani, Siddha and Homeopathy. The government support is mainly for the Western medicine sector which amounts to almost 90% of the government expenditure on health with the balance support for the Ayurvedic sector. The private health sector has practitioners in almost all types of medicine with more stress on the western medicine.

In the developing economy of Sri Lanka where the welfare factor makes a sizable dent into the state coffers, the hospital system too is one sector that is heavily dependent on state funds.

The government contribution to the health sector at present stands at 5% of the total government expenditure. A review of data from 1970 to date pertaining to public investment in health reveals that as a percentage of the GDP it has ranged from 1.5 to 1.8 (1990).

Despite the low GDP, the health indicators of the country are better than those of even some of the more developed countries of the world.

Table 1 shows the health indicators of a few selected countries for the purpose of comparison.

Figure I and II show improvements observed in the death rates, maternal and infant mortality rates within the past several decades.

Almost all countries experienced a steady increase in the costs of health care over the past three to four decades for numerous important reasons. One obvious reason is the marked improvement in the sphere of curative methods as against palliative care. Medico-technological advances have made rapid strides but involving heavy financial investments.

Table - 1

Health indicators: Selected countries (early nineties)

	No. of persons per doctor	Hospital beds per 10,000	Government Health expenditure	% of Population without medical insight	Life expectancy at birth (years)	Infant mortality rate (per 1,000 live births)	Maternal mortality rate (per 100,000 live births)
					60	62	54
Sri Lanka	4,994	1.7	1,800	40.8	72	22	10
India	2,162	1.8	3,140	30.6	63	63	4.9
Nepal	12,016	1.3	4,795	66.6	51	29	2600
Bangladesh	22,500	2.7	3,[illegible]	45.[illegible]	52	107	5.4
Myanmar	5,[illegible]	2.5	6,900	11.[illegible]	[illegible]	60	6.6
S. Korea	419	4	8,[illegible]	4.[illegible]	71	12	50
United Kingdom	581		10,[illegible]	96.3	74	12	45

Source:

HEALTH

Budget

Tentative Capital Budget Estimates (1995 to 2002)

Description	1998	1999	2000	2001	2002	Total
	Rs. 000	Rs. 000	Rs. 000	Rs. 000	Rs. 000	Rs. 000
1. Construction of Buildings	294,100	487,580	328,000	485,300	141,500	1,776,600
2. Acquisition of Equipment	144,300	85,000	45,250	31,750	18,000	324,300
3. Rehabilitation and Improvement of Capital Assets	9,800	12,880	3,000	4,000	1,450	31,130
Total	448,200	585,300	364,250	521,050	175,450	2,134,030

Source - Five Year Medium Term Plan for National Hospital of Sri Lanka 1995 - 2002

The conflict in the North and East renders it impossible to obtain accurate statistics regarding the hospitals islandwide. According to the available statistics there are 514 state hospitals and 76 private hospitals in Sri Lanka. So far as bed accommodation is concerned, the total bed strength in state hospitals is 48,061 and in the private sector 1,886 with 1,018 in Colombo. There are only 317 beds on a private fee - levying treatment basis in state hospitals of which 218 are in Colombo. Other districts with a reasonable number of beds in the private sector or on a fee-levying basis in the public sector are Kurunegala, Matara, Kandy and Galle. There are no such facilities in Nuwara Eliya, Hambantota, Mannar, Vavuniya, Mullaitivu, Ampara, Trincomalee, Anuradhapura, Polonnaruwa and Monaragala.

On an average there is a state hospital bed for every 376 persons in the community. However in Trincomalee and Vavuniya one state hospital bed is available for 600 people and the corresponding figure in Mullaitivu is even worse, a bed for 1,000 people.

A study of the distribution of general practitioners in the private sector shows that of the total of 900 practitioners (approximate) nearly 50% are in Colombo and many districts are not served by general practitioners. Of the 558 Specialist Consultants (1995) in the public sector 41% are in Colombo, 12% in Kandy, 11% in Gampaha and 8% in Galle.

The figures are self-explanatory in that both public as well as private sector health facilities are concentrated in Colombo and around the main cities. In-patient and out-patient attendance at the government hospitals are tabulated below Refer Tables 3, 4, 5, 6, & 7

In 1995, Cancer Hospital, Maharagama had the highest occupancy rate (123) followed by the Mental hospitals (117). There is a definite over utilization at major hospitals and specialised hospitals and a gross underutilization at small hospitals below the level of base hospitals.

In 1995, there had been 349,596 live births in Sri Lanka, of which 297,949 (85.2%) were in government hospitals. The breakdown hospital-wise is tabulated below.

All these services are not available in all government hospitals. The network of curative institutions ranges from central dispensaries providing out-patient care to sophisticated teaching hospitals with specialised services. The distinction between hospitals is basically on the space available and the range of facilities provided. There are three levels of curative care institutions.

The central dispensaries, maternity homes, rural hospitals, peripheral units and district hospitals are primary health care institutions. The base hospitals and provincial hospitals are secondary care institutions and the teaching hospitals and the special hospitals are tertiary care institutions

Problems, issues and remedies

The Health Service in Sri Lanka compares best with those of other countries of similar economic status. However, several problems and issues remain unsolved in this system, mainly with regard to the curative services.

Table 2

In-patient and out-patient attendance and rate per 1000 population per year (1981 - 1995)

Year	In-patient attendance		Out-patient attendance (excluding clinics)	
	Number '000	Rate	Number '000	Rate
1981*	2,820	[illegible]	[illegible]	[illegible]
1982	2,929	[illegible]	[illegible]	[illegible]
1983	[illegible]	[illegible]	[illegible]	[illegible]
1984	[illegible]	[illegible]	[illegible]	[illegible]
1985**	2,958	[illegible]	[illegible]	[illegible]

Source: Medical Statistics Unit.

Excludes :

* Northern and Eastern Provinces

** Jaffna, Kilinochchi, Mullaitivu and Ampara districts

Table 3 gives the bed occupancy rates of different hospitals (1995).

Table 3

Bed occupancy rates of different hospitals (1995)

Hospital category	No. of hospitals	Bed occupancy rate (%)
Teaching hospitals	12	[illegible]
Accidents hospitals	02	[illegible]
Provincial hospitals	08	[illegible]
District hospitals	21	[illegible]
Other hospitals	117	[illegible]
Private nursing homes	23	[illegible]
Cancer hospitals	03	[illegible]
DPH, MH	03	[illegible]
Other hospitals	18	[illegible]
Total	211	

Table 4

Distribution of beds in the government hospitals in 1995

	No.	%	
Teaching hospitals	[illegible]	[illegible]	
Other hospitals (GH)	10,197	[illegible]	[illegible]
Provincial hospitals	[illegible]	[illegible]	[illegible] is available
District hospitals	[illegible]	[illegible]	in other hospitals
Other hospitals	[illegible]	[illegible]	
Private nursing homes	[illegible]	[illegible]	
Total hospitals	[illegible]	[illegible]	
Other sets	[illegible]	[illegible]	
Total	207,810	100.0%	

The distribution of medical, nursing and paramedical personnel is given in Table 5.

Table 5

The distribution of medical, nursing and paramedical personnel (1995)

	No.	Rate per 100,000 population
Medical officers	[illegible]	[illegible]
Dental surgeons	[illegible]	[illegible]
Specialists, Medical Officers, Prevent. Officers	[illegible]	[illegible]
Nurses	[illegible]	[illegible]
Medical Laboratory Science	[illegible]	[illegible]
Public Health Inspectors	[illegible]	[illegible]
Pharmacists	[illegible]	[illegible]
Midwives	[illegible]	[illegible]
Medical Laboratory Technicians	[illegible]	[illegible]
Physiotherapists	[illegible]	[illegible]
Nursing aides	[illegible]	[illegible]
Dispensers	[illegible]	[illegible]
Public health midwives	[illegible]	[illegible]
Family health officers	[illegible]	[illegible]
Dietitians	[illegible]	[illegible]

Source: Medical Statistics Unit.

Overcrowding and underutilization

One of the key issues of the existing health care system is overcrowding of major hospitals whilst small hospitals are underutilized (Table 4). One main reason for this situation is the shortage of manpower, equipment and drugs in small hospitals. If the facilities could be provided at their doorstep, it is likely that the people would not hesitate to use them. It is necessary to equip well all these hospitals and appoint the necessary staff to man them. A proper referral system should be formulated so that major hospitals would not be burdened with patients that could have been managed at the primary care level. It is also essential to strengthen the back-referral system, which to be effective should have a sufficient flow of information and guidance to the practitioners of base hospitals, to provide efficient follow-up care to such patients. Initially the services of provincial hospitals could be restricted to the residents of the respective provinces and a referral letter should be made compulsory for patients seeking treatment from hospitals outside their provinces, except in case of emergencies.

Manpower shortage

Shortages in all categories of staff are evident in all hospitals. The approved cadre for nursing officers at the National Hospital of Sri Lanka is 1,825, whereas only 1,400 nursing officers are available at present. The situation is the same with several other categories and with other hospitals. The availability of different categories of staff per unit of 100,000 population is given in Table 5. Apparently the present cadre strength is grossly inadequate to provide a reasonable service to the community. This is more so in case of specialist consultants (Table 6).

The accidents and trauma are on the increase at present. Though the general surgeons may be just enough, the four neuro surgeons and the ten orthopaedic surgeons are not adequate at all to meet the increasing demand. With regard to the other specialities too, it is more or less the same. This is a problem that has to be addressed immediately both with short-term and long-term approaches.

A cadre of recommended specialists should be worked out for base hospitals, provincial hospitals and teaching

Specialist consultants, population ratio is given in Table 6.

Table 6

Specialist consultants, population ratio (1996)

	No.	Ratio
General Physicians	24	318,3[illegible]
General Surgeons	22	3[illegible]
Obstetricians and Gynaecologists	7	[illegible]
Paediatricians	12	1,[illegible]
Neurologists	10	[illegible]
Dermatologists	14	1,[illegible]
Haematologists	17	[illegible]
Orthopaedics	14	[illegible]
Eye Surgeons	31	[illegible]
E.N.T. and Chest Physicians	14	[illegible]
GI Surgeons	15	1,[illegible]
Cardiologists	26	[illegible]
Urological Surgeons	10	1,[illegible]
Orthopaedic Surgeons	10	[illegible]
Plastic Surgeons	14	1,[illegible]
Oral & Maxillofacial Surgeons	19	[illegible]
Neuro Surgeons	14	[illegible]
Cardiac Surgeons	12	[illegible]
Anaesthetists	41	[illegible]
Pathologists	21	[illegible]
Dermatologists & Venereologists	10	[illegible]
Rheumatologists	10	[illegible]
Nephrologists & Urologists	17	[illegible]
Radiologists	22	[illegible]
Others	13	[illegible]
Total	[illegible]	

hospitals, eg. A base hospital should have.

Physicians	- 2
Surgeons	- 2
V. O. G.	- 2
Paediatricians	- 2
Anaesthetists	- 3
Pathologists	- 3
Eye Surgeon	- 1
E. N. T. Surgeon	- 1
Dermatologist	- 1
Radiologist	1

Provincial hospital could have in addition the services of an orthopaedic surgeon, neuro surgeon, neurologist, histopathologist, physician with special interest in nephrology.

It was mentioned earlier that general practitioners available in the community are inadequate and many districts are not served by general practitioners. This had resulted in a large number of unqualified persons practising medicine in such districts. Unpublished data suggest that the total number of such personnel can be as high as 30,000. Unqualified practitioners not only prescribe unnecessary drugs, but also create undue delay in patients getting the proper treatment, thereby aggravating the illness. Steps should be taken to ban unqualified personnel practising medicine.

Shortage of equipment

This is an area which needs heavy capital injection to rectify the situation. Achievements in medico-technology are so rapid and advanced that new inventions are brought forth almost overnight. It would be really impossible for a developing nation like Sri Lanka to keep pace with such trends. Yet some arrangement is necessary to provide the services of these machinery and equipment at least to a certain extent, eg. a MRI scanner cost about 40 - 50 million rupees and a modern CT scanner will cost about Rs. 15 to 20 millions.

Similar to specialists, there should be a list of special equipment recommended for each category of hospitals. For example, a district hospital should have facilities to do blood counts, urine examinations, blood urea, serum electrolites, blood sugar, serum bilirubin, liver enzymes, X'rays and ECG. A base hospital in addition should have scanning and X'ray screening facilities and provincial hospitals should have endoscopic facilities.

The shortage of equipment is also the result of frequent breakdown of equipment due to lack of preventive maintenance.

Each hospital or group of hospitals should have technicians trained for maintenance and repairs. Except the Bio-Medical Engineering Service division based in Colombo, no other system is available to the hospitals islandwide.

A systematic, regular maintenance of the available vital major equipment such as anaesthetic machines, ventilators, cardiac monitors, blood gas analysers, haemodialysis equipment, X'ray machines and CT and MRI scanners is a badly felt need. All such valuable equipment on purchase should have an extended guarantee and a service agreement including conditions for the supply of necessary spares, valid for more than 5 yrs (5 to 10 yrs).

Automating the management functions

The hospitals in Sri Lanka still continue with the old record keeping systems, and retrieval of information about patients is extremely difficult at present. This also results in duplication of work when the same patient gets admitted to the hospital several times with a similar complaint. The information system of all the hospitals should be upgraded and automating the management functions of at least the leading hospitals in the country deserves serious attention.

Private health care facilities

As described earlier the total number of beds in the private sector is 1,986 and paying beds in the public sector is 817. This is also limited to Colombo and a few other major cities. With several attractive insurance and medical schemes in which there are provisions for the payment of hospital bills, the number of beds available on a

fee levying basis is hardly adequate and as a result patients who could afford to pay are compelled to seek free treatment at the public sector hospitals. More paying wings in the major state hospitals and the expansion of services in the private sector will help to ease the congestion at government hospitals.

At present the income generated at the paying wards of the hospitals is directly credited to the Consolidated Fund of the Treasury. There is no incentive scheme for the health personnel to boost this activity. Like in the Customs Dept. there should be some encouragement to the staff who earn revenue for the department. It is better to divert some of these earnings for the development of the hospital concerned.

Lack of a system of home follow-up care in the public sector

The home follow-up care in the public sector at present is limited to the perinatal care provided by the midwives after childbirth. Home follow-up for other conditions could be provided only through the general practitioners working in the community. In such instances the patients have to pay for their services. The overcrowding of government hospitals can be reduced to a greater extent if this facility too is provided through the Ministry of Health.

To provide this facility the services of the M.O.H. and their assistants could be used. Patients who have received treatment for uncomplicated illnesses such as pneumonia, urinary tract infection, typhoid or after operations such as appendictomy may be reviewed at the M.O.H. clinics thus decreasing the workload of the specialised units.

Labour unrest – disruption of the health services

In the recent past trade union activities have been observed in the public as well as the private institutions. The health service is not an exception. In many such instances it was observed that there had been no proper communication between the management and the aggrieved party before the latter resorted to trade union action. This was due to a multitude of reasons. It is extremely essential for the administration to have a continuous dialogue with all the relevant trade unions and the professional bodies to obtain their support and co-operation to maintain the services. Health care sector is a very sensitive area and also the bargaining power of the employees in this sector is extremely high and one cannot overlook their capacity to completely paralyse this essential service.

As health care personnel are an extremely important category of public servants, their problems should attract immediate attention and every possible attempt should be made to solve them without undue delay.

To minimise the inconveniences to the public in such situations, the public sector should have an alternative arrangement to utilise the private sector and possibly the health units of the armed forces. However, if the medical personnel including the consultants are involved in such protest activities as 'go-slow', 'work-to-rule' or 'not reporting for duty' the government runs into a serious impasse for the simple reason that replacements are not available even for a short while. Hence, the way out is constant communication between the two parties and the realisation that what is at stake is human life.

Prioritisation and rationing

Considering the inexorable rise in the costs of health care, governments all over the world have sought ways of controlling it. Consideration has been given to cost containment, efficiency and efficacy which had led to prioritisation and rationing.

For generations we have had prioritisation in medicine and it is something with which all the physicians are familiar. The physicians have to take decisions about who should get what precise form of medical treatment and when they will get it. For example, if there is one intensive care bed available in the hospital for two bad patients, the physicians will have to give priority to one patient. Similarly when one ventilator is available for two patients needing assisted respiration, the physician has to take that extremely difficult decision as to who should use the ventilator in this matter of life and death. A worse situation is removal of one who is already in a ventilator considering his irreversible state, allowing another less serious patient to get into it.

In general, medical judgements are based on an evaluation of the clinical need of the individual patient, the physician's perception of the effectiveness of the intervention offered, and, in addition, an assessment of the risk to the patient involved in that intervention. Very frequently, the judgement has to take account of the relative effectiveness of different interventions, or even of their relative risks. The training the physicians have received and their experience enable them to make generally accurate judgements though this is a difficult task. If there is a restriction of resources (eg. trained manpower, technical equipment, theatre time etc) then taking a decision to prioritise is an uphill task.

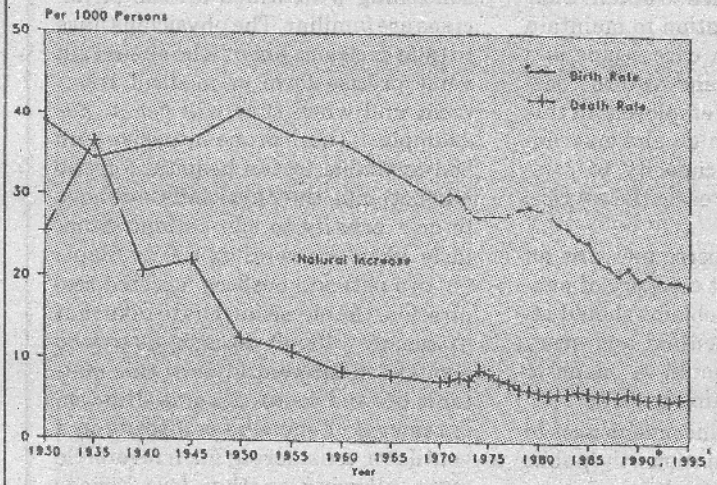
Rationing could be considered a severe form of prioritisation. Rationing

Table 7 gives the specialised services available in Govt. hospitals.

Table 7

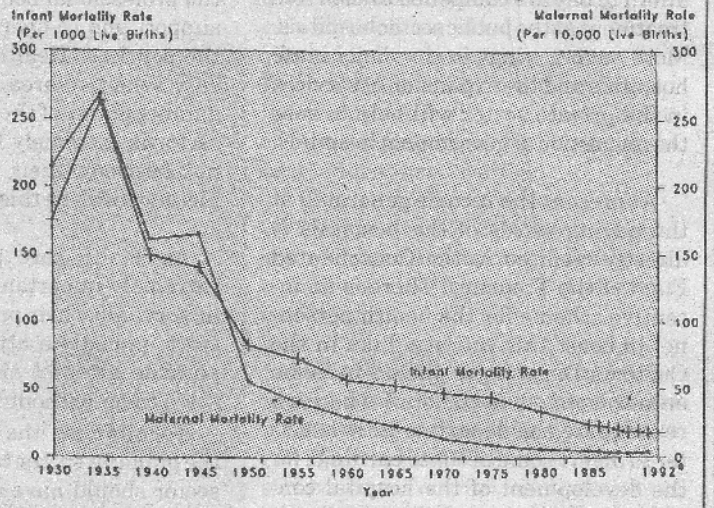
Specialised services available in hospitals	
Anaesthesia and Intensive Care	Neurosurgery
Burns	Obstetrics and Gynaecology
Cardiology	Oncology
Cardio Thoracic Surgery	Orthopaedic Surgery
Renal Surgery	Otorhinolaryngology [illegible]
Dermatology	Paediatrics
Eye Surgery	Paediatric Surgery
General Medicine	Pathology
General Surgery	Plastic and Reconstructive Surgery
Genito Urinary Surgery (Urology)	Psychiatry
Haematology	Radiology
Ophthalmology	Stomatology and Orthodontics
Neurology	Vascular Surgery

Fig.1 - VITAL STATISTICS
(BIRTH AND DEATH RATES): 1930 - 1995



Source: Registrar General's Department

Fig.11 - VITAL STATISTICS
(MATERNAL AND INFANT MORTALITY RATES): 1930 - 1992



* Provisional

has two distinct meanings. Firstly, it refers to the distribution on the basis of specific criteria of resources which are in short supply in circumstances where the needs of the recipients are generally uniform.

For example, all patients who need to be dialysed for the rest of their life may need two sessions of dialysis per week (or 8 per month). The hospital may decide to provide one per week free of charge allowing them to get the balance at their expense.

Secondly, rationing can mean deliberately restricting access to needed and potentially beneficial resources on the ground of cost alone.

For example, when there are two regimes of treating a particular disease (eg. AIDS), one which is expensive and the other less expensive but has limitations, a decision may be taken to provide all such patients with the low cost regime.

As one would see, rationing is a more emotive process and the physicians tend to get into conflict with ethical issues, and it may also have a psychological impact on the physician.

The hospitals have no alternative but to engage in prioritising and to a certain degree rationing. Policy decisions or guidelines on these matters are imperative since these problems are likely to become intricate legal issues.

Certain types of medical interventions now carried out in government hospitals, cost a large sum of money. Among the expensive interventions available for patients are Coronary Artery Bypass Grafting (recurrent cost to the government in public hospitals is around Rs. 125,000/= without adding the fixed costs), Renal Transplantation (Rs. 400,00/= plus additional charges for dialysis), routine dialysis for chronic renal failure (about Rs. 250,000/= per patient per year), treatment for Thalassemia (about Rs. 150,000/= per year) and total hip replacement (prosthesis alone cost Rs. 130,000/=).

Facilities for bone marrow transplant are not available in Sri Lanka and they are available in our neighbouring country, India, at a cost of Rs. 1.5 - 2.0 millions. Most of our patients cannot afford this type of expensive procedures, unless they have the benefits of an insurance or other medical scheme.

Clear cut indications should be laid down for such expensive procedures, so that the waste of resources could be minimised. eg: Regular dialysis of chronic renal failure, free of charge in government hospitals, could be limited to those who have a definite plan for renal transplant and/or the patients who are below the age of 70 yrs. Such guidelines should be incorporated in the National Health Policy, without leaving room for individual physicians to decide on such matters.

This will not only create a fair and just health care system, but also protect the physicians from allegations and possible litigations.

Present pressing needs

This overview inter-alia highlights the general needs of the health system in Sri Lanka. The disturbances in the North and East for the past 10 to 15 years warrant a rethinking of the services – supply systems, the health care services in particular. The following factors may be taken into consideration as a short-term basis.

(1) The budgetary restrictions on all the welfare services including the health care services at least temporarily.

(2) Provision of health care to war-stricken areas

(3) Provision of health facilities on a priority basis for soldiers getting injured in the battlefield.

(4) Preparedness for civil disturbances, industrial disasters and other natural and man-made catastrophies and

(5) Rehabilitation of war victims including soldiers.

INFECTIOUS DISEASES KILL OVER 17 MILLION PEOPLE A YEAR

WHO warns of global crisis

Nearly 50,000 men, women and children are dying every day from infectious diseases; many of these diseases could be prevented or cured for as little as a single dollar per person, the World Health Organization says in **The World Health Report 1996**, published today.

At least 30 new infectious diseases have emerged in the last 20 years and now together threaten the health of hundreds of millions of people. For many of these diseases, there is no treatment, cure or vaccine.

"We are standing on the brink of a global crisis in infectious diseases. No country is safe from them. No country can any longer afford to ignore their threat"

the Director-General of WHO, Dr Hiroshi Nakajima, says in the report.

The report warns that some major infectious diseases, such as cholera, malaria and tuberculosis are making a deadly comeback in many parts of the world, despite being preventable or treatable. At the same time, many new and highly infectious diseases such as HIV/AIDS and the notorious Ebola haemorrhagic fever - both of which are incurable - are emerging to pose additional threats. Fears are growing over a possible food-chain link between bovine spongiform encephalopathy ("mad cow disease") and a variant of the incurable Creutzfelot-Jakob disease, due to an infectious agent that attacks the human brain.

Meanwhile, antibiotics and other life-saving drugs used against many diseases are rapidly losing their effectiveness as bacteria and other microbes develop resistance to them. For example, doctors worldwide are losing some of the most useful and affordable anti-biotics against the two principal bacteria which cause pneumonia, the major cause of death in children.

The World Health Report 1996- Fighting disease, fostering development, published by WHO, states that infectious diseases are the world's leading cause of premature death. Of about 52 million deaths from all causes in 1995, more than 17 million were due to infectious diseases, including about 9 million deaths in young children. Upto half the world's population of 5.72 billion are at risk of many endemic diseases. In addition, million of people are developing cancers as a direct result of preventable infections by bacteria and viruses, the report says.

"The optimism, of a relatively few years ago that many of these diseases could easily be brought under control has led to a fatal complacency among the international community. This complacency is now costing millions of lives - lives that we have the knowledge and means to save, yet that we are allowing to trickle through our fingers" Dr Nakajima says.

"The socio-economic development of many nations-their prospect of a better future-is being crippled by the burden of these diseases. Other countries are paying a huge price in lost foreign currency income from food trade and tourism as a result of epidemics of cholera, plague and other diseases."

"The world has lost sight of its priority to reduce poverty through better health and foster development by fighting disease. Today, infectious diseases are not only a health issue; they have become a social problem with tremendous consequences for the well-being of the individual and the world we live in. We need to recognize them as a common threat that has been ignored, at great cost, for too long, and to build global solidarity to confront them."

"What is required is the commitment of the international community to help countries most at risk to help themselves. By helping each other, nations united protect the world and protect themselves."

According to the report, many countries have failed to invest adequately in the control of common infectious diseases. Less prevention is now resulting in rising treatment costs.

The Ten Biggest Killers

About 52 million people died from all causes in 1995, according to the report. Of these, more than 17 million were killed by infectious diseases.

*Acute lower respiratory infections such as pneumonia killed 4.4 million people, about 4 million of whom were children.
*Diarrhoeal diseases, including cholera, typhoid and dysentery, spread chiefly by contaminated water or food, killed 3.1 million, most of them children.
*Tuberculosis killed almost 3.1 million, mostly adults.
*Malaria killed 2.1 million people, including 1 million children.
*Hepatitis B infections killed more than 1.1 million people.
*HIV/AIDS killed more than 1 million people.
*Measles killed more than 1 million children.
*Neonatal tetanus killed almost 460,000 infants.
*Whooping cough (pertussis) killed 355,000 children.
*Intestinal worm diseases killed at least 135,000 people.

THE TEN MOST COMMON INFECTIONS

*Diarrhoeal diseases - About 4 billion episodes in 1995.
*Tuberculosis - About 1.9 billion carry the tuberculosis bacilli; 8.9 million new cases in 1995
*Intestinal worms - About 1.4 billion infected at any given time.
*Malaria - Up to 500 million new cases in 1995
*Hepatitis - About 350 million hepatitis B chronic carriers and about 100 million hepatitis C chronic carriers.
*Acute lower respiratory infections - About 395 million episodes in 1995
*Sexually transmitted diseases - At least 330 million new cases in 1995
*Measles - 42 million total cases in 1995.
*Whooping cough - 40 million total cases in 1995

*Meningococcal meningitis - About 250,000 new cases in 1995

NEW DISEASES

Some of the causative agents, and diseases associated with them, include in chronological order of their identification:

1973: Rotavirus, a major cause of infantile diarrhoea worldwide.
1976: Cryptosporidium parvum, a parasite which causes acute and chronic diarrhoea.
1977: Legionella pneumophila, the bacterium which causes potentially fatal Legionnaires' disease.
1977: Ebola virus, which causes haemorrhagic fever - fatal in up to 80% of cases.
1977: Hantaan virus, which causes potentially fatal haemorrhagic fever with renal syndrome.
1977: Campylobacter jejuni, a bacterium which causes diarrhoea.
1980: Human-T-lymphotropic virus 1 (HTLV-1), which causes lymphoma-leukaemia.
1982: Escherichia coli 0157:H7 strain of bacteria which causes bloody diarrhoea.
1982: HTLV-2 virus, which causes hairy cell leukaemia.
1983: Helicobacter pylori, the bacterium associated with peptic ulcer disease and stomach cancer.
1983: Human immunodeficiency virus (HIV), which causes AIDS.
1988: Hepatitis E virus, which causes epidemics of jaundice in hot climates.
1988: Human herpesvirus 6, which causes fever and rash.
1989: Hepatitis C virus, which causes liver cancer as well as liver disease.
1991: Guanarito virus, which causes Venezuelan haemorrhagic fever.
1992: Vibrio cholerae 0139, which causes epidemic cholera.
1994: Sabia virus, which causes Brazilian haemorrhagic fever.
1995: Human herpesvirus 8, associated with Kaposi's sarcoma in AIDS patients.

ANTIBIOTIC RESISTANCE

Drug - resistant strains of microbes are having a deadly impact on the fight against tuberculosis, malaria, cholera, diarrhoea and pneumonia - major diseases which together killed more than 10 million people last year. Some bacteria are resistant to as many as 30 different drugs.

'Disastrously, this is happening at a time when too few new drugs are being developed to replace those that have lost their effectiveness. In the contest for supremacy, the microbes are sprinting ahead. The gap between their ability to mutate into drug-resistant strains and man's ability to counter them is widening fast', the report says.

Many of the most powerful antibiotics have been rendered impotent. The two most common bacteria which are the major cause of death in children through acute respiratory infections, particularly pneumonia, are becoming more and more resistance to drugs.

Antibiotic resistance in hospitals worldwide threatens to leave medical and public health workers virtually helpless in the prevention or treatment of many infections. Antibiotic-resistant bacteria are responsible for upto 60 per cent of hospital-acquired infections in the United States, for example. Resistance means that people with infections are ill for longer periods, and are at greater risk of dying, and that disease epidemics are prolonged.

'All bacteria possess an inherent flexibility that enables them, sooner or later, to evolve genes that render them resistant to any antimicrobial. The implications are awesome: drugs that cost tens of million of dollars to produce, and take perhaps 10 years to reach the market, have only a limited life span in which they are effective.' the report says. 'As resistance spreads, that life span shrinks: as fewer new drugs appear, the gulf widens between infection and control.'

A major cause of the antibiotic resistance crisis is the uncontrolled and inappropriate use of antibiotics globally. They are used by too many people to treat the wrong kind of infections at the wrong dosage and for the wrong period of time.

Antibiotics and other antimicrobial agents are used in enormous amounts worldwide for the production of animal meat for human consumption. Some 170 billion tons of animal meat is produced every year. Drug resistant bacteria and other microbes are passed through the food chain to the consumer, where they many cause disease, or transfer the resistance to human pathogens.

WHY DISEASES ARE SPREADING

WHO says that thanks to concerted international action, some infectious diseases are close to being eliminated or eradicated completely, among them poliomyelitis, leprosy, neonatal tetanus, guinea-worm infection and Chagas disease. Other targeted diseases such as onchocerciasis (river blindness) will soon follow. Extra resources must be mobilized to ensure that the campaigns against all of them continue, otherwise, progress already made will be compromised.

About 8 out of 10 of all the world's children have been immunized against six infectious diseases, diphtheria, measles, neonatal tetanus, pertussis (whooping cough), poliomyelitis and tuberculosis.

But the outlook for many others is that they will continue to spread and become increasingly difficult to control, for a combination of reasons. These factors include:

*Population growth combined with rapid urbanization means that many millions of city dwellers live in overcrowded and unhygienic conditions that are breeding grounds for infectious diseases.
*Wars, civil turmoil and natural disasters mean that millions of migrant or refugees are on the move in conditions that are also fertile for infectious disease.
*Rapid increase in international air travel and the growing traffic in trade, particularly food trade, mean that disease-producing organisms can be transported within hours from one continent to another.
*Expanding areas of human habitation place additional millions of people risk from pathogens previously rare or unknown as causes of human disease.
*Social changes including the clustering in day care centres and growing numbers of the elderly in nursing homes place these age groups at higher risk of infections.
*Disease formerly under control are re-emerged because of complacency towards them in the public health sector - tuberculosis is one example - and a revival

of others, such as diphtheria, has been triggered by the collapse of public health systems because of economic or social crises.

EPIDEMICS OF 1995

The report covers the state of world health in 1995, with a special focus on infectious diseases, many of which caused lethal epidemics during the year. These included: An epidemic of dengue fever in 14 countries or territories of Central and South America, which struck more than 200,000 people. Dengue haemorrhagic fever, a complication of the initial infection, killed 24,000 people worldwide, with almost 600,000 cases.

Epidemics of cholera in south America, Africa and Eastern Europe caused at least 11,000 deaths, with about 384,000 cases worldwide.

The biggest epidemic of yellow fever in the Americas since 1950 struck in Peru; other epidemics of the disease hit Western Africa, causing thousands of cases in Liberia.

The Ebola haemorrhagic fever outbreak in Zaire killed 245 people, or about 80% of the 316 cases.

Diphtheria epidemics that began in the Russian Federation in 1990, have since spread to a total of 15 countries in Eastern Europe, causing tens of thousands of cases and many hundreds of deaths. WHO estimates that there were about 8,000 diphtheria deaths and 100,000 cases worldwide last year.

INFECTIOUS DISEASES AND CANCER

Viruses, bacteria and parasites emerge as the "secret agents" causing millions of cases of cancer, according to the report. WHO estimates that over 1.5 million of the total of 10 million new cancer cases a year could be avoided by preventing the infection associated with them. About 6.6 million people died from all types of cancer last year. Three main cancers are linked to infections.

Stomach cancer: About 550,000 new cases a year of stomach cancer (about 55 percent of the worldwide total) are attributed to a bacterium, Helicobacter pylori, transmitted in food. The bacterium also causes duodenal and gastric ulcers and gastritis.

Cervical cancer: Sexually transmitted infection of the cervix with human papilloma viruses (type 16 and 18) involves a very high risk of developing cervical cancer. Of the 525,000 reported cases a year, the viruses are held responsible for an estimated 65 per cent of those occurring in industrialized countries, and 87 per cent of those in developing countries - a total of 436,000 cases.

Liver cancer: About 434,000 cases a year of liver cancer, or 82 per cent of the world total, are attributed to hepatitis B and C viruses. The viruses are transmitted in a number of ways, including through contaminated blood or blood products and through sexual intercourse. Hepatitis B causes 316,000 of the cases, and hepatitis C a further 118,000 cases. Some cases are the result of infection with both viruses.

PRIORITIES FOR ACTION

The report identifies priorities for action in three categories. These are "old diseases-old problems", old diseases-new problems" and "new diseases - new problems". It says that by applying existing technology and expertise, many infectious diseases can be controlled, eliminated or eradicated. What is required is the political and professional commitment to finance and sustain well-planned, cost-effective disease control measures.

In the "old diseases-old problems" category, cost-effective interventions already exist, the report says. These include:

* Immunization of children against diphtheria, pertussis (whooping cough), tetanus, polio-myelitis, measles and tuberculosis, with the addition of hepatitis B and yellow fever vaccine for selected countries,and vitamin A and iodine supplements to others. The cost: about $ 14.60 per child.

* An integrated approach to the management of sick children to prevent them dying from acute respiratory infections and diarrhoeal diseases. The cost: about $ 1.80 per capita in low-income countries.

* Provision of adequate and clean drinking-water, basic sanitation and waste disposal,together with simple personal hygiene measures can prevent diseases ranging from poliomyelitis and hepatitis to cholera and typhoid.

* School health programmes to treat worm infections and micronutrient deficiencies, and school health education programmes. The cost: about 50 cents per capita in poor countries.

* Simple standard procedures for improved diagnosis and treatment of sexually transmitted diseases. The cost: $ 11 per case in poor countries.

In the second category of "old diseases-new problems" are tuberculosis and insect-borne diseases including malaria and dengue. The report says the strategy for controlling them largely involve cost-effective interventions, which also exist for many of them. But the development of antimicrobial drug resistance or of pesticide resistance poses a greater threat to public health.

* The main components of WHO's global malaria strategy are providing early diagnosis and prompt treatment, prevention measures including vector control, and the early detection, containment or prevention of epidemics.

* Tuberculosis control depends on DOTS-directly observed treatment, short course which is already showing itself to be a successful and cost-effective intervention.

* New research initiatives are needed on treatment and improved diagnostics, drugs and vaccines related to all diseases in this group.

* Strengthened epidemiological surveillance systems nationally and internationally are required to detect and combat all diseases in this category, particularly their drug-resistant forms.

The "new diseases-new problems" category is probably the most frightening, says the report. The natural history of diseases such as Ebola and other viral haemorrhagic fevers is unknown, and

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An overview of medical education system in Sri Lanka

by
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To provide an efficient, effective health care service of good quality, several categories of skilled personnel are required. Among them, medical officers constitute a key category of personnel who need to have specific skills to provide health care for the people and also to enable them to give leadership to all health-related activities. Thus medical education programmes i.e. training of medical officers constitute an area which is of special concern to all those who are interested in improving the health care services.

The health care providers in Sri Lanka today could be broadly categorised as those providing the Western system (allopathic) of health care and those providing the traditional (mainly Ayurvedic) systems of health care.

The Ayurvedic systems in legal terms include Ayurveda, Siddha and the Unani systems of medicine. Organised teaching in Ayurveda started in 1929 with the establishment of the College of Indigenous Medicine which became a government institution in 1941. The College of Ayurvedic Medicine was made the Institute of Indigenous Medicine of the University of Colombo. Admission to the Institute is based on the performance of the GCE (Advanced Level) examination. The duration of the course is five years after which the student has to undergo an internship for a period of one year before being registered by the Ayurvedic Medical Council. In recent years, the Institute of Ayurveda has undergone a turbulent period leading to long periods of closure. According to available information, approximately 40 - 60 graduates from the Institute of Ayurveda annually during the recent years.

In addition to the Institute of Ayurveda of the University of Colombo, the Siddha Ayurveda College at Gampaha also trains practitioners for registration with the Ayurvedic Medical Council. Recently this College was also given university status. The health services in the Ayurvedic system are provided through the state sector as well as the private sector. At present it is estimated that there are approximately 4500 traditional physicians and 1000 general physicians who are certificate holders registered with the Ayurvedic Medical Council and another 5500 traditional specialists practising in the country.

The Western (allopathic) system of medical care was introduced to Sri Lanka first by the Portuguese, then by the Dutch and was consolidated by the British. They established the Civil Medical Department in 1859 and were responsible for the establishment of a training institution for medical personnel, the Ceylon Medical College in 1870. With the establishment of the University of Ceylon in 1942, the Ceylon Medical College became the Faculty of Medicine of the University of Ceylon.

Expansion of the facilities for medical education commenced in 1960 with the establishment of the Second Medical School in Peradeniya. This was followed by the establishment of two (2) more medical schools, in Galle and Jaffna in the early 1980s and two (2) more, in the mid-1990s. Thus, at present there are 6 medical schools in the country.

As with the provision of health care services, medical education has been a state sector responsibility under the system of providing free education. Training in the medical schools is provided free of charge. The only deviation to this system was the establishment of a Private Medical College in early 1980s which led to several problems within and outside the university system. This Medical College was later taken over to the university system as the fifth Medical Faculty in the country by the University of Kelaniya.

The entry to the Faculties of Medicine is highly competitive and is based on the performance at the GCE Advanced Level examination. There is no other form of assessment made of the prospective candidates.

The undergraduate medical course is of five years duration following which they have to complete an internship of one year to be eligible for registration by the Sri Lanka Medical Council, the body responsible for monitoring and maintaining the professional standards of several categories of health

personnel. At the present time, the Ministry of Higher Education is responsible for undergraduate training and the Ministry of Health is responsible for internship training.

To a large extent, the medical education system in Sri Lanka has followed the British model. The traditional medical curriculum is broadly divided into pre-clinical, para-clinical and clinical training. This curriculum is being followed in most of the medical schools at present. The pre-clinical training which lasts for the first five terms focuses on the basic sciences – anatomy, physiology and biochemistry. During the next six (6) terms referred to as the para-clinical training, the students are introduced to the clinical disciplines (medicine, surgery, paediatrics, obstetrics and gynaecology and psychiatry) in the teaching hospital setting, parallel with the training in the other relevant subjects i.e. parasitology, microbiology, pathology, pharmacology, community medicine and forensic medicine. The fifth year of the medical course i.e. the "final year" focuses mainly on clinical training with the students being trained in the professorial wards in the teaching hospitals. In the traditional curriculum, exposures to settings outside the teaching hospitals are very limited.

Many innovative changes aimed at making the curriculum more appropriate to the Sri Lankan setting have been made by some faculties in recent years. The introduction of an integrated curriculum emphasising self-learning, paying more emphasis to community orientation and exposure to clinical settings outside the teaching hospitals, in the Faculty of Medicine, Colombo in 1996/96 is a major change in the system of medical education.

Faculties of medicine in the universities in Sri Lanka are the main providers of medical graduates in the country. The number of medical graduates who qualified from the faculties from 1985 - 1995 are presented in Table 1.

In addition to those qualifying from the universities in Sri Lanka, a varied number of persons obtain the medical degrees from training institutions in a wide range of countries. The responsible authority for maintenance of professional standards in the health-related professions is the Sri Lanka Medical Council which requires that those graduating from institutions outside the faculties of medicine in Sri Lanka should pass a special examination held under the Act 16, prior to obtaining full registration to practise in Sri Lanka.

Table 1

Number of medical graduates who obtained qualifications by Faculty 1985 - 1995

Year	Colombo	Peradeniya	Kandy	Ruhuna	Jaffna	Total
1985	119	35	70	65		289
1986	147	41	68	41		297
1987		52	59	69		325
1988						410
1989						
1990	190	58	90	66		396
1991	176	50	102			314
1992	141	59	84	68	64	450
1993	167	90	114	58	49	481
1994	189	97	106	34	35	461
1995	154	118	85	48	121	568

* None have graduated from the University of Sri Jayawardhanapura.

Source: University Grants Commission, Statistical Handbooks for 1985 - 1991 and Ministry of Health, Sri Lanka, Annual Health Bulletin for 1991 - 1995.

An important landmark in the system of medical education in Sri Lanka is the introduction of post graduate medical education. In May 1979, the Postgraduate Institute of Medicine (PGIM), University of Colombo was established with the responsibility of providing post-graduate training in all relevant specialities for medical specialists to work in the health care system in Sri Lanka.

At present, post-graduate training is provided in 21 specialities and a total of 31 training programmes are available at the PGIM, 12 of them leading to 'part' specialisation (Diploma - 9; MSc - 3) and others leading to full specialist qualifications (MD/MS - 19). Duration of the training programmes varies between specialities and usually includes a component of overseas training. Those who complete the required training as fully qualified specialists are board certified as a specialists by the Board of Study in the relevant disciplines. The number of trainees who were successful at the post-graduate training programmes during the past five years are given in Table 2.

Medical education, both under graduate and post-graduate can not be considered in isolation from other important considerations such as the organisation for provision of health care services in the country, other resources available for health care and the health care needs of the population of Sri Lanka.

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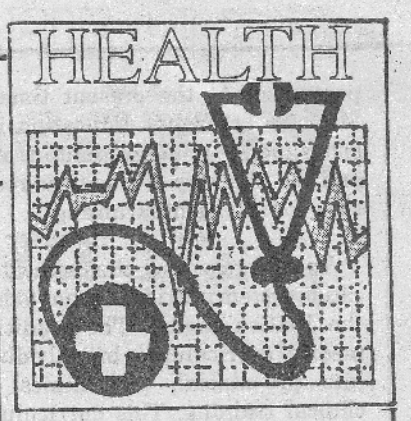
Table 2

Number of trainees who obtained post-graduate qualification at the PGIM 1991 - 1996

Qualification	1991	1992	1993	1994	1995	Total
Diplomas	77	72	73	81	92	395
MSc	11	18	16	24	28	97
MD/MS	36	54	72	82	95	339
Total	124	144	161	186	215	831

Source: Ministry of Health, Annual Health Bulletin 1992 - 1996



Role of NGOs in Health Care in Sri Lanka

by

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In Sri Lanka and elsewhere, non - governmental organisations (NGOs) have been playing an important role in the field of development by concentrating on areas often neglected by government and academic institutions. In the health sector, NGOs have long been involved in the prevention and control of major diseases.

In Sri Lanka, due to the availability of an extensive health infrastructure, NGOs have not been involved directly in the *delivery* of health care. However, they have been effective in various important health-related activities such as nutrition, water supply and sanitation, HIV/AIDS prevention, health education and family planning.

Justification for NGO involvement in health care

Sri Lanka has completed two decades of operation of the free market economy, the aim of which is accelerated growth and "development". Despite whatever achievements on the economic front, there is still a significant section of the population who suffer from ill-health. There are several sub-groups such as the urban poor, the plantation population, communities living along the coastal belt, the displaced and the rural poor who are underserved by the health care system.

The social, economic and political changes that have taken place during the past two decades have permanently altered much of society and have significantly affected the health status of most people. In order to achieve economic growth often environmental and health standards have been compromised, resulting in the emergence of new public health problems. Thus, even before the country could come to grips with more prevalent infectious diseases, it is faced with increasing incidence of diseases such as those related to stress, occupational hazards and poisoning. What is becoming clearer is that most health problems that we face today in our country are a result of more complex social and political phenomena. They have more to do with lifestyles, attitudes and values moulded by a consumerist social atmosphere. Any change in these can only be brought about by collective action, involving the community and through multisectoral effort. It is very clear from past experience that governments alone cannot do this.

Health status, as it is well recognised now, is the outcome of many societal influences, not just medical. Health problems and social problems are closely interlinked. People are constantly trapped in the vicious circle of poverty, malnutrition and disease. Hence, health care should be a matter for the people through their community based organisations assisted by all sectors; governmental, non-governmental and private. This implies a willingness on the part of the government authorities to cooperate with popular action viz-a-viz NGOs. There are many examples both in Sri Lanka and the world where such partnership has brought about significant results. Many NGOs in Sri Lanka have demonstrated new ways of working with low-income groups. The experience of the Sarvodaya Movement and similar initiatives in Sri Lanka support the fact that given the proper guidance and tools, the communities are capable of managing their own health problems.

NGOs are important in facilitating community participation in health development activities. This would, amongst other things, increase resources available for health services, but more importantly, to think and act for themselves in all matters pertaining to their own health and well-being.

NGO action in health sector

The NGOs involved in health-related activities in Sri Lanka are many and diverse. Their involvement range from caring for those suffering from a specific disease (eg. SUROL in assisting leprosy patients, NEST - meeting the needs of AIDS patients) to advocacy to change government policy to attacking its causes with a view to prevention (eg. Sarvodaya). The NGOs deliberately direct their activities at underserved population, either rural or urban. Their focus of action may be mothers, children, youth or the community at large. The NGOs often obtain services of full-time or part-time professionals or volunteers to implement their health programmes.

The NGOs working in the health sector in Sri Lnaka are active in the following areas :

Mental health,
Family planning/reproductive health,
Water supply and sanitation,
Prevention of drug addiction and alcoholism,
Community based rehabilitation,
Disaster relief,
Environmental health,
Occupational health and safety,
STD/AIDS prevention, control and care,
Nutrition,
Child development,
Care of the elderly and
Health education

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Human Resources for Health -Dimensions and Perspectives

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Sri Lanka has impressive health records such as low infant and maternal mortality rates, high childhood immunization coverage rates and high family planning acceptance rates. The life expectancy at birth and adult literacy rates are high. When comparing with the neighbouring countries, the doctor and nurse population ratios, too, are high.

These imply that among others, Sri Lanka despite limited financial resources for health, the utilization of human resources for health development has continued to remain at a marginal level.

Nevertheless, major health issues confront the future health development of Sri Lanka. Some of these are:

(i) About 35% of pre-school children are malnourished,

(ii) Over 60% of the pregnant and lactating mothers are anaemic,

(iii) Food and waterborne bowel diseases are widely prevalent. In 1991 there were over 133,000 diarrhoeal disease episodes. Intestinal infection is the fourth leading cause of hospitalization,

(iv) Malaria continues to be a major health problem. Over four million people in six districts are at risk of malaria. Malaria is the eighth leading cause of hospitalization, morbidity-being nearly 519/100,000 population in 1994.

(v) Health financing remains at a low level : expenditure on health is 1.2% of total government expenditure; 1.6% of the G. N. P. in 1994. In 1999 it was 6.5% and 2.3% respectively.

(vi) Patients bypassing smaller medical institutions and overutilization of large institutions are a long standing phenomena.

(vii) The health services are not adequately developed for caring special population groups like the adolescents and youth, the disabled, the aged, the workers, the displaced, population groups swelling in the areas of development projects and urban areas.

Further the following are some emerging health problems in Sri Lanka.

(i) Addictions, accidents, suicides and poisoning are on the increase. Traumatic injuries are the second leading cause of hospitalization. Pesticide poisoning is the fourth leading cause of hospital deaths. Over 40,000 persons are heroin dependent.

(ii) There is an increased occurrence of ischaemic heart diseases, cerebro-vascular diseases and cancer, the morcality rates per 100,000 population being 16.9, 14.3 and 4.7 respectively in 1994.

(iii) HIV infection and AIDS, and Hepatitis B are emerging major health problems.

There were ten donors positive for HIV antibodies among blood donors screened in 1993-1994. The incidence of Hepatitis B among blood donors is 1 per 1000 donors.

(iv) Mental disorders have increased from 77/100,000 population in 1970 to 247 in 1994.

Milestones in health development

Article 27 (2) c of the Sri Lankan Constitution has ensured the realization of an adequate standard of living, by all citizens of Sri Lanka. The commitment to provide comprehensive free promotive, preventive, curative and rehabilitative health care has been a fundamental promise of every Sri Lanka government.

In response to the 1978 World Health Assembly resolution, in 1980 Sri Lanka committed to the attainment of Health For all by 2000 A. D. with Primary Health care as the key approach.

In the 1990s the need emerged for a National Health Policy to guide future health development.

In March, 1992 a Presidential Task Force was appointed to draft a National Health Policy for Sri Lanka. This Task Force submitted the National Health Policy in June 1992 which was accepted by the Cabinet of Ministers. The National Health Policy has presented guiding principles, goals and objectives as directions of state policy for future health development in Sri Lanka. It has considered health as a holistic concept and health development as a multi-sectoral effort.

A perspective plan for health development was formulated in 1994 for a planning horizon of ten years. This plan has identified the need for the development of human resources for health development in Sri Lanka.

Demographic changes

The growth of the population is 1.4% per annum. The total fertility rate (TFR) has declined from 5 in early 1980s to 2.82 in late 1987. It was 2.26 in 1993. It is assumed that the TFR will decline to 2.1 by the end of this decade and Sri Lanka will reach replacement level by the year 2000. The estimated urban population is around 24% and the annual growth in the urban population is around 2.4%. (It is estimated that the urban population

Table 1

Hospital Utilization Trends : Hospital Utilization Statistics

Year	‡ In-patients (000')	# Out-patients (000')	# Live births (000')	Population (000')
1980	2334	31892	316	14,850
1985	2494	29570	293	15,837
1989	2524	31781	284	16,806
*1990	2533	28401	241	16,993
*1991	2629	28575	262	17,247
1992	3023	36827	296	17,405
1993	3174	36656	299	17,613
1994	3204	35276	284	17,865

* Excludes Northern and Eastern Provinces
***Source* : Annual Health Bulletin 1994 pg. 71 - 76.**

would shift towards 35% on the basis of past trends and state policies in 2015).

Utilization of health services

It has been observed by Frank (1989) that the threshold for health demand would be very likely to be low with the improvement in the educational level of the people, income levels and the development of the health services. In Sri Lanka the morbidity due to chronic illness, advancing age and changes in lifestyles will create an added demand for health care. But with poverty and economic difficulties, the people's health would improve but slowly.

The introduction of universal medical insurance is unlikely to be realised in Sri Lanka. However, voluntary insurance schemes are being introduced. Further, as the family units are becoming smaller and moving towards nuclear families and more and more people are being employed, more people will need in-patient care for chronic illnesses that were previously cared for at home by families and relatives.

Based on these observations and the recent hospital utilization trends (Table 1), there will be modest increases in the annual number of in-patients, while the number of out-patients and hospital live births will be unlikely to show substantial increases.

Productivity of health resources

The delegation of tasks from doctors to support staff can increase the physician's productivity (Reinhardt 1987). If more nurses and support staff are supplied, the productivity of doctors would improve. The underutilization of facilities in rural hospitals and peripheral units etc. is one reason for low productivity at low level health facilities. As Table 1 shows, the decline in OPD attendance and hospital births will favour low productivity levels in some categories of health staff like the OPD doctors and midwives and nurses in maternity units of major hospitals.

There has been a general increase in the number of doctors, nurses, hospital midwives and pharmacists over the years

In Sri Lanka the overall growth of doctors has exceeded the growth of the population

reveals the fast rate of growth in the number of doctors in Sri Lanka during 1984 - 1994 period exceeding the growth of the population by eight times unlike during 1965 - 1985, when there was a negative growth of doctors (20%), while the population growth was 41.4%. The increase in the number of doctors in Sri Lanka is even faster than that in India (1971 - 1981) and USA (1970 - 1980).

The relationship between the hospital service output-variables with changes in population, number of doctors and nurses is shown in Figure 1. It shows a steep increase in the number of doctors and a moderate increase in the number of nurses in the curative services. The expected future increase in the in-patients and the decline in out-patients are also illustrated in Figure 1. Manpower mixes, working relationship, staff absenteeism and trade union action are some other situations that affect efficiency and productivity of health services.

If the current trends of producing doctors continue into the future, together with the influx of foreign qualified doctors and the output from the proposed one or two medical colleges, the future absorption of them into the public (government) health sector would become a most challenging task.

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In the health care system of Sri Lanka, the state is the main provider of health care and a majority of the medical officers are employed by the state sector. However, a substantial number of them work in the private health care services, both as general practitioners as well as specialists, both in out-patient and in-patient settings. Reliable information of the number, distribution, type of settings in which they work etc. are not available for those in the private sector. Hence any assessment of the availability of medical officers, distribution etc. could only be done for those employed in the state sector.

In keeping with the increase in the number of medical graduates qualifying from the faculties, the availability of medical officers shows an increase during the past 15 years from 13.9 per 100,000 population in 1980 to 25.5 per 100,000 population in 1995. These rates though higher than those of many African countries, are far below those of many developed countries.

It is important to note that even though the availability of medical officers in relation to the population has shown an increase, the inequalities in the availability of medical officers between districts have not shown any major improvements. In 1995, the availability of medical officers per 100,000 population varied from 71.5 in the Colombo district to 6.4 in the Moneragala district. (This proportion is less than one (1) in the districts of Kilinochchi and Mullativu which could be identified as 'conflict areas'). This is an area of concern even though lack of reliable data related to the personnel in the private sector poses limitations in drawing conclusions. Several factors influence the availability of medical officers at district level which include the availability of infrastructure facilities for provision of health care as well as those in other sectors such as education.

Increased opportunities for training as medical officers have been provided by increasing the number of medical schools and also by marginally increasing the intake in each medical school. It is not clear whether these decisions have been made taking into consideration the development of the health services specially those provided through the state sector. If the state sector is to employ the increasing numbers of medical graduates who qualify in the next few years, it will be necessary to review and make required modifications in the health care system of Sri Lanka. Such changes will have to take into consideration, the budgetary provisions available for health care. In a country where state sector employment was almost guaranteed for the medical graduates, limitation of such opportunities in the future has to be considered with a view to minimising the negative social impacts of such a situation.

The Presidential Task Force appointed to make recommendations on the health services in Sri Lanka has focused its attention on the important subject of human resources development. The recommendations made by this Task Force will need to be taken into consideration in further developing the medical education programme in Sri Lanka.

A major challenge for the medical education programmes is to produce medical professionals who will be able and willing to serve the people of Sri Lanka with competence, compassion and care, in the changing demographic and epidemiological scenario and the health sector reforms likely to be encountered in the 21st Century.

FOODBORNE DISEASES POSSIBLY 350 TIMES MORE FREQUENT THAN REPORTED

According to the latest edition of the World Health Statistics Quarterly, surveys indicate that foodborne diseases may be 100-350 times more frequent than the reported cases tend to indicate.

It is believed that hundreds of millions of people worldwide suffer from diseases caused by contaminated food. Developing countries suffer the most from a wide range of diseases including cholera, campylobacteriosis, Escherichia coli infections, salmonellosis, shigellosis, brucellosis and hepatitis A. The annual incidence of some 1.5 billion episodes of diarrhoea in children under five years of age, resulting in over three million deaths is an indication of the scale of the problem, since a significant proportion of the diarrhoeal disease cases are of foodborne origin.

Paradoxically, in spite of safe water supplies, sound standards of hygiene and application of technologies such as pasteurization, a number of industrialized countries have experienced an increase in the incidence of foodborne diseases in recent years. Surveys indicate that no less than 5 - 10% of the population are involved annually. On top of that, the emergence of Listeria monocytogenes, Escherichia coli O157 and multi-antibiotic resistant Salmonella typhimurium are justifiably perceived as new significant threats to public health. Witness the much-publicised outbreaks of Escherichia coli O157 as far apart as Japan and Scotland last year.

In addition to the human suffering caused by foodborne diseases in terms of dearth and ill-health, substantial economic costs are involved, affecting individuals and families, industries, health care systems and entire communities. At the national level, epidemics of foodborne diseases affect both tourism and trade. When cholera broke out in Peru in 1991, over US$ 500 million were lost in fish and fishery products exports. In the three months following the start of the epidemic, US$ 70 million were lost due to closure of food service establishments and a decrease in tourism. The global value of international trade in agricultural products and commodities was estimated at US$ 381 billion in 1993.

The WHO report quotes American statistics, "Each year, seven foodborne pathogens (Campylobacter jejuni, Clostridium perfringens, E. coli 0157:H7, Listeria monocytogenes, Salmonella, Staphylococcus aureus and Toxoplasma gondii) cause an estimated 3.3 - 12.3 million cases in the United States and up to 3,900 deaths. Their costs in human illness were estimated at US$ 6.5 - 34.9 billion annually."

"Although food safety is a major (public health) problem, many public health authorities do not appreciate its importance for community health and development", explains Dr. Fritz Kaferstein, Director of the WHO Programme of Food Safety and Food Aid. "WHO continues to promote the concept of shared responsibility among government, industry and consumers in the fight against foodborne diseases. To ensure the safety of food, each group must integrate its efforts through involvement in research, regulatory control, infrastructure development, epidemiology and training, education and learning".

Europe

In France, the number of outbreaks rose from 594 in 1990 to 702 in 1992. Where the agent was identified, Salmonella was responsible for 84.47 per cent of outbreaks. Egg and meat products were associated with various outbreaks caused by a number of different Salmonella strains. In Germany, about 1,000 cases of salmonellosis were linked to the consumption of paprika and paprika-powdered potato chips which makes it the largest documented outbreak from contaminated spices. Powdered infant formula was responsible for 48 known cases of salmonellosis in infants under seven months from 14 regions in Spain in 1994. The implicated strain was a lactose fermenting Salmonella virchow. In Scotland, there was a large meatborne Escherichia coli 0157 outbreak with 496 cases and 11 deaths at the end of last year. The persons involved had eaten cold cooked meats from a butcher or had eaten cooked steak in gravy at a church lunch supplied by the same butcher.

Africa

Little in the way of foodborne surveillance is done in Africa. As a result, the data are extremely scarce. Occasionally, acute illness directly associated with a food is documented as, for instance, in Tanzania, where the first major botulism outbreak claiming at least 16 deaths occurred in 1991. The outbreak was caused by consumption of locally-made fish meal. An outbreak of Escherichia 0157 in Egypt in 1994 was traced to hamburgers and dairy products. As a follow-up, a survey of 175 foods obtained from slaughterhouses, supermarkets and farmers' homes was conducted for Escherichia coli 0157. The bacterium was detected in 6 per cent of unpasteurized milk, 8 per cent of fresh retail beef, 4 per cent of boneless chicken and 4 per cent of lamb meat samples.

Because of civil wars and national

conflicts, refugees and misplaced population are an increasing concern. Last year, 500,000 refugees returned from east Zaire to Rwanda. The epidemiological sentinel stations registered about 14,000 consultations and 47 deaths. Diarrhoeal diseases accounted for two-thirds of all consultations. How much of this diarrhoeal disease is due to unsafe water and food is not known, but they are suspected to be major vehicles of transmitting this type of disease.

Asia

Except for a few countries such as Japan, relatively little in the way of surveillance of foodborne disease is carried out in Asia. In recent years in Japan, Salmonella has become much more frequent which is explained, at least partially, by changes in the national diet-eggs and egg products are now more popular than ever before. There were a number of outbreaks in Japan last year caused by Escherichia coli 0157:H7 resulting in 9,578 cases and 11 deaths. No responsible foods have yet been identified, except in a few isolated cases.

A comparative study of foodborne outbreaks in the Republic of Korea and Japan between 1971 and 1990 revealed considerable differences in the morbidity and mortality as well as in agents involved. Most incidents occurred in the workplace and the home in the Republic of Korea, whereas they were not frequent in restaurants and hotels in Japan. Seafood was often implicated in both countries, but food of animal origin was much more frequently associated with outbreaks in the Republic of Korea.

Oceania

In Australia some trends in notifications of foodborne diseases are apparent for 1991-1995. Laboratory isolates for Campylobacter and Salmonella are increasing, those for Shigella and Yersinia are decreasing and those for Listeriua monocytogenes vary slightly from year to year. New Zealand updated its notifiable diseases in 1996 to include botulism, campilobacteriosis, cryptospridiosis, giardiasis, listeriosis, toxic shellfish poisoning, VTEC, and yersiniosis. A recent summary for the years 1980 to 1995 indicates that the agents responsible for illness are similar to those in other industrialized countries with Salmonella being the predominant cause of morbidity and mortality.

North America

In both the United States and Canada, salmonellosis cases seem to have reached a plateau of about 40,000 and 9,000 each year, respectively, despite the fact that Salmonella enteritidis has become a major eggborne pathogen in the United States in the last 15 years. Illness from Escherihia coli 0157 are being documented in outbreaks from both countries, not only from ground beef but also from vegetables, milk and apple juice. In 1994, 593 cases of Salmonella enteritidis were identified in Minnesota, USA, after a nationally-distributed brand of ice cram was eaten. Pasteurized ice cream mix had been transported in a tanker previously used for to carry non-pasteurized liquid egg. The United States commitment to epidemiological surveillance was reinforced by the presidential proposal for the 1998 budget to allocate US$ 43 million for a programme to detect foodborne outbreaks before they become widespread. This will help to reduce morbidity and mortality due to foodborne diseases, estimated at 6.5-33 million people and 9,000 deaths annually.

Central and South America

All Central, South American and Caribbean countries have some form of notifiable disease system. Diarrhoeal diseases are one of the main causes of death in young children. The causes are not generally known but amoebic dysentery, trichinosis, giardiasis, shigellosis, brucellosis, Escherichia coli, and hepatitis infections are all documented from Latin America and the Caribbean. Cholera, initially identified in Peru in 1991 with a total of 600,000 cases, rapidly spread to other countries, and in 1994 caused 112,611 cases and 1,229 deaths. The total number of cases and deaths from 1991 to 1994 was 1,061,188 and 9,.989 respectively. The source of infection was probably contaminated food and water. The disease was spread partly through consumption of street-vended foods and beverages containing ice. Undercooked or raw seafood may also have been implicated. Shellfish may be contaminated not only with local sewage, but waste water pumped from ships in harbour.

Most Latin American countries now recognize that foodborne disease is important enough to justify some kind of surveillance scheme and are trying to develop better ways of determining numbers of cases and their causes.

Courtesy: WHO Press Release (' 58).

Cont'd from page 15

there is incomplete understanding of the factors behind their emergence. The need therefore is for expanding research on the agents of such diseases, their evolution, the vectors that spread them, methods of controlling them, and vaccines and drug development. The report points out that much of this approach has already been applied to HIV/AIDS, one of the most serious diseases to emerge in recent decades.

The priority requirements in this category of deceases are :

* Improving national and international epidemiological surveillance.
* Developing prevention strategies to fight new and re-emerging infectious diseases.
* Responding more rapidly to outbreaks and epidemics.
* Integrating laboratory science and epidemiology to optimize public health practice.

In confronting infectious diseases as a whole, the first priority is to complete "unfinished business" of eradicating or eliminating certain targeted diseases-poliomyelitis, guinea-worn infection, leprosy, neonatal tetanus and Chagas disease, to be closely followed by measles and onchocerciasis-while simultaneously addressing other major diseases. "Relatively small financial resources are needed for this final stage. If they cannot be found, eradication or elimination will not be achieved; these diseases will exploit any easing of the campaign against them, and return with a vengeance," the report says.

"The eradication of smallpox shows the way forward. The lessons of malaria and tuberculosis must not be ignored, or the efforts and resources already invested will have been wasted. This must not be allowed to happen."

What should be known about Health Insurance

by
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The provision of voluntary health insurance in Sri Lanka was an industry monopolised by the state until it was liberalised in 1986. Hence the provision of Private Health Insurance (PHI) is limited with 98% of the health policies being available from just six insurance providers.

Costs and coverage

The number of people covered by PHI is yet small. In 1994 these insurance companies supported an estimated 8,473 policies, covering approximately 166,847 people.[1] This represents about 0.96% of the Sri Lankan population. Claims paid out by the insurance industry are estimated at Rs. 75.43 million, which is only about 1.7% of the government expenditure on patient care services, and about 1% of total national expenditures on health.

The growth of the PHI industry in terms of coverage and cost-of-premiums is shown in figure 1. Although the industry is still in its stages of infancy, the growth trends suggest potential for continued expansion in the coming years. Figure 1 also highlights the fact that cost of premiums has been growing faster than the coverage. This means that the cost per person of buying PHI has been increasing over the years. International experience suggests that as long as the PHI industry remains unregulated, this trend is likely to continue.

Employer-provided health insurance

It should be noted that the provision of health insurance is not restricted to the PHI industry. Many banks and state institutions have in-house Employer Health Insurance (EHI) schemes, which reimburse their employees for costs of health care. It has been estimated that 40,000 people were covered by these EHI schemes in 1980. While the expansion in the economy and formal sector employment during the 1980s would have led to an increase in these EHI schemes, there appears to be an increasing trend for employers to switch from their in-house schemes to commercial PHI group policies.

The cost of EHI schemes varies greatly. State companies tend to incur higher expenditures than private companies. The highest expenditures are incurred by the banks due to the provision of very generous benefits. In some instances of EHI, average expenses per employee (including dependents) are as much as Rs. 15,000 per year. This is fifty times greater than per capita government health expenditures, and 20 times the average PHI premium.

Government policy

The government's current policy encourages the expansion of private health insurance through tax incentives and the lack of regulation. The implicit goals are twofold: (i) To mobilise additional resources for health care. (ii) To shift demand for health care from the overstretched public sector to the private sector.

However, international experience shows that unregulated private insurance is an extremely inefficient method of financing health care. In Sri Lanka, of every one rupee collected in health insurance premiums, only 67 cents is spent in paying for medical services. The remainder is absorbed into administrative costs and profits.

Furthermore, data analysis has shown that in recent years, prices for many insurance-financed medical services have been rising substantially faster than prices in the economy as a whole. This means that of the 67% of premiums that are spent on patient care, not all of it benefits patients. A significant portion appears to merely increase the profits of providers.

Because of the tax subsidy given for health insurance, these trends are matters of concern not only to those who subscribe to PHI but also to the public at large. More than 70% of private health insurance is provided for through employers who are permitted to deduct their premiums as expenses against corporate tax. In some cases, the implicit tax subsidy per beneficiary is already greater than average per-capita health expenditure of the government.

Who benefits ?

In a preliminary study conducted by the Institute of Policy Studies (IPS), it was found that almost 60% of those claiming health insurance were between the ages of 20-40 (the incidence of claims is highest between the ages of 25-35 with 30% of the claims being from this group).

This finding is at variance to the general pattern of illness in the population as a whole – where the probability of illness is greater in the lowest and highest age groups. The variance can be explained by the fact that health insurance schemes are easily accessible to the employed (20 + age group) through group insurance coverage, while the terms and conditions result in the frequent exclusion of the elderly population.

The average cost for patient visits also showed a trend similar to the incidence of claims. This suggests that

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ROLE OF THE GOVERNMENT ANALYST UNDER FOOD ACT

Ms Y. Mahesan

Government Analyst, Government Analyst's

This Act applied to both imported and local items of food and drugs. The Government Analyst had a key role in the implementation of the provisions of this Act. The authorised officers namely public health inspectors and food and drugs inspectors acting under the supervision of the medical officers of health are empowered to seize the items suspected to be adulterated, but they are not competent to decide whether such regard to standards or other regulations. It is here that the Government Analyst has the significant role of funcitoning as the Approved Analyst to test the quality of the samples of food and drugs seized for suspected adulteration.

Under the old Act the Government Analyst's Department was designated the main food laboratory for enforcement of the quality of food and drugs. However, the provisions of this Act were not mandatory all over the island.

Subsequently, this Act of 1949 was revised and a new legislative enactment, the Foos Act 1980, was passed. Under this Act the Government Analyst continues to function as the Approved Analyst carrying out quality checks on food seized by authorised officers functioning in almost all parts of the island except in towns like Kandy, Colombo, Kalutara and a few other places, which employ their own analysts, referred to in the Act as Additional Approved Analysts.

Who supplies the food items for test under the Act?

Samples of food are sent by various local bodies who function as Food Authorities which authorise their field inspectorate to seize foods of doubtful quality. These local bodies are municipal councils, urban councils and pradeshiya sabhas. In addition the regional Directors of Health Services of the Central Government may also send items seized by them. The Excise Commissioner too can send excisable articles for tariff purposes. The Director General of Customs can also send imported foods for conformity with local standards.

The annexed diagram explains the working of the Food Control system and the role played by the Government Analyst.

Samples sent may be formal in which case the results of the analysis are recorded in a prescribed form the certificate of which can be the basis for prosecution by the food authority. If an informal sample is sent for a quality check the results are reported in the form of a note. If the sample is found not to comply with standards, a formal sampling is carried out. One portion of the sample is sent to the Analyst, a second portion is given to the vendor and the third portion is retained by the food authority.

Can the public send samples?

If a member of the public finds that any food items he or she comes across is unsuitable for human consumption, he or she may inform the relevant food authority of that administrative area and request it to seize that food and despatch it to the Analyst who has jurisdiction over that area. For example if the food is found in Colombo, it should be sent to the City Analyst for that administrative area. If the food sample is seized in Negombo it would have to be sent to the Government Analyst's Department.

Frequency of sampling

Ideally it would be suitable, if the food inspectorate can seize about 5-10 food samples per week and send them to the respective approved Analyst for testing and issue of certificates. However, due to manpower shortage in most government agencies this target cannot be reached easily. Further by law, these samples would have to be reported on or before three calendar months from the date of seizure.

The Department of the Government Analyst receives about 2,500 food items per year. If prosecution is to follow in respect of any item it would not be possible without the Government Analyst's report.

Other functions of the Government Analyst under the Food Act

Under the Food Act, a committee called the Food Advisory Committee has been constituted comprising representatives of several organisations. The Government Analyst is also a member and the duties of this committee are to advise the Minister of Health on matters arising from the administration of the Act and to carry out other functions assigned to it under the Act.

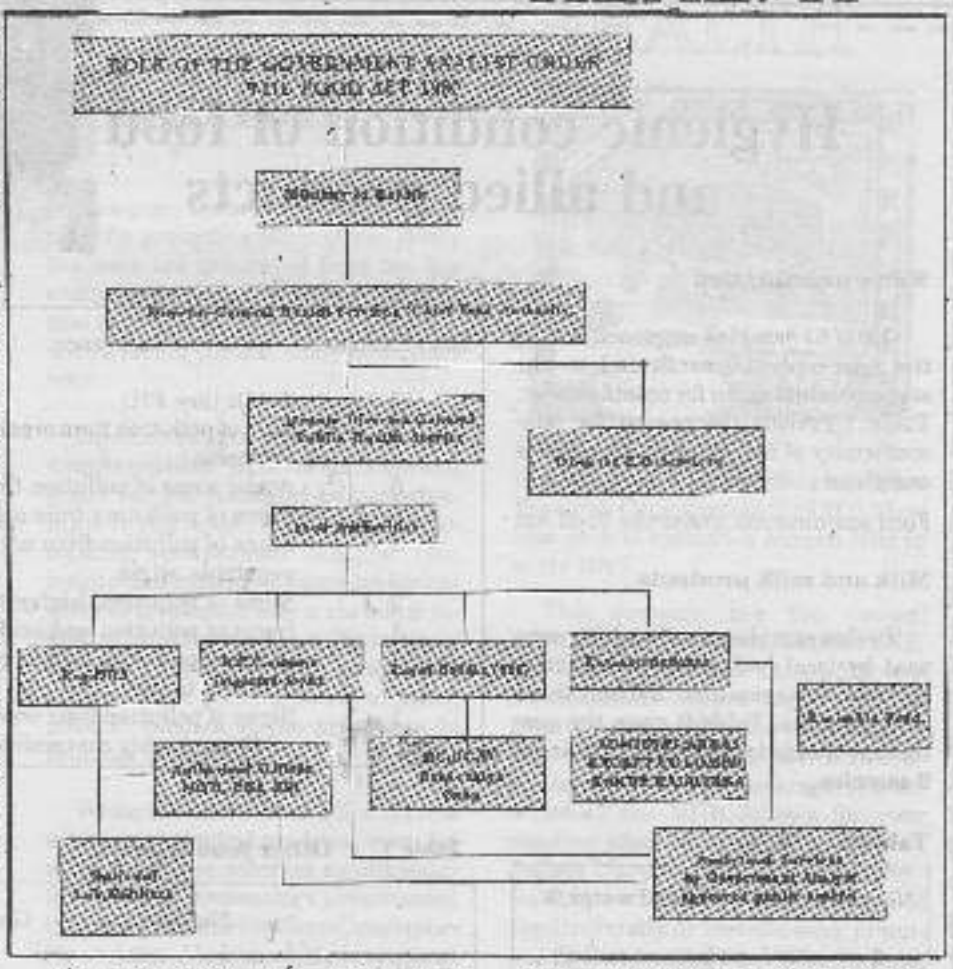
The Committee may appoint such sub-committees as it deems fit to exercise such powers assigned to them. An example is the fixing of legal stand-

ards for various food items. The Government Analyst is represented in all the sub-committees constituted under the main committee.

Another important function of the Government Analyst is also specified in the Food Act.

When a sample obtained by an authorised officer is tested and reported on by an Analyst other than the Government Analyst as being not in compliance with the legal standards specified for that item of food that part of the food sample retained by the authorized office of that Food Authority shall be produced in court at the time of the institution of the prosecution.

The magistrate shall at the request of either party (prosecution or defence) forward for analysis or examination that part of the sample produced in court (referred to as Referee Sample) to the Government Analyst. The Analyst shall carry out the examination for a fee charged from that party which requests the examination and present a report to the court within 28 days of receiving the sample.



What have been described above are the major functions of the Government Analyst under the Food Act. However, with the formation of more and more sub committees the Government Analyst's Department has additional important roles to play.

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There are approximately 150 national NGOs involved in health-related activities in Sri Lanka[1].

There are also a significant number of foreign NGOs (estimated at around 20 main foreign NGOs) involved in health-related activities in Sri Lanka. These include, the International Committee of the Red Cross (ICRC), CARE, Redd Barna, Medicins Sans Frontieres (MSF) and Save the Children Fund (SCF). Most of these organisations are active in the conflict areas providing essential relief and rehabilitation services, while assisting the government health services.

Future scenario for NGOs

With the dawn of the 21st Century the time has come for NGOs to develop new partnerships and define a new role to address the health challenges of the new millennium. As Dr. Uton Rafei, the WHO's Regional Director for South Asia states: "If we are serious about meeting the challenges of our region, we cannot solely rely on our own efforts. We need to work with others, we need to form alliances and partnerships – partnerships for health"[2]. WHO acknowledges that the role of NGOs has increased significantly over the past decade. Participation in, and strong visibility at international meeting including UN summits has fortified NGOs with increased recognition of the influence they wield and the usefulness of their contributions. Many are better equipped with technical skills and financial backing than previously. Their comparative edge over the public sector in flexibility, commitment and drive and sense of urgency for change, adds to their strengths.

While many partnerships between the public sector and NGOs have worked well in the past, there still exists a love-hate relationship between the two, based on both dependency and suspicion. There is a need to recognise the compelling evidence that the two sectors are complementary and that by working together they can achieve much more than either can do alone. Dialogue must form the basis for developing trust, confidence and a more harmonious, genuine partnership. Sri Lanka is fortunate to have a very vibrant NGO community who are willing and responsive to meet the health challenges of the 21st century.

References:

1. A Pocket Directory of Organisations in Sri Lanka Working in the Fields of Primary Health Care and Women's Issues Relating to Health Status, Women's Development Centre, Kandy, 1995.
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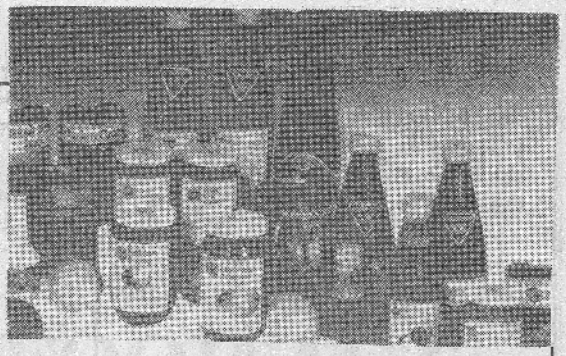
Hygienic condition of food and allied products



Water examination

Out of 51 samples examined during the year only 16 confirmed to the standards laid down for potable water. Table 1 reveals the reason for non-conformity of the balance 32 samples examined :

Food examination under the Food Act

Milk and milk products

Twelve samples of milk which were sent by local bodies were examined. Examinations revealed that only three were genuine. Table 2 gives the percentage of added water in the remaining 9 samples :

Table 1

No. of samples	Inference
10	Acidic (low PH)
8	Sign of pollution from organic substance of animal origin (high free ammonia)
5	Acidic signs of pollution from organic substance of animal origin
2	Signs of polllution from organic substance of vegetable origin
2	Signs of pollution from organic substance of both animal and vegetable origin
2	Signs of pollution (high nitrite)
1	Signs of pollution and acidic in nature
1	Signs of pollution from organic substances of vegetable origin and acidic in nature
1	Signs of pollution from organic substances of animal origin and, in addition, highly contaminated with iron

Table 2 Milk

No. of Samples	Added water %
1	45
2	30-40
2	20 - 30
4	10-20

Other Food Items

The results / of other food items examined were as follows: Table 3

Table 3 Other food items

	No. reported	Genuine	Adulterated	Poor Quality
Cordials	9	8	-	1
Honey	17	11	4	1
Ice cream	6	3	-	1
Ice palam	8	7	-	-
Treacle	8	6	-	3
Rice	109	51	1	51
Dhal	16	9	-	5
Dry fish	19	10	-	9
Pepper	21	17	1	3
Fennel	20	14	-	5
Coriander	16	9	(samples with insects - 7)	
Milk powder	24	20	-	4
Baking powder	11	7	-	4
Yoghurt	8	3	-	5
Bread	64	14	-	50
Iodated salt	70	37	-	33

Spices

Chilllie powder, condiment powder and turmeric powder.

Ground Spices

85% genuine, 7% misleading labels 7% adulterated, 1% low quality.

Grand Spices

The common adulterants were paddy husks and poonac.
Condiment powder - 65% genuine, 7% misleading labels 7% adulterated, 1% poor quality.
Chillie powder - 89% genuine, 7% misleading lablels, 3% adulterated, 1% poor quality.
Turmeric powder - 79% genuine, 9% poor quality, 12% adulterated.

Sugar confectionery - 87% genuine, 11% poor quality, 2% misleading.

Coconut oil - 11% genuine, 88% poor quality, 1% adulterated – an increase in acidity was observed. 88% of the samples received this year had a high acidity as compared with 51% in 1994.

Vinegar - 69% genuine, 27% poor quality, 11% misleading labels 3% adulterated.

Source : Administration Report of the Govt. Analyst - 1995.

Tea and Health

Most Tea Association members are familiar with the Tea Trade Health Research Association (TTHRA). The Association was formed to manage and administer a joint research effort between the Tea Council of the USA, the Tea Council of Canada, and the UK Tea Packers Association to further scientific knowledge about the human health benefits of tea. This project research effort is part of an international project funded by the Common Fund of Commodities under the auspices of the FAO and various producer countries. Set up as a charitable organization in the UK in November 1995, the TTHRA has raised funds and managed the research project. The focus is specifically directed to black tea and its role in preventing/inhibiting the formation of cardiovascular diseases and certain forms of cancer.

The TTHRA is guided by a Steering Committee made up of technical experts from each of the participating countries. The committee met and to discuss interim results on January 23 and 24, 1997 at the offices of the Tea Council of Canada. To date, eight research grants have been issued with funds remaining to sponsor three additional studies. Most of the research is still in progress, with at least three of the projects showing positive signs; two of the studies dealing with cancer in animals and one of the studies dealing with animal cardiovascular diseases (Chung, Yang and Chait).

Dr. Chung, of the American Health Foundation, is studying the effect of tea on lung and liver carcinogenesis. He measured 8-OH-dG in DNA from liver and lung in animals exposed to tea in the diet and animals not given tea. DNA damage is a bio-marker which is frequently a forerunner of cancer. The liver levels of 8-OH-dG in animals fed the 2% tea extract with or without exposure to the carcinogen (NNK), were significantly lower; a similar trend was seen in DNA taken from lung tissue but the effect was not statistically significant. DNA is harder to extract from lung tissue and the data are more variable.

However, these results are suggestive of a protective effect of tea. While the data are generated from too few animals to warrant separate publication they will likely be included along with a longer chronic study still under way.

Dr. C. S. Yang of Rutgers conducted a study entitled 'Effect of black tea and green tea on spontaneous tumorigenesis in A/J mice'. Dr. Yang is investigating spontaneous cancers. This means that instead of exposing his animals to treatment like a chemical injection, that causes a specific tumour, he has a strain of mice genetically selected to be predisposed to so-called natural cancers of the type seen in humans in real life.

While the study must still complete a histopathological analysis, mice fed a 2% black tea solution significantly inhibited all parameters investigated including tumour incidence, multiplicity and size. More analysis is required to determine the effect of the lower body weight before the results may be accurately assessed.

Dr. Chait, of the University of Washington in Seattle, is studying the effect of tea fed to mice relative to the incidence of cardiovascular disease. In the first set of experiments, using a dietary manipulation to produce CVD, tea did not show an effect. However, in a second set of experiments, using mice which are genetically susceptible to cvd, tea appears to have a modest inhibitory effect against the oxidation of LDL. In addition to the studies funded by the TTHRA, many other independent studies are being investigated by scientists around the world.

Nearly every week the Tea Council hears of a new study touting various health benefits attributed to tea consumption. Just this week we received word of an Australian study which found the laboratory mice fed black tea suffered 54% fewer cancers than mice fed water or even green tea when they were exposed to damaging ultraviolet rays. The study was conducted by the Commonwealth Scientific and Indus Research Organization (CSIRO). They also plan to conduct a human trial in early 1997.

This January, the Tea Council released a Video News Release (VNR) for Hot Tea Month. This VNR was structured in such a way to benefit from the news about tea's health benefits while positioning hot (and iced) tea as a pleasurable beverage. A transcript of the VNR follows for your reading pleasure. Two scientists; Dr. Jeffrey Blumberg of Tufts University - Boston, and Dr. Carol Greenwood of the University of Toronto were prominently featured in the VNR. To date, the preliminary audience figure is well over 7 million viewers which is expected to climb even further over the next couple of weeks. This equates to a cost of less than $ .00015 per impression or $ 3.50 per thousand viewers.

As the Tea Council has stated before, the marketing of tea as a healthy beverage poses tremendous challenges to the global tea industry. To move aggressively in this direction risks attracting the attention of regulatory authorities and/or communicating the wrong message to consumers. Given the potential for error, the safest policy for industry is to focus their marketing efforts on the sensory pleasures of consuming tea and to leave the dissemination of potential health benefits to the medical and scientific communities.

Given the abundance of emerging scientific data identifying a broad spectrum of health benefits associated with tea consumption, the prognosis for future growth is indeed healthy.

(Source: Tea World - Spring/Summer 1997).

SPECIAL FEATURE

Food Security

Dr. Udaya Rajapaksha
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Food is a basic need of all living organisms including humans. Food may be defined as any substance which, when taken into the body, enables an organism to grow and maintain health. Food performs the following three functions;

i. Supply material for the production of energy,
ii. Supply material for building up of new tissue and for repair of existing tissue and
iii. Supply substances which enable and even stimulate the body to produce energy and to grow (Wikramanayake 1997).

Therefore, food is essential for both good physical and mental development. Inadequate intake of food can lead to poor physical and mental growth, malnutrition and even death. Hence, an intake of required level of food for good nutrition and health is a human right.

Ensuring food security has been a problem throughout human history. The availability of food and its access to various social groups have varied over the centuries. The hunter-gatherers relied on what they found in the forest–both animal and plant origin. They accumulated knowledge on foods that were not toxic, their seasonality and availability. Gradually they also accumulated knowledge of the methods of food storage for off-season consumption.

In an agriculture-based society, food security mainly depends on what the people produced. Various farming systems were adopted in order to cultivate different food plant varieties in different agro-climatic zones. Forests foods and animal flesh supplemented the diet. People used traditional methods of food preservation and storage systems in order to make available food for off-season.

Food security was threatened in those societies by various natural causes such as natural climates, drought, floods, crop failures due to pest and diseases and unstable political situations like civil wars.

Incidence of the first drought in Sri Lankan history is recorded in the Mahawamsa as having occurred during 161-137 BC. That drought was called *Bulukesaya* since even fruits of bulu plants were used for food during that period (Siriweera, 1993).

According to the *Saddharmalankara* and *Sammoha vinodani* during the reign of Wattagamini a severe drought prevailed in Sri Lanka called *Baminitiya saya*. Some 24000 Buddhist monks died due to drought and most of the monks left the country. It is recorded that some people even ate human flesh to survive. The Mahawamsa reports that the during the period of *Kuncha naga* there prevailed a drought called *Eknalisaya*.

Crop failures also lead to food insecurity situations. For instance in 1840s potato blight ravaged potato cultivation in Ireland. Famine conditions continued for five years and the disease affected potato cultivation. Around two million people died and as many migrated to North America. A recent example of crop failure is corn leaf blight in the USA in 1961. Americans had lost fifteen per cent of their most important crop and the loss was more than a billion bushels. (Flower et al., 1990).

Recent trends and UN World Food Conference

Widespread fear was expressed in the early 70s that the world had entered a new era in which the growth of production of food would not be adequate to cope with the growth in demand at constant prices, which proved to be unfounded. Per capita food supplies for human consumption in the world has marginally increased by 110 kcal/day compared with that of early 60s, but it has not improved significantly in Sub-Saharan Africa and in South Asia. Population that received less than 2100 cal/day has increased from 1605 millions to 1747 millions during the decade. 917 million people were undernourished. Total percentage of undernourished was 35%, and that in South Asia was 41%.

During the 1972/74 world food crisis, the world seemed to be losing its capacity to feed its rapidly growing population, and controlling year to year variations in food supplies. The term 'food security' was first coined at the UN World Food Conference held in Rome in November 1974 to stress the need for ensuring that countries experiencing difficulties in producing an adequate volume of food should have access to surpluses available elsewhere in the world.

In the years following the World Food Conference, much emphasis was placed on measures designed to ensure the physical availability of food supplies, particularly in the event of widespread crop failure. The FAO, under its Food Security Assistance Scheme, adopted in early 1976, provided technical, financial and food assistance to develop and implement appropriate national food stock policies, covering also processing, storage and transport facilities. In pursuance of this initial concept which focussed on the short-term, immediate problem of strengthening stock policies and food supply operations (and less on the long-term fundamental issues of production and nutrition) the FAO supported food security activities in Laos associated with the Ministry of Commerce.

However, experience showed that the concept of stock holding and supply stabilization was too narrow a basis

Theoretically, two types of food insecurity–chronic and transitory–can be distinguished. Chronic food insecurity indicates persistent inadequate diet caused by continued inability to acquire food. Transitory food insecurity is a temporary decline in household access to needed food due to instability of food production and prices or household income.

upon which national food security could be built. Although the fundamental importance of increasing crop production, in particular food crop production, was more and more emphasized, it was also recognized that, while a satisfactory rate of growth of production is a necessary condition for achieving food security, it will not, by itself, suffice to ensure that food is available in sufficient quantities to those who need it. *There was growing evidence that many emergencies had been caused not exclusively or even primarily by a catastrophic fall in food production, but rather by a sudden drop in the purchasing power of specific social groups.* It was recognized that degrees of food security many vary widely between different areas of a single country, and that temporary or chronic malnutrition may exist on a considerable scale even if total food supplies at national level appear satisfactory.

Nutritionists all over the world emphasise that ensuring the food security at household level is of utmost importance since low income groups particularly in the developing world are suffering from malnutrition and hunger due to poor access to resources.

Conceptual framework for food security

The term food security signifies that all people at all times should have both physical and economic access to the basic food they need to lead an active and healthy life. *Theoretically, two types of food insecurity–chronic and transitory–can be distinguished. Chronic food insecurity indicates persistent inadequate diet caused by continued inability to acquire food. Transitory food insecurity is a temporary decline in household access to needed food due to instability of food production and prices or household income.* This situation is commonly seen among rural population during off-seasons.

In reality, however, chronic and transitory food insecurity is closely intertwined. Typically, the poorest people, who are chronically food insecure, are hit hardest by transitory food insecurity problems.

The generally available indicator for monitoring developments in world food security is per capita food consumption, measured at the national level by the average dietary energy supply (DES) in calories on the basis of national food balance sheets (FBS) and population data.

Daily energy allowance for moderate activity which is considered as national average energy requirement for different developing countries is in the range of 2000 to 2310 calories per person per day. For Sri Lanka, it is estimated at 2200 calories per day, while those who receive below 1800 calories (energy allowance for light activity) are considered nutritionally "poor". As shown in tables 1 and 3, per capita availability of energy in the world and Sri Lanka is above the required level. In Sri Lanka the situation has not improved significantly in the past fifteen years. Availability of protein, has gradually improved, particularly animal protein has increased from 7.49 g in 1977 to 16.7 g in 1993.

In order to measure food security at household level various methods are used and dietary intake surveys are most common. In the latter method, either intake of food over a period of time is measured or 24 hours recall method of food consumption for individual members of household is administered. Anthropometric surveys are used to measure nutritional status of individuals.

The following three conditions should be fulfilled to have real food security.

1. Ensure the availability of adequate food supplies.
2. Maintain the stability of food flow and
3. Ensure the access (physical and economic) to available food supplies.

Availability

Food availability is determined by domestic food production, imports and stock holding. Various strategies have been employed by governments to ensure food availability. In many cases, high priority is given in development programme to increase the domestic food production and to allocate resources to this sector. Adequate facilities are given to food producers to encourage them to achieve greater success. Credits, subsidies, marketing facilities and stabilization of prices for agricultural commodities are normally given to farmers in many countries.

Research and development have played an important role in increasing crop production. Introduction of high

Table 1

Per Capita Food Supplies for Direct Human Consumption, Historical and Projected

	1964-66	1969-71	1979-81	1989-91	2010
	Calories/day				
Developing Countries	1900	2140	2320	2510	2750
Sub-Saharan Africa	2000	2150	2060	2000	2220
Near East and North Africa	2250	2380	2640	2800	3010
East Asia	1750	2030	2360	2600	2880
South Asia	1890	2080	2070	2300	2570
Latin America and the Caribbean	2280	2510	2720	2840	3040
Developed countries	2920	3190	3250	3320	3390
Former CPEs	2110	2300	3250	3240	3350
Africa	2080	2150	2430	2110	2410
World	2300	2440	2550	2750	2900

(Food and Agriculture Organisation, 1993).

Table 2

Population living in developing countries with given per caput food supplies, 1961 - 1963 to 1990 - 1992

	Per caput food supplies (Calories/day)				Population (Million)			
	1961-63	1969-71	1979-81	1990-92	1961-63	1969-71	1979-81	1990-92
Developing Countries								
Under 2 100	1835	2000	2025	1910	1605	1747	1024	411
2100 - 2300	2200	2180	2180	2185	275	370	405	460
2300 - 2500	2380	2415	2355	2335	149	274	1256	1077
2500 - 2700	2565	2580	2670	2650	53	76	214	338
2700 - 3000	2820	2835	2800	2730	32	121	124	1486
Over 3000	3080	3275	3170	3255	21	24	243	336
Total	1965	2135	2330	2520	2139	2612	3265	4107
Developed Countries	3025	3180	3270	3330	989	1075	1169	1260
World	2300	2440	2575	2710	3128	3687	4434	5368

(Food and Agriculture Organization, 1996).

Table 3

Availability of Energy and Protein in Sri Lanka (1977-1993)

Year	*Calories per day*	*Protein (G/day)*	*Fats (G/day)*
1977	2343.1	49.2	4.1
1978	2325.4	51.1	5.1
1979	2316.6	48.6	5.2
1980	2169.4	46.6	5.5
1981	2200.1	46.5	5.3
1982	2188.7	47.9	5.3
1983	2361.4	53.1	6.0
1984	2385.1	55.3	5.9
1985	2517.5	55.0	6.3
1986	2376.8	52.1	5.5
1987	2267.4	51.4	6.8
1988	2326.1	52.6	5.7
1989	2248.4	52.2	6.8
1990	2292.0	54.3	6.8
1991	2338.9	56.6	6.6
1992	2282.8	55.6	6.6
1993	2305.2	58.0	6.7

(Department of Census and Statistics).

yielding improved varieties and application of modern technology in cultivation and storage help to reach higher levels. Credit schemes, fertilizer subsidy and guaranteed price for rice were other encouraging steps taken in this regard.

In the case of Sri Lanka, successive governments in pre-and post-independence periods have attempted to increase the food production. Self-sufficiency in rice, the staple food of Sri Lankans, has been the motto of all post-independence governments. At present, Sri Lanka is able to produce about 90% of its rice requirement.

Priority in resource allocation has been given in Sri Lanka to rice cultivation. *Promotion of rice cultivation has a negative impact on other minor cereals, roots and tubers and other starchy crops, which have played a vital role in Sri Lankan food systems, particularly among rural poor.*

Therefore, it is very important to investigate whether we have really improved the availability of nutrients, while promoting rice production. From the nutritional point of view, it is important to have sufficiency in nutrients, (eg. sufficiency in carbohydrates, protein etc). rather than sufficiency in rice or other food items. Considering the availability of fruits and vegetables throughout the year, the Ministry of Agriculture, Lands and Forestry has identified 21 vegetables and 12 varieties of fruits, the cultivation in of which should be undertaken urgently.

Increaseing the production of food varieties of animal origin is also extremly essential, since they are good sources of protein, calcium, iron and other minerals and vitamins. According to FBS, foods of animal origin countribute 5.8%, 25.5% and 12.1% of calories, protein and fat availability in Sri Lanka respectively.

Prevention of post-harvest losses is also important since it saves a significant percentage of food domestically produced. This situation is worse in the developing countries, because post-harvest handling, storage and processing of agricultural products have been relatively neglected areas. It is estimated that around 20-45 per cent of the food crops produced in Sri Lanka is lost due to poor pre-harvest and post-harvest practices. These losses are high in perishables and relatively low in cereals

Many developing countries have stressed the importance of increasing domestic food production to achieve food self-sufficiency. But so far only a very few countries have been able to reach food self-sufficiency. Many countries may be better off if they rely on imports for some part of their food supplies rather than depend on domestic production, provided they have the capacity to finance such imports. It is noted that a country's ability to import food commodities depends on world food prices and its own foreign exchange availability.

The Sri Lankan government imports essential food items in order to ensure adequate supplies to the people. Accordingly 655,090 mt of wheat flour, 491,750 of sugar, 50,210 mt of onion, 84,820 mt of maize, 34,020 mt of rice, 61,400 mt of fish and 36,780 mt of milk have been imported in 1996. The export sector, covering both industrial and agricultural exports, plays an important role. It is necessary to strike an optimum balance between producing food for domestic consumption and producing agricultural and industrial commodities for exports. The prevailing price policy appears to be the most important factor which influences the level and commodity composition of production and thus determines the balance between domestic food self sufficiency and production for exports. An appropriate support system for ag-

riculture has to be in place to ensure that farmers receive prices which are remunerative, whether obtained through direct governmental procurement or in the open market.

Stability

As mentioned earlier, regional or local availability of food is determined primarily by food production, stockholding and trade at any of the levels. Variation in any of these can contribute to food insecurity. Second, variation in production and seasonally high food prices are often major factors that contribute to the transitory food insecurity in poor households. Sudden changes in income, prices and availability of food can influence household's ability to obtain required level of food. Further, the ability to effectively demand adequate food is affected by some events, such as civil wars, price changes, trade policy and natural disasters such as drought and floods.

As mentioned above, the problem of food crises in many countries arises due to lack of marketing, distribution, storage and weak infrastructure facilities. Therefore, with improvements in marketing systems and infrastructure, the fluctuations can be reduced. In addition an early warning system should be adopted when forecasting the next harvest, irrigation systems should be expanded and improved and varieties tolerant to both conditions introduced.

Access

Physical access to food and financial resources play a vital role in ensuring the production of food security. Unstable political situations such as civil wars and ethnic conflicts, disturb production and distribution of food, which makes it physically not accessible to the people living in conflict areas. On the other hand, financial constraints of a country, a social group, a household or an individual lead to food insecurity due to poor access. At the country level, access to food from the foreign market is a function of world food prices and foreign exchange availability. But for many developing countries access to food is limited by inadequate food production arising from stagnant agriculture and limited foreign currency. Supply by donors is influenced by prices and level of production in their countries. In the case of social groups, households and individuals, poverty is the main cause of food insecurity. Poverty is associated with many other factors such as unemployment, underemployment, landlessness and poor access to resources.

Various studies done on dietary intake and nutritional status, especially anthropometric surveys, show that dietary intake of some social and ethnic groups is below the required level. Table 4 indicates that malnutrition is still high in many regions in the world.

Nearly 179 million children are reported to be underweight, 215 million children are stunted and 48 million children are wasted. (Table 5). Each year, about 20 million infants are born with low birth weight (LBW). Nutritional problems resulting in underweight are also prevalent among adults and adolescents in developing countries.

In the case of Sri Lanka, child malnutrition is still high (Table 6). There are noticeable provincial differences, stunting being highest in the Central Province and lowest in the Western Province. Underweight is also highest in the Central Province and the lowest in the Western Province. Wasting is

Table 4

Estimates of Food Energy Deficiency in Developing Regions (1990 - 1992)

Region	Prevalence of Undernutrition	Number of persons in deficit
Sub-Saharan Africa	47	215
Near East and North Africa	12	37
Eastern and Southeast Asia	16	280
[illegible]	[illegible]	[illegible]
Latin America and the Caribbean	13	56
Economies in transition	26	100
Middle-income countries	13	164
Low-income countries	20	841

Source: FAO 1996

Table 5

Estimates of the Number of Wasted, Stunted and Underweight Children Under Five Years of Age in Developing Countries, 1990

Region	Wasted		Stunted		Underweight	
	%	Millions	%	Millions	%	Millions
Sub-Saharan Africa	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Near East and North Africa	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
South Asia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
East and Southeast Asia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Economic Class						
Low-income countries	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Middle-income countries	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Source: FAO, 1996.

Table 6

Nutrition and Mortality Situation in Figures

Indicator	Value
Stunting	[illegible]
Wasting	[illegible]
Underweight	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Source: Sri Lanka Demographic and Health Survey 1990, Dept. of Census and Statistics
Health and Nutrition Status Survey 1989, MFP.
[illegible] NGOs, Coming Back to Nutrition
[illegible] MFP (data from MCH clinics)

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recorded as highest in the Sabaragamuwa Province and lowest in the Uva-Province.

Besides vitamin A deficiency disorders, anaemia and iodine deficiency are common among Sri Lankans. Therefore, it is very important that necessary action should be taken to eradicate poverty. Productivity of the small farmer has to be increased providing technical and financial inputs. The poor should be helped with income generating activities. Promotion of household food production programs such as home gardening and animal rearing can help improve access to food of low income households. Both long and short term programs have to be launched to alleviate poverty. Short term programs such as subsides, food stamps and target feeding have to be introduced in order to increase access to food. Long term macro economic policies and strategies have to be evolved and implemented in order to alleviate poverty.

The dimensions of food insecurity vary from country to country, region to region and social group to social group within a country. Therefore, it is not easy to suggest a universal program to eradicate food insecurity. Hence, it is very necessary to identify the optimal combination of programs suitable for a specific country. Recognizing the need for short, medium and long-term intervention, the common programs and policies adopted by most countries can be divided as follows:

1. Production - oriented policies and programs to increase the local food production (Both national and household food production programs),
2. Trade-oriented policies and programs to stabilize the food situation in a country,
3. Emergency relief programs to respond to crises affecting food security such as famine,
4. Poverty alleviation programs,
5. Programs to address the problems of food insecurity of target groups,
6. Target feeding programs, school midday meal programs, food stamps, foods subsidies and triposha program and
7. Macro-economic policy and development strategy

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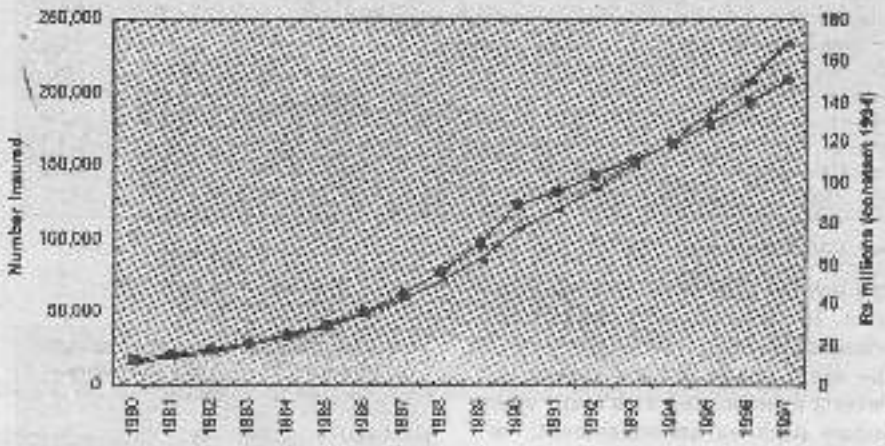
Figure 1

Estimations and Projections of the Cost of Premiums & Coverage in Private Health Insurance

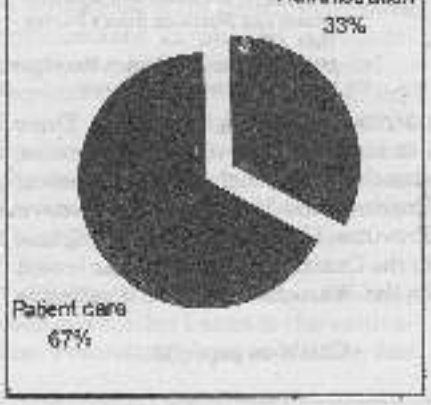


Projections based on interpolation of past trends *Source: IPS Data*

the age group which is least burdensome on the health care system in terms of occurrence and cost of health problems is twice favoured by the PHI industry. Not only are they the most frequent beneficiaries, but their average cost per treatment-visit is also the highest. This points to a major potential problem of misallocation, if PHI is used to extend the coverage of health services. Most of the resources are allocated to the age groups that are least in need of them.

Figure 2

Health Insurance Premiums



Future prospects

The major problem the industry faces is cost escalation. As seen in figure 1, the total cost of PHI has been growing faster than the total coverage in recent years. This is due to the significant problem of "moral hazard" both on the supply and demand side of health care. On the demand side there is a tendency for consumers to overutilise health services and ask for more expensive forms of care due to the subsidisation of costs through insurance. On the supply side, providers are prone to overprescribe and overcharge for medical services, since they anticipate less price elasticity of demand (i.e. reaction or resistance to higher prices) from an insured consumer. Evidence of both the above factors have been documented in the recent IPS study.

PHI, through encouraging resource supply and demand in the private health sector, reduces the burden on the government health care system. This has made the promotion of PHI seem like an attractive strategy in terms of health policy. However, because of the provision to deduct premiums as an expense under corporate taxation, the government may eventually lose more in tax revenues than it gains from the reduced need for expenditures on the public health system. In the longer run, the major concern is that PHI will lead to price and cost escalation in the health sector, and result in a health care system that is more costly for every one. Careful targeting of incentives and strict regulation are needed in order to avoid these problems and maximise the economic and social benefits that can be derived from health insurance.

Note:

1. Exact figures for the number of people covered were available to the authors from only three of the insurance companies. For the other companies, estimates were made using the number of group and individual policies issued and the average number of people covered by each type of policies in the companies for which data were available.

Sri Lanka's Economy - Tourism Sector

SECTOR OUTLOOK

Promoted by the Government since the 1970s, the industry has grown to be a core sector in the Sri Lankan economy. In 1996 gross forex receipts were Rs 10.6b and the sector provided employment for over 82,000 people -33,131 directly and 49,697 indirectly. Sri Lanka has established itself as a popular tropical tourist destination; with its sandy beaches, rich cultural heritage and beautiful hill country, the nation boasts a variety of attractive destinations. However, because of the protracted ethnic conflict, the fortunes of the industry have fluctuated widely.

* ***Tourism to pick up***

Plagued by escalation of the conflict and a leftist insurgency, arrivals remained around 180,000 from 1987 to 1989. However subsequent to crushing of the JVP insurgency in early 1990 and containment of violence to the North and East, the industry recorded a strong recovery. In 1990 arrivals jumped 65% to reach 297,888. Arrivals exceeded the 400,000 mark in 1994 and 1995. However terrorist attacks in the heart of Colombo City in late 1995 and early 1996 hurt the sector. Arrivals declined 30% to 302,000 last year. Helped by relative calm over the past 8 months, optimism has returned to the industry and arrivals for Q1 in 1997 grew 20%. Bookings for the winter season-rooms are contracted during summer- have also seen significant improvement. Barring any major incidents, arrivals are expected to pick up to around 375,000 in 1997.

* ***Strong long-term prospects***

Prospects for the sector are strong and arrivals are expected to exceed 750,000 by 2001. Per capita tourist expenditure - presently US $ 550 is expected to double over the same period. The strong medium-term prospects have attracted heavy investment. In 1994 and 1995 two five-star hotels were constructed on the South West coast. Eden Hotel (158 rooms) and Palm Garden (142 rooms). International operators such as Hilton and Taj have also invested in large resort hotels. Another five-star hotel, the 60 roomed Lighthouse, has just been completed in Galle.

* ***Increased room supply - will keep rates soft***

At present resort room availability is estimated at 9,000. However with the completion of the hotels in the sector, room supply is expected to increase by 15% to 10,350. It is estimated that tourist arrivals should exceed 500,000 for average occupancy levels to reach 60%, a comfortable level of profitability. Thus given the modest recovery in the sector (tourism picking up to 375,000 arrivals) average occupancy in the sector is expected to be around 45% (average occupancy in 1996 was 40%). Competition among hotels is also expected to be fierce and rates are likely to be soft in 1997.

* ***Intensifying regional competition***

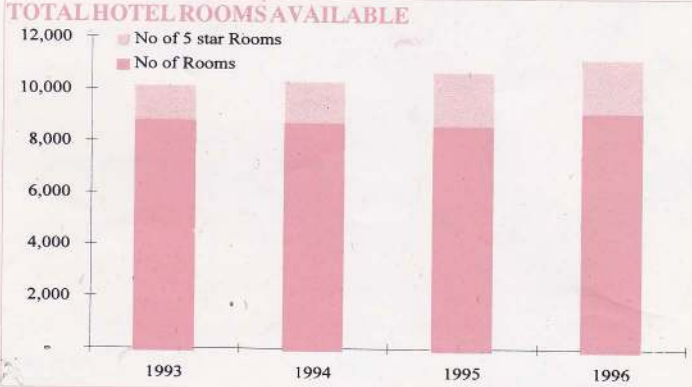
The country faces stiff competition from its neighbours in the Maldives and India. Further, aided by their respective Governments, Thailand, the Philippines, Indonesia and Malaysia have been aggressively promoting the industry. Also in the running are other tropical destinations such as Mauritius and the Seychelles who have been attracting considerable volumes of tourist traffic. A prolonged downturn in the local industry will put the country in danger of losing its established niche - scenic beauty and golden beaches.

Courtesy: C.T.Smith Stockbrokers (Pvt) Ltd.

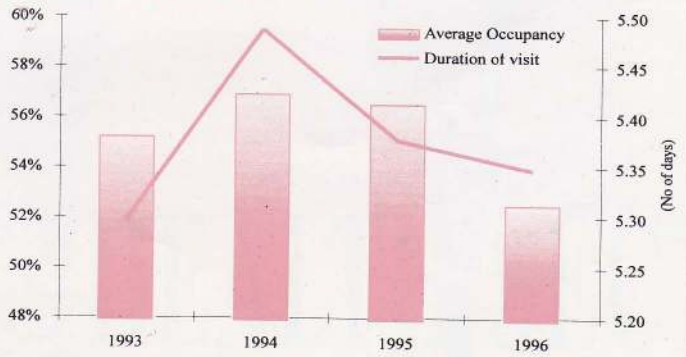
TOURIST ARRIVALS & ROOM SUPPLY

	1993	1994	1995	1996
Tourist Arrivals (Nos)	393,669	392,250	407,511	302,265
Average Occupancy (%)	57.00	56.60	52.60	40.30
No of Rooms	10,365	10,742	11,255	11,292
No of 5 star Rooms	2,402	2,426	2,333	2,306
Per Capita expenditure (Rs)	22,420	25,588	27,913	28,396

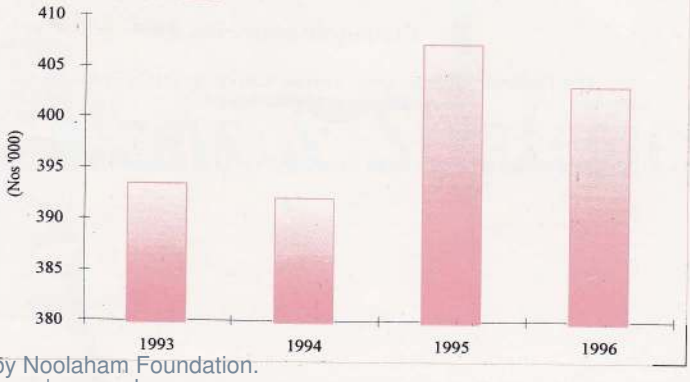
TOTAL HOTEL ROOMS AVAILABLE



AVERAGE OCCUPANCY



TOURIST ARRIVALS



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