Margaret Jones

Striving for Equity

Healthcare in Sri Lanka from Independence to the Millennium, 1948–2000

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3-6-752 Himayatnagar, Hyderabad 500 029, Telangana, India

e-mail: centraloffice@orientblackswan.com

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Focusing on the period from independence in 1948 to the millennium this book is an historical analysis of the process by which Sri Lanka became a model of how a nation with limited resources could nevertheless achieve health indicators on a par with the developed world through the development of a primary healthcare system. In so doing it had to interact and negotiate with global health actors such as the World Health Organization while maintaining its own agency. Based on a close reading of original archival sources it is an in-depth exploration of these questions viewed through a series of case studies which highlight both the successes which contributed to this outcome and the inadequacies of those efforts when seen at the micro level. A primary health care infrastructure is an essential prerequisite for the delivery of preventive health care; how this was developed and delivered to the entire population forms the first substantive chapter. Since the incidence of tuberculosis in a community serves as a marker of a country's achievement in meeting basic needs and establishing social justice there follows an examination of policies to control TB. The most vulnerable group in a nation are its children and they are also the source of a nation's future human capital. Two chapters discuss children's health; firstly the problem of childhood malnutrition and secondly the implementation of the successful immunization programme. Demographic change means a double disease burden of non-communicable diseases alongside communicable diseases and how this considerable challenge is met is the subject of the last chapter. Furthermore these topics enable a discussion of the significance and problems of an international policy transfer to less well-resourced environments.

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Abbreviations

BAT — British American Tobacco

BCG — Bacillus Calmette-Guerin

CARE — Co-operative for Relief and Assistance

CDC — Centers for Disease Control and Prevention

CDs — Communicable Diseases

CHD — Coronary Heart Disease

CNAPT — Ceylon National Association for the Prevention of Tuberculosis

CTC — Ceylon Tobacco Company

CVDs — Cardiovascular Diseases

DDT — Dichloro Diphenyl Trichloroethane

DGHS — Director General of Health Services

DHS — Director of Health Services

DMS — District Medical Superintendent

DNA — Deoxyribonucleic Acid

DT — Diptheria

DPT — Diphtheria, Pertussis, Tetanus

ECG — Electrocardiogram

EPI — Expanded Programme of Immunization

FAO — Food and Agriculture Organization

FP — Family Planning

GDP — Gross Domestic Product

GHC — General Hospital, Colombo

GPEI — Global Polio Eradication Initiative

HVs — Health Visitors

IHD — International Health Division

IMF — International Monetary Fund

INH — Isonicotinic Acid Hydrazide

IPV — Inactivated Polio Vaccine

ITC — International Tuberculosis Campaign

IUAT — International Union Against Tuberculosis

JP — Justice of the Peace

LHV — Local Health Volunteers

LTTE — Liberation Tigers of Tamil Eelam

MCH — Maternal and Child Health

MCI — Maharagama Cancer Institute

MDGs — Millennium Development Goals

MO — Medical Officers

MOH — Medical Officer of Health

MP — Member of Parliament

NCCP — National Cancer Control Programme

NCDs — Non-communicable Diseases

NCP — North Central Province

NGOs — Non-Governmental Organisations

NHDN — National Health Development Network

NICE — National Institute for Health and Clinical Excellence

NIDs — National Immunisation Days

NIHS — National Institute of Health Sciences

NPTCCD — National Programme for Tuberculosis Control and Chest Diseases

NWP — North-western Province

OPV — Oral Polio Vaccine

ORT — Oral Rehydration Therapy

PAS — Para-aminosalicyclic

PHC — Primary Health Care

PHIs — Public Health Inspectors

PHMs — Public Health Midwives

PHN — Public Health Nurse

RDHS — Regional Divisional Health Services

RF — Rockefeller Foundation

SHS — Superintendent of Health Services

SP — Southern Province

SPHC — Selective Primary Health Care

STDs — Sexually Transmitted Diseases

TB — Tuberculosis

TCP — Tuberculosis Control Programme

TMPs — Traditional Medical Practitioners

TOPV — Trivalent OPV

TT — Tetanus Toxoid

UK — United Kingom

UN — United Nations

UNFPA — United Nations Population Fund

UNICEF — United Nations International Children's Emergency Fund

UNP — United National Party

US — United States

USAID — United States Agency for International Aid

USSR — Union of Soviet Socialist Republic

WER — Weekly Epidemiological Review

WHO FCTC — WHO Framework Convention on Tobacco Control

WHO — World Health Organization

WP — Western Province

WSB — Wheat Soy Blend

WWC — Well Women's Clinic

Glossary

Aggala — a traditional snack

beedis — cigarettes

cunjee — conjee or rice porridge

Desiya Chikithsa — the indigenous system of medicine that existed in Sri Lanka before the advent of Ayurveda

Dhal — pulses

Dinamina — a Sinhala-language newspaper in Sri Lanka

gramodayamandalaya — the main organisation for all community development activities including health

Kola Kande — a nutritious herbal porridge

Mandama — cases of kwashiorkor when travelling outside Colombo

suruttu — cigars

Tamil Eelaman — autonomous region for the Tamils

Triposha — food supplement

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Introduction

Sri Lanka as a Model for Health Equity

'We have the taste of a Westerner and the pocket of an Easterner.' This poignant comment, made in 1988 by Dr Ramadas, a Sri Lankan medical professional working in child health, seems to encapsulate Sri Lanka's dilemma in the pursuit of health equity for its population.[1] From independence in 1948, the Sri Lankan government was rhetorically committed to providing a health delivery system that reached all groups, classes, gender and ethnicities, and one that could match that of the West in terms of its benefits. Health was declared a fundamental right of citizenship by Sri Lanka's first Minister of Health, S. W. D. Bandaranaike, in 1949.[2] Health equity was the primary aim, and the colonial legacy and international health models suggested that it would be achieved through Western curative and preventive institutions. These objectives were well-established in the island by 1948, so that developing these institutions along the pathways that had proved so successful in the developed world seemed to offer the most effective way forward.[3] However, as Dr Ramadas's comment highlights, Sri Lanka was inhibited in these efforts by far more limited resources than the developed world and a very different economic, political and social context. Rising health indicators in the West were not achieved through health interventions alone. An efficient and equitable health system can save many lives; but it is not sufficient unless the causes of ill-health and disease, that is, poverty, insanitary living conditions and inequality, are also tackled. Alleviating these causes, which Johan Gultung has termed 'structural violence', is a much harder proposition for a developing country like Sri Lanka.[4] As a nation that also suffered from the 'structural violence' of the world's geo-political system, it had limited resources to deal with the social determinants of its people's ill-health or the consequences of this ill-health. Additionally, Sri Lanka had the extra burden of 30 years of bitter civil conflict and that ended only in 2009. The last two decades of this conflict seriously hampered government public health efforts in the most affected areas of the north and east of the island.[5]

Nevertheless, despite these challenges, Sri Lanka (now deemed a low middle-income country by the World Bank) consistently maintained overall exemplary health indicators throughout the second half of the twentieth century. Table I.1 illustrates how Sri Lanka compares in certain key indicators with its northern neighbour, India, the United Kingdom (UK) and the United States (US) in the first decade of the twenty-first century. It shows that Sri Lanka has better health indicators than India; and more remarkably, comparable indicators with the high-income countries, the UK and the US. Notably, Sri Lanka's achievements are obtained at a much lower level of health expenditure per capita and overall Gross Domestic Product (GDP) than these two rich nations.

This record has made Sri Lanka something of a *cause celebre* in international health circles, and it serves to justify this volume's exploration of how this health record has been achieved.[6] Exposing the successes and failures

1 D. Ramadas, 'Protection and Promotion of Child Health', *Jaffna Medical Journal* 23, 1988, 6.

2 See Sunil Amrith, *Decolonising International Health: India and Southeast Asia, 1930–1965* (Basingstoke: Palgrave, 2006), 87–90 for an analysis of the concept of health as a right.

3 C. G. Uragoda, *A History of Medicine in Sri Lanka* (Colombo: Sri Lanka Medical Association, 1987); Margaret Jones, *Health Policy in Britain's Model Colony: Ceylon, 1900–1948* (Hyderabad: Orient BlackSwan, 2004); Margaret Jones, *The Hospital System and Health Care: Sri Lanka, 1815–1960* (Hyderabad: Orient BlackSwan, 2009).

4 The concept of 'structural violence' was first posited by Johan Gultung, 'Violence, Peace and Peace Research', *Journal of Peace Research* 6, no. 3, 1969, 167–91. For further discussion on this in relation to health, see, for example, Paul Farmer, Jim Yong Kim, Arthur Kleinman and Matthew Basilico, *Reimagining Global Health: An Introduction* (Berkeley: University of California Press, 2013); Paul Farmer, *Infections and Inequalities: The Modern Plagues* (Berkeley: University of California Press, 2001).

5 For a detailed account of the war-affected malaria prevention, see Kalinga Tudor Silva, *Decolonisation, Development and Disease: A Social History of Malaria in Sri Lanka* (Hyderabad: Orient BlackSwan, 2014), 165–206.

6 S. Halstead, J. Walsh, K. Warren, eds, *Good Health at Low Cost* (Bellagio: Rockefeller Foundation, 1985).

underpinning this record over the 50 years since independence contributes to an understanding of the complexities of how health policy is made and implemented.

This volume is also prompted by an interest in the activities of international health organisations, in particular, the World Health Organization (WHO), which, in the second half of the twentieth century, sought to impose a global health agenda on the developing world. The WHO was set up in 1948 as a specialised agency of the United Nations (UN) to direct and coordinate international public health efforts. Its work was underpinned by the philosophy that was stated in its Constitution, that the 'enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.' Moreover, it also stated that health was 'a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity'.[7] However, while health experiences and diseases can be seen to transcend national boundaries, thus raising the expectation that policies and programmes to deal with them can do likewise, the reality is that the agency of local populations, institutions and governments act to challenge such expectations. As Linda Whiteford and Lenore Manderson have argued:

> Too often, international health planners design programs based on the assumption that 'all else is equal' and that each recipient nation shares the same level playing field. The assumption of uniformity of context may be necessary to the process of planning global health programs but also may create needless barriers to their effective execution.[8]

How this interaction between the global and the local was played out in Sri Lanka provides a second focal point for discussion in this volume.

The influence of the global health agenda of the WHO also links to a third theme and forms a further context for the examination of Sri Lanka's healthcare system. If the objective of the healthcare system is to maximise health opportunities and promote the well-being of an entire population, that is, to achieve health equity, then the issue is what kind of healthcare system can do this most effectively. Various factors coming together in the 1970s resulted in a new conceptual framework for healthcare delivery, when Primary Health Care (PHC) was launched onto the global stage at the WHO Alma Ata Conference in 1978.[9] PHC included the increasing recognition that individual health very strongly related to socio-economic conditions in the 1970s; it also stated that a new approach was needed to deal with the tremendous disparities in healthcare provisions and health outcomes between rich and poor countries, and within countries themselves. For Halfdan Mahler, the Director General of WHO from 1973–88, 'the necessity to proceed with implementing primary health care is part of a wider necessity to seek social justice.'[10] Additionally, the failure of the WHO malaria eradication campaign by the late 1960s had called into question the effectiveness of vertical special campaigns targetted against specific diseases. The example of China's barefoot doctors and socialist medicine in the Union of Soviet Socialist Republic (USSR) provided alternative visions of healthcare. PHC has been described as a 'comprehensive philosophy of

7 The Constitution of the World Health Organization, available at www.who.int/government/eb/who_constitution_en.pdf (accessed 22 November 2017).

8 Linda Whiteford and Lenore Manderson, 'Introduction: Health, Globalisation, and the Fallacy of the Level Playing Field', in *Global Health Policy, Local Realities: The Fallacy of the Level Playing Field*, ed Whiteford and Manderson (Boulder: Lynne Rienner Publishers, 2000), 1–2.

9 For an analysis of the role of the Soviet Union in Alma Ata, see Anne-Emmanuelle Birn and Nikolai Krementsov, '"Socialising" Primary Care? The Soviet Union, WHO and the 1978 Alma-Ata Conference', *BMJ Global Health*, vol. 3, supplement 3, 1–15.

10 Halfdan Mahler, 'Promotion of Primary Health Care in Member Countries of WHO', Public Health Reports, International Health, WHO Congress on Traditional Medicine, March–April 1978, 109.

development', and one that represented a 'shift in thinking that saw health not merely as a result of biomedical interventions but also an outcome of social determinants'.[11]

According to the Alma Ata declaration, PHC 'reflects and evolves from the economic conditions and sociocultural and political characteristics of the country and its communities and is based on the application of the relevant results of social, biomedical and health services research and public health experience'.[12]

Defined as above, it encompassed a broad spectrum of attributes. PHC was to be based on practical, scientific and socially acceptable methods and technologies; it was also to be universally accessible to individuals and families in the community by a means acceptable to them, through their full participation, and at a cost that the community and the country could afford. PHC should form an integral part of the health system, being the first level of contact between the individual and the community, bringing healthcare as close as possible to where people lived and worked; and significantly, it should be the nucleus of the overall social and economic development of the community.[13] It depended on an inter-sectoral approach that encompassed food supply and nutrition, safe water and sanitation, health education, maternal and child health including family planning, immunisation, access to treatment, prevention and control of disease, and the availability of essential drugs.[14] Moreover, the need to ensure health services that were acceptable to communities entailed the inclusion of 'traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community'.[15] However, these objectives were almost immediately subject to dispute. In the 1980s, global development policy became dominated by neo-liberal macroeconomics, with its emphasis on cuts in public-spending and the reduction of budget deficits. At the same time, the World Bank began to overshadow the WHO in the field of international health policy.[16]

Against this background, the ambitions of Alma Ata were challenged as too costly and unrealistic. PHC came to signify, for some, selective programmes such as the United Nation's International Children's Emergency Fund (UNICEF)'s 'child survival' programme, and the GOBI strategy of growth-monitoring, oral rehydration, breastfeeding and immunisation. This more limited approach was re-conceptualised as Selective Primary Health Care (SPHC). Apart from such contemporary critiques, more recently, the anthropologist Mark Nichter has raised a more fundamental question. To what extent did PHC and other such representations in fact reflect real changes in policy? Or were they merely a reframing of issues in order to construct a narrative, regenerate interest, and facilitate international policy transfer? By 'using different language …. people believe that something new is being discussed or that an exciting new initiative is afoot'.[17] The debates around PHC and

11 Joy Lawn, Jon Rohde, Susan Rifkin, et al., 'Alma-Ata 30 Years On: Revolutionary, Relevant, and Time to Revitalize', *The Lancet* 372, 2008, 917.

12 WHO, 'Declaration of Alma Ata', International Conference on Primary Health Care, Alma Ata, USSR, 6–12 September, VII, 1, available at www.who.int/publications/almaata_declaration_en.pdf (accessed 30 November 2017).

13 WHO, 'Declaration of Alma Ata.'

14 WHO, 'Declaration'. However, this inter-sectoral and community approach was not new. It harked back, as Mahler pointed out in 1978, to the 1937 League of Nations Conference on Rural Hygiene in Bandoeng, Java, which had recommended the need for 'reconstruction that entailed the collaboration of the population, sanitation and sanitary engineering, nutrition' as well as 'health and medical services'; Mahler, 'Promotion of Primary Health Care in Member Countries', 107.

15 WHO, 'Declaration of Alma-Ata', Para. 7.

16 Amy L. S. Staples, *The Birth of Development: How the World Bank, Food and Agricultural Organization, and World Health Organization Changed the World, 1945–1965* (Kent, Ohio: Kent State University Press, 2006); Kelley Lee, *Global Institutions: The World Health Organization (WHO)* (London: Routledge, 2009).

17 Mark Nichter, *Global Health: Why Cultural Perceptions, Social Representations, and Biopolitics Matter* (Tucson: University of Arizona Press, 2008), 109.

SPHC, for example, were framed as a contest between horizontal versus vertical health programmes, whereas Nichter has argued that 'many programs have elements of both types of approaches to primary health care', and moreover, 'reflect the interests and ideologies of donors more than recipient countries'. Furthermore, he claims, this dichotomy 'limits thinking about health planning because neither representation accurately captures the complexity of forces shaping the way state governments engage in public health problem solving'.[18] PHC came into being as a separate philosophy of health; but arguably, it just pulled together various kinds of health and development plans under one label. The experience of Sri Lanka has much salience in this debate.

The Sri Lankan government accepted the propositions of the Alma Ata declaration fully, and until the end of the century, couched its health policy objectives consistently under the umbrella term, 'striving for health equity', through the means of primary healthcare. However, how far was there a fundamental change in its approach or its policy trajectory? At least one external consultant, for instance, noted that in 1975, Sri Lanka was already committed to what might be termed a primary healthcare approach, even if the terminology was absent and the capacity to implement it was lacking:

> The government of SL is committed to a policy of social and community medicine and of family health. The execution of this progressive and forward-looking approach to national health problems will require, on the part of medical administrators, medical officers, general nurses, public health nurses, midwives, health educators and health inspector, a knowledge of the social, cultural, psychological and economic factors that bear upon and influence health behaviour.[19]

Primary healthcare, in the sense of responding to the social determinants of ill-health, through the prevention alongside the provision of basic health services within reach of all, was in existence before PHC was launched. Was it just the terminology that changed, then, rather than the policies? This volume explores all these questions outlined above against the singular background of Sri Lanka's political, social and economic development in the second half of the twentieth century.

Table I.1. Selected Human Development Indicators for Sri Lanka, India, UK and US for the Year 2011.

Indicator	*Sri Lanka*	*India*	*UK*	*US*
Life Expectancy at Birth	74	66	81	79
Infant Mortality Rate Per 1,000 Live Births	8	44	4	6
Maternal Mortality Rate Per 1,00,000 Live Births	35	200	12	21
Improved Sanitation Facilities (Percentage of the Population with Access)	91	35	100	100
Immunisation, DPT (Percentage of Children Aged 12–23 Months	99	72	97	95
Health Expenditure Per Capita $	59	97	3,609	8,608
GDP Per Capita $	2,923	1,489	39,093	51,749

Source: Available at datatopics.worldbank.org (accessed 4 April 2014).

18 Nichter, *Global Health*, 107. An extensive debate on the implications of SPHC An extensive debate on the implications of SPHC and comprehensive PHC can be found within the pages of *Social Science and Medicine*. See, for example, the articles in *Social Science and Medicine* 26, 9, 1988; see also Marcos Cueto, 'The Origins of Primary Health Care and Selective Primary Health Care', *American Journal of Public Health* 94, no. 11, 2004, 1864–75.

19 WHO Archives, Geneva, Project Files SRL/HED/002, Health Education in Family Health, Dr George M Foster, Assign. Report, Behavioural Science Research in Sri Lanka, 30 December 1974–26 Feb 1975, Para. 3,1.

POLITICAL, SOCIAL AND ECONOMIC CONTEXT: SUMMARY

Sri Lanka was the British crown colony of Ceylon from 1805 until its independence in 1948.[20] It set the pattern of crown colony governance from the 1830s and was deemed Britain's model colony. A vibrant economic sector, based on the export of primary products, made it a wealthy colony. Four hundred years of colonisation had created a highly Westernised elite, who, from the 1920s, began to challenge British rule. In 1931, the demand for self-government bore results in the Donoughmore Constitution, which set up a legislature elected on universal suffrage. There followed nearly two decades of decolonisation where the Ceylonese were responsible for all aspects of government except that of foreign policy, and an 'embryo welfare state' was established.[21] There was a rapid expansion of healthcare services in this period through to 1948, and this included an extensive preventive healthcare system. In 1926, as a collaborative venture between the International Health Division of the Rockefeller Foundation (RF) and the colonial government, a health unit was established at Kalutara. It was modelled on the scheme successfully used by the RF in the American South in its hookworm campaign. The programme of work for this first health unit focused on maternity and child welfare services, health education, sanitary work, communicable diseases work, and school medical inspections.[22] The purpose of the health unit was preventive, not curative, and as they expanded across the island (there were 98 health units by the mid-1970s), they formed the basis of a primary healthcare infrastructure still present today. Furthermore, the 1934–35 malaria epidemic (in which there was an estimated 80–1,00,000 deaths) was instrumental in extending the health infrastructure into hitherto neglected rural regions; and in 1937, anti-malarial measures were included in the activities of the health units. The epidemic was also instrumental in exposing the widespread poverty of the Sinhala peasant class. This is significant as it entrenched welfarism in nationalist elitist politics, and shaped public policy and state interventionism in the first three decades after independence.[23]

The first independent government established a social welfare state based on the three pillars of free education, free healthcare and food subsidies. Significantly, access to free education included girls, and Sri Lanka was and is notable for its levels of female literacy. It was at 44 per cent by the mid-1940s; and by 1963, the entry of girls equalled boys in primary education, and at secondary level, by 1981. Women are now also well-represented at the university level, especially in the field of medicine.[24] Since women are the health producers in families and communities, this was an important contributory factor in the search for good health. Government intervention to maintain food availability and consumption was carried out through a system of subsidies to producers to ensure a good price for their product as an incentive to growth, and subsidies to consumers on rice and other basic food items. These subsidies, enduring until the late-1970s, were intended to ensure a basic safety net of food consumption.[25]

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20 Ceylon changed its name in 1972, when it became the Democratic Socialist Republic of Sri Lanka.

21 K. M. De Silva, 'Introduction', in *Sri Lanka: The Second World War and the Soulbury Commission, 1939–45*, Part 1. British Documents on the End of Empire series B, ed. De Silva (London: HMSO, 1997), xxxii; Laksiri Jayasuriya, 'The Colonial Lineages of the Welfare State', in *Economic Policy in Sri Lanka: A Festschrifi in Honour of Gamini Coreae*, ed. Saman Kelegama (New Delhi: Sage Publications, 2004).

22 Soma Hewa, *Colonialism, Tropical Disease and Imperial Medicine* (Lanham: University Press of America, 1995); Jones, *Health Policy in Britain's Model Colony*, 153–71.

23 Lakisiri Jayasuriya, *Welfarism and Politics in Sri Lanka: Experience of a Third World Welfare State* (Perth: University of Western Australia, 2000); Silva, *Decolonisation, Development and Disease*, 80–125.

24 Patricia J. Alailima, 'The Human Development Perspective', in *Sri Lanka's Development Since Independence: Socio-Economic Perspectives and Analyses*, ed. Weligamage D. Lakshman and Clement A. Tisdell (New York: Nova Science Publishers, 2000), 45; Kamalika Pieris, *The Medical Profession in Sri Lanka, 1843–1980* (Colombo: Visidunnu Prakashakayo Ltd, 2001), 115–16.

25 Alailima, 'Human Development Perspective', 47.

Sri Lanka also had a thriving traditional medical system. Ayurveda had been officially recognised by the government from the 1930s. Its medical college and research institute received government funding, although this was minimal compared with expenditure on Western medical services. This did mean, however, that traditional medicine was an integral part of the official medical landscape, and its practitioners were often the first port of call for health advice, as they were easily accessible even in the more remote areas where Western medical services were thinly spread. Moreover, it is argued that Sri Lankan cultural norms paved the way for the willing use of all available healthcare services, whether Western or traditional; and individuals would easily switch between the two when in need, making their own assessment of the relative effectiveness of the two systems for their particular problem. This may also stem from the fact that the indigenous medicine of Sri Lanka places great value on good health and eschews a fatalistic attitude to illness, so that Sri Lankans' health-seeking behaviour predisposes them to accessing medical aid, in whatever form.[26]

The social welfare state was financed by the plantation export sector, but by the late 1950s, its profitability was increasingly coming under threat and the resulting deteriorating terms of trade, budget deficits and slow economic growth at a time of rapid increase in population led to youth unemployment and social discontent. The 1970s witnessed a major youth insurgency in 1971, severe drought conditions from 1972–76, and increases in international prices of food grains (Sri Lanka imported much of its food), and of petroleum and petroleum products such as fertilisers. Gross Domestic Product (GDP) growth averaged to just 2.9 per cent during the period 1970–77.[27] The package of reforms that ended the social welfare state in 1977 were implemented under the auspices of the World Bank and the International Monetary Fund (IMF), and this instigated, according to Godfrey Gunatillake, a 'fundamental shift in development policy' in the direction of the 'market and an open economy in which the private sector would be the main engine of growth'.[28] The liberalisation of the economy increased the flow of foreign aid and investment, and boosted manufacturing and the export economy. GDP growth from 1980–90 reached a high of 6.1 per cent, but this was not maintained against a background of economic instability and growing ethnic conflict. For the entire period under study, Sri Lanka's average GDP growth was only 4 per cent. Nevertheless, as Gunatillake has noted, the 'improvements in health and education appear to have been able to produce an unusual capacity to prevent infant and child mortality in a poverty-stricken environment.'[29]

Apart from surviving the vagaries of the global economic system, Sri Lanka also experienced a crippling and traumatic civil war that ended only in 2009. The island's population (numbering c7 million in 1948 and c20 million in 2000) is heterogeneous, composed of different social and ethnic groups, distinguished by language and religion. There are three main ethnicities; the majority are the Buddhist Sinhalese community. There are two Hindu Tamil communities who form the largest minority. The Tamils who came to the island in the seventh century, and settled in the north and the east, consider themselves indigenous to the island. The Indian Tamils are descended from the immigrant labour brought in from South India from the 1840s onwards to work on the coffee and the tea estates. They now form the poorest segment of the population, and despite sharing religion and language with the Tamils of the north, they constitute a separate group. There is also a small Moslem minority.

During the first decade after independence, English remained the official language. Also, the government continued to be dominated, as Elisabeth Nissan and R. L. Stirrat argued, by the 'Colombo based, English speaking, Westernised class', but with 'growing tension' between them and the 'Sinhala speaking non-

26 Indrani Pieris, *Disease, Treatment and Health Behaviour in Sri Lanka* (New Delhi: Oxford University Press, 1999).

27 Alailima, 'Human Development Perspective', 43.

28 Godfrey Gunatillake, 'Development Policy Regimes', in *Sri Lanka's Development Since Independence*, ed. Lakshman and Tisdell, 146.

29 Gunatillake, 'Development Policy Regimes', 131.

Westernised elites', who felt cut off from access to power and status.[30] It was to this latter group that Sinhala nationalism had most appeal. In 1956, this group was instrumental in the election of the Bandaranaike government that gave pride of place to Sinhala language and Buddhist values, and ushered in an era when communal tensions became more overt, and ultimately, more violent.

From 1956 onwards, Sri Lanka experienced several episodes of communal violence, but not until after 1977 did it escalate to more than isolated incidents. The emergence of the campaign for an autonomous Tamil region in the north and the east, *Tamil Eelam* (an autonomous region for the Tamils), and the organisation of the Liberation Tigers for Tamil Eelam (LTTE) turned these episodes into outright conflict, and finally, into civil war between the Sinhalese majority and the Tamils. In 1983, an LTTE ambush of a party of government soldiers sparked off a wave of violence against the Tamil population throughout the island, which cost 1,000 Tamil lives and created 1,00,000 Tamil refugees. The civil war that followed lasted until the defeat of the LTTE, with a great loss of lives in 2009. It caused immense suffering to ordinary people on both sides of the communal divide and created a Tamil diaspora throughout the world as Tamil people sought peace and security. In the areas most affected—the north and the east of the country—the war disrupted all aspects of government and administration as well as being an enormous drain, as the military budget increased, on government resources available for social and welfare services.[31] Skeletal health services were maintained by the government as far as possible in the afflicted areas, but were subject to severe staff shortages with the flight of personnel, disruptions to medical supplies, and extra pressures brought on by the conflict. Non-governmental organisations (NGOs) and international donors were increasingly relied upon for assistance. The war also suggests that in the analysis in this volume, there is a gap in information from the 1990s onwards, a period on which data on health indices and other sources of information in the war zone itself are limited and patchy.[32]

This account is necessarily based on top-down sources. Government and WHO reports provide the framework of the study; but other kinds of Sri Lankan sources have also been explored as much as possible. Newspaper and journal articles written by Sri Lankan medical professionals responsible for the implementation of these policies provide a different perspective from the more official sources.[33] Sri Lanka has a long tradition of philanthropic and charitable activity to supplement government efforts. Organisations such as Sarvodaya, for example, have been instrumental in supporting and devising community projects in health, nutrition and agriculture. Its contribution, along with the contribution of other such organisations, are only explored when they appear in these sources. However, their part really does deserve a more thorough assessment.[34] Despite the fact that such an assessment cannot be undertaken in this volume, through the generosity of its Secretary, the bulletins and reports of the Ceylon National Association for the Prevention of Tuberculosis (CNAPT) were made available, and these provided a rich archival source for Chapter 2, which explores the deadly disease, tuberculosis (TB).

30 Elisabeth Nissan and R. L. Stirrat, 'The Generation of Communal Identities', in *Sri Lanka: History and Roots of Conffict*, ed. Jonathan Spencer (London: Routledge, 1990), 35.

31 Nira Wickramasinghe, *Sri Lanka in the Modern Age: A History of Contested Identities* (London: C. Hurst & Co. Ltd, 2006); A. M. Navaratna-Bandera, 'Ethnic Relations and State Crafting in Post-Independent Sri Lanka', in *Sri Lanka: Current Issues and Historical Background*, ed. Walter Nubin (New York: Nova Science Publishers, 2002), 57–75; Patrick Peebles, *The History of Sri Lanka* (Westport, Connecticut: Greenwood Press, 2006), 110–79.

32 See Silva, *Decolonisation, Development and Disease*, Chapter 5, for an account of the impact of the war on malaria control in the conflict zones.

33 This refers to other international organisations, apart from the WHO, that were involved in Sri Lanka, but whose archives are not accessible. For example, the archives of the UNICEF have been closed since 2010, as there are no resources to keep them open.

34 The CNAPT does receive a more detailed assessment in Chapter 2 through the generosity of its general Secretary, Mr D. P. Fonseka, who kindly gave me access to the CNAPT archives.

This brief summary of the socio-economic and political context provides the background against which Sri Lanka's efforts must be set. The subsequent chapters explore the three fundamental questions outlined at the beginning of this introduction, through a detailed analysis of selected health policy developments and programmes in the period 1948–2000. This is by no means, and not intended to be, a comprehensive account of health policy or primary healthcare initiatives. There are acknowledged omissions, such as maternal health and reproductive policies. The estate population forms a separate and singularly disadvantaged group within Sri Lanka; they are only touched upon and they merit a study of their own.

The topics have been chosen in order to illustrate the various aspects and complexities of the making and implementation of health planning and programmes in the light of these questions, and they relate to major health threats over the period of this study. Chapter 1 explores the development of healthcare infrastructure, the effectiveness of its delivery of services to the entire population, and the extent to which it adapted to the challenges of health for all. The attempt to control TB is examined in Chapter 2. This disease has been selected because the incidence of TB in a community serves as a marker of a country's achievement in meeting basic needs and establishing social justice. This chapter also includes an analysis of the relationship between the WHO and Sri Lanka, as exemplified through the workings of a joint project on TB control from the late-1960s.

The most vulnerable group in a nation are its children, and they are also the source of a nation's future human capital. Hence, two chapters are devoted to children's health. The first, Chapter 3, presents an overview of child mortality and morbidity, with particular reference to nutrition, which, at Alma Ata, was seen to have an essential role in achieving good health.[35] Chapter 4 concentrates on the implementation of the childhood immunisation programme. This was deemed as a means to extend primary healthcare services throughout the population, and exploring this also offers the opportunity to discuss the significance and problems of an international policy transfer to a less well-resourced environment. The double disease burden presents a predominant and urgent threat to the established primary healthcare structures in Sri Lanka today. Demographic and epidemiological change has contributed to the prevalence of noncommunicable diseases alongside communicable disease; this adds a considerable burden to the already stretched limited resources for healthcare. How Sri Lanka has responded to the challenge of rising noncommunicable disease is the subject of Chapter 5. The Conclusion looks back at the past 50 years of Sri Lanka's health achievements and ahead at the challenges it faces in the twenty-first century.

35 This will not include an account of its maternal and infant services per se, but see Indra Pathmanathan, Jerker Liljestrand, Jo. M. Martins, et al., *Investing in Maternal Health: Learning from Malaysia and Sri Lanka* (Washington: The World Bank, 2003), for an excellent analysis of Sri Lanka's success in this field.

1. Delivering 'Medical Services for Health and Not for Disease'

In Ceylon, health is becoming less a matter of gaining freedom from the great killing diseases and more a matter of thoughtful organized planning for real living for the population …

D. L. J. Kahawita[1]

The above statement by the Medical Director of Sri Lanka's health services shows an acceptance that to promote health rather than just treat disease, an effective healthcare infrastructure needed to be resourced sufficiently and be accessible to the whole population, whatever the class, gender, faith, ethnicity and geographical location. With regard to the implementation of such a healthcare system, Sri Lanka at independence had some advantage because of the coverage of its curative institutions[2] and the existence of the health unit. The first health unit, set up in 1926, provided infant and maternal welfare clinics, vaccinations, sanitary work and health education (malaria control was added in 1937 as a response to the malaria epidemic of 1934–35). Health units were intended to deliver healthcare to a defined population group through curative, preventive and promotive services. They spread across the island after 1926, and they were the basis for preventive and promotive healthcare, such as they were in the succeeding decades.

Arguably, hence well before Alma Ata, the Sri Lankan healthcare infrastructure contained within it a prototype of what a primary healthcare institution might look like. Furthermore, Sri Lanka had a traditional medical system that was thriving through popular use, and that had official government recognition and funding. Ayurveda was part of the official medical landscape from the 1930s onwards, and thus, in theory it was well-poised to fulfil the role in primary healthcare delivery that was envisaged for traditional medicine at Alma Ata. The basic institutions of a primary healthcare infrastructure were therefore inherited from the colonial state and expanded upon through the following decades. In this chapter's discussion of how effectively the medical services were structured to maximise the good health of the population, there are two main parts. The first section examines the public healthcare infrastructure as it developed over the period in relation to its capacity to deliver health equity before the challenge of health for all was launched onto the global stage. The second section explores how, if at all, the acceptance of primary healthcare, as declared at Alma Ata, changed the trajectory of the development of Sri Lanka's healthcare services.

THE EVOLUTION OF THE PUBLIC HEALTHCARE INFRASTRUCTURE FROM 1948–79

Curative medicine and its institutions, a legacy of imperial medicine, dominated Sri Lanka's medical services after independence, and the hospital and hospital medicine were the suggestive symbols of modernity for the post-colonial state.[3] In the eyes of policy-makers, medical professionals and the public, hospitals represented the best that biomedicine had to offer, and even as there was acceptance that it was more cost-effective to prevent ill-health than to cure it, the pull of the hospital sector on Sri Lanka's limited resources was difficult to resist. This bias towards curative medicine had an impact on the development of the healthcare infrastructure in two

1 D. L. J. Kahawita, *Annual Medical Report 1955*, B2, SLNA Sessional Papers.

2 In 1948, there were 248 government hospitals and the ratio of beds to population was 1:376. Margaret Jones, *Health Policy in Britain's Model Colony: Ceylon, 1900–1948* (Hyderabad: Orient BlackSwan, 2004); and for an account of the development of this curative system Margaret Jones, *The Hospital System and Health Care: Sri Lanka, 1815–1960* (Hyderabad: Orient BlackSwan, 2009).

3 See Jones, *Hospital System and Health Care*; Mark Harrison, Margaret Jones and Helen Sweet, *From Western Medicine to Global Medicine: The Hospital Beyond the West* (Hyderabad: Orient BlackSwan, 2009).

interrelated ways, and it has continued to hinder the development of an effective primary healthcare delivery system to this day.

First, and most significant, government expenditure on health was and remained disproportionately focused on the curative sector, a situation that worsened over the decades as biomedical technological advances became ever-more effective, ever-more expensive, and ever-more in demand. In effect, expenditure on public and preventive health actually fell as a proportion of total health expenditure over the whole period. In 1975, L. A. Simeonov estimated that for every 12 cents spent on the prevention of diseases and the promotion of health, one rupee was spent on treatment.[4] Twenty years later, in 1994, Dulitha Fernando estimated that the percentage difference was 61.9 percent on curative care, with 24.7 per cent on general administration and 12.0 per cent on community health services.[5] Moreover, the Ministry of Health's own report in 2003 suggested that the proportion of total expenditure on preventive and public health expenditure had declined from 11 per cent in 1990 to 6 per cent by 1999.[6]

Second, and following from this, it meant that medical education, and thus, the medical profession in Sri Lanka, was heavily biased in favour of the curative sector and the Western model of healthcare. The perception was that medical careers were best pursued within the hospital sector, and within the major urban centres. Rural hospitals, clinics and dispensaries were small generalist institutions, often under the direction of one doctor who was responsible for the entire range of medical problems in the area. The training they received in the city hospitals of Colombo and Kandy ill-fitted them for this task.[7] Sri Lankan doctors were reluctant to work both in public health and/or in rural areas. Policy-makers from the 1940s onwards acknowledged that preventive medicine for medical professionals was the poor relation of the medical services. For example, Dr W. G. Wickramesinghe, Director of Health Services (DHS), writing as early as 1945, argued that there was a need to wean professionals away from their 'Disease Policy' to a 'Health Policy'.[8] However, persuading doctors to commit themselves to working in public health and in the more remote rural areas (where opportunities for private practice were also limited) proved to be a difficult proposition. This problem was of wide public concern from the beginning of the period. As the Member of Parliament (MP) and representative for Colombo Central, P. B. G. Keuneman, argued in 1952, stating that the country's medical service is primarily concerned with curative rather than preventive measures:

> It seems to me that the central policy of the Department has not been that of preventing people getting ill but rather that of giving them some sort of medical attention if they do get ill …. We can see the absolute neglect of public health work in the allocation of funds and also in the allocation of personnel …. In a

4 L. A. Simeonov, *Better Health for Sri Lanka: Report on a Health Manpower Study*, SEA/PHA/149, 1975, 173, WHO, Regional Office for South East Asia, New Delhi.

5 Dulitha Fernando, 'An Overview of Sri Lanka's Health Care System', *Journal of Public Health Medicine* 22, no. 1, 2000, 17.

6 *Annual Health Bulletin*, 2003, 20, available at www.health.gov.lk.

7 In a conversation Dr Chris Uragoda in April 2004, I learned that his first posting as a newly qualified graduate was as the in-charge of a small rural hospital, where he was confronted with problems that he had never met in his training in the Colombo hospitals and with none of the back-up support in Sri Lanka's major hospital.

8 W. G. Wickramesinghe, 'A National Health Service in Ceylon', *Journal of the Ceylon Branch of the British Medical Association* 41, no. 1, 1945, 6.

> country like ours, where living conditions and sanitation are primitive and where the standard of living is low, the main emphasis should be the other way round.[9]

However, taking resources from the urban, curative sector and directing them towards rural and/or public health was a contentious policy, which governments were reluctant to embark upon. Furthermore, in Sri Lanka, health was invariably viewed through the prism of politics. In his report on the health services in 1975, for example, Simeonov commented that '*Political considerations* seem to play an exceptionally important role in the decision-making process in health matters in Sri Lanka. Almost every decision is assessed from a political viewpoint in terms of the reaction of the electorate to such a decision' (italics in the original).[10]

Nearly 30 years later, in 2004, the Director General of Health in the 1980s, Dr Malinga Fernando, also confided that health matters were a 'clear and potent political issue', and thus, any changes were met with formidable political obstacles.[11] Initiatives to develop an infrastructure for the delivery of primary healthcare had to operate within these particular parameters as well as within the general context of the financial restraints of the government. This chapter examines the significant milestones in the development of healthcare infrastructure and assesses the import of structural changes, beginning with the first major reform attempted by the newly established independent government in the 1950s. It should be noted that before Alma Ata, the term 'primary healthcare' was not used in reports, articles and accounts, but rather, the terms preventive, public and prophylactic medicine, were used to denote those services designed to provide accessible basic healthcare, to prevent ill-health and to promote good health. Essentially, they did not vary significantly from the Alma Ata approach, but it is only after Alma Ata that these same policies acquired the nomenclature of PHC. This has salience with regard to the suggestion that it was a change of rhetoric rather than that of essence that followed Alma Ata in Sri Lanka.

THE 'CUMPSTON PLAN FOR MEDICAL REFORM'[12]

The first of these milestones was the result of an invitation from the Minister of Health, S. W. D. Bandaranaike, with the support of the WHO, to the former Director General of Health of Australia, and consultant for the WHO and UNICEF, Dr J. H. L. Cumpston, to investigate and report on Sri Lanka's medical and public health organisation and to advise on how to reform the service. This invitation was prompted by the widespread dissatisfaction with the existing system, coming from politicians, medical professionals and the public alike. Among the many problems complained of, were the overcrowding of hospitals, shortage of medical personnel and drugs, private practice by government medical officers (MO), and notably, the friction between the curative and preventive sections. This last problem is wonderfully illustrated by the cartoon below from *The Ceylon Observer* after the report's publication in 1950 (Figure 1.1).[13]

Cumpston is shown here as being pushed into a room by Bandaranaike, where the 'twins', curative and preventive healthcare, are fighting it out, while the ordinary Sri Lankan is held hostage.

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9 P. B. G. Keuneman, 'Health Services Bill, Second Reading', 1 February 1952, 1162, *House of Representatives Debates*, Sri Lanka National Archives (henceforth SLNA).

10 Simeonov, *Better Health*, 19. Simeonov compiled a report on the Sri Lankan healthcare services in the early 1970s on behalf of the WHO.

11 Malinga Fernando, Director General for Health (1981–85), Secretary to the Minister of Health (1985–90), WHO Team Leader (1990–96), email message to author, 8 November 2004.

12 Headline, *The Ceylon Observer*, 27 January 1950, 1.

13 I am immensely grateful to Laksiri Jayasuriya for providing me with this and other material on the Cumpston Report.

Cumpston arrived in the island in September 1949, and after a month of interviews in Colombo, he travelled further afield, visiting hospitals and dispensaries around the island. He handed what turned out to be a controversial report to the government at the end of the year, and this then went on to form the basis of the reorganisation of the medical services legislated for in the 1953 Health Services Act.

The first issue that Cumpston addressed in his report was the separation between the curative and preventive divisions (termed as the medical and sanitary divisions) within the Medical Department. In his opinion, this separation carried the 'implication that they are mutually exclusive', and given that the Ceylon government had already accepted the WHO's holistic definition of health, which acknowledged no such division, he argued that this needed to be reflected in the organisational apparatus of healthcare delivery.[14] He therefore recommended that the Medical Department should be 'so organized as to emphasize and encourage the essential unity of purpose', and that in pursuit of this objective, its name should be changed from the Department of Medical and Sanitary Services to the Department of Health.[15] At the top, a Ministry of Health should be established with a designated Minister of Health, and under him, should be a Director General of Health Services (DGHS), who would be the ultimate authority in the health service. The Minister was the politician, and his role was to guard the DGHS 'against all interference and pressure from politicians'. As an illustration of how political the question of the health services was, he felt the need to add that 'Sufficient evidence has come before me to justify the insertion of this paragraph.'[16] The DGHS's function was to 'secure and maintain the unity of inspiration and purpose already discussed and to ensure harmony in operation'. Cumpston felt that the appointee should be someone who had had experience in both clinical and preventive medicine, and in administration as well.[17] The Department should have three divisions: medical, health and laboratory services, each under a Divisional Director with full authority in their division. All these posts, Cumpston felt, should be advertised to obtain the best candidate, who might not necessarily be the next in line for promotion.[18] The DGHS and the three Divisional Directors would together constitute a Health Council, which would hold minuted monthly meetings to discuss any issues that would be arising and to review overall objectives and performance.[19]

The medical, health and laboratory formed the essential structure of the Medical Department till the end of the twentieth century. The Division of Medical Service dealt with all aspects of curative medicine—hospitals, clinical medicine, and maternal and infant clinical health work.[20] The Division of Health Services (the renamed Sanitary Department) was responsible for the health aspects of maternal and child welfare (apart from its clinical aspects), nutrition, environmental sanitation, infectious diseases, the special campaigns against leprosy, TB, filaria, malaria, sexually transmitted diseases (STDs) and yaws (again, aside from hospital aspects)—in other words, public health.[21] This division housed the principal institutions of preventive health—the health centre and the health unit. The former was the base for a Medical Office of Health and a public health nurse (PHN) and/or midwife, and was the location for the maternal and child welfare clinics. In addition, the health centre

14 J. H. L Cumpston, *Report on the Medical and Public Health Organizations of Ceylon*, Ceylon Sessional Papers No. 3, 1950, 17, SLNA. The Medical Department was established in 1858 to serve the civilian population, and the public health sector (sanitary division as it was termed) followed subsequently, and was traditionally the 'Cinderella' of the Medical Department.

15 Cumpston, *Report*, 5.

16 Cumpston, 19.

17 Cumpston, 23.

18 Cumpston, 23.

19 Cumpston, *Report*, 22.

20 Cumpston, 34.

21 Cumpston, 36–37.

offered examinations, advice and treatment for minor ailments. The health unit took on the major role in the prevention of communicable disease, sanitation, housing, maternity, child and school health work, and the collection of vital statistics.[22] The special campaigns against TB, filariasis, malaria, venereal diseases and leprosy, along with childhood immunisations, formed the major part of the preventive activities of the Health Division and commanded the majority of its budget. The role of TB control and childhood immunisation in delivering primary healthcare are examined in full in later chapters. The Division of Laboratory Services was self-explanatory; its head should also be the Director of the Institute of Medical Research, and thus, be in charge of all research and have a supervisory role over hospital laboratories. By establishing this tripartite structure for the health services under the one overall Director General, Cumpston's objectives had been to deal with the lack of coordination and cooperation within the Medical Department, and to streamline its administration. Moreover, along with the reforms he proposed in hospital management and the conditions of service for MOs at all levels, he aimed to produce a more effective delivery system for both curative and preventive health.[23]

Cumpston acknowledged that the preventive side suffered from the unpopularity generally of public health work, and in his opinion, the reasons were clear:

> … the young doctor …. is limited to routine examinations on a monotonous level within an extremely limited field of medical practice, without even the satisfaction of seeing any of his cases through to treatment …. but even these functions do not occupy all or nearly all of his time: the rest of his time is occupied in supervisory work in a field of administration of which he has no real knowledge and to which …. he cannot bring that enthusiasm or evaluation of results which is possible only with the right training.[24]

He went on to say that given the shortage of doctors, it was a waste to employ a doctor 'on any form of work if he could be much more profitably employed elsewhere'. Cumpston accepted, however, that with Sri Lanka's 'limited financial resources' and its 'very inadequate medical staff', to do everything that was 'desirable or even urgently necessary' would be impossible. Rather, he argued, it was 'far better to do something properly and build on that, than to do everything badly and so go from bad to worse with mounting inefficiency and ultimate chaos'.[25]

Cumpston's conclusion was that it was better to build up the infrastructure slowly on a sound basis, and rely on an incremental redistribution of medical staff to the provinces. He also felt that it was better to wait for the natural increase of medical graduates to ultimately solve the problem.[26] This conflict between quality and quantity, between long-term planning versus the short-term satisfaction of needs, as highlighted by Cumpston above, also arose at this time with regard to nursing. The help given to Sri Lanka by the International Health Division (IHD) of the Rockefeller Foundation on the provision and training of nurses was hampered by a fundamental disjuncture between what the Sri Lankans wanted and what the IHD thought they should have. As the IHD Nursing Advisor, Betty Tennant, complained in 1950, the 'minister is interested in quantity not quality' (the minister in question being Bandaranaike).[27]

22 Cumpston, 42

23 Cumpston, 1–15.

24 Cumpston, 43.

25 Cumpston, 44.

26 Cumpston, 44.

27 Betty Tennant to Andrew Warren, 12 January 1950, Projects RG 1.1, Ceylon Series 462c, Box 1, Folder 6, Rockefeller Archive Centre, New York. See also Jones, *Hospital System and Health Care*, 357–86.

The IHD wanted to lay down the basis for the long-term improvement of nursing in the island; on the other hand, the Health Department was desperate for trained nurses in their hospitals and clinics to be produced as quickly as possible. In both these instances, the Sri Lankan government was confronted with immediate problems (the shortage of trained staff being the primary one), which demanded immediate solutions based on realistic possibilities, whereas the Western donors and experts, intent on replicating a health service that was akin to Western models, seemed unresponsive to these pressures. It is a dilemma, if you accept that certain aspects (note: not all aspects) of the Western model did improve health opportunities, such as fully trained nurses and appropriate therapeutics. However, it has also been argued, as it was at Alma Ata, that at times, in certain circumstances, something, albeit imperfect, in place is better than nothing at all. Both these viewpoints have been and still are debated, and in the case studies that follow in the subsequent chapters, negotiating between them is shown to be a constant factor in policy-making.

In order to improve the effectiveness of the preventive healthcare system, Cumpston emphasised that it needed to work in unison with the local government. By this, he meant not only the system devised by the central government, but also a 'good system of administrative government by the people of any location regulating the actions of themselves and their neighbours'.[28] This sounds very similar to the community participation advocated at Alma Ata, but he did not elucidate how this could work in practice. He did, however, point out that neither did the administrative divisions of the health service coordinate with those of local government, nor was there coordination within the Health Department itself, in that there were eight provincial medical superintendents on the curative side, but only five on the public health side. It was 'rational', he argued, that 'the administrative subdivision of the island should be for *all* governmental purposes uniform' (italics in the original).[29]

At the same time, Cumpston made these recommendations for improving the workings of the medical service. He also adopted a wider perspective and laid down the fundamental prerequisites for the promotion of health that should underpin government policy:

> … sanitation to the point at which intestinal infections are unknown; nutrition to the point at which malnutrition from insufficient or wrong diet does not exist; education to the point where the public, instead of having to be urged, will demand, and continue to demand until they receive, adequate provision for the maintenance of their complete health.[30]

The need for a good general education and a 'reasonably high economic level' for the whole community were, he stated, 'self-evident' in the prevention of ill-health. Education enabled a person to 'understand the elements of good living' and to develop 'a sensitive social conscience'; and a poor community without the means to provide for itself suffered from low levels of nutrition and susceptibility to disease.[31] Since the Sri Lankan government was already intent on pursuing a social welfare state, he was, to some extent, preaching to the converted; but as the subsequent chapters in this volume show, there were many obstacles to achieving those objectives.

This extended discussion on the Cumpston Report is justified, first, by its significance in the structural development of medical services from the 1950s, until the changes wrought by the Alma Ata Declaration of 1978. Second, it is also justified by the emphasis placed on preventive healthcare, apparent in both the objectives of the government in commissioning the report, and in its conclusions. This was a report heavily influenced by the ideas of social medicine. Its recommendations had a mixed reception—approbation by some and hostility by

28 Cumpston, *Report*.

29 Cumpston, 21.

30 Cumpston, 38.

31 Cumpston, 38.

others—that reflected how politicised health matters were in Sri Lanka. For example, a January editorial of the *Ceylon Daily News* acclaimed it for being 'incisive, outspoken, and studiously compiled'. It highlighted Cumpston's success in 'brushing away the mass of irrelevancies which have always prevented observers from getting at the root of the problem; the battle of the kites and crows within the medical officers themselves …. the scurry for the plums of office'. Tellingly, the writer added to this list of irrelevancies, 'the over acute concentration on world health problems at the expense of our own since we joined the WHO—which had cluttered up the medical scene in Ceylon so badly that it was barely possible for the Government to attend to the real problems of its people'.[32]

Clearly there was some feeling in the island about interference from yet more outsiders soon after becoming independent, and at least one senior MO, whose opinion was referred to in the same edition of the paper, applied this to Cumpston himself. He argued that 'sufficient consideration had not been given to local conditions, and that Cumpston wanted to impose on Ceylon a system that prevails in Australia.'[33] In contrast, at a meeting of the government MOs' Association in February 1950, it was proposed that Cumpston himself should be appointed the first Director General of the Health Department.[34] Despite these differences in responses to the report, it was largely accepted as the basis for the future organisation of the Health Department.

The Health Services Act (No. 12, 1953) that finally implemented Cumpston's recommendations represented to Dr D. L. J. Kahawita, the DHS, a 'decisive step' in the 'evolutionary change' that was taking place in the practice of national health.[35] It represented an attempt, following the 'experience of more advanced countries', to establish a 'close liaison of curative and preventive medicine with a vigorous attack on disease through research and community action'. 'With this activity there must be associated', he argued, 'an increasing recognition of the broader implication of the terms "ENVIRONMENTAL HEALTH" and "OCCUPATIONAL HEALTH"' (capitalised in the original).[36] Under the terms of the Act, a central administrative structure was established, composed of a Director, three Deputy Directors, and five other officers to advise the Director with the support of a health council, as Cumpston had suggested. The DHS was principally responsible for coordination and advice, although it was acknowledged that 'administrative duties are still numerous and important.'[37] At the beginning of 1954, a decentralised divisional administration set up 15 administrative health districts, each under a Superintendent of Health Services (SHS). According to an introductory memorandum to the changes by the Minister of Health, the 'aim of the scheme is to ensure maximum efficiency at minimum cost', adding that the 'conception of decentralization must be dynamic.'[38] The SHS's functions were the control of all staff—doctors, apothecaries, midwives, public health inspectors and laboratory technicians—and departmental administration. The SHS was also responsible for the 'harmonization of the curative and preventive supervision and administration at sub-divisional level', which included the education of the local authorities on prevention with, if need be, the power to 'force them under Section 8 of this Act, to realize and discharge their responsibilities to stem the toll of ill-health arising from insanitation'.[39] Also, the Minister of Health's comment in this memo, that 'the "hospital system" must be made to reassert itself again' (to be achieved through the establishment of separate

32 Editorial, *Ceylon Daily News*, 28 January 1950.

33 Anonymous, 'Doctors' Views on Cumpston Report: Wide Divergence of Opinion', *Ceylon Daily News*, 28 January1950.

34 'Director General of D. M. and S. S. Post for Dr Cumpston Requested', *The Daily News*, 4 February 1950.

35 Kahawita, *Annual Medical Report 1954*, B5.

36 Kahawita, *Annual*, B5.

37 Kahawita, B5.

38 Kahawita, B5.

39 Kahawita, B5.

hospital boards), suggested that the curative sector was set to maintain its dominance in the new administration.[40]

Emulating the advanced countries, as the Health Act clearly attempted to do in following Cumpston's recommendations, presented a formidable challenge in a context where communicable diseases (CDs) such as malaria, TB, leprosy and filiariasis were ever-present major threats to health. General improvements in living standards in the developed world, as much as medical advances, had contributed in a large part in alleviating the threat from CDs, and as Cumpston had pointed out, ideally it was the way forward also for Sri Lanka as the most effective means of prevention. However, the developed world had taken nearly a century to understand this process, and much of this knowledge had come with hindsight. However, developing countries were expected to, and wanted to, act upon this knowledge in a context of severely limited resources, both for the application of medical advances and the raising of socioeconomic standards; and moreover, they had to do this simultaneously. Not surprisingly, therefore, although from the 1950s onwards, the deliverers of healthcare and the policy-makers were fully aware of the need for preventive healthcare provision, the hospital remained the symbol of a modern health service, and preventive medicine continued to be the Cinderella in terms of resources and personnel.

THE YEARS UP TO ALMA ATA: 1956–78

Three years after the implementation of the reorganisation, little progress had been made in re-orientating health services towards prevention. In 1956, Kahawita considered the main obstacles to this to be, first, the lack of coordination with other government departments that had an impact on health, in particular, those which were responsible for housing and the environment. Second, the medical profession itself 'had not been able to give the lead into the great era of prevention'.[41] Kahawita reiterated what Cumpston had said about the reluctance of doctors to serve in the preventive health field:

> In Ceylon the gratitude that comes the way of clinicians in their conduct with patients which is one of the rewards of medical work, does not come equally to those who try to keep people out of clinicians' hands. This is mostly the reason why every young medical graduate chooses clinical work to save occasional lives by diagnostic skill in preference to preventive medicine where many lives can be saved.[42]

This issue was raised again in 1960 when the DHS noted in his annual report that

> … from the point of view of health protection one of the greatest impediments is the somewhat anachronistic outlook on preventive medicine. Still medical men look upon preventive health work as of little account …. The outlook of the doctor in Ceylon has not changed to appreciate the value and the importance of preventive medicine.[43]

There were attempts to rectify this attitude towards preventive medicine through changes in the medical curriculum in the 1950s and 1960s. In 1949, the Colombo Medical School had established a chair of preventive medicine (one of the first in South Asia), and according to a WHO visiting consultant, 'much progress has been made in extending instruction along modern lines and in incorporating prevention into the general teaching programme.'[44] However, although public health was included in the undergraduate course in Colombo, and subsequently, in the new medical school established at Peradeniya in 1962, it was an undeveloped field of study.

40 Kahawita, B5.

41 Kahawita, *Annual Medical Report 1956*, B8.

42 Kahawita, *Annual*, B8.

43 Kahawita, *Annual Medical Report 1960*, B 162.

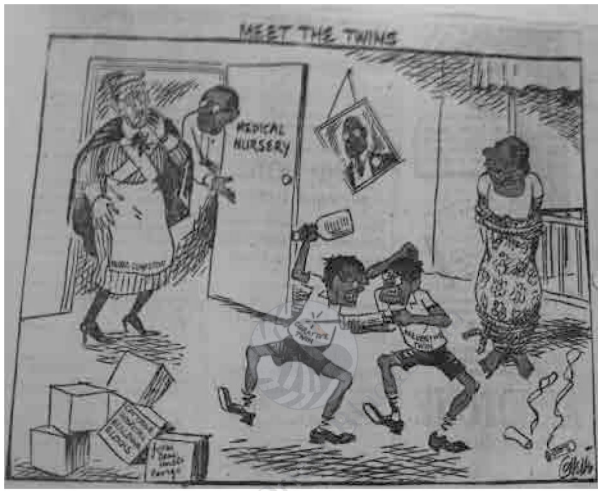

Figure 1.1. A Cartoon Illustration from the 'Cumpston Report'.
Source: 'Cumpston Report', *The Ceylon Observer*, 7 February 1950.

For example, Dr R. Sutarman, a WHO consultant of medical education, noted in 1964 that there was still no internship in public health for medical students, and that there was a great need for a diploma in the subject. He cited the fact that out of the 2,250 registered physicians in Sri Lanka, only 50 were DPH holders.[45]

On the eve of Alma Ata in 1977, Dr Tybjaerg Hansen, a WHO consultant, itemised the ongoing problems within health service, which suggest that very little had changed in the intervening years since the above comments were made. He estimated that the amount of funding allocated to the two branches of the Medical Department was still heavily in favour of the curative side, comprising up to 80 per cent of the total; of the remaining 20 per cent left for public health, three quarters was consumed by the special campaigns (malaria, filiariasis, TB and leprosy), 'leaving only a small amount for general prophylactic undertakings'.[46] He noted that despite the intentions behind the new structure set up in 1953 to coordinate the curative and preventive services, there was still 'little formal co-operation between the two branches'.[47] Furthermore, the medical profession had not changed in its outlook. Medical education in Sri Lanka, as in most developing countries, he pointed out,

> … has emulated, or has been identical with, that of the medical professional in the most prosperous and technically advanced countries, with the result that they are neither educated for nor interested in the kind of problems facing a developed country …. It is no wonder, therefore, that preventive medicine has

44 J. E. Gordon, *Report on Preventive Medicine and Epidemiology in Ceylon*, WHO Visiting Team of Medical Scientists Reports, MH/AS, 1952, 1, Historical Collection, WHO Library. The first to hold the chair was O. E. R. Abhayaratne, who had obtained the Harvard MPH on a Rockefeller Foundation Fellowship before the war. He was appointed to the Chair in January 1949, when he developed the department, 'making it the womb to tomb affair that he always claimed it was'. See also C. H. S. Jayewardene, 'Obituary: Professor O. E. R. Abhayaratne', *Ceylon Medical Journal* 15, no. 1, 1970, 60. The phrase 'from the womb to the tomb' is the American equivalent to the English phrase, 'from the cradle to the grave', denoting the welfare state. For a full discussion of medical education in Sri Lanka up to the 1960s, see Jones, *Hospital System and Health Care*, pp. 73–120, 317–45.

45 R. Sutarman, Regional Adviser on Medical Education WHO/SEARO, *Tour Notes on a Visit to Ceylon*, 22–26, WHO, SRL/HMD/001, Medical Education, 1959–70, Ceylon, March 1964, 4.

46 A. Tybjaerg Hansen, 'Cardiovascular Diseases in Sri Lanka: Assignment Report', 9 June–8 September 1977, 3, Project Files, SRL/CVD/001, Cardiovascular Diseases—Sri Lanka, WHO Archives, Geneva.

47 Hansen, 'Cardiovascular Diseases', 3.

> had little support from the medical profession, and is still resisted, consciously or unconsciously, by the majority of the contemporary medical profession.[48]

His conclusion concurred with that of the above commentators (comments from both outsiders and Sri Lankan), that 'preventive medicine has, therefore, not yet attained the same "status" as its therapeutic counterpart.'[49] Another factor that militated against the development of preventive medicine, according to Tybjaerg Hansen, was that the curative sector was 'chronically overburdened', which he maintained was due to the lack of a referral system.[50] Cumpston had earlier attributed the overcrowding of the Colombo Hospitals to the problem of the by-passing of the local, rural and small medical institutions around the island in favour of the major hospitals in the urban centres, especially Colombo, where the most up-to-date and specialist services were available.[51] Hansen argued that the absence of a referral system within a situation where health was free but not accompanied by 'highly developed, penetrating public health education' led to an abuse of free service and increased the tendency 'to encourage passivity and additional demands on the services on the part of clients'.[52] This comment does carry the suggestion that the victims of ill-health were in part to blame for their own plight, and perhaps suggests that Hansen had an insufficient understanding of the context of his analysis.[53]

Given the poor socio-economic conditions that many Sri Lankans lived under at the time—a major cause of their ill-health—public health education alone would not solve the problem of this supposed excess demand, and at least a free health service meant that poverty did not preclude access to healthcare. Hansen went on to conclude that the 'overburdened system and the irrelevant education of the medical doctors creates frustration, a brain drain and subsequently further difficulties in coping with demands.'[54] Arguably, the success of its free health service and its curative institutions, despite their inadequacies, accompanied, as they were, by a rapidly increasing population, was exacerbating these problems by drawing more and more of government resources into the curative sector and away from the preventive services.

The issue presented by this situation was effectively raised in a newspaper article in 1970 by the then Medical Superintendent of the General Hospital Colombo, who posed the question:

> Was it more important to improve sanitation, nutrition, and health education and provide basic facilities for health and patient care of the masses of this country, or was it more important to go in for sophisticated and expensive programs like heart transplant units, etc., to keep alive the chronically ill?[55]

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48 Hansen, 3.

49 Hansen, 3.

50 Hansen, 4.

51 Cumpston, *Report*, 53.

52 Hansen, 'Cardiovascular Diseases, 4.

53 These consultants often based their conclusions on relatively short stays on the island, which were usually limited to Colombo and the surrounding areas. Hansen was there for two months, for example, and his contacts there included Directors at the Health Department, the epidemiology unit, cardiologists at the Colombo and Kandy hospitals, academics at the universities of Colombo and Peradeniya. He also visited a community centre at Kotte, just outside Colombo. In effect, then, his own experience of the island was based on what he saw only in Colombo and Kandy, which arguably was hardly representative of the overall conditions.

54 Hansen, 'Cardiovascular Diseases', 4.

55 'Problems of Our Doctors Listed', *Daily News*, 3 September 1970, The Lakehouse Library Archive, Colombo, Sri Lanka.

This dilemma is ongoing in Sri Lanka, and it is not unique to developing countries. Developed countries are also subject to an unlimited and elastic demand for the most advanced treatments, but it does, of course, pose even more of a problem in resource-poor countries. Understandably, public clamour for these 'medical miracles' arose in Sri Lanka as soon as they became available in the West, and governments everywhere fight shy of grasping the political nettle of rationing expensive medical treatments and making unpopular decisions.[56] A good preventive healthcare system would obviously alleviate this demand to some extent. In fact, this remained an objective of the Sri Lankan health services throughout the period covered in this study, but its pursuit was always hampered up to a certain level by this fundamental problem.

The decade of 1970s was, as discussed in the Introduction, one of change and turmoil, both internationally and within the island. Sri Lanka had managed, partly through public health efforts, to lower birth and death rates; but if this success was not to stagnate in a context of the economic problems and population pressures, then a major reassessment of the working of the health services was needed. At the beginning of the 1970s, the WHO and the Sri Lankan government commissioned an important survey of the health services. Conducted by Simeonov between 1971 and 1973, this survey report became one of the landmark studies of the health services during a time of change. Based on surveys, data analysis and reports, the objective was to examine health services and to endeavour to find ways to improve their management in order to maximise the scarce resources that were available. *Better Health for Sri Lanka*, according to Dr V. T. H. Gunaratne, the Regional Director of SEARO, was also intended to 'be of benefit to other countries, since it shows the ways leading to the improvement of health services may be varied and that it is possible to provide adequate health services by the efficient mobilization and better utilization of the available resources'.[57] This study is evidence of the increasing appreciation at international level of the need for affordable broad-based health services, and an acknowledgment, in Simeonov's words, of 'how disjointed and uncoordinated recent efforts to assist less developed countries have been'.[58] Indeed, many of Simeonov's recommendations for Sri Lanka signal the change in outlook at the international level, which culminated at the end of the decade in the Alma Ata Declaration.

The health section of Sri Lanka's First Five Year Plan, 1972–76 signalled yet again the government's commitment to preventive services. It began with a policy statement to improve preventive services generally, and then listed other more specific preventive measures, such as improved immunisation services, more aggressive health education, control of nutritional anaemia in expectant mothers, the construction of rural water supply schemes, and the adoption of a population policy. The inclusion also of the policy objective to integrate curative and preventive services lends support to the lack of progress in this field since Cumpston, but this, as Hansen's earlier comments suggest, required a fundamental change in outlook that was not to be brought about easily. The list also contained a policy objective that directly prefigured one of Alma Ata's aims, and that was to improve and expand the services of the traditional medical sector.[59] Table 1.1, taken from the Simeonov report, provides a useful snapshot of the numbers and the kinds of government and private health services available in 1972.

In addition, Simeonov estimated that there were about 10,000 purveyors of medicine in the island, including c6,000 unregistered Ayurveda practitioners, c600 homeopathic doctors, whose qualifications for the practice of medicine Simeonov considered questionable, and c3,000 of what he termed 'quacks'. There were also various

56 For example, in 1999, the UK government sent up the National Institute for Health and Clinical Excellence (NICE) to deal with this problem. NICE is an independent body whose remit is to decide which treatments, based on the criteria of clinical and cost-effectiveness, should be available on the NHS. It was designed to eradicate geographical inequalities in expensive treatments. It can and has made unpopular decisions about some treatments being available on the NHS, and thus, it has the added advantage from the government's viewpoint that it is NICE, and not the Ministry of Health, that takes the flak for such decisions.

57 Gunaratne, 'Foreword', vii–viii.

58 Simeonov, *Better Health*, 6.

59 Simeonov, 9.

other places where medicines could be bought, such as roadside 'boutiques' and pharmacies.[60] The sheer quantity of medical services, illustrated in Table 1.1, meant that according to Simeonov, there was some kind of health service accessible to every member of the population within 0.8 miles, a public health midwife (the principal family health worker) within 1.8 miles, and a government Western health institution within 3 miles. Including all services providing formal healthcare (that is, those legally registered), then, there was one unit providing either Western or Ayurveda medical services for every 1,150 of the population. Simeonov added to this the personnel working in the public health services and the special campaigns. There were, in total, 7,809 health workers working in the general preventive services and sanitation, and in the special campaigns for the control of TB, leprosy, venereal diseases, and malaria and filariasis eradication. This represented one person working in the prevention of the leading diseases for every 1,732 inhabitants.[61] In summary, Simeonov argued that the 'health care system in Sri Lanka has the potential for a huge output of health services', but that this potential has not been 'completely utilized'.[62]

The mainstay of public health services and the personnel responsible for the delivery of primary care were the public health nurses (PHNs), public health midwives (PHMs) and public health inspectors (PHIs). In 1972, there were 161 PHNs; 113 of them had public health qualifications, and the remainder were PHNs only because they worked in public health. PHNs made up 3.2 per cent of all nurses, and the 4,668 hospitals nurses made up 93.6 per cent of all nurses. PHNs were responsible for family care, which included home visits to families, childcare (vaccinations and care of infants), supervision of midwives, school health work, health education, conducting clinics, immunisations, cooperating with voluntary organisations, investigations of deaths of mothers and children, and general administrative duties from reporting and recording data to maintaining equipment. A breakdown of how PHNs distributed their time across this formidable list of duties revealed that only 21.1 per cent of their working time was spent on what Simeonov termed their 'technical duties', that is, diagnostic, therapeutic or promotive work. The majority of their time was taken up with non-contact work: 28.1 per cent on administration, 23.3 per cent on travel, 9.2 on maintenance, and 16.5 on waiting for people, informal discussions, and so on.[63]

Simeonov conducted similar analyses for PHMs and PHIs. There were 3,587 midwives in 1972, and more than half of them (57.9 per cent) worked as PHMs. They were considered the 'pillar' of the family health services, responsible for maternity and child health, and family planning. Each PHM had her own defined area, in which she was expected to live, usually using one of the rooms in her house as an office, and occasionally, as an examining room. However, she mainly carried out her work in the homes of the families in her area. She also attended the regular child welfare clinics run by the local MOHs. The breakdown of the PHM working pattern showed that 53 per cent of their time was spent on technical work—32 per cent related to diagnostic and therapeutic work, and 27 per cent related to prophylactic and promotive work, that is, preventive work. The remaining 45 per cent were taken up with managerial activities, travel and non-productive work. Simeonov noted that the PHMs provided a 'considerable amount of medical care (diagnostic and therapeutic activities)', although their role was supposed to be 'mainly with the prophylactic and promotive aspects of maternity and childcare'.[64] The estimated number of PHIs in government service was 1,074 (all of them trained at the Kalutara Institute of Public Health), and the majority of them worked in the 770 areas (ranges), in which again they lived. The key worker in the public health service, they were responsible for collating statistics, CD control, environmental sanitation, and submitting a monthly 28-page report on these topics. Travel and administration each took up 28 per cent of a PHI's time, while 20.6 per cent and 0.6 per cent was spent on preventive, and

60 Simeonov, 152.

61 Simeonov, 163–64.

62 Simeonov, 169.

63 Simeonov, 124–25.

64 Simeonov, 108–09.

diagnostic and therapeutic work, respectively.[65] Included in his overall assessment of the weaknesses that needed addressing in the health services, Simeonov highlighted the 'instances when public health personnel have to provide medical care, although they are not equipped with drugs, and sometimes, with adequate knowledge for such activities'.[66]

The major problems that Simeonov emphasised, which needed addressing in order to deliver an effective and equally accessible service, contained little that had not been observed in previous reports and surveys. First, there was the unequal geographical distribution of services, masked within the assessment of overall numbers of medical care institutions. This is illustrated in Table 1.2.

The variation in the distribution of doctors shown in this table between Colombo and the rural Vavuniya division is 95.8 to 3.3, which means that accessibility to a doctor was 30 times easier in the Colombo division than in the Vavuniya division. In addition, Simeonov pointed out that across the whole island, doctors were concentrated in district centres, that is, the towns, within each health division, so that the overall accessibility of doctors in the towns was 11.7 times better than for those living outside these urban areas. This average of 11.7 further disguised wide variations in accessibility for different divisions. For Colombo, for instance, the difference between the centre and the rest was a mere 4.2, but for Kegalle, it was 64. A slight advantage in Colombo was the concentration of health services not only in, but also around the capital, whereas the population of Kegalle had a 64 times better chance of contacting a doctor than those living outside of the urban centre.[67] The overall midwife population ratio was 28.2 per 1,00,000 population, and the variation was less wide but still significant between SHS divisions—from 35.8 per 1,00,000 in Kalutara, for example, to 8.4 in Kandy.[68]

A corollary of this geographical inequity was that Sri Lankans were entirely free to choose where they accessed free government care, and both Cumpston and Hansen had highlighted this as a major problem. Simeonov addressed this question by analysing how and why individuals made their choices regarding where to access the required medical care. On an average, he found that an inhabitant of Sri Lanka made three visits a year annually to a Western-type institution. The most frequently visited institutions for outpatients were hospitals with 62.2 per cent of all visits, followed by central dispensaries (with or without maternity facilities) at 32.5 per cent. The branch dispensaries and visiting stations that only operated on a weekly or fortnightly basis attracted a mere 6.3 per cent of patients. The most bypassed institutions were the central dispensaries (47.2 per cent of patients), followed by the branch dispensaries (44.8 per cent), rural hospitals (23.1 per cent) and peripheral units (11.5 per cent). Simeonov also noted that big hospitals like the provincial and base hospitals were bypassed by some patients (4.8 per cent and 3.1 per cent, respectively).[69] When asked about their reasons for bypassing their nearest institution, patients gave the following explanations in order of their frequency: 30 per cent felt that better treatment could be obtained at another institution; 14 per cent had attended the bypassed institution previously, with no benefit; 12 per cent had been referred to by the institution nearest their homes; 10 per cent stated that there were no effective drugs or injections available at the bypassed centre; 9 per cent said that they habitually attended the place where they had gone; 6 per cent referred to the convenience of transport; 1 per cent said there was no qualified doctor at their nearest institution; and the remaining 6 per cent gave a variety of other reasons.[70]

65 Simeonov, 108–09.

66 Simeonov, 108–09.

67 Simeonov, 108–09.

68 Simeonov, 128.

69 Simeonov, 60.

70 Simeonov, 60.

However, whereas the government (along with other commentators) considered bypassing to be 'one of the major health concerns of the country' since it led to the 'overutilization of some medical institutions and the underutilization of others', Simeonov suggested that bypassing in itself might not have been as negative a factor as it was perceived. First, in general, patients did not travel far from their homes; a number of one-day censuses of the outpatients revealed that 61.4–96.6 per cent of all patients travelled less than 5 miles from their homes to their favoured institution. Second, added to this, the apparent total of 19 per cent of patients responsible for bypassing their nearest centre 'without good justification' could be reduced to 11 per cent by exploring those explanations more closely. For example, the vague explanation that it was felt that better treatment could be found elsewhere could conceal more concrete reasons such as lack of medicines, better transport, or infrequency of availability.[71] If Simeonov's assessment was correct, then this behaviour was a logical response to an inadequate service. It could be changed by improving the quality of the smaller and more local primary healthcare services, and not neccessarily by setting up a referral system. Moreover, as Simeonov also rightly pointed out, if bypassing was not allowed, then while the pressure on the provincial, Colombo and base hospitals would be reduced by 23, 25, and 28 per cent, respectively, the workload in the already inadequate rural hospitals and central dispensaries, branch dispensaries and visiting stations would increase by 12, 34 and 61 per cent, respectively.[72] It seems clear that the problem the government had to confront was not so much bypassing, but alternatively, improving the quality and availability of care services outside of the urban centres.

Moreover, Simeonov cited other interrelated factors that detracted from the effectiveness of health services. First, the majority of rural medical care units did 'not carry out health activities meant to control the major diseases and few of them dealt with family health problems'. Second, the big hospitals (like the provincial, base and district hospitals), which did attract patients, were 'not responsible for the prevention of communicable diseases although 30% of their bed strength is used for the treatment of these diseases'. Third, the PHNs, PHMs and PHIs —the health workers who had most on-the-ground contact with people—provided no medical care. Fourth, Ayurveda practitioners did not participate either in the control of communicable diseases or family health (discussed at length in the next section). Last, he emphasised yet again that inpatient services consumed the majority of the health budget, 'although these services are unlikely to improve the overall health of the population.' 'In short', he concluded, 'there is not a single health care unit' which delivers 'all the needed health care services', and this could be considered 'one of the major problems of the whole health care system.'[73] There were indications, too, he argued, that

> instead of co-ordination of activities of the different health care units and sectors of the health care system, there is competition and an overlapping of activities, which is particularly evident with regard to the western and Ayurveda sectors, but also between the medical and the public health services in the rural areas.[74]

It seems that little had changed since that cartoon on the Cumpston Report depicted this contest in 1950. Other outside commentators in the 1970s reinforce this picture of an unbalanced system and a lack of concerted effort directed towards preventing ill-health. For example, Dr Sarah S. Rao, a WHO consultant, reviewed health education for the government in the middle of 1972. Health education had featured as a supporting element of the special campaigns since the beginning, and the Government had established a Health Education Branch within the Department of Health to coordinate such efforts. By 1972, there were 29 specialist health educators: 19 in the SHS areas; 4 attached to the special campaigns, 2 attached to the Maternal and Child Health Bureau, 1

71 Simeonov, 61.

72 Simeonov, 61.

73 Simeonov, 180.

74 Simeonov, 180.

for the Colombo hospitals, 1 at the Health Education Media Production Unit, and 2 at the Health Education headquarters within the Medical Department. The SHS educators' role was to plan, implement and evaluate health education within their jurisdiction. However, Rao concluded that because of their lack of professional training 'such integration does not always take place, and health education tends to become a desultory activity.'[75] Her comments on the various other health educators support Simeonov's conclusions on those kingpins of primary health—the PHMs and the PHIs. The 'few isolated health education activities' undertaken by the PHIs were 'for the most part ineffective'.[76] Although PHMs seemed to build up a 'good rapport with the mothers' and 'talk to the mothers in the clinics and home visits, these talks do not form a deliberate component of a planned health education process.' They, too, needed 'proper preparation and supervision in health education'.[77] Likewise, in the hospitals, although there was an 'awareness that health education could be effectively combined with the curative services', in practice, this was not done.[78]

Given the pressures which Sri Lanka's hospitals were under, perhaps this was to be expected. In fact, this also raises the question regarding to what extent hospitals in any part of the globe had proper health education programmes. Rao argued that what was needed was a 'more pervasive health education programme to be routinely integrated with the various medical and public health activities'.[79] Her recommendation, that a 'fully fledged' Health Education Bureau be established to develop health education training (conducted by the Institute of Hygiene, Kalutara), was implemented in 1973, and by the end of the decade, this was fully up and running.[80] Dr Ian M. Newman, a WHO consultant, on his visit to the island also in 1972, found that although there was a 'wide acceptance of the concept of health education', there was little understanding of what was meant by it and that 'some were openly sceptical as to how health education programmes could contribute to the solution or prevention of health problems.'[81]

The report of L. Barreau, the WHO Nurse Consultant, after an extended visit over three years, not only testified to the commitment of the government to promote family health, but also highlighted the obstacles to its success. The purpose of her project was to 'improve the health of the people, especially that of the mother and child, by the provision of improved maternity health, child health and family planning services at all levels'.[82]

To this end, she visited medical institutions and field areas in all 16 SHS divisions, paying particular attention to the workers most concerned with family health—the PHNs and the PHMs. She gave them direct guidance on an individual basis, and through group discussions on how to improve their educational efforts, and accompanied the PHMs on their home visits. The deficiencies that Barreau itemised in her report reiterate those of many others. In 'most remote areas it was noticed that lack of grass-root level workers (midwives especially) impeded

75 Sarah S. Rao, 'Assignment Report on Training in Health Education', 1 March–30 June 1972, p. 4, Project Files, SRL-HED-002, Health Education in Family Health, Jacket 1, WHO Archives, Geneva.

76 Rao, 'Assignment Report', 4.

77 Rao, 4.

78 Rao, 4.

79 Rao, 5.

80 Rao, 16. The Institute of Hygiene at Kalutara is now the National Institute of Health Sciences (NIHS), and it remains the principal training institution for public health workers. It grew out of the first health unit founded in 1936 at Kalutara. See H. J. Weddle, 'Health Education in Family Health in Sri Lanka, Assignment Report', 12 July–25 August, 2–3, Project Files SRL/HED/002, Health Education in Family Health, WHO Archives, Geneva.

81 Ian M. Newman, 'Assignment Report on Behavioural Studies, Sri Lanka', 7 November–7 December 1972, Project Files, SRL-HED-002, Health Education in Family Health, Jacket 1, WHO Archives, Geneva.

82 L. Barreau, WHO Nurse Administrator, 'Assignment Report, Family Health', 19 June 1974–31 January 1977, 2, Project Files, SRL/MCH/001, Jacket 1, Family Health Sri Lanka, WHO Archives, Geneva.

the reach of family health services to the peripheral areas'. There was, furthermore, a 'lack of quick and improved transportation' so that workers could not 'accomplish rapid progress'. In certain areas, there were no 'proper living quarters and other facilities', which 'hampered the satisfactory output of work'. Last, the 'senior supervisory staff were lacking', and thus, 'better performance and enthusiasm' was not maintained.[83] A familiar theme that emerges again and again in the subsequent case studies is that there was apparently no lack of political will to extend primary healthcare services, but there was a serious lack of the necessary resources to do it, especially given the hold that the curative sector had over the distribution of these resources, as illustrated by Table 1.3 compiled by Simeonov.

In the area of family health, more was spent on prevention than on cure, but for the other categories, the balance of costs was overwhelmingly focused on cure. Notably, the cost of the treatment of diseases was about seven times the expenditure on prevention. A cost-benefit analysis would no doubt show that spending more on prevention would save on cure, but Simeonov did not feel able to make that calculation. Given this situation, there was a possible way of extending preventive primary healthcare services, which was in keeping with the changing perceptions at international level for which Sri Lanka was eminently suitable. This way was, as Simeonov proposed in his report, to utilise the traditional medical system of the island.

Table 1.1. Healthcare Services in Sri Lanka in 1972.

Sector	*Type of Institution*	*Number of Institutions*
Government Western		
	Colombo Group of Hospitals	10
	Provincial Hospitals	10
	Base Hospitals	12
	District Hospitals	96
	Cottage Hospitals	13
	Peripheral Units	94
	Rural Hospitals	73
	Maternity Homes*	128
	Central Dispensaries*	424
	Branch Dispensaries	345
	Visiting Stations	1,017
	Tuberculosis Hospitals	4
	Leprosy Hospitals	2
	Mental Hospitals	3
	Other Hospitals	12
	Health Units (Medical Officer of Health [MOH] Areas)	98
	Special Campaigns	5
	Medical Research Institute	1
	Sub-total	2,253
Government Ayurveda		
	Ayurveda Hospitals	7

83 Barreau, 'Assignment Report', 18.

Table 1.1 continued from previous page.

Sector	*Type of Institution*	*Number of Institutions*
	Ayurveda Dispensaries	211
Private Western		
	Nursing Homes	62
	Cooperative Hospitals	14
	Estate Hospitals	66
	Estate Maternity Homes	115
	Private Practitioners	530
	Sub-total	787
Private Ayurveda		9,823
All Sectors	Total	13,081

Note:
* 94 institutions function as both central dispensaries and as maternity homes, and thus, 94 has been removed from the total.
Source: L. A. Simeonov, 'Better Health for Sri Lanka: A Report on a Health Manpower Study', SEA/PHA/149, 1975, 173, WHO, Regional Office for South East Asia, New Delhi.

Table 1.2. Standardised Doctor: Population Ratio by Selected Health Division Per 1,00,000 Population.

SHS Division	*Ratio Per 1,00,000 Population*	*Standardised Ratio Per 100 Square Miles*
Sri Lanka	25.6	18.6
Colombo	52.7	95.8
Jaffna	28.7	24.5
Kalutara	18.9	20.3
Anuradhapura	17.4	7.8
Vavuniya	12.1	3.3

Source: Compiled from Simeonov, *Better Health for Sri Lanka*, Table 5.4, 108.

Table 1.3. Estimates of Government Costs on Preventive and Curative Health.

	Inputs (Rs × 1,000)	
Health Problems	*For Prevention*	*For Cure*
Family Health	25.655	17.000
Control of Disease	25.655	168.329
Medical Care	-	259.912
Total	51.310	445.241

Source: Compiled from Simeonov, *Better Health for Sri Lanka*, Table 6.5, 173.

AYURVEDA AND HEALTHCARE PROVISION UP TO ALMA ATA

'Ayurveda' is the official term in Sri Lanka to collectively denote all the traditional medical systems existing on the island. They include Ayurveda, the predominant system which came to the island from India with Buddhism c2,500 years ago, Siddha, Unani (the medical systems of the Tamil and Moslem communities, respectively), and *Desiya Chikithsa* (the indigenous system of medicine that existed in Sri Lanka before the advent of Ayurveda).[84]

By the Ayurveda Act (No. 31 of 1961), the term 'Ayurveda' legally encompasses all the above medical systems, and thus, it is the blanket term used in Sri Lanka and likewise throughout this chapter. The Ayurveda that emerged in Sri Lanka from the early decades of the twentieth century was a complex mixture of these systems struggling to survive and co-exist with the medicine of the colonial rulers. In the colonial period, the traditional medical systems had declined in status, but not in availability or in use, and they formed an integral aspect of the cultural revival and political nationalism of the first decades of the twentieth century. From the 1930s onwards, they began to be recognised and subsidised by the colonial government, and therefore, became part of the official medical landscape. However, in terms of funding and resources, they were a very inferior partner to Western medicine; a situation that continued into the post-colonial state.

The price to pay for government recognition and funding was that from the 1920s, Ayurveda was forced to establish a professional identity.[85] This entailed presenting Ayurveda 'at political and ideological levels', as Dagmar Wujastyk and Frederick M. Smith have argued, 'as a uniform medical system' with all the attributes of the Western medical system.[86] The 'biomedicalisation' of Ayurveda has provoked much debate on the nature and the practice of the Ayurveda that emerged from this process. The establishment of training institutions (where Western medicine was also taught), certification, registration, and establishing formal canons of knowledge resulted, at the time and subsequently, in claims that what resulted was a 'hybrid' between Western and traditional medicine. This 'hybrid' was opposed to the pure form that had previously been practised when knowledge was passed down within families.[87] Ayurveda's legalisation, as Madhulika Banerjee has argued for India (but this applies to Sri Lanka as well), was also accompanied by the 'pharmaceutilisation' of Ayurveda, where its medicines 'become indistinguishable from any other pharmaceuticals', thereby eroding its 'capacity as an "alternate system"'.[88] These adaptations make it difficult to identify any of the different practices within Sri Lankan traditional medicine as discrete systems.[89] Sri Lankans very often use the term 'Ayurveda', not specifically to indicate only the Ayurveda medical system, but equally to indicate all the traditional medical systems; some of these, in practice, also use the tools of Western medicine, and as Indrani Pieris has shown, Sri Lankans use all these medical systems interchangeably.[90]

Thus, there were good grounds for Simeonov's suggestion. He estimated that the total number of Ayurveda practitioners was about 16,000, 10,116 of whom were registered with the Ayurveda Medical Council, and almost all were male (an estimate of 125 women practitioners only in the registered sector). There were seven Ayurveda government hospitals, and 211 Ayurveda dispensaries were established by local authorities with government

84 For an exploration of the definitions of medical systems, see Fred Dunn, 'Traditional Asian Medicine and Cosmopolitan Medicine as Adaptive Systems', in *Asian Medical Systems: A Comparative Study*, ed. Charles Leslie (London: University of California Press, 1976); Allan Young, 'The Relevance of Traditional Medical Cultures to Modern Primary Health Care', *Social Science and Medicine* 17, no. 16, 1983, 1205–11.

85 For a more detailed exploration of this process, see S. N. Arseculeratne, 'Interactions between Traditional Medicine and "Western" Medicine in Sri Lanka', *Social Scientist* 30, no. 5, 2002, 4–17; Jones, *Health Policy in Britain's Model Colony*, 83–104; Margaret Jones, 'A Bounded Medical Pluralism: Ayurveda and Western Medicine in Colonial and Independent Sri Lanka', in *The Development of Modern Medicine in Non-Western Countries: Historical Perspectives*, ed. H. Ebrahimnejad (London: Routledge, 2008), 108–26.

86 Dagmar Wujastyk and Frederick M. Smith, 'Introduction', to *Modern and Global Ayurveda: Pluralism and Paradigms*, ed. Dagmar Wujastyk and Frederick M. Smith (New York: State University of New York Press, 2008), 7.

87 Such views were aired extensively in the Legislature from the start of this process in the 1920s. See Jones, *Health Policy in Britain's Model Colony*, 99–102.

88 Madhulika Banerjee, 'Ayurveda in Modern India: Standardization and Pharmaceutilization', in *Modern and Global Ayurveda*, ed. Wujastyk and Smith, 201–02.

89 P. B. Wanninayaka, *Ayurveda in Sri Lanka* (Colombo: Ministry of Health, Sri Lanka), 1982.

90 Indrani Pieris, *Disease, Treatment and Health Behaviour in Sri Lanka* (New Delhi: Oxford University Press, 1999), 79–136.

support. These institutions operated solely in the field of medical care, and they were not involved with public health at all.[91] A breakdown of the workload of all Ayurveda practitioners, derived from the number of patient visits, showed that government- and local government-employed practitioners contributed only 17 per cent of the total patient visit; the remaining 83 per cent was taken up by the private practitioners.[92] Furthermore, whereas Table 1.1 highlights the dominance of Western medicine in the government sector, the situation, as illustrated by Table 1.3, was reversed in the private sector, particularly in the demand for outpatient services (Table 1.4). It seems clear from these figures that Ayurveda practitioners, especially those in the private sector, were responsible for providing almost the same proportion of outpatient care as the Western sector.

The large number of Ayurveda practitioners meant that their services were easily accessible; the average distance to an Ayurveda practitioner of any kind, according to Simeonov, was 0.9 miles.[93] In the rural areas, particularly, he claimed that 'people usually consulted the closest source of medical care, the indigenous doctor, who is usually a well-respected person in the rural community'; if she/he could not help, then a patient went further afield.[94] He also noted that a breakdown of the figures for patients accessing care in the government Ayurveda institutions showed an age differential between those who accessed Western care and those who opted for Ayurveda. Infants, pre-school and school children were treated in the Western sector, whereas older people opted for Ayurveda.[95] This could, in part, derive from the fact that the young tend to suffer acute health problems for which Western remedies were considered more effective. Meanwhile, older people are subjected to chronic health problems more associated with lifestyle and the ageing process for which Ayurveda might seem more appropriate. In the same way as in the West today, complementary therapies are resorted to for the chronic problems, which biomedicine seems ill-equipped to deal with. Given the demographic and epidemiological changes that Sri Lanka was about to undergo in the remaining years of the twentieth century, with an ageing population and an increase in non-communicable diseases, the possible contribution of Ayurveda to primary healthcare began to gain leverage at national and international levels. However, there were obstacles to bringing traditional medicine into the primary healthcare system.

Simeonov noted in his 1975 report that although the traditional medical sector constituted 'a system for providing services spread over the whole country', traditional practitioners did not 'participate in either family health or in the control of communicable diseases' in a formal sense.[96] As he argued forcefully, the 'almost complete lack of co-operation and co-ordination between the two main systems of medicine in Sri Lanka represents a special problem whose solution promises the highest payoff'; but the 'lack of proper communication' between them 'represents a potential obstacle' to an effective utilisation of the Ayurveda practitioner in the healthcare structure.[97] He offered the integration of both systems into one as the solution to Sri Lanka's future increasing healthcare needs, given that their resources would not be able to meet those needs. This would concur with the present health-seeking behaviour of the population, which 'appreciates both sectors, and has its own ideas of the way in which it should make use of both systems'. The two systems did not have a separate clientele, but were used interchangeably. Moreover, he added that 'it is indicated that both systems have competences which are complementary.'[98] He then went on to explain that some conditions required treatment in a modern

91 Simeonov, *Better Health*, 94–95.

92 Simeonov, 96.

93 Simeonov, 97.

94 Simeonov, 162.

95 Simeonov, 62.

96 Simeonov, 95. For an exploration of how traditional medical systems could contribute to primary healthcare, see Allan Young, 'The Relevance of Traditional Medical Cultures to Modern Primary Health Care', *Social Science and Medicine*, 17, no. 16, 1983, 1205–11.

97 Simeonov, *Better Health*, 216.

biomedical hospital, but that there were some, 'especially the psychosomatic ones' that needed 'a considerably different doctor/patient relationship than that usually provided by the Western sector'.[99] This integration demanded that Ayurveda move even further closer to the Western model, which would not necessarily be accepted by Ayurveda practitioners; it also demanded that the Western sector accept their Ayurveda colleagues as equals. However, hitherto, there had been little evidence that although Ayurveda was still used extensively by the population, the Western medical establishment was willing to concede its privileged status.[100] Simeonov himself acknowledged that there were 'problems of professional prestige, social status, social role, linguistic barriers, political issues, etc.', which would need to be solved before such an integration could take place.[101]

An awareness of the need to improve the preventive aspect of healthcare provision in Sri Lanka was never absent from national and international reports and surveys, as the above examples illustrate. But by the 1970s, given the island's economic problems and the growing demand for services, the need for a more efficient model of healthcare provision became ever more pressing. This coalesced with similar changes in perceptions at the international level, which culminated in the Alma Ata Declaration, as discussed in the Introduction. The primary healthcare approach launched at Alma Ata, however, was not entirely innovative in terms of the policy trajectory of Sri Lanka's healthcare system over the previous decades. As Dr Malinga Fernando, Sri Lanka's Director General of Health in the 1980s and delegate to Alma Ata in 1978, argued in a 1991 article written with Tissa Cooray, Sri Lanka's healthcare system had 'deep roots in primary health care', and 'all governments since independence', they pointed out, 'have been fully committed to the provision of total health care to the entire population'. Sri Lanka was thus, the authors argued, 'well equipped politically and socially' to committing itself to health for all by 2000, and to that end, the government signed the Charter for Health Development in February 1980.[102]

Fernando and Cooray further argue that 'the stress on equity and social justice in the health-for-all goal, had been the framework on which health care was provided to the people of Sri Lanka.' As such, Sri Lanka was, in fact, an important model for other developing countries. The health unit, in particular, 'made a strong impression' on those developing the primary healthcare model, and therefore, '[r]epresentatives from Sri Lanka did not go to Alma-Ata merely to listen but to present their experiences and contribute to the development of the primary health care strategy.'[103] The primary healthcare approach was not indeed 'new and novel to Sri Lanka'; and the wide accessibility of healthcare facilities (Western and Ayurveda), general high levels of literacy, and the high level particularly of female education 'made the people more receptive to the primary health care concept'.[104] This positive view of Sri Lanka's healthcare system might be expected from the person who was its ambassador in 1978, and who was to have overall responsibility for directing it in the following decades. Nevertheless, he was also someone who had first-hand knowledge of the events of the time, and was not averse to highlighting the faults as well as the positive aspects.[105] Fernando and Cooray acknowledged that by the end of the 1970s, the healthcare structure, which had been so successful, was being undermined by the new demands

98 Simeonov, 216.

99 Simeonov, 216.

100 Arseculeratne, 'Interactions', 4–17; Jones, 'Bounded Medical Pluralism', 108–26.

101 Simeonov, *Better Health*, 217.

102 Malinga Fernando and Tissa Cooray, 'Sri Lanka: Deep Roots in Primary Health Care', 1991, available at www.who.int/publications/1991/9241561327_srilanka.pdf (accessed 25 September 2012). Malinga Fernando was the Director General and Secretary of the Ministry of Health in Sri Lanka from 1980–88. After that, he was appointed to the Executive Board of the WHO, an appointment he held from 1986–88. He worked in Bangladesh, Nepal, The Maldives, Bhutan and Myanmar as Advisor on Health for the WHO. As the foremost medical administrator in Sri Lanka at the time of Alma Ata, he was a conference delegate; email message to author, 4 September 2004.

103 Fernando and Cooray, 'Sri Lanka', 230.

104 Fernando and Cooray, 230.

being made upon it. The health unit system could not keep pace with the population increase, communicable diseases were still a major threat, and 'diseases related to increased life expectancy and changes in lifestyle were beginning to emerge.'[106] In addition, at the end of the 1970s, at the same time that PHC took centre stage, the World Bank and the IMF imposed neo-liberalism on Sri Lanka's social welfare state. In response to these challenges, and to ensure a healthcare structure that could deliver primary healthcare, the existing system needed to be restructured and re-orientated.

Table 1.4. Demand for Outpatient Medical Care Services.

Sector	*Number of Visits Per Year*
Government Sector: Total	34,067,394
Western (1971–2)	29,582,599
Ayurveda (1973)	4,484,795
Private Sector: Total	39,915,416
Western**	5,160,000
Ayurveda*	23,805,416
Other**	10,950,000
Grand Total	73,982,810

Note:
* Estimates;
** Assumptions.
Source: Simeonov, *Better Health for Sri Lanka*, Table 3.17, 59.

PRIMARY HEALTHCARE FROM 1979–2000

The first step towards achieving this, according to Fernando and Cooray, was the establishment of a National Health Council, chaired by the Prime Minister, including the Minister of Health and other ministers. It was intended to provide the 'political commitment at highest level as well as policy guidelines for health development within an inter-sectoral framework', and to pursue the objective of reducing inequities in healthcare provision and removing health disparities.[107] It was supported by six standing committees, which had wide representation from government departments, academia and NGOs, and one of these was specifically on PHC. At the same time, the National Health Development Network (NHDN) was established to ensure intra- and inter-sectoral coordination for health development, the identification of priority areas for intervention of PHC, and the development and evaluation of the PHC model at the district level.[108] The health services were organised into smaller, more manageable units when the number of decentralised health divisions were increased from 15 to 21, with a future increase planned for 24 to match the administrative districts of the island. What was intended to emerge from the changes in the 1980s was a three-tiered pyramidal structure.

105 While carrying out research on her previous two books on Sri Lanka, the author met Dr Fernando, who was extremely helpful and willing to share his critical knowledge of Sri Lanka's healthcare system's problems. He very sadly died before the author was able to talk to him about this project.

106 Fernando and Cooray, 'Sri Lanka', 234.

107 Fernando and Cooray, 231.

108 Committee on Studies for Co-operation in Development in South Asia, *Report of the Consultation Meeting on Development of Primary Health Care*, Colombo, 24–26 May 1984, 32–33, Marga Institute Library, Colombo.

At the base of the pyramid was to be the village health centre with the responsibility of 3,000 people, headed by the PHM who was the first point of contact with the health delivery system for the villagers; this was intended to be the basis of all primary health activities. Each PHM was supposed to have residential and clinic accommodation in the area. Above that were sub-divisional health centres (with the responsibility of 20,000 people) with a medical practitioner, two PHIs, a supervisory PHM, and a PHM working at the centre and in the field. In effect, this designation was largely a change in nomenclature, as the existing 538 rural hospitals, central dispensaries and maternity homes were re-classified as sub-divisional health centres. They provided outpatient care, and were intended to integrate curative and preventive care. Above them, most district hospitals and all peripheral units became divisional health centres, which provided in-patient care under a divisional health officer who was responsible for the health of 60,000 people in the area, as well as for providing essential healthcare to those living around the centre. At the top of the pyramid were the teaching, specialist and provincial hospitals. No hospitals were to be downgraded, and thus, the existing unequal distribution of hospitals remained. The idea was that a referral system would operate throughout the structure from the bottom upwards. The respective responsibilities of these institutions are laid out in Table 1.5.

The emphasis on community participation and inter-sectoral action entailed changes in the training of health workers in order to re-orient them to the new approach. The training institute at the Kalutara Health Unit was upgraded in 1979 to become the National Institute of Health Sciences, and was responsible thereafter for revising the curriculum and training all primary healthcare workers, their supervisors and their teachers. The principle of community participation, as advocated in Alma Ata, was also to be implemented through the mechanism of the village development council—the *gramodaya mandalaya*—which was the main organisation for all community development activities including health. It was to have a health sector committee for which the PHM acted as Secretary and it was to be the main body responsible for 'planning, implementing and evaluating health activities in the village'.[109] Additionally, local health volunteers, men and women trained in basic healthcare, assisted the PHMs in their clinics and home visits, and 'became important agents of change'.[110] Again, in line with Alma Ata, and as suggested by Simeonov, the traditional medical practitioner was perceived as a significant member of the health workers' team. Traditional Medical Practitioners (TMPs) were to be involved in health promotion and disease prevention, and would give 'collaborative support to community care'.[111] Therefore, there followed some attempts to raise the status of Ayurveda by improving the training of indigenous medical practitioners. The Ayurveda College was elevated to the status of a university and further support was given to other training centres. Moreover, some Ayurveda practitioners received training in family planning and immunisations.[112] However, there were no formal mechanisms set in place to institutionalise their involvement with PHC.[113]

Given that this description of the post-Alma Ata healthcare structure was outlined by Fernando, the person who, as Director General and then Secretary in the Ministry of Health, was responsible for implementing it in the 1980s, this had to be understood as a less-than-objective assessment. Nevertheless, it is evidence of the commitment of those in charge to the ideal of PHC. However, it is also clear from this account that it was, in part, a case of grafting a veneer of PHC onto the existing structure. This was almost inevitable when these changes could not be accompanied by a major influx of more resources, given that this coincided with the end of

109 Fernando and Cooray, 'Sri Lanka', 237.

110 Fernando and Cooray, 237.

111 Fernando and Cooray, 238.

112 Nihal G. Wijesooriya, *Development of Primary Health Care in Sri Lanka*, Country Paper, Marga Institute Library, November 1985, Part D, 42.

113 Some Ayurveda practitioners received training in family planning techniques and immunisation, but it was not until 2004, when the PHC Community Health Programme was instigated, that any of them were formally integrated into the government healthcare provision. Information on this is available at www.indigenousmedimini.gov.lk (accessed 20 February 2015).

Sri Lanka's social welfare state, along with increased population, internal conflict, and the exodus of large numbers of qualified medical and para-medical personnel from the country. Indeed, this three-tiered structure was ultimately deemed a failure by later commentators.[114]

Based on the situation in the Kalutara district, Fernando and Cooray laid claim to some success for the restructuring of PHC in the 1980s, but with limited discussion on how typical the Kalutara district was for the whole island. First, the target of one PHM for every 3,000 people had been achieved by the end of the decade in Kalutara, and together with the PHIs and Assistant Medical Practitioners, they argued that the 'primary health care services are now equally accessible to people in all parts of the district.'[115] Second, the NHDN was very 'dynamic' in Kalutara and had been able to 'mobilize and co-ordinate the activities of formal, informal, governmental and nongovernmental agencies for health development'. For example, mobile clinics had been instituted for the remote areas, land was donated by the wealthy for new health centres, and rural development officers had created first aid posts for the treatment of minor ailments, which were, in turn, maintained by local volunteers.[116] Third, the effectiveness of promotive and preventive programmes was increased by a quarterly monitoring of progress; and last, health education officers were very active in the district.

The success in Kalutara was evidenced by the increase in the take-up of immunisations. For example, Bacillus Calmette-Guerin (BCG) up of immunisations. For example, Bacillus Calmette-Guerin vaccinations increased from 75.8 per cent in 1984 to 93.6 per cent two years later.[117] However, Kalutara was not typical of Sri Lanka as a whole. As even Fernando and Cooray themselves admitted, the National Institute of Health Sciences, the place where all public health personnel were trained, was located in the district so that 'expertise' was 'readily available'.[118] Furthermore, their own figures show that there were higher rates of immunisation than the national average anyway in Kalutara, which suggests a more effective service operating in the area. For instance, the national average BCG percentages for 1984 and 1986 were 66.8 and 73.8 per cent, respectively.[119] In addition Fernando and Cooray highlighted the fact that in 'spite of progress made in many fields', one problem remained 'particularly acute', and that was the perennial one, highlighted by previous commentators, of 'the reluctance of doctors to take up preventive medicine or to serve in rural areas'.[120]

Other commentators have also cited the positive achievements in the initial years of the PHC re-orientation, particularly in relation to its emphasis on community involvement. Writing from a longer perspective in 2011, V. S. Ariyaratne, a leading member of one of Sri Lanka's most important non-governmental self-help organisations, the Sarvodaya Shramadana Movement, saw the 1980s as the 'golden era' of PHC. It was a period when 'true partnerships were built between government agencies and civil society organisations to jointly address some of the major public health problems.'[121] An example of this in action, he referenced, was the Mahaweli Development Programme, where one of the most underdeveloped and poverty-stricken areas of Sri Lanka was opened up for new settlement from 1977 onwards, under a joint UNICEF/government project. Government health services were thin on the ground there. In 1978, the area's SHS noted that there was no MOH in either

114 V. S. Ariyaratne, 'Role of Primary Health Care in the 21st Century', *Journal of the College of Community Physicians of Sri Lanka* 16, no. 2, 2011, 6.

115 Fernando and Cooray, 'Sri Lanka', 241.

116 Fernando and Cooray, 242.

117 Fernando and Cooray, 242.

118 Fernando and Cooray, 241.

119 Fernando and Cooray, 242.

120 Fernando and Cooray, 240.

121 Ariyaratne, 'Role of Primary Health Care in the 21st Century', 5.

Anuradhapura or Kekirawa (the towns of the project area), and there was a shortage of other medical personnel such as PHMs, along with a lack of drugs and supplies and insufficient beds at the Anuradhapura hospital. An influx of population confounded this situation of unmet needs and added new health demands. According to Dr Wright, the result was that 'a primary health care system at the grassroots level had therefore to be developed on non-traditional lines.' This entailed using the community development officers who were the key workers in the programme, and who were located within the new settlements.[122] Dr Hiranthi Wijemanne, the UNICEF Programme Coordinator, further claimed that the use of the community development officers as a means of bringing family health education to the new settlements in Mahaweli in 1977 'gave birth to the health volunteer concept'.[123]

Another example of such community participation was the Sarvodaya Malaria Control Research Project, designed to prevent and control malaria at the village level. Trained Sarvodaya workers were used in selected villages, in the Anuradhapura area where malaria was endemic, to mobilise communities to control the vector by eliminating breeding habitats, and also to treat villagers with anti-malarials. It had mixed success: 'it achieved a capacity for early diagnosis and treatment of malaria', but it 'failed to set in motion a process of community diagnosis which in turn would induce suitable community action against malaria as and when the need arises'.[124] Ariyaratne also cited the establishment of pre-schools in remote rural areas and community-based programmes for the disabled, which evolved throughout the 1980s, as successful examples of PHC in action.[125]

Dr L. N. D. Abeyagunawardena, the MO responsible for family health education, in 1985, at the Ministry of Health, further extolled the advantages of using local health volunteers (LHV) to supplement official activities. This programme, he noted, was launched in 1976, adding further credence to Fernando and Cooray's claim that Sri Lanka was a model for the Alma Ata PHC policy; by 1985, it covered 5,000 villages. The volunteers came from the communities in which they worked and were chosen by community leaders and health workers. They received no incentives of any kind; they predominantly came from the 18–25 age group, and 85 per cent of them were female. They received theoretical training from the MOH for a period of two to three weeks in basic health subjects such as maternal and child health, communicable diseases, nutrition, sanitation, and so on. Then they gained practical experience from the field workers, accompanying PHMs on their home visits and PHIs in their anti-malarial work. The LHV was responsible for 10–15 families living near the LHV's home, and their role was to detect the health needs of the community, provide advice and primary care, and make referrals to a higher unit where necessary. Abeyagunawardena claimed a high success rate for the LHV programme, noting that in the villages where it operated, there was an 'increase in immunisation coverage, attendance at ante-natal clinics, construction of sanitary latrines, home gardens and a drop in the refusal rate for insecticide spraying'.[126]

However, involving the community did not always deliver the required results, as this report on another such initiative indicated. In 1983, the Marga Institute reported on a village development project on health/nutrition/home gardens in the Matara district. It was conducted by the district administration of the health and agricultural departments in conjunction with the Marga Institute and the Agricultural University of Wegeningen. The original proposal for the project outlined a programme of 'providing the villagers what were

122 Walter K. Patrick, 'The Primary Health Care Model for the Mahaweli', in *Primary Health Care in Mahaweli*, ed. Walter K. Patrick (Colombo: Health Education Bureau, 1983), 30.

123 Hiranthi Wijemanne, 'UNICEF and Primary Health Care in the Mahaweli', in *Primary Health Care in Mahaweli*, ed. Patrick, 35.

124 Kalinga Tudor Silva, 'Towards a Primary Care Approach to Malaria Control: Lessons from the Sarvodaya Malaria Control Experiment in Anuradhapura District, Sri Lanka', *Regional Health Forum* 1, no. 1, 1996, 39.

125 Ariyaratne, 'Role of Primary Health Care in the 21st Century', 5.

126 L. N. D. Abeyagunawardena, 'The Use of Volunteers as a Community Participatory Technique in Family Health Education', *Sri Lankan Family Physisican* 8, 1985, 44.

thought by officials to be villagers "needs"'. The health village volunteers assigned there to assist in the project were expected to act as liaison officers who would contact villagers directly to find out their needs as they themselves perceived them.[127] In order to pinpoint these, villagers of Minipogoda (a village in the project area) were invited to answer questionnaires. They were asked two questions about what they needed in their village. The first question was what health facilities were needed in their village; the second one was what was needed to develop it.

In answer to the first question, 49 per cent of households stated that they wanted a health facility in their village, and 44 per cent said that they want a resident midwife. These preferences derived from the lack of nearby health facilities. The nearest government hospital was six miles away. There was a dispensary two-and-a-half miles away, under a woman doctor, but she was often absent as she ran a private clinic of her own. To obtain *Triposha* and other medicines, mothers still had to do the two-and-a-half mile trek to the dispensary.[128] In answer to the second question, 47 per cent wanted improvement to roads, and 34 per cent wanted a community centre that could serve as a school, a venue for public gatherings, and a clinic. In both questionnaires, only a small number of respondents wanted latrines: and yet, these 'felt needs' were totally ignored by the officials, and villagers were told that what they had to do was to construct latrines. To overcome their reluctance to embark on a venture they did not see the necessity for, the villagers were encouraged by both the carrot and the stick. These took the form of crop plants, other benefits provided for those that did as they were told, and 'veiled threats' about frequent visits from government officials for those who did not.[129] This still failed to 'elicit adequate and satisfactory response from villagers', for which the official explanation was that they were 'uneducated and incapable of realising the usefulness of constructing latrines'.[130]

Chandrani Wanigasooriva, the researcher for Marga, argued that socio-economic constraints prevented villagers from acting along the lines suggested by the health officials. This was because 35 per cent of the villagers had a monthly income of less than Rs 150, and only seven per cent earned above Rs 500, and latrines constructed on the government model were expensive.[131] In addition, she emphasised that it was 'a shortcoming on the part of anyone in authority to expect people in the lower rungs to accept blindly suggestions from the top', at a time when most people were literate and 'politically wakened'. 'Unless they are properly motivated they will not co-operate with officials', she added.[132] The insights offered in this research paper illustrate that it is not just international actors who can be arrogant and override people's wants and needs. Within the very local context, power relations play a crucial role, and there is always a need for negotiation and understanding.

Further structural changes to the healthcare system were instigated in the late-1980s in line with the decentralisation of the island's administration. In 1987, some central government powers were devolved to Provincial Councils, who had their own ministries and health departments, with the responsibility for the administration and management of the provincial hospital network and field health services. This decentralisation was initially intended as a solution to the conflict in the north and the east, but it was extended throughout the country. In 1992, Divisional Directorates of Health Services were established with the responsibility of the provision of healthcare services to a defined population, with special emphasis on preventive medicine. By 1997, there were 238 of these, and for the first time, the organisation of healthcare services was brought in line with the administrative structure of government at all levels (a need first highlighted by

127 Chandrani Wanigasooriva, 'Action Research Project on Health/Nutrition/Home Gardens (Progress Report No. 2 February 1883)', Marga Institute, Centre for Development Studies, Colombo, Sri Lanka, 1983, 1.

128 *Triposha* was an infant food supplement; this nutrition programme is discussed in detail in chapter 3.

129 Wanigasooriva, 'Action Research Project', 2.

130 Wanigasooriva, 2.

131 Wanigasooriva, 7, 10.

132 Wanigasooriva, 10.

Cumpston half-a-century earlier).[133] However, according to Sarath Samarage, even by the early 2000s, this devolution was not complete: 'several provinces have not been given full statutory power and the financial decentralisation everywhere is very limited.'[134]

Table 1.5. Healthcare Services Provided by Health Centres.

Village Health Centres	*Sub-divisional Health Centre*	*Divisional Health Centre*
Family Health: infant, maternal and child health, family planning, immunisation, diarrhoeal disease control, nutrition, school health; control of communicable diseases; management of minor ailments and injuries; health education; simple investigations (blood and urine testing); blood films for malaria parasites; malaria screening.	All health centre activities plus outpatient medical care; environmental sanitation.	All of these previous activities plus inpatient medical care; dental care; minor surgery, including sterilisation; medico-legal work.

Source: Malinga Fernando and Tissa Cooray, 'Sri Lanka: Deep Roots in Primary Health Care', available at www.who.int/publications/1991/9241561327_srilanka.pdf (accessed 25 September 2012), 237.

CONCLUSION

What are the main themes that emerge from this account of the development of the Sri Lankan healthcare system up to 2000? The first is that from the outset, the new nation was committed to the idea that a good healthcare system amounted to more than one that merely treated disease. It had inherited from the colonial state a public health sector and an institution within this sector, the health unit, which operated to prevent ill-health from communicable disease and offered maternal and child welfare services. It is clear that Sri Lanka was intent on providing primary healthcare within the reach of all its citizens. Alma Ata therefore did not signal a fundamental change in the trajectory of the provision of healthcare in Sri Lanka. Indeed, in some respects, the Alma Ata model was based on models within the Sri Lankan system, as exemplified by the health unit and the use of local health volunteers. What did change indisputably was the terminology. Before this, Alma Ata policy planners and healthcare professionals used the terminology of public, promotive, preventive or prophylactic health to describe activities that sought to prevent ill-health and promote good health practices. After Alma Ata, they talked, instead, of primary healthcare, universal health coverage, or equity in health as their objectives of the healthcare services. However, they were still faced with the same problems of geographical, class and ethnic inequity, exacerbated by the civil war and limited resources. On paper, the government was committed to the recommendations of Alma Ata and adopted all eight of them in 1980. But this happened at the same time that the economic and political landscape was changed; the shift in development policy outlined in the Introduction ended Sri Lanka's social welfare state.

The context of PHC provided an impetus for innovation in the structure of healthcare services, with the aim of meeting increasing demand as cheaply as possible. But at the same time, government resources directed towards healthcare *per se* were reduced. The Sri Lankan authorities always cloaked their objectives within the terms of Alma Ata and emphasised community participation as a necessary means to achieve them. However, arguably, as the subsequent chapters suggest, the economic constraints meant that a more realistic appraisal would indicate more continuity than change, and a trajectory of SPHC rather than of PHC. The health system described in this chapter had achieved and continued to achieve remarkable results from independence to the end of the century. However, the capacity of this system to deal with the problems of poverty, malnutrition and insanitation was necessarily limited, and the enduring funding bias towards curative medicine further curtailed the effort to

133 Fernando, 'An Overview of Sri Lanka's Health Care System', 15.

134 Sarath Samarage, 'Revitalizing Primary Health Care: Country Experience: Sri Lanka', WHO Report, 5 July 2008, 33, available at www.searo.who/linkFiles/Conference-SRL-5-July-08.pdf (accessed 5 May 2013).

achieve health for all. The subsequent chapters explore, through a variety of case studies, these tensions in greater detail.

2. 'Public Enemy Number 1'

Governmental, Medical and Societal Responses to TB

> We have controlled smallpox, plague and cholera. In recent times we have controlled malaria, an achievement of which our country may well be proud. The time has come when the scourge of tuberculosis too can be swept away from our land. We now have the power to change the course of Tuberculosis.[1]

Dr L. H. F. Jayasuriya, formerly Senior Surgeon at the Colombo General Hospital, and founder of the CNAPT, threw out this challenge to the people of Sri Lanka in his 1967 account of the disease. In his view, TB would continue to take a heavy toll, 'until the slums, poverty and malnutrition, ignorance, fear and prejudice, are done away with, giving place to clean healthy homes and an enlightened community'.[2]

These words perfectly summarise the major factors that allowed TB to flourish; one of the oldest and most lethal of human diseases, it has plagued all human societies throughout history.[3] They were written in a period of optimism, when the advent of effective chemotherapies from the 1950s onwards seemed to promise new means of successfully reducing the ravages of the disease, even in poor environments. For international health agencies such as the WHO, they also presented an opportunity to tackle the disease without having to address the underlying social and economic causes; that is, those proximate causes highlighted by Dr Jayasuriya above. For him, clearly and rightly, the advancing technologies of biomedicine were not enough. The battle against TB was to be fought on all fronts, and he was no doubt aware that it had been won in the developed world because of rising living standards, as much if not more than medical interventions.

How Sri Lanka rose to the challenge of TB is the focus of this chapter. TB was not the only communicable disease to afflict the Sri Lankan people, but it was a predominant cause of mortality and morbidity throughout most of the twentieth century, and was recognised as such by the authorities from the 1900s. It was the communicable disease that most tested the healthcare system; it affected young children, young adults and whole families. Furthermore, the epidemiology of TB arguably stands as a 'good metric for malnutrition, overcrowding, and a government's ability to mobilize its health infrastructure'; it acts as a 'marker of political and infrastructure problems as well as a symptom of poverty and underdevelopment'.[4] As such, it can provide insights into how effectively Sri Lanka's healthcare system responded to the threat of this widespread communicable disease against the background of the changing international health agenda. How far did Sri Lanka's TB control programme adhere to the concepts of the PHC model? In order to do so, it would also have to address the underlying causes, as it is apparent that the approach to TB control was ultimately a medical one based on drugs, not social and economic change.

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1 L. H. F. Jayasuriya, *The Challenge of Tuberculosis* (Colombo: Wesley Press, 1967), 174. In the late 1940s, with the advent of dichlorodiphenyltrichloroethane (DDT) spraying, the annual incidence of malaria fell rapidly; in the context of the time, this claim about malaria had some validity. However, in the late-1960s, it again reached epidemic proportions, increasing from under 100 cases to half-a-million, from 1967 to 1968. See R. H. Gray, 'The Decline of Mortality in Ceylon and the Demographic Effects of Malaria Control', *Population* 28, no. 2, 1975), 205–29. See also Gordon Harrison, *Mosquitoes, Malaria and Man: A History of Hostilities Since 1880* (London: John Murray, 1978), 229–30, 254–55; Margaret Jones, *Health Policy in Britain's Model Colony: Ceylon, 1900–1948* (Hyderabad: Orient BlackSwan, 2004), 204–08.

2 Jayasuriya, *Challenge of Tuberculosis*, 174.

3 See Helen Bynum, *Spitting Blood: The History of Tuberculosis* (Oxford: Oxford University Press, 2012), 1–22.

4 Mark Nichter, *Global Health: Why Cultural Perceptions, Social Representations, and Biopolitics Matter* (Tucson: University of Arizona Press, 2008), 111, 120.

A secondary purpose of this chapter is to examine the interaction of the WHO with the Sri Lankan authorities and peoples as TB took centre-stage within the international health agenda.[5] This chapter also looks at official government and WHO reports, newspaper and medical journal articles, as well as draws upon the bulletins and reports of the CNAPT. The CNAPT's activities are interesting and significant because the evidence from their reports and bulletins places this account firmly within the context of Sri Lankan society, and in particular, illustrate the role of civil society in dealing with its problems. The CNAPT was largely run by the elites of Sri Lanka, but it also drew upon people from all strata of society in its voluntary work. It is an example of charitable organisation that can claim to have pushed the government continually to expand its commitments. It pioneered accommodation for child victims, home visiting and social assistance schemes, all subsequently adopted by the government. As such, its archives have provided a vital insider's and non-governmental perspective.[6] Although the directors of the CNAPT tended to come from the highest echelons of government medical services, they represented a medical rather than a governmental viewpoint, which could frequently be at odds with each other, each having differing priorities. The first section of this chapter explores the incidence of TB and the development of the specialised campaign to control it up to the 1960s. In the mid-1960s, the WHO was instrumental in pushing for integrated community-oriented control programmes. The attempt to supplant the existing vertically structured campaign forms the focus of the second substantive section of this chapter.

THE ORIGINS AND ESTABLISHMENT OF THE SPECIALISED TB CAMPAIGN

The colonial government of Sri Lanka had identified TB as a major health threat from the beginning of the twentieth century. Annual deaths from the disease, estimated to be c4000 between 1905 and 1910[7] led to the formation of a government committee in 1910 to examine its causes and consider the responses.[8] This committee acknowledged the contributory socio-economic factors, accepted TB as an infectious disease, but also attributed its cause to individual behaviour and the commonly held trope at the time, that of 'hereditary disposition'.[9] As a result, the first specialist services were established: an Anti-Tuberculosis Institute and dispensary in Colombo in 1916; a hospital for advanced cases at Ragama in 1917; the Kandama Sanatorium, which became fully operational in 1919; and a second sanatorium was established at Kankesanturai in 1931. Chest clinics in Colombo and Jaffna also followed. TB was made a notifiable disease, although this was not enforced until the 1950s. In 1948, the Director of Health Services (DHS), W. G. Wickremesinghe, acknowledged that 'with the control of Malaria', TB had 'become the most serious medical and socio-economic problem in Ceylon'.[10] A sample survey of the population of Kotte in 1944, a small urban area in the south of Colombo, had

5 See Sunil Amrith, *Decolonising International Health: India and Southeast Asia, 1930–1965* (Basingstoke: Palgrave Macmillan, 2006); Niels Brimnes, *Languished Hopes: Tuberculosis, the State and International Assistance in Twentieth Century India* (Hyderabad: Orient BlackSwan, 2016); Christian McMillen, *Discovering Tuberculosis: A Global History, 1900 to the Present* (New Haven: Yale University Press, 2015); M. C. Raviglione and A. Pio, 'Evolution of WHO Policies for Tuberculosis Control, 1948–2001', *The Lancet*, 359, 2002, 775–80.

6 Original copies of the CNAPT Reports and Bulletins were very kindly donated to the author by the present CNAPT Executive Secretary, D. P. Fonseka.

7 *Report of the Tuberculosis Commission, 1910, Sessional Paper XIX*, CO 57/177, National Archives, Kew (NA).

8 *Report of Tuberculosis Commission*.

9 *Report of Tuberculosis Commission*. For an analysis of the ideas around hereditary disposition and other causes, see Michael Worboys, 'Before McKeown: Explaining the Decline of Tuberculosis in Britain, 1880–1930', in *Tuberculosis Then and Now: Perspectives on the History of an Infectious Disease*, ed. Fleurin Condrau and Michael Worboys (Montreal: McGill-Queen's University Press, 2010), 148–70.

10 *Administration Report of the Director of Medical and Sanitary Services, 1948*, Tuberculosis, C90, Sri Lanka National Archives (SLNA).

revealed a TB morbidity rate of 2.2 per cent and a death rate of 470 per 1,00,000. Yet, according to the official statistics on TB, the death rate in Kotte was only 60–80 per 1,00,000. While these figures could not be directly extrapolated to the whole island, they did suggest, Dr W. G. Wickremesinghe argued, that the actual death rate from TB was much higher than the official figure for 1948, which was 57.5 per 1,00,000. He concluded that it was likely that there were more than 1,00,000 cases of 'open' TB (that is, actively infectious) in a population of about seven million.[11]

A first batch of MOs had already been sent to India for specialist training in TB work in 1942, and the Kotte Survey resulted in a second Government Committee on TB in 1943. This second TB Committee resulted in the establishment of a vertical control programme based on the tripartite model of treatment, case detection and prevention devised in the developed world. A Superintendent of the Anti-TB Campaign for the coordination, control and development of anti-TB work was appointed in 1945 alongside a staff of seven MOs, seven Assistant MOs, nurses, X-ray and laboratory workers, and a sanitary inspector.[12] The CNAPT was established by Dr J. H. F. Jayasuriya to supplement and support government efforts following the model of similar associations in the West.[13] The lynchpin of preventive strategy was a BCG vaccination campaign begun in 1949, with the help of the International TB Campaign and the UNICEF. Initially aimed at schoolchildren and selected adult groups in Colombo,[14] after 1951, it was extended throughout the island, and by the mid-1960s, to all babies born in government institutions and school children.[15] A planned case-finding campaign with mass miniature radiography was instigated in 1951.[16] In 1953, to encourage patients to present themselves for treatment, a social assistance scheme for patients and families was set up by the government; and in the same year, combined Streptomycin and Isoniazid, or Isonicotinic Acid Hydrazide (INH) chemotherapy was introduced for all patients.[17] Along with the Central Register of all known TB cases started in 1958, these developments laid down the structure of the national Tuberculosis Control Programme (TCP). It took two decades to establish this structure, and by the end of this period, there were newly available effective therapeutics. However, to what extent was this programme implemented on the ground? And how did the Sri Lankan population respond to these efforts?

TREATMENT

At the beginning, treatment focused on the standard care of isolation, in homes or institutions, rest, good food, and collapse therapy. Streptomycin was introduced in 1951, four years after it became generally available as the standard treatment. Para-aminosalicyclic (PAS) and INH were added for a combined therapy as they, too,

11 *Report of the Director of Medical and Sanitary Services, 1948*, Tuberculosis, C90, C10.

12 *Medical and Sanitary Services*, C91.

13 Dr J. H. F. Jayasuriya, OBE, FRCS, a prominent chest surgeon, also Chairman of the Rotary Club, Colombo was the inspiration for its foundation, and for many years, he ran it from his home until it acquired its own building in 1957 at 51 Sir Marcus Fernando Mawatha, where it is still housed today; B. Kaluarchchi, 'CNAPT Serves the Nation, 60 Years, 17th June 1948–17th June 2008', *The Island, Online*, 17 June 2008, available at www.island.lk/2008/06/17/features2.html (accessed 10 November 2014).

14 For BCG vaccination programmes in India at the same time, see Niels Brimnes, 'Vikings against Tuberculosis: The International Tuberculosis Campaign in India, 1948–1951', *Bulletin of the History of Medicine* 81, no. 2, 2007, 407–30; and for a fascinating account of BCG vaccination and the global campaigns, Christien McMillen's, *Discovering Tuberculosis*, 71–118.

15 *Report of the Director of Medical and Sanitary Services 1950*, B137, SLNA; CNAPT *Report and Financial Statement 1964*, 'Address by Mr M. D. H. Jayawardena, Minister of Health', 1627.

16 *Report of the Director of Medical and Sanitary Services, 1950*, Para. 242, B137, SLNA.

17 *Report of the Director of Medical and Sanitary Services, 1953*, Paras 45, B95 and 52, B96, SLNA.

became generally available in the early 1950s.[18] However, to talk of treatment, even with the introduction of antibiotics, belies what was really taking place at this time. First, because of inadequate inpatient accommodation in sanatoria or hospitals, a large number of patients examined at clinics were sent back to their homes where they further spread the infection. Additionally, many patients refused to enter the sanatoria or TB wards in hospitals because of their appalling conditions. As the 1951 CNAPT Annual Report observed, the very term 'sanatorium' was 'itself now a misnomer'. In the Welisara TB clinic (the primary TB clinic in the country), with 550 beds, for example, there were 1,070 patients, and 70 to 80 per cent of these were 'advanced and irremediable cases'. Lack of accommodation meant that patients were admitted only when they were virtually past hope.[19]

In Kandy Hospital, there were two wards for TB patients, with 51 patients in one and 70 in the other: 'Patients were under beds, between beds, and in the passages between the rows of beds.' There were a mere 30 sputum mugs for these 121 patients (and thus, they expectorated 'where they liked'), four lavatories, no running water, and one nurse to look after both wards.[20] The CNAPT argued that these TB institutions were not, as they should be, places to 'recover and live'; instead, they were places in which one was to 'remain and die'.[21] Furthermore, the report stressed, 'the enormous sums of money now spent on Streptomycin, PAS and so on, are largely wasted.'[22] The British TB expert, Donald Barlow, who visited the island in 1952 to advise on TB services of the government and to set up training in thoracic surgery at the Colombo General Hospital, reiterated these criticisms about the conditions in inpatient TB facilities and the pointlessness of 'streptomycin being poured down the throats of those who are not resting'.[23]

Barlow's report and the subsequent follow up visit by British surgeon, Dr Abbey Smith, in 1953 instigated significant changes to the TB services. A grant of Rs 3 million was negotiated through the Colombo Plan from the Australian government for the establishment of chest clinics in every province.[24] Drastic and contentious action was taken to deal with the overcrowding at the Welisara Clinic when the decision was made, beginning on 15 January 1953; and on the advice of the British surgeons, action was taken to reduce the number of patients from 1,228 to 600. This provoked immediate public outcry in the form of public meetings, council resolutions and opposition from the CNAPT on the obvious grounds that unless these patients were isolated and cared for properly, they would spread the disease further into the community.[25] If, as the CNAPT had claimed two years earlier, most patients in the clinic were in advanced stages of the disease, then the assertion by the Minister of Health, E. A. Nugawela, that these discharged patients were not infectious, was somewhat disingenuous. As a result of the discharges, however, the Welisara Clinic had, according to the District Medical Superintendent (DMS), been 'converted into a modern Institution and Teaching Centre'.[26] As well as providing specialist training for doctors, in 1954, a school for training TB nurses was also opened at the clinic.[27] Even the CNAPT was willing to concede that at least with these reforms, patients in the clinic now received the 'fullest benefits of

18 See Bynum, *Spitting Blood*, 128–59, for an excellent survey of this institutional care. Collapse therapy refers to surgical procedures such as pneumothorax, designed to rest the diseased lung. For a summary of the development of these drugs, see Brimnes, *Languished Hopes*, 83–84.

19 'Introduction, Conditions in Sanatoria', 2, *Annual Report for the Year 1951*, CNAPT.

20 Introduction, 'Kandy TB Wards', 3.

21 Introduction, 'Conditions in Sanatoria', 2.

22 'Conditions', 2.

23 'Abstracts from Mr Barlow's Address to the Executive Committee on 30th January 1952', 45, Appendix D', *Report and Financial Statement for 1952*, CNAPT.

24 *Report and Financial Statement 1953*, 6, CNAPT.

25 *Report*, 'Changes at Welisara', 11–13.

26 Anti-tuberculosis Campaign', B90, *Report of the Director of Medical Services, 1953*, SLNA.

rest, expert nursing, drugs and surgery', and that without them, the Welisara Clinic would have continued to serve 'more as a graveyard than as a sanatorium for patients'.[28] The first modern chest clinic in Galle, the Thassim Chest Clinic, was a charitable initiative; the building was the gift of A. R. M. Thassim, the mayor of Galle. It was completed by 1952, but the tardiness of the government in staffing and equipping it caused delays to the 'very great disappointment' of the donor and the CNAPT.[29] It was finally opened by the Governor-General, Lord Soulbury, in June 1953.[30]

The CNAPT was instrumental in highlighting the problem of childhood TB and the facilities for treating it. Their 1952 bulletin gave prominence to the claim of the paediatician and Director of the Lady Ridgeway Hospital for Children, C. C. De Silva, that 'of all the chronic and prolonged illnesses in children under 10, in my opinion, tuberculosis is the commonest cause of death.' Yet, facilities for children with TB were almost non-existent, as the CNAPT discovered on a visit to the Lady Ridgway Hospital.[31] The 24 children with TB were 'cramped in a dark, narrow, ill-ventilated verandah which contained 8 cots, 2 or 3 children were in each cot and a few were in the floor'. Some of these children had been lying there for two to three years, and 'all the world they ever saw was the little blue sky through the trellis of the verandah.'[32] The situation so 'distressed' the visitors that they set about the reconstruction and equipping of a children's ward at the Welisara Clinic; opened in 1952, it was the first of its kind in Sri Lanka.[33] Further provision for children with TB came from a donation of Rs 3 lakh from the Joseph Hawke Charity Fund to the CNAPT to establish the Hawke Memorial Children's Hospital at Kandana.[34] The 110-bed hospital was handed over to the government by the CNAPT in 1955, but the official opening was again delayed until June 1956, until the government could provide an adequate number of nurses and medical personnel.[35] Treatment at the hospital consisted of drugs, good food, play, occupational therapy and a school. The children did improve as a result of their stay in the hospital, but as Dr M. Rajasingham wryly put it, 'we wish that the children were going back to better home conditions.'[36]

While conditions improved within the TB institutions, and the numbers of inpatient beds increased year by year (from 1951 and 1960, they increased from 1,622 to 3,506), the vast majority of patients would still have to receive treatment on an outpatient basis.[37] The first team to implement a planned system of domiciliary treatment started its work in Colombo in April 1953, to be followed by a second team in June, and a third in August. At the end of the year, teams were also set up in Kandy and Galle.[38] The Health Visitors (HVs) attached

27 *Report of the Director of Medical Services, 1954*, Tuberculosis, B126, SLNA.

28 *Report and Financial Statement 1953*, 'Changes at Welisara', 11, CNAPT.

29 *Annual Report for the Year 1952*, 29, CNAPT. Many of Sri Lanka's medical institutions started life as a result of individual philanthropy. See Margaret Jones, *The Hospital System and Health Care: Sri Lanka, 1815–1060* (Hyderabad: Orient BlackSwan, 2009), 34–48, 201–17.

30 *Annual Report for the Year 1953*, 31, CNAPT.

31 *Report and Financial Statement 1952*, 20, CNAPT. C. C. De Silva was the pioneer of paediatrics in Sri Lanka.

32 *Report*, 25.

33 *Report*, 23.

34 *Report*, 24. Joseph Hawke was a British man who had spent 50 years of his life in Sri Lanka. A condition of his bequest to the people of Sri Lanka was that it could not be spent on religion or education, and thus, the trustees decided that a children's hospital was appropriate.

35 *Annual Report for the Year 1956*, 4, CNAPT. The beds were all endowed by friends of the CNAPT in Sri Lanka and overseas. For example, contributions came from Rotary Clubs in the US, Canada, Australia, New Zealand and Denmark.

36 *Annual Report*, 7.

37 CNAPT *Report and Financial Statement 1953*, 'Brief Report on the Progress of the Anti-TB Campaign of the Department of Health', 4; *Report of the Director of Medical Services*, 1960, B222, SLNA.

to each team were ideally expected to supervise the treatment of patients in their own homes (through streptomycin, PAS and INH), seek out contacts, give health education, and ensure that patients attended clinics every month for examination.[39] This domiciliary programme predated the Wallace Fox Trials undertaken by the Madras Tuberculosis Chemotherapy Centre after 1956, which concluded in 1959 that there was little difference between treatment in sanatoria and treatment at home.[40] As might be expected, the more efficient the TB service became, the more patients emerged with need of its services. They could not be catered for on an inpatient basis, and with the advent of antibiotics, institutional care was no longer considered necessary; moreover, it was too costly, and thus, the burden of treatment fell primarily on the domiciliary staff and the outpatient sector.

Already by the end of 1953, the six HVs attached to the domiciliary teams were deemed insufficient by the DMS, and he asked for at least four more HVs in the following two years.[41] This pressure on the existing HVs meant that as far as the CNAPT was concerned, even in 1953, they were unable to fulfil their tasks properly. The HV must 'find the time for case-finding and careful supervision of contacts', and it was upon them that 'much of the constant education and propaganda needed to drive home to the public the facts about tuberculosis and its prevention' was devolved. The CNAPT feared that 'the treatment of the patient appears to be the main and sometimes the only concern.'[42] Under the pressure of work, the public health aspects of the government HVs necessarily fell by the wayside. The CNAPT, in collaboration with the Ceylon Red Cross, had set up their own home visiting service in 1951, which operated initially in and around Colombo to supplement these government efforts. They used their visits not only as an educational opportunity, but also to provide help in kind with rations of 'milk, eggs, butter, cod liver oil, spratts and dahl'.[43]

For TB sufferers outside of these urban schemes, access to treatment was far more problematic. The difficulties for these patients were graphically highlighted in the CNAPT's 1953 Report. Not only were facilities for treatment at rural clinics 'very unsatisfactory', but they could also be 'highly dangerous'.[44] Patients who had to attend their nearest chest clinic or the MOH's office for their twice-a-week streptomycin injections would often have to go to 'great lengths to get there, travelling on foot and by bus, undergoing physical hardships, for which they are not fit. The accompanying risks were that of 'exposure' …. 'an attack of pleurisy or exacerbation of illness'. The solutions that the CNAPT offered were to provide an ambulance service or 'some facility for travel'; or when the nearest MOH was not close at hand, to arrange for the apothecary at the nearest rural health agency to give the injections under the MOH's direction.[45] As will be seen later in the chapter, treatment at the nearest general health agency offered a solution to these problems and it became the lynchpin of the WHO's community-orientated strategy of TB control in the late-1960s.

CASE DETECTION

Treatment, while obviously being the essential factor for an individual patient, forms only one aspect of an effective control programme. From a public health perspective, case detection and the prevention of TB were as vital. Cases were ideally detected through chest X-rays of symptomatic patients who went to the chest clinics and

38 'Anti-tuberculosis Campaign', 91, 95, *Report of the Director of Medical Services, 1953*, SLNA.

39 'Anti-tuberculosis Campaign', 95, 96.

40 Brimnes, *Languished Hopes*, 83–84.

41 'Anti-tuberculosis Campaign', 95.

42 'Domiciliary Treatment and the Tuberculosis Health Visitor', 13, *Report and Financial Statement 1953*. CNAPT.

43 'Domiciliary Treatment', 35.

44 'Domiciliary', 'Ambulatory Treatment of Patients', 14.

45 'Domiciliary Treatment', 14.

hospitals; however, given the lack of X-ray facilities, this was not possible frequently. For example, in 1952, even the Kandana, Kankesanturai and the Puttlam Sanatoria did not have X-ray equipment, and many of the largest hospitals were similarly ill-equipped.[46] In 1951, the UNICEF donated a mobile mass radiography unit and the WHO provided a technician to run it.[47] It focused on specific groups in Colombo in the first year, and from 1952, it conducted mass field surveys radiating out from Colombo, starting with a plan to X-ray 1,00,000 people in the Kotte area.[48] In subsequent years, the mass radiography campaign was extended to the whole island. An account of a mass X-ray campaign in the Wekanda ward of Colombo in 1961 reveals the efforts that had to be made to persuade people to come forward for the examination; 'enthusiasm had to be aroused', 'incentives provided', and 'everything had to be done in the way of educating the people'. This entailed public meetings, newspaper publicity, posters, pamphlets and home visits. As a further inducement, those who were X-rayed in Wekanda were given a numbered ticket that was entered into a weekly draw for three prizes. The prizes, donated by local companies, included an electric iron, alarm clock, folding chair, torches and batteries, cartons of matches, shirts, tea, tins of carnation, and malted milk from Horlicks. Among all of the 8,400 men, women and children over the age of five, who registered in the ward, 6,200 were X-rayed.[49]

These efforts were necessary because TB victims, even, or especially, if they were aware of what their symptoms signified, did not always present themselves for diagnosis and treatment, as confirmation of the disease could result in loss of employment, destitution and/or social stigma (this, in part, explains the discrepancy between the official statistics and actual cases of the disease as thrown up in the 1944 Kotte Survey, for example). The 1943 TB Committee had recommended a scheme of social assistance to deal with the economic consequences of a diagnosis. The CNAPT had pioneered such a scheme in 1950, with funds raised by the Ceylon Turf Club; and in 1953, the government finally followed suit.[50] This was not a social security scheme in that assistance would be granted if eligibility was proved; it was dependent on available funds, so that even if applicants were accepted, there could be a long wait for aid.[51] Monthly allowances of Rs 60 for inpatients and Rs 80 for outpatients were paid to needy patients (determined by a visit from the Department of Social Services), who had a certificate from a government MO that s/he was suffering from TB and had agreed either to being treated in a hospital or to attend a clinic regularly and adhere to the treatment regime.[52] The scheme proved so necessary that by August 1954, there were 3,005 patients receiving the allowance, and another 1,100 were on the waiting list, with 300 applying each month. The budget of Rs 2 million in 1954 was under such severe pressure that it was suggested that it ought to be cut and spread more thinly among more families. Instead, it was decided to make the allowance conditional on a fresh medical certificate being issued every six months.[53] Initially, the allowance would only be paid if it was the breadwinner who was incapacitated, but as the CNAPT pointed out that this excluded many other deserving families; families such as that of Patient A, for example. Her husband was a casual labourer who earned between Rs 30 and Rs 40 per month. They had six children, and thus, as in most poor families, they were dependent upon her wage as much as his to survive.[54] As a result of such clear need, the scheme was extended to take into account the effect of dependents having TB, even if the breadwinner did not.[55]

46 'X-Ray Facilities and Laboratory Services', 7–8, *Report and Financial Statement 1952*, CNAPT.

47 *Report of the Director of Medical and Sanitary Services, 1951*, B207, SLNA.

48 *Medical and Sanitary Services*, B207–08.

49 'Mass X'Ray Campaign—Wekanda Ward', 68–69, Report and Financial Statement 1961, CNAPT.

50 *Report and Financial Statement 1951*, 12.

51 *Report and Financial Statement 1955*, 29.

52 Jayasuriya, *Challenge of Tuberculosis*, 'Appendix II, Financial Assistance to Tuberculosis Patients', 180–83.

53 'TB Allowances Will Not be Cut', *Ceylon Daily News*, 4 August 1954, 1.

54 'Relief to TB Patients: Shortcomings of the TB Assistance Scheme of the Department of Social Services', 17, *Report and Financial Statement 1953*, CNAPT.

The allowance was set at a level akin to the lowest wage and hardly did more than to prevent outright destitution. It did not, as the CNAPT had hoped, 'improve the economic position of the family as a whole'.[56] The CNAPT saw this scheme 'as a public health measure' and 'not as a dole' so that 'neither the patient nor his family should be made to feel the slightest degree of humiliation. In all deserving cases, this relief should be considered their right'.[57] However, this assistance was not a right, and in the first year of its operation, the Department of Social Services was castigated for appearing to '*work rigidly like a machine when it is dealing with this Human Problem*' (italics in the original).[58] Despite these apparent failings (only to be expected from a government assistance scheme anywhere in the world), the scheme clearly satisfied a need, and no doubt, along with effective therapeutics, may have encouraged sufferers to come forward. By 1960, 16,074 patients were in receipt of assistance at a cost to the government of Rs 8,565,361; this represented 41 per cent of all known cases of TB, but there was considerable variation by province. In the Eastern Province, 75 per cent of known TB cases received it, as compared to 24 per cent in the Central Province; or to take it by population numbers, 36 out of every 10,000 population in the Northern Province, 23 per 10,000 in the Eastern Province, and only 4 or 5 in Uva and the Central Provinces.[59] These figures reflected the effectiveness of the TB services by province more than the incidence of TB itself.

The 1943 Committee also recommended education on TB for both the medical profession and the general public, again to improve case detection rates. This would help, it argued, to 'produce intelligent sympathy instead of instinctive dread, and will destroy the social stigma that now attaches to the disease'.[60] Until the advent of antibiotics, a diagnosis of TB was generally perceived as a death sentence in the East or the West.[61] This deep-seated fear of the disease continued to exert its influence even when cure was possible, and led to a degree of social ostracism that deterred individuals from seeking help. Being cured did not signal the end of the problem for patients either, as the stigma of the disease could have long-term consequences for employment possibilities, marriage prospects and social inclusion. One of the predominant purposes for the establishment of the CNAPT was the dissemination of information about TB, to 'dispel ignorance, help remove old superstitions and faulty beliefs' and 'help remove the social stigma'.[62] The CNAPT's reports highlight some of that ignorance and fear, and the effect it had on people's lives. For instance, a CNAPT survey of the Welisara Sanatorium in 1956 found that 20 per cent of the women patients had been deserted by their husbands because of their TB.[63] In 1960, a Justice of the Peace (JP) and member of the Jaffna Branch of the CNAPT Muhandiram, E. P. Rasiah, addressed a public meeting on the 'Consequences of Ostracism'. In this, he recounted the horrifying story of the family who, on finding that they were all infected with TB, receiving 'no sympathy or help' from their relatives, and on realising that their daughters would not be able to marry, decided to take poison: 'To make death doubly sure, they locked themselves in their cadjun-walled house and set fire to it.'[64] The other examples he cited, although

55 Jayasuriya, *Challenge of Tuberculosis*', 180–83.

56 'Relief to TB Patients', 18.

57 'Financial Assistance to TB Patients', 32, *Report and Financial Statement 1952*, CNAPT.

58 'Relief to TB Patients', 18.

59 'A. Control of Tuberculosis, (j) Social Assistance to Tuberculosis Patients', B226, *Report of the Director of Medical and Sanitary Services 1960*, SLNA.

60 SLNA *Sessional Paper III*, 1945, 'Report of the Tuberculosis Committee, 1945', Para. 5(1) 2, *Sessional Paper III*, 1945, SLNA.

61 In Jamaica, for example, it was termed the 'Repentance Sickness'; it was invariably fatal, but there was time to repent of one's sins. Margaret Jones, *Public Health in Jamaica 1850–1940: Neglect, Philanthropy and Development* (Kingston, Jamaica: University of West Indies Press, 2013), 136–53.

62 End cover of all CNAPT Annual Reports.

63 *Report and Financial Statement, 1956*, 29, CNAPT.

less tragic, still speak to the social consequences that could ensue from a diagnosis. Even just a visit to the chest clinic for an X-ray could be problematic. Rasiah also spoke of a family who refused to allow their two teenage daughters to go for an X-ray as this in itself, whatever the diagnosis, would 'act as a great handicap, if not prove detrimental for their matrimonial prospects'.[65]

Although the CNAPT educational material emphasised, for obvious reasons, that TB could strike anyone from the highest to the lowest in the land, it did not fail to recognise the socio-economic causes. Consistently within the pages of the CNAPT bulletins and reports, TB was designated as a disease of poverty, principally a problem of appalling living conditions. If the elite readers of the CNAPT reports were in any doubt regarding the full horror of a Colombo slum, these are described graphically for them by CNAPT home visitor, Mrs Walter Jayawardena, in an article titled 'Where the Sun Never Shines'. The worst huts, she wrote, were

> rows of little rooms, each measuring 12' × 14' partitioned off from each other by flimsy boards pasted over with paper …. They are just earth pressed down or sometimes cow dunged …. The roofs are thatched with cadjun sagging and black with smoke from the cooking …. They are sodden, sorry stinking hovels, steaming with foul smoke …. they afford not an inch of dry space for even a dying child to sleep on …. they are surrounded by the slime and slush of open drains, stinking sewers and decaying faecal matter.[66]

Jayasuriya acknowledged that given these conditions, efforts to educate people on TB was a pointless exercise, when they could do nothing about the circumstances in which they were forced to live through poverty:

> Many of us living in living in comfortable homes may not even realize that there is a Tuberculosis problem, and we cannot possibly understand the misery in these homes.… Talking of Tuberculosis to these poor people may literally make no sense to them, as they have plenty of other pressing problems that seem far more important to worry about.[67]

It is interesting to contrast the understanding and humanity of this statement with the comments made to the CNAPT annual general meeting in 1963 by the Minister for Health and Housing, Al Haj Badiuddin Mahmud. He accepts that TB is 'one of the deadliest national enemies', but argues that '[h]owever intensive the control measures be, or however effective the drugs are, if the people *have no desire* to live under more hygienic conditions, or take the drugs as required, this problem is bound to remain a danger to the community' (emphasis mine).[68]

This governmental view is not unique to this time and place, and these two opposing views reflect an enduring debate found in public health discourse. How far does the responsibility for health lie with the individual and how far with society? Where the emphasis is placed depends very much on the perspective of the observer and how short- or long-term a view is taken. Blaming the individual, as Mahmud does here, clearly absolves the government from responsibility for failures in the control programme. It also avoids the need to deal with or even discuss the socioeconomic causes of TB that might require a radical re-think about the structures of society. To quote Paul Farmer, the minister is choosing to ignore the 'social inequalities' that are ultimately 'embodied as

64 'Consequences of Ostacism', 39, *Report and Financial Statement 1960*, CNAPT. A photograph of the burnt house is reproduced opposite the address.

65 'Consequences', 39.

66 'Where the Sun never Shines: Speech Delivered at the CNAPT Public Meeting by Walter Jayawardena, A Home Visitor', 24, 25, *Report and Financial Statement 1953*, CNAPT.

67 'Address by Dr J.H.F. Jayasuriya', 24, *Report and Financial Statement 1963*, CNAPT.

68 'Address by The Hon'ble Haj Badiuddin Mahmud, Minister of Health and Housing', 14, *Report and Financial Statement 1963*, CNAPT.

adverse health outcomes'.[69] Antibiotics offered one individualised solution for curing those infected by TB, which seemingly skirted around the need to tackle these inequalities. At the same time, biomedicine produced another technological solution in order to prevent infection in the first place through the BCG vaccination. BCG was introduced in the island in 1949 and was integral to the TB control programme, but as this preventive measure was directed primarily at infants and children, this will be discussed fully in Chapter 4.

Despite the evident weaknesses of the TB service, its first decade was lauded as a success. The DMS claimed in 1956 that TB sufferers had a 'full range of medical treatment available, without delay at the special institutions and the usual hospitals'.[70] There were six chest clinics, over 3,500 TB beds for inpatients, supplemented by ambulatory or domiciliary care, financial assistance for subsistence, and protection available for families and friends through the BCG vaccination.[71] Sir Bennett Hance, Medical Advisor to the British Department of Commonwealth Relations, in his 1956 report for the Sri Lankan government on the health services, had nothing but praise for these efforts: 'Progress despite the limited staff has been spectacular', he noted, evidenced by the halving of death rates from 528 per million of population in 1949 to 210 in 1954, which he attributed to 'increased effective treatment'.[72] Furthermore, even the increasing morbidity rate was 'indicative not of a seriously increasing problem but of better and earlier diagnosis with greatly improved chances of cure'.[73] While he noted that assistance had been received from the WHO and the UNICEF (especially for the BCG campaign), he considered this success to be 'wholly due to the Ministry and Department of Health, and to these belong the credit. Inspired by leadership and enthusiasm at the top, the workers in the campaign have toiled early and late against almost every conceivable handicap with a devotion which is worthy of the highest praise.'[74]

He added, that given support from the Departments of Housing and Agriculture in dealing with the underlying problems of bad housing and poor nutrition, he was not being 'unduly optimistic to say that *if present progress and momentum be maintained*, the disease should come under control (and here elimination is *not* implied) in a period of 10–15 years' (italics in original).[75]

Not all agreed with Hance's rather sanguine report. A sample survey conducted in 1956 by WHO consultant, Dr James Deeny, on behalf of the government, led him to estimate that there were nearly 69,000 'unhealed' cases, aged 10 or above, that is, about one per cent of the population, and nearly 35,000 'healed' cases. Significantly, 81.7 per cent of these unhealed cases in Deeny's sample were found among the rural population. Since this group represented about 83 per cent of the total population, it suggested that the prevailing TCP was failing to reach a large proportion of people.[76] In 1964, it was further estimated that there were nearer 80,000 cases, but only half of these cases had been diagnosed; and the majority of patients who did appear in the Central Register of Tuberculosis came from urban or semi-urban areas.[77]

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69 See Paul Farmer, *Infections and Inequalities: The Modern Plagues* (Berkeley: University of California Press, 2001), 282.

70 *Report of the Director of Medical and Sanitary Services, 1956*, B14.

71 *Medical and Sanitary Services*, B14.

72 Sir Bennett Hance, *Sessional Paper XVI, Report on the Organisation of the Health Services of Ceylon*, NA DO/109, Para. 161

73 Hance, *Sessional Paper*, Paras 161, 65.

74 Hance, Paras 163–65, 65–66.

75 Hance, Para. 165, 66.

76 'Plan of Operation for Tuberculosis Control in Ceylon', Signed by UNICEF, 2 September 1965, Project Files, Sri Lanka-75 1965–72 TUB 1, BCG/TBC, A. PRO 529, WHO Archives, Geneva; WHO, 3 September 1965 and the Government, 16 December 1965, 3; *Report of the Director of Medical and Sanitary Services, 1956*, B157, SLNA. Unfortunately, I have not been able to locate a full copy of Dr James Deeny's report. The WHO Archives only have a partial and largely illegible microfilmed copy.

THE WHO COMMUNITY MODEL OF TB CONTROL

The Eighth Report of the WHO Expert Committee on Tuberculosis, in 1964, recommended 'that tuberculosis services [should] be integrated into general health services.'[78] The blueprint for TB control outlined in this report represented an attempt to grapple with what the Director General of the WHO, Dr M. G. Candau, described as a 'public health problem of major importance in all countries'. This was made even more pressing by 'the disturbing fact of a rapidly increasing gap.… between the economic "have" and the "have not" countries'.[79] This growing divergence between rich and poor nations in their epidemiological experience of TB in the decades following the Second World War highlighted the need to find a method of control that was feasible in areas with scarce resources, facilities and trained personnel.[80] The 1956–59 Wallace Fox Trials at the Madras Tuberculosis Chemotherapy Centre had shown that domiciliary chemotherapy could be as effective as expensive drug treatment in a hospital or sanatorium; and further trials at the Madras Centre, East Africa, Hong Kong and Singapore in the 1960s showed that a six-month, combination, intermittent drug regime where patients attended clinics twice a week for chemotherapy could solve the problem of patient supervision. This short-course therapy ultimately took shape in the WHO DOTS strategy of the 1990s.[81]

The community model of TB control advocated in the 1964 Report therefore derived directly from the Madras and subsequent trials, and formed the basis of India's National Tuberculosis Programme, which was established from 1962.[82] Two community-based projects were initiated in Sri Lanka in the 1960s, which were designed to take advantage of new developments in diagnosis and treatment. The first of these was spearheaded in 1965 by the CNAPT in the Jaffna Peninsula, with support from the ITC, and material help channelled through the International Union Against Tuberculosis (IUAT) to the CNAPT from Canada. The second was a WHO/UNICEF-backed plan based on the WHO/India model.

THE JAFFNA PROJECT

The aim of this pilot project, according to the CNAPT, was to 'ensure individual and personal attention to every TB patient' in the region, and to 'induce everyone of them to take a full share of the responsibility for the diagnosis, treatment, and the cure of the disease'. It was, moreover, the 'first and concerted joint effort to arrest the spread of Tuberculosis in Jaffna', a claim that in itself points to the regional inequalities in TB services.[83] The

77 'Plan of Operation for Tuberculosis Control in Ceylon', Signed by UNICEF, 3 September 1965, 3.

78 WHO Expert Committee on Tuberculosis, Eighth Report, *WHO Technical Report Series, No. 290*, 1964, 17, Para. 7, available at (accessed 2 June 2013). For an analysis of the genesis of this policy, see Sunil Amrith, 'In Search of a "Magic Bullet" for Tuberculosis: South India and Beyond, 1955–1965', *Social History of Medicine* 17, no. 1, 2004, 113–30. For an overview of WHO policies for TB control, see Raviglione and Pio, 'Evolution of WHO Policies', 775–80.

79 WHO Expert Committee on Tuberculosis. Eighth Report, 3.

80 For an overview of the global significance of TB, see Sue Bowden and Alex Sadler, 'Review Article: Health Expectations and Health Achievements: Respiratory Tuberculosis in the Global Economy Between 1950 and 1980: A Developing Economy Perspective', *Journal of International Development* 26, 2014, 222–45.

81 Tuberculosis Chemotherapy Centre Madras, 'A Concurrent Comparison of Home and Sanatorium Treatment of Pulmonary Tuberculosis in South India', *Bulletin of the World Health Organization* 21, 1959, 51–144. See also Helen Valier, 'At Home in the Colonies: The WHO–MRC Trials at the Madras Chemotherapy Centre in the 1950s and 1960s', in *Tuberculosis Then and Now*, ed. Condrau and Worboys 213–34; D. Mitchison and G. Davies, 'The Chemotherapy of Tuberculosis: Past, Present and Future', *The International Journal of Tuberculosis and Lung Disease* 16, no. 6, 2012, 724–32; Paul Farmer, Jim Yong Kim, Arthur Kleinman and Matthew Basilico, eds, *Reimagining Global Health: An Introduction* (Berkeley: University of California Press, 2013), 235–39; Mukund Uplekar and Mario Raviglione, 'Hospital or Home? Scripting a High Point in the History of TB Care and Control', *WHO South-East Asia Journal of Public Health* 1, no. 2, 2012, 220–23.

82 Brimnes, *Languished Hopes*, 210–41.

project was devised by a group of experts from the IUAT led by Dr Johannes Holm (an international team consisting of members from Denmark, Canada, Australia and Malaysia). This project was undertaken with the full cooperation of the government and with the close liaison of government MOs, nurses, PHIs and midwives in Jaffna. However, it relied on charity for funding and a cohort of willing volunteers to make it work. As Dr M. Thevathasen wrote in 1967, 'Tuberculosis is a community problem …. Hence to control Tuberculosis effectively and economically, all measures should be employed on a community basis.'[84] The plan was based on one that had been operating successfully in Canada. By taking the work right into their homes, it was designed to deal with the principal weaknesses in TB control work—the failure of patients to come forward for diagnosis, and their failure to take the drugs regularly and systematically.

Two factors suggested that Jaffna would provide a favourable environment. The first was the active and contiguous 12 CNAPT branches in Jaffna who could raise and supervise the volunteers needed for the home visiting. The second, as all cases were assigned to their nearest general health centres, was the 'generally well-developed health institutions as close to the people as possible'.[85] At the top of the voluntary pyramidal structure of helpers, was the regional organiser, and under him, there were six branch organisers. Their responsibility for supervising the volunteers made these paid appointments. Below them, were the volunteers who did the home visiting and upon whom the community aspect of the work depended. This, it was hoped, would create an 'effective girdle of TB supervision of each branch association area; and by the concerted and coordinated action of a number of contiguous' areas, an 'inescapable network of TB control over a selected area of considerable extent' would be built up.[86] The CNAPT policy was that volunteers were chosen from among people who lived in the community they served, and that they could come from any strata of society, provided that they were acceptable to the people for whom they were responsible.[87] They could therefore be 'labourers, farmers, social workers, clerical workers, religious leaders and so on'. It was a demanding role as it was envisaged that each volunteer would have five patients, and they were expected to devote at least an hour a day visiting their charges.[88] The need for such personal contact was evidenced by preliminary investigations, which found that of the 4,171 cases of TB registered, only 1,948 were taking some form of treatment.[89] This scheme, like the WHO project, was greatly facilitated by the adoption of bi-weekly treatment from 1 October 1966, the advantages of which are itemised in a CNAPT Bulletin of 1967 (Table 2.1).

This seems to be a very early example of the use of intermittent therapy, and it was a considerable improvement on the previous drug regime. That regime sent patients home with the task of having to take 30 or more pills daily and unsupervised for several months. Understandably, as CNAPT Secretary H. Goonewardene acknowledged, patients found this 'irksome', and in 'some cases nauseating', and 'one can quite understand how very difficult the patient finds it to continue regularly his self-administration of drugs.'[90]

Four years into the project, some success was claimed for the plan. By 1969, in the areas where there were full-time paid organisers (it is not specified how many of them there were), the defaulter rate had been kept low, and

83 CNAPT *Report and Financial Statement, 1965*, 'CNAPT Pilot Project in Regional Organisation', 37.

84 CNAPT, Valikamam, West Branch, Tenth Anniversary Souvenir, 1967, Dr M. Thevathasen, Medical Officer-in-Charge, Chest Hospital, K. K. S., 'TB Control in Jaffna', 13.

85 Thevathasen, 'TB Control', 13.

86 'CNAPT Pilot Project in Regional Organisation', 38, *Report and Financial Statement 1965*, CNAPT.

87 H. E. R. Goonewardene, 'What the CNAPT Has Yet to Do', *CNAPT Monthly Bulletin* V, no. 3, 1968, 4–6.

88 Goonewardene, 'From Unsupervised to Supervised Treatment in the Control of Tuberculosis', *CNAPT Monthly Bulletin* VI, no. 1, 1969, 10.

89 'Regional Organisation in the North', *CNAPT Monthly Bulletin* III, no. 3, 16–17.

90 Goonewardene, 'From Unsupervised to Supervised Treatment'.

the number of patients on the bi-weekly treatment had reduced to one-third of the total in October 1966. This left the volunteers with more time for other aspects of TB work. Attention was then to be turned to case-finding. The average number of new cases in the Northern Province from 1966–69 was about 450, but since case-finding had been secondary to supervising the treatment, it was acknowledged that there was 'no cause for complacency'.[91] After this deemed success in Jaffna, the CNAPT took the scheme to Colombo (which had the highest rates of TB), and then, wherever branch associations could muster up support. In its reliance upon volunteers from within the community at all levels of the local society, and not just the elites, for effective implementation, the Jaffna Project arguably anticipated, in some respects, the PHC ideal of community participation. However, its dependence on volunteers must have been subject to a great deal of variability in coverage, which is rather glossed over in the sources. Moreover, it was still fundamentally rooted in a biomedical perspective, and its effectiveness essentially depended on the availability of Western medical services and a technical transfer. The Jaffna method dovetailed into and coexisted with the more extensive WHO project that began in 1966.

Table 2.1. **Treatment in TB.**

Treatment in TB: A New Advance	
Regimen Then	*Regimen Now*
Thrice Daily:	**Twice Weekly:**
Pas	Streptomycin
Inah	Inah
Resulted In:	**Resulting In:**
Nausea	Absence of Nausea
Side Effects	No Side Effects
Drug Wastage	Regularity of Treatment
And Doubtful Care	No Wastage of Drugs
	And Definite Cure

Source: CNAPT Bulletin, January 1967, vol. IV, no. 1, 10–11. The original is also in Tamil and Sinhalese.

THE WHO PROJECT

This project was the joint responsibility of the WHO, which provided the technical advisors; UNICEF, which provided supplies and equipment to the value of $42,000; and the government, which committed itself to providing all other personnel, supplies and equipment.[92] The structure of this WHO community programme was paired with the existing 15 health divisions of the general healthcare services, with a Divisional TB Officer to head each unit. The existing TCP and its personnel remained in place, but it was expected that in time, the new model would graft naturally onto the old, and the two would be integrated. Under this WHO methodology, technology was uppermost, and thus, case detection was a simple matter. A 'case' was defined as a 'person suffering from bacteriologically confirmed disease' through the testing of the patient's sputum; therefore, all a health worker needed for diagnosis, apart from the patient's cooperation, was 'a microscope, basic technical knowledge and clear instructions'.[93] As in the Jaffna model, the problem of incomplete chemotherapy would be dealt with by organising treatment at the general health facility nearest to the patient, whether it be a dispensary, a health unit or an outpatient department. The services of the CNAPT would again be drawn upon for treatment

91 'Report of Regional Organisation, Northern Region', 23, *Report and Financial Statement for 1969*, CNAPT.

92 'Plan of Operation for Tuberculosis Control in Ceylon', 3 September 1965, 13–15.

93 'Plan of Operation', 4.

supervision. This would make treatment more accessible to all, especially in those areas far from specialist services, and make it easier for health authorities to follow up with patients and their contacts.[94]

To assess the suitability of the plan for local conditions, a test area was selected that was representative of the socio-economic conditions, and which, in time, could evolve into a demonstration and training area.[95] The area chosen for this was the North-western Province (NWP), an area of 4,826 sq. km, with 4,958 villages and an estimated population of 1,157,082. It was divided into two administrative districts, centred on the towns of Kurunegala and Puttalam, with nine health areas. Crucially, the NWP had a 'very good coverage of basic health service units', which for the most part, were 'accessible by transport services', and it had a 'comprehensive postal service'.[96] This last factor was essential, given the case-detecting method that relied upon sending samples to laboratories and receiving the results within a two-week time span. The province had some urban areas, although it was largely rural, and thus, it could claim to broadly follow the national profile. The WHO archives hold many of the quarterly reports jointly compiled by the WHO project leader and the Sri Lankan head of the programme, plus reports from outside experts who were sent to evaluate the project's progress. These reports provide telling evidence that this model was not working as intended. However, as McMillen has shown in his recent study, in their rush to control TB (undoubtedly a laudable aim), the WHO had a tendency to brush aside problems as they arose in the field and plough on regardless.[97]

The pilot project began in the NWP in May 1966. It was under the joint direction of Dr J. V. Seneviratne, a Sri Lankan, and formerly Director of the Welisara Chest Clinic, and the WHO's Dr F. J. Loven (later replaced by Dr Eung Soo Han).[98] In addition, there was a laboratory technician, a PHI and educator, and a PHN. All these subordinate staff were Sri Lankan and had received specialist training via WHO fellowships at the National Tuberculosis Institute, Bengaluru.[99] In the two Health Divisions of the NWP, Kurunegala and Puttalam, there were 10 MOH areas, further sub-divided into 112 'ranges' under a PHI. All MOHs and PHIs were to participate fully in the integrated programme, and all hospitals, base, district, peripheral, and dispensaries to which a permanent MO was attached, were designated 'centres' for sample collection. It was through these centres that the objective of developing 'permanent facilities' to detect cases of TB among 'symptom-motivated persons', and organising a 'satisfactorily functioning treatment services' was to be implemented.[100]

Ninety-two of the various health agencies in the province were designated as sputum collection centres.[101] A sputum sample was collected from all patients who presented at these health agencies, suffering from a cough of

94 'Plan of Operation', 4.

95 WHO Expert Committee on Tuberculosis: Eighth Report, 19, Para. 7. 2.3.

96 N. Cobbald, 'Assignment Report on Laboratory Aspects of the Tuberculosis Control Programme, August–September 1967', 5, Project Files, Sri Lanka-75 1965–72 TUB 1, BCG/TBC, WHO Archives, Geneva.

97 See McMillen, *Discovering Tuberculosis*, for a specific example of this failure to learn the lessons in the case of a WHO TB control pilot project in Murang, Kenya, 156–58.

98 Cobbald, 'Assignment Report on Laboratory Aspects', 2.

99 The National Tuberculosis Institute in Bangalore had been established in 1960 as a centre for planning, research and training in TB control and was considered the focus of expertise in the region. The integrated model had been pioneered in India in the early 1960s. See Brimnes, *Languished Hopes*; Amrith, *Decolonising International Health*, 129; 'Plan of Operation for Tuberculosis Control in Ceylon', 3 September 1965, 13–15; Cobbald, 'Assignment Report on Laboratory Aspects', 2–5; Goonewardene, 'From Unsupervised to Supervised Treatment', 6; K.L. Hitze, RATB, 'Tour Notes on Visit to Ceylon from 19–28 October 1966', 3, Project Files, Sri Lanka-75 1965–72 TUB 1, BCG/TBC, WHO Archives, Geneva; Eung Soo Han and A. H. D. Richards, 'Quarterly Field Report, December 1969', Para. 1.2, 1, Project Files, Sri Lanka-75 1965–72 TUB 1, BCG/TBC, WHO Archives, Geneva.

100 Han and Richards, 'Quarterly Field Report, December 1969', 1.

101 Han and Richards, 2.

more than two weeks duration, or patients over the age of 35, who had shorter cough duration but who also had a fever and/or other chest symptoms. If the first specimen was negative but symptoms persisted, then a second sample was collected; and if this was negative, and symptoms still remained, then the patient was referred for chest X-ray to the established chest clinics at Kurunegala, Puttalam, Chilaw and Narawila.[102] Under the existing system, the chest X-ray was considered to be the prominent diagnostic tool. Each collecting centre was ideally supplied with slides, waxed ice cream cartons for the sputum samples, a wooden spoon, a grease pencil, a spirit lamp, boxes for transporting the slides, and forms for recording cases. Slides were sent by post weekly for laboratory examination, and laboratory staff were requested to send back results to the centres within five days.[103] The attractions of this method of case-finding to its Sri Lankan and WHO adherents are obvious. If it all worked smoothly, then it was cheap, with no costly technology involved. It utilised existing services, and thus, it entailed no new substantial outlay on facilities; and when extended throughout the whole island, the hope was that it could reach those patients in rural areas who had been unable to access the existing specialist TB clinics, but who could reach their nearest health facility.

Patients who tested positive were to be immediately offered treatment at the centre closest to their homes, with the appropriate drugs supplied by the project MO, funded by the government and free to the patient. Standard treatment consisted of twice-a-week injections of Streptomycin of 1gm, plus INH of 700 gms, given at the same time as the injection, and pyridoxine of 5–6 gms for one year. Sputum samples were supposed to be tested again after six months and at the end of one year, at which point those patients who still tested positive were referred to specialist clinics, assumed to be drug-resistant, and considered for second-line drugs. This method of giving the drugs, administered under supervision and close to home, was thought to ensure that the treatment regime would be completed without the expense and difficulties of domiciliary visits.[104]

The so-called defaulters were the responsibility of the range PHI, who was expected to visit the local centre on a weekly basis to pick up their names, trace them and 'remotivate' them.[105] The sources contain no figures on the numbers of patients who failed to complete treatment. The incentive for them to do so was that regular attendance for treatment was a requisite to qualify for government social assistance. This, however, could work both ways; it was claimed that some patients preferred to remain ill and not complete treatments in order to retain their right to the government allowances.[106] Given the low level of government assistance, this would suggest a high level of desperation among victims. Reasons cited by CNAPT workers for interruptions in, or the ceasing of, treatment were changes of address, as a result of which patients disappeared from the system, absences from home for business, work or pilgrimage, for Muslims, Ramadan, which created difficulties, and there was also outright refusal. The stigma of the disease played its part in this last factor.[107]

The long-term objective was for the NWP pilot project to become a training centre for all national health personnel in TB control methods, as preparatory to the expansion of the integrated control programme throughout the whole island. Once the programme was up and running effectively in the NWP, it could become the focal point for training health workers throughout the island. It was therefore essential to ensure that the initial problems of the programme were identified and solved. In its first 18 months, the pilot project received some praise from WHO advisors. Dr K. L. Hitze, WHO Regional Advisor, considered it to have made a 'remarkable start', and felt that there was 'every possibility that this provincial TB Control Programme may

102 Han and Richards, 3.

103 Han and Richards, 4.

104 Han and Richards, 4–5.

105 Cobbald, 'Assignment Report on Laboratory Aspects', 4–5

106 See, for example, 'Address by Dr J.H.F. Jayasuriya', 10, *Report and Financial Statement 1967*, CNAPT.

107 'Address', 70–71.

become the most advanced and integrated TB Programme in this region.'[108] N. Cobbald, WHO Laboratory Technician, also noted that a 'great deal of work and effort have been put into the integration of the health agencies of the NWP by the medical officer and the staff of the pilot project.'[109]

The programme was considered a success to the extent that by the end of 1969, it was proposed to extend it to the Western Province (in 1970), the Sabaragamuwa and Eastern Provinces (in 1971), the Northern, Southern and Uva Provinces (in 1972), and the whole island (by 1973).[110] Testament to this perceived success was a WHO Seminar held in Colombo from 22–28 February 1970, which was attended by participants from Burma, Nepal and Thailand, as well as 51 Sri Lankan participants and observers, representing TB control officers, public health administrators, professors of medicine and public health, epidemiologists, statisticians, and so on.[111] At this seminar, it was noted that in the NWP pilot project, the peripheral agencies had detected about one-third of positive cases, and significantly, these cases came from a different age cohort than those detected at the provincial headquarters. The patients were people who lived away from the main roads, and thus, 'would have had little chance of being detected by the specialized services'.[112] It was precisely this group of patients that the integrated programme was designed to reach; hence, the programme was endorsed at the seminar, and it was also proposed that the Sri Lankan programme should become an international training centre for an integrated TB service.[113]

However, despite these indications of success, from the outset, it was clear that the design of the project presented problems. Some issues relate to what could be expected in any attempt to implement a model devised at international level, but aimed at a comparatively under-resourced country. The other, however, relates specifically to the Sri Lankan context—the established health-seeking behaviour of Sri Lankans and the presence of an already existing and functioning TB control programme.

PROBLEM OF RESOURCES

The programme required specialist equipment that was supplied by the UNICEF. This included such things as microscopes, cameras, X-ray films, sputum containers, records cards and vehicles.[114] These supplies did not always arrive on time or were not suitable for the specific conditions of the island. For example, two vehicles were supplied to the project, so that its leaders could travel to the health agencies and provide the necessary supervision and training of staff. Dr Hitze, the WHO advisor, on his visit in October 1966, had personally experienced the inadequacy of the two Volkswagon vehicles supplied by the UNICEF: 'repeatedly, because of the low road clearance, the bottom of the car hit the stony surface of the road.'[115] It was essential, he argued, that Land Rovers with four-wheel drive were provided, so that all roads could be negotiated at any time 'as is required for the job of permanent supervision'. He also asked for spare tyres for the existing Volkswagon cars because they needed frequent changing, given the condition of the roads.[116] Evidently, this plea was not responded to with any haste. In the first quarter of 1968, the project had been held up, in particular, the field visits, because one of the Volkswagons had been in the garage for a month, as there were no spare parts for repair.[117] By 1969, some

108 Hitze, RATB, 'Tour Notes on Visit to Ceylon from 19–28 October 1966', 3.

109 Cobbald, 'Assignment Report on Laboratory Aspects', 5.

110 Han and Richards, 'Quarterly Field Report, December 1969', Para. 1.2, 1.

111 Han and Richards, 'Quarterly Field Report, 20 March 1970', Remarks, 1, Project Files, Sri Lanka-75 1965–72 TUB 1, BCG/TBC, WHO Archives, Geneva.

112 Han and Richards, Annex C, Seminar on Tuberculosis Control, Colombo (Ceylon), 22–28 February, 6.

113 Han and Richards, Remarks, 2.

114 'Plan of Operation for Tuberculosis Control in Ceylon', 3 September 1965, 13.

115 Hitze, RATB, 'Tour Notes on Visit to Ceylon, 19–28 October 1966', 1.

action had been taken; Dr Han reported in June 1969 that Land Rovers had been supplied by the UNICEF, but that they had not yet been delivered to the project.[118] Delays also occurred in the delivery of Land Rovers when the project was extended to the Central Province (it took 3 months there) and the North Central Province (NCP).[119] Delays in the delivery of UNICEF supplies was apparently a constant feature of the programme, but Dr Han's recommendation in June 1969, that 'UNICEF supplies be more expeditiously handled and delivered to projects concerned' suggests that the fault may have been as much with the government's organisational capacity as with UNICEF's.[120]

The detection of cases through sputum collection and testing by the general health agencies was the crucial component of the new model, but it threw up many problems in relation to equipment, technical expertise and facilities. Collecting a viable sample depended upon having a suitable receptacle for its collection, an effective means of taking slides, a secure system for the packaging and posting of slides, equipped laboratories, and trained staff. All these steps in the process had to be done properly to ensure the viability of the specimens and the accuracy of the testing. It is apparent that these procedures constantly failed, for various reasons, to come up to the expected standards. The sputum cups provided by the UNICEF at the start had screw lids and could be sterilised and re-used; but WHO Advisor Dr Hitze recommended that these should only be used when a sample needed to be cultured and that instead, locally purchased ice cream tubs (at 4 cents each) were used.[121] The ice cream industry also supplied the wooden spoons that the staff used to select the portions of sputum for putting onto slides. Complaints that they were too short and exacerbated the difficulty and distastefulness of the process were upheld by N. Cobbald, who recommended the use of locally sourced coconut leaf fibre sticks cut to 6-inch lengths.[122]

To get a good specimen of sputum, it was advised that samples should be collected from patients under staff supervision. To N. Cobbald, this was not a problem: 'Even though the supervised collection does take more time (approximately three to five minutes), the time factor cannot be considered decisive when quality is essential.' Ideally, sample collection could be done by any member of the centre staff, but Cobbald conceded that this had proved problematic: 'supervised sputum collection was not particularly well received, mainly because of the time factor and the "obnoxious" nature of the task.' This meant that often, it was the MO who had to do it, as the dispenser or labourer 'could not be persuaded to undertake this task'.[123] No acknowledgement was made of the already burdensome workload of the local MO, who had to deal with patients presenting across the full range of the health spectrum.[124]

116 Hitze, Annex II, Para. 2, 1. This lack of awareness of road conditions, which were very different from those of the developed world, crop up elsewhere in WHO projects. See, for example, Margaret Jones, 'A "Textbook Pattern"? Malaria Control and Eradication in Jamaica, 1910–1965', *Medical History* 57, no. 3, 2013, 397–419.

117 F. J. Loven and J. D. Seneviratne, 'First Quarterly Report, 30 March 1968', Project Files, Sri Lanka-75 1965–72 TUB 1, BCG/TBC, WHO Archives, Geneva.

118 Han and Richards, 'Second Quarterly Report, June 1969', 3, Project Files, Sri Lanka-75 1965–72 TUB 1, BCG/TBC, WHO Archives, Geneva. Richards had replaced Seneviratne as Project Leader. Very few Europeans had worked in the Sri Lankan medical service since the 1920s, and uniquely, in the colonial context, a Sri Lankan had headed the service from 1936. It had always been predominantly an indigenous service (its medical college was founded in 1870). TB seems to be one specialism where Europeans were still employed; another TB specialist was Dr J. Wilson, who also headed the TCP.

119 Han and Richards, 'Fourth Quarterly Report, 20 December 1969', 5.

120 Han, 'Second Quarterly Report, June 1969', Para. 4, 3.

121 Hitze, 'Tour Notes on Visit to Ceylon, 19–28 October 1966', 2.

122 Cobbald, 'Assignment Report on Laboratory Aspects', 12.

123 Cobbald, 8.

Taking some account of the different circumstances he encountered, Cobbald suggested that whenever possible, 'sputa should be collected in the open air and, so as not to cause embarrassment to the patient, out of the sight of others', and that 'collection in crowded, non-ventilated rooms should be avoided.' He also advised that patients who had been 'chewing betel or eating immediately before the collection' should rinse their mouths with clean water before collection.[125] On the face of it, this last injuncture appears to be a simple piece of practical advice. However, it depended upon the availability of clean water in the unit and in many health agencies, and as Dr Eung Soo Han and Dr A. H. D. Richards noted in their field report of March 1969, there were often no such facilities. This lack was even more important when it came to supervised treatment. Patients could not take pills at the health unit in front of staff if there was no water for swallowing them.[126] The rural peripheral health agencies, the Cinderellas of Sri Lanka's healthcare infrastructure, were inadequately resourced. These problems related to them, particularly; the established chest clinics were much better equipped to fulfil these tasks efficiently.

Deficiencies were also evident in the process of sputum testing. Reliance on the bacteriological test depended upon the availability of well-equipped laboratories, and sufficient suitably trained staff. Cobbald's visit in August 1967 revealed that even with the supplies from the UNICEF and the support from the government and medical authorities, these could not just be conjured up. Cobbald noted that smear preparation at the general health centres was inadequate, as most of the smears were too thin. His detailed instructions to the staff at the centres he visited were indicative of these inadequacies. He stressed the need to collect thick smears that would be most likely to contain the TB bacilli, and that should cover two-thirds of the available space on the slide. He laid down guidelines for the 'cleanliness of the slide', for its labelling, for drying the smear, and for its fixation and packing for postal transportation. He also suggested that the provision of a standard tin box container for transporting the smears from the centre to the laboratory (instead of the wide variety of round tins in use) would save time on the packing.[127] A year later, Dr C. Baily, another WHO advisor, noted that adequate preparation of the slides was still lacking, in particular, the fixing of the slides, which 'sometimes arrived at the reference laboratory with the wrapping paper adhering to them'. Baily's solution was that wherever a microscope was available, the specimen could be examined at the health agency where it was taken.[128] Since he also stressed that 'continual control by the laboratory supervisor of the sputum case-finding procedures …. especially, the quality control of sputum collection and smear preparation at the peripheral centres, is most essential' (underlined in the original), to rely even more on the peripheral agency staff for testing samples was merely glossing over the resource problem.[129] Moreover, working microscopes were not always available, even in the laboratories where they were obviously the essential piece of equipment.

The six laboratories involved in the pilot project received some praise from Cobbald in August 1966. Cooperation was good, the staff 'were found fully competent to carry out the necessary examinations', and he instituted a quality control assessment procedure for training and supervision purposes.[130] However, he also

124 From 1966, for example, malaria began to remerge as a problem, and from 1968–69, it once more reached epidemic proportions, increasing from under 100 cases to half-a-million; Harrison, *Mosquitoes, Malaria and Man*, 254–55.

125 Cobbald, 'Assignment Report on Laboratory Aspects', Annex 3, 'Guidelines to Staff of Participating Health Agencies: Sputum Specimen Collection and Smear Preparation', Para. 2, The Collection, 1.

126 Han and Richards, 'First Quarterly Report, 20, March 1969', Annex E, Para.7, 2.

127 Cobbald, 'Assignment Report on Laboratory Aspects', Annex 3, 'Guidelines to Staff of Participating Health Agencies', Paras 5.3, 9, 6.8, 12.

128 C. V. J. Baily and H. Patterson, 'Assignment Report on Tuberculosis Control, 6 July–12 August 1968', para. 5, 13, Project Files, Sri Lanka-75 1965–72 TUB 1, BCG/TBC, WHO Archives, Geneva.

129 Baily and Patterson, 'Assignment Report on Tuberculosis Control', Para. 9.3, 21.

130 Cobbald, 'Assignment Report on Laboratory Aspects', Para. 5.4, 9.

highlighted the problems with the equipment and put in a plea, in particular, for more microscopes. For example, the Kuliaputiya laboratory had two technicians, but only one microscope, and they of course had more than just the TB slides to deal with. The Puttalam District Hospital Laboratory microscope was in a 'poor state of repair', so that 'any reliable microscopy' was 'practically impossible'.[131] The laboratory staff's role was also expected to move beyond the purely technical, as they were enjoined by Cobbald to be 'more active in motivating centres to pay more attention to the quality of specimens and smears'.[132] He 'strongly suggested that the medical laboratory technician' make at least twice-a-month field visits to the participating laboratories to ensure that they followed correct procedures, and visit any health centres 'whose staff require further motivation'.[133] Even as these problems persisted, six years into the programme, Han and Richards were 'very confident that, with the enthusiastic and active support of the Ministry and the Directorate of the Health Services, the Superintendent of the Anti-tuberculosis Campaign and his colleagues will have eventually succeeded in organizing a sound rational national tuberculosis control programme'.[134] However, lack of resources was not the only obstacle to success. Salient also was the willingness of doctors and technical staff to adopt these procedures and the willingness of patients to change their health-seeking behaviour.

PROBLEM OF INSTITUTIONAL, MEDICAL AND PATIENT CULTURE

The WHO programme was not being transferred onto a blank page. Recent scholarship has sounded the alert on assumptions that the objects of international health and development aid, in colonial, post-colonial and independent states were passive recipients of these international initiatives and lacked agency of their own.[135] The rationale behind the WHO TB control plan, to extend TB control in an economically feasible manner to reach the rural areas of Sri Lanka, made theoretical sense; but for it to work as it was designed to, it needed the cooperation of both the medical and technical professionals, and not least, of the general population. Although the WHO and other international health agencies had initially recognised the importance of understanding the cultural milieu of the recipients of aid, by the 1960s, there had been a shift away from these ideas of community development towards an emphasis on the transfer of technology.[136] Ironically, although this model of TB control was deemed a community-oriented programme, it was, in reality an example of a technical transfer that needed to override existing policies and patterns of behaviour in order to succeed. Decades of a specialised TCP in Sri Lanka had contributed to the growth of institutional, medical and patient cultures that would have to be supplanted by the new programme for it to be effective. It might have had the support of those at the top of the healthcare infrastructure, but how did those who had to work the system at the lower levels—the doctors, the technical staff and the patients—respond to it?

The programme had to be drafted onto the existing general healthcare infrastructure. This would entail changes to its organisation and to the work of both general and specialist medical and technical staff. Han and Richards raised the issue of the lack of integration at the divisional level in their quarterly report in March 1969, and reported that the Divisional SHS and his staff 'should participate more actively and directly with the project'. Only with this authority, could a 'properly functioning integrated tuberculosis control programme' be achieved.[137] A year later, they again emphasised that it was essential for a successful integrated programme, that

131 Cobbald, 'Assignment', Para. 6.9, 15–16.

132 Cobbald, 'Assignment', Para. 6.2, 11.

133 Cobbald, 'Assignment', Para. 6.4, 11.

134 Han and Richards, 'Assignment Report on Tuberculosis Control, 21 February 1972', para. 6, 13, Project Files, Sri Lanka-75 1965–72 TUB 1, BCG/TBC, WHO Archives.

135 Sanjoy Bhattacharya, *Expunging Variola: The Control and Eradication of Smallpox in India, 1947–1977* (Hyderabad: Orient BlackSwan, 2006); Amrith, *Decolonising International Health*; Farmer, *Infections and Inequalities*.

136 Kelley Lee, *The World Health Organization* (London: Routledge, 2009), 5–9.

the TB Control Officer had official status as a member of the SHS staff.[138] Two years after this, in 1972, when the programme was being extended to the whole island, they were still making recommendations that changes be made to the administrative structure in order to 'streamline communications' and establish lines of authority. The existing administrative structure meant that the Superintendent of the Anti-tuberculosis Campaign had 'no authority to issue any technical instruction directly to the periphery', but had to go through the Health Services Directorate, and then, to the SHS to issue them to the local health agency. Therefore, they suggested, the Superintendent of the Anti-tuberculosis Campaign should be designated the Assistant Director of Health Services (TB) to give him official status within the Health Directorate.[139]

Continuity of staff at the general health agencies was also a problem. Under their conditions of service, MOs had the right to apply for transfers after two years at a post, so that there was an annual rotation of about one-third of all personnel. This applied particularly to health units in rural areas where MOs were reluctant to serve longer than they needed to, as they were regarded as stepping stones to better appointments. This meant that the TB staff had to undertake crash training programmes on the integrated service, with the newly appointed MOs every year, and provide constant supervision.[140]

From the beginning, there emerged a suspicion of the new procedures by the staff who were expected to implement the programme. In the first months of the NWP pilot project, F. J. Loven and J. D. Seneviratne reported that on receiving a visit from their team to explain and demonstrate the new method, the staff at the health agencies 'started to realize that this project is not only a plan on paper but that it is becoming more and more a lively project'. Project leaders made surprise visits on any day at any time, and 'staff members in the various centres sometimes look quite surprised and 'disturbed' at such activity.'[141] Such attitudes might be expected at the outset, as Loven and Seneviratne commented: 'it cannot be expected that since the inception of the project in May, 1966 everything can be plain sailing.' The staff were going to 'have to pull themselves up as regards output and quality of work', they added, and the DHS had already had to take 'disciplinary action against some staffs who were caught for neglect of work'.[142] In September 1967, Cobbald noted that it was 'not easy for the staff at the centres, and was even more difficult for the patients, to accept the new approach immediately and completely'.[143]

In 1968, Dr G. Baily was given the task of conducting a study of the first full year of the sputum case-finding procedures in the pilot project, from January–December 1967. His results did not indicate a high success rate for the favoured WHO method. Out of the 3,934,173 patient visits at the 92 peripheral agencies of the province (that was an average of three visits per person), bacteriological examinations were made on 12,227 patients, and 51 new cases (0.4 per cent) were confirmed. However, these 51 new cases were diagnosed by just 30 of these agencies. The remaining 62 agencies examined 7,325 out of 2,339,592 patients, but diagnosed no new cases. Hence, of the 177 newly detected cases in the province in that year, 126 were diagnosed at the existing specialist clinics. Furthermore, the main chest clinic at Kurunegala was responsible for 108 out of those 126; and tellingly, of those 108 patients, 86 had bypassed their home agency and had come 'of their own volition directly to the Clinic'.[144] Baily's study thus showed that the local agencies that did attract patients were only those located away from roads and means of transport, and that people who lived 'within reach of the public transport system tend

137 Han and Richards, 'First Quarterly Report, 20 March 1969', Annex E, Para. 1, 1.

138 Han and Richards, 'First Quarterly Report', Section III, Para. 4, 4.

139 Han, 'Assignment Report on Tuberculosis Control, 21 February 1972', Paragraph 7, (1), 13.

140 Han, 'Assignment Report', Para. 7, 2 (2), 14.

141 Loven and Seneviratne, 'Quarterly Field Report, 30 September 1966', 1.

142 Loven and Seneviratne, 'Quarterly Field Report, 30 December 1966', 2.

143 Cobbald, 'Assignment Report on Laboratory Aspects', Para. 3, 5.

to by-pass the peripheral agencies and travel to the clinic even from considerable distances'.[145] Baily concluded that 'the self-referral of such a high proportion of patients clearly implies a widespread public awareness not only of the symptoms of tuberculosis but of the health facilities to cure the patients.'[146] A breakdown of two provinces in Han and Richards' field report in July 1970 in Table 2.2 suggests that this bias in favour of the chest clinics continued.

In both these examples, the peripheral agencies tested more patients, but had fewer positives. Patient behaviour, as manifested in this preference for the existing and known specialist services, militated against the integrated programme as much as lack of resources. It also merged with the resistance by medical professionals to change long-adopted practices in favour of new methods.

The specialist chest clinics were intended to be a fundamental part of the new programme and were expected to adapt to the integrated programme; but it seems that the MOs operating the specialist clinics as well as other practitioners were clearly reluctant to adopt the new diagnostic method in the manner prescribed. Baily reported in 1968 that all patients attending the chest clinics for the first time were first screened by X-ray, 'and only those having pulmonary shadows are examined bacteriologically for acid fast bacilli.' This happened irrespective of whether they had been referred by 'peripheral agencies, general hospitals, or private practitioners', or they had come voluntarily 'because of symptoms which they associate with tuberculosis'. Moreover, on the basis of a clinical examination of the X-ray, patients were placed on the ambulatory treatment regime even if their sputum tested negative.[147] These diagnostic and treatment actions followed the existing practices, but they went against all the guidelines of the new process. This did not go unnoticed by project leaders. Han and Richard's Report in December 1969 praised the support they were receiving from those at the top of the administration. However, they foresaw 'great operational difficulties in the Western Province which is scheduled to commence in June 1970 due to differences in opinion on the project particularly among senior TB officers'.[148]

In January 1971, at a one-day seminar attended by all MOs in the TB service, it was noted that 'criticism was made of primary sputum case-finding as against the conventional chest X-ray examination as a screening method', and 'the integrated scheme was also compared unfavourably with the patient-orientated chest clinic service programme'.[149] Some insight into what these criticisms might encompass can be seen in the opening article of the April 1970 CNAPT monthly bulletin, written by Dr Jayasuriya, respected chest surgeon, TB expert, and CNAPT founder and Chairman. It was an impassioned plea for professional knowledge and clinical skill over a laboratory test. There was no doubt, he argued, that a patient whose sputum tested positive was suffering from advanced TB, and s/he would be highly infectious. However, he explained, 'experienced clinicians know that for every case that is sputum positive there are perhaps 8 or even 10 cases of active tuberculosis that are sputum negative.'[150] These patients could be diagnosed through a combination of radiology, Mantoux Test and the diagnostic skill of the clinician, and could be treated before the disease advanced and they become infectious.[151] 'Belittling' this approach, he argued, would be 'committing a serious offence' against sufferers. As he argued, the 'transmitters of today were all sputum negative cases yesterday.' He claimed that in the discussions at the February 1970 WHO Seminar, 'the treatment of only the TB positive was condemned and that such a

144 Baily and Patterson, 'Assignment Report on Tuberculosis Control, 6 July–12 August 1968', Paragraph 8.4, 19–20.

145 Baily and Patterson, 'Assignment Report', Para. 4.4, 5.

146 Baily and Patterson, Para. 4.4, 5.

147 Baily and Patterson, Para. 4.5, 12.

148 Han and Richards, 'Quarterly Field Report, 20 December 1970', Para. 6, III.1.3.

149 Han, 'Assignment Report on Tuberculosis Control, 21 February 1972', Paragraph 5.4, 11.

150 J. H. F. Jayasuriya, 'Extract from Address, WHO. Seminar on "Control of Tuberculosis" in Ceylon', *CNAPT Monthly Bulletin* VII, no. 2, 1970, 5.

procedure was considered both morally and scientifically unsound.'[152] The 'needs and conditions for tuberculosis control', he argued, 'differ from country to country'; and if it was to be controlled in Sri Lanka, 'we must make fullest use of all the facilities for case-finding and treatment that have been built up over these many years.'[153]

Jayasuriya's comments reflect the tensions noted by both Amrith and Valier, which emerged in the Madras Trials: 'the potential disjunction between the commitment of the physician to cure each patient, and the demands on international public health officials to cure the greatest number at the lowest cost'.[154] For Jayasuriya and his colleagues, treating the individual sufferer at the first signs of symptoms satisfied not only their primary purpose of curing the individual, but also the public health imperative of reducing infection in the community. Waiting for a positive sputum test before starting treatment did not make sense, especially when there was already a functioning control system in place. It seems that both patients and doctors were manifestly reluctant to adapt their behaviour to the new scheme.

An evaluation of Sri Lanka's TCP in 1993 concluded that it had 'had a positive impact on the epidemiological situation of tuberculosis'. There had been a shift in incidence to older age groups, making it more of a chronic disease. The notification of 40 cases per 1,00,000 (all forms) in 1991 was attributed mostly to an efficient BCG vaccination programme, and it was observed that this was 'low for a developing country'.[155] However, the TCP that was evaluated in the Report was not the envisaged community-integrated programme of 1966. Although some branch chest clinics had closed in the early years of that programme, it was apparent that despite the attempt at integration and some initial success the WHO model had not supplanted the existing specialist programme. In a 1986 review, Dr S. S. P. Gupta and Dr S. Radhakrishna noted that before 1969, 6,300–6,400 new cases of TB were detected and notified in the whole island. A peak was reached in 1975, of nearly 7,300 cases, when integration was at its height. Since 1977, new TB case detection had slowed down, but more pertinently, the contribution of the general health agencies to new case detection had decreased. In 1977, 623 TB cases (sputum positive) had been detected by general health institutions, but since then, they had detected no more that 300–500 cases annually.[156] Moreover, specialist chest clinics had not declined in importance; in 1986, 20 years after the integrated programme had started, there were now 19 provincial chest clinics (up from seven) and three chest hospitals.[157] Additionally, Dr Parrkali stated in 1993 that diagnosis was confirmed by smear microscopy in less than 50 per cent of cases, and he felt it necessary, as preceding advisors had, to stress the superiority of this method of diagnosis instead of 'relying on X-ray findings'.[158]

151 In 1974, the WHO Expert Committee on TB decided that there was 'abundant evidence that radiography cannot reveal with any certainly whether shadows are of tuberculosis origin', and that 'bacteriological confirmation' was necessary. WHO, Geneva, WHO Expert Committee on TB, 1974, Ninth Report, 8, available at www.apps.who.int/iris/bitstream/10665/41095 (accessed 22 October 2014).

152 Jayasuriya, 'Seminar on "Control of Tuberculosis" in Ceylon', 9.

153 Jayasuriya, 'Seminar', 6.

154 Amrith, *Decolonising International Health*, 159; Valier, 'At Home in the Colonies', 222–23.

155 Lissa M. Parkali, 'Evaluation of Tuberculosis Control Activities in Sri Lanka, 10 May–10 June 1993', Para. 4.1, 8, Third Generation Files, TB/370/12/SL, Tuberculosis 1981–1996, WHO Archives, Geneva.

156 S. S. P. Gupta and S. Radhakrishna, 'Assignment Report, Assistance in the 1) Review of the Tuberculosis Control Programme, and 2) Preparation of a Plan on the Methodology of Prevalence Survey, Sri Lanka, 31 December 1985–30 January 1986', Para. 4, Existing Situation, 5, Third Generation Files, TB/370/12/SL, Tuberculosis 1981–1996, WHO Archives, Geneva.

157 Gupta and Radhakrishna, 'Assignment Report', Para. 3.2, Facilities, 2.

158 Parkali, 'Evaluation of Tuberculosis Control Activities in Sri Lanka, 10 May–10 June 1993', Para. 4.2 (3), 9.

The 1974 WHO Expert Committee on Tuberculosis Report acknowledged that the implementation of the new approach to TB encountered many obstacles to success, such as shortages of financial, material and physical resources, and a lack of manpower and 'managerial skill'. Additionally, the Report cited a 'reluctance to change traditional and outmoded orientations'. All these explanations were certainly applicable to Sri Lanka.[159] Sri Lankan commentators have cited the lack of resources as a reason. For example, the History Section of the website of the National Programme for Tuberculosis Control and Chest Diseases in Sri Lanka states that the rapid rise in fuel prices at the start of the 1970s rendered supervisory visits virtually impossible, and it was thus a major factor in the failure of the integrated programme.[160] In 1995, Dr C. G. Uragoda, a former head of Sri Lanka's TCP, and later Chair of the CNAPT, also emphasised that the WHO integrated programme was a success as long as the WHO poured resources into it, but as an 'island-wide method it became a failure'. He stated that the main reason for its failure was 'the lack of resources'. However, Uragoda questioned whether a reluctance to change was necessarily a negative. A reluctance to innovate if it destroyed an existing successful system could well be a positive attribute: '[O]ther countries laughed at us for dismantling a well-tried method' for one 'that was not tried nation-wide in any other country'. His pertinent advice was that 'great caution should therefore be exercised in abandoning a well-tried method of treatment in preference to a new method, whether on the advice of the WHO or any other agency.'[161]

In 1989, the Anti-Tuberculosis Campaign was renamed the Respiratory Disease Control Programme, reflecting the improved TB situation and the coordination of TB control activities with other chest diseases. The National Programme for Tuberculosis Control and Chest Diseases (NPTCCD), the focal point for TB control today, still functions as a separate department within the Ministry of Health.[162] Sri Lanka is not among the high burden countries for TB; however, it remains a problem and poses a continuing threat. The estimated rate is 66 per 1,00,000, but the real figure is likely to be higher.[163] The 2006–15 Strategic Plan for Tuberculosis Control issued by the NPTCCD once more put an integrated programme on the agenda. TB control services had been 'implemented in a fairly vertical way with the district chest clinics as main centres of service delivery'.[164] However, the Strategic Plan argued that 'in the interest of long-term sustainability of the programme and to increase cost-efficiency, decentralization and integration in the general health care system are to be aimed for.'[165] It remains to be seen if this attempt is more successful than that of 40 years earlier.

Table 2.2. Case Finding by Sputum Testing in the North-western and Central Provinces.

Period	*Number of Slides Examined*	*Positives (Microscopic)*	*Percentage (In Per Cent)*
NWP			
April 1966/September 1969	31,580	549	1.7
January/March 1970			

159 WHO Expert Committee on Tuberculosis, 1974, 6.

160 See the section 'History' on their website, available at www.healthlk/en/TB (accessed 7 July 2015).

161 'Address by the Chairman, CNAPT', *CNAPT Report and Financial Statement, 1995/6*, 6. C. G. Uragoda, who was Chair of the CNAPT in the 1990s, is a well-respected chest surgeon and historian of medicine in Sri Lanka.

162 National Programme for Tuberculosis Control and Chest Diseases, Ministry of Health, Sri Lanka, *Strategic Plan for the Tuberculosis Control, 2006–2015*, available at www.nptccdsrilanka/home (accessed 6 June 2016).

163 C. Dissanayake, 'Sri Lanka Fast Developing into TB Hub of Asia', *The Sunday Times*, 30 March 2014, available at www.sundaytimes.lk/140330/news/sri-lanka-fast-developing-into-hub-of-asia-91034.html (accessed 13 May 2015). This article begins by highlighting the threat posed to Sri Lanka by the migration of TB-infected labour from China and India into Sri Lanka to work on development projects.

164 National Programme for Tuberculosis Control, 12.

165 National Programme, 1.

Table 2.2 continued from previous page.

Period	*Number of Slides Examined*	*Positives (Microscopic)*	*Percentage (In Per Cent)*
Chest Clinics	252	57	22.6
Peripheral Agencies	759	11	1.4
Total	1,011	68	6.7
Central Province			
January/December 1969	2,954	178	6.0
January/June 1970			
Chest Clinic	999	76	7.5
Peripheral Agencies	1,038	24	2.3
Total	2,037	100	4.9

Source: Compiled from WHO Archives, Geneva, Project Files, Sri Lanka-75 1965–72 TUB 1, BCG/TBC, Dr Eung Soo Han and Dr A. H. D. Richards, 'Quarterly Field Report', 16 July 1970, Section III.1, 4.

CONCLUSION

TB has been the focus of this chapter, and as the major communicable disease to threaten the population for much of the period, stands as an exemplar for the responses of a primary healthcare system to reach sufferers of the disease, and offer diagnosis and treatment. From the beginnings of the recognition of TB as a major health threat, the models of control that were put in place were largely derived from those in the West. In the colonial period, the model was that of the UK, with isolation where possible, and treatment in Sanatoria. The establishment of these specialist institutions did no more than touch the surface of the problem, both in the colonial and the immediate post-colonial period. However, they did signify a recognition of the need to identify and treat the sufferers of TB both from an individual and a public health viewpoint. The advent of antibiotics changed the context of tackling the disease. Moreover, Sri Lanka utilised these new therapeutics almost from their inception in its TB control programme, along with case detection through mass radiography, prevention through BCG vaccination, and a measure of social assistance for sufferers. In the late-1960s, the WHO community-oriented model of TB control, designed to be more effective in resource-poor countries, was piloted in the NWP, and then extended throughout the island. The transfer of this internationally devised model to Sri Lanka, where there was an already existing specialist TB programme, and therefore seemingly an ideal context, provides the opportunity to explore the strengths and drawbacks of such a policy transfer.

There was a high degree of awareness of the disease, and the medical and civil authorities at the top were supportive. However, this transfer, while purporting to be community-oriented, in fact ignored community and individual patterns of behaviour. Sri Lanka was keen to adopt methods transferred from the developed West, as the general view of post-colonial states was to perceive the advance of biomedical strategies as a modernising necessity. However, this account of TB control in Sri Lanka exemplifies the problems that impeded policy transfers such as the community-oriented TB control programme. Ironically, it was precisely because it did not take sufficient account of the community context. It is also worth noting that the TB control programme was unchanged by the advent of the advent of PHC; it continued to be a vertically structured separate specialist arm of the medical services. Ultimately, however, biomedical therapeutics alone cannot deal with the problem of TB. Only by fulfilling basic needs with good housing, good nutrition and rising living standards, can TB be conquered. TB became less of a threat in Sri Lanka because these basic needs were increasingly met for the majority of the population. The pockets of poverty that still exist today ensure that TB still threatens the health of those struggling at the bottom.[166]

3. 'The Protection of Child Health is the Protection of the Nation'

Malnutrition and Child Health[1]

This headline in *Dinamina*, one of Sri Lanka's Sinhala-language newspapers, in 1977, reflected the dominant idea first proclaimed in the 1959 UN's Declaration of the Rights of Children, that children were the key to development: 'Children should not be treated as if they were the orphans of the development process or its accidental baggage; they should be a focus of all policies directed at building up a country's 'human capital.'[2] The UNICEF survey on the Needs of Children in 1961 exposed the widespread suffering and privation of the world's children, and highlighted the interrelated needs of the whole child, which included health, nutrition, safe water supply, sanitation and education. In the following decades, as Judith Justice has pointed out, 'the political appeal of international initiatives dealing with child survival were unprecedented in development assistance.'[3] The result was several international programmes where children took centre-stage in international health policy, most notably, UNICEF's Child Survival Revolution of 1982 and Universal Childhood Immunization after 1984. These two initiatives focused on oral rehydration therapy (ORT) and immunisation, both designed to attack the major child killers, that is, diarrheal and infectious diseases. The failure of governments to reach acceptable levels of ORT and immunisation contributed to a further UNICEF initiative in the 1990 World Summit for Children, and the Convention on the Rights of the Child, which also became international law in that year.

The World Summit established major goals for the survival, protection and development of children by 2000. These included the reduction of maternal and child mortality; universal access to safe drinking water; sanitation; primary education; and the protection of children in areas of armed conflict (the last of these was, of course, particularly pertinent in Sri Lanka from the 1990s onwards).[4] The Sri Lankan government committed to these objectives when President Ranasinghe Premadasa signed the Global Plan of Action for Children on 5 April 1991, and established a Committee to prepare a national plan for the protection of children. The Committee's subsequent report accepted the dominant discourse in its opening sentence: 'Children are both the means and the end of development.'[5]

Sri Lanka's child health policies before and after PHC rested upon interventions for safer childbirth, immunisation for infectious disease, and from the 1940s, nutrition support coupled with general anti-poverty initiatives. They were thus always a combination of PHC and SPHC programmes. Ironically, the scope of the nutrition and anti-poverty programmes, which until the late-1970s, were applicable to the whole population, were narrowed from the 1980s and targetted only at the poor. The radical change in development policy at the international level that coincided with the PHC launch undermined the universality of this state aid in Sri

166 I have not discussed HIV/AIDS in this chapter. This is because the prevalence of HIV/AIDs is low in Sri Lanka (0.03 per cent in 2005) compared with the ravages it inflicts elsewhere in the world. See, for example, T. L. Rathnayake, R. M. U. K. Rathnayake, 'HIV/AIDS Prevention: How Well Are We Prepared in Matara?', *Journal of the Ruhunu Clinical Society* 13, 2006, 15–17. Similarly, drug resistance to TB did not figure in the sources for this period. It is now recognised as an emerging problem in this century.

1 *Dinamina*, 14 December 1977. *Dinamina* is a Sinhala-language newspaper that has been published in Sri Lanka since 1909. All translations of Sinhala newspaper articles are by Chathuri Gunathilaka.

2 UNICEF, *1946–2000, Sixty Years for Children*, 11, available at www.unicef.org/publications/index_36603.html (accessed 27 November 2013).

3 Judith Justice, 'The Politics of Child Survival', in *Global Health Policy Realities: The Fallacy of the Level Playing Field*, ed. Linda Whiteford and Lenore Manderson (Boulder: Lynne Riener Publishers, 2000), 23.

4 UNICEF, *Annual Report 1991*, 7–9, available at www.unicef.org/annualreports (accessed 24 November 2014).

5 Ranasinghe Premadasa, *A Plan of Action for the Children of Sri Lanka* (1991), National Planning Department, Ministry of Policy Planning and Implementation, 7 October 1991, Foreword, Para. 1, 1.

Lanka. It therefore represented a retreat from, not a movement towards, the broader approach of PHC. This change highlights the tensions inherent in the adoption of PHC at the same time, as government interventionist policies for social welfare were being drastically curtailed. Immunisation policies, on the other hand, show no major change in direction, but rather, an expansion along the same lines. This, in turn, was aided by the increased international focus on what was, in effect, a significant arm of SPHC rather than PHC. Chapter 4 and Chapter 5, which explore child health, focus on these two principal aspects of child health policies. This chapter explores an aspect of the PHC approach by addressing a major factor in the ill-health of the child, economic deprivation. It begins with an overview of child health indicators in Sri Lanka during the period; it then explores efforts to reduce the toll of disease and death, with a particular focus on the questions of malnutrition and anti-poverty programmes. Chapter 5 examines the policy to prevent, control and even eliminate the infectious diseases of childhood through the technological fix of immunisation. These two chapters highlight the divergent features of the concepts of PHC and SPHC; the first that attempts to alleviate the underlying socio-economic causes of ill-health, and the second, which focuses on the bio-medical 'magic bullet' of immunisation.

After providing a general overview on poverty, nutrition and health, this chapter considers how nutrition was perceived and dealt with during the period of the socio-welfare state. There follows an account of the food supplement of *Triposha*, which spanned the period of economic policy change and the transition, from the social welfare to the neo-liberal state. *Triposha* was designed for better nutrition of the most vulnerable category of children, the pre-school child. Initiated in the early-1970s, it survived the neo-liberal reforms, which ended the food subsidy programme and continued to expand throughout the 1980s. The next section explores the changes in nutrition policies inaugurated by the neo-liberal state and the switch of emphasis from general subsidy to focused poverty programmes. In this examination of child health, a major anomaly in Sri Lanka's record can be seen. The health of women and children had long been a recognised concern of Sri Lanka's health and welfare system, dating back to the establishment of the first mother and child clinics in the 1920s.[6] Then and subsequently, the principal focus was on reducing the high infant and maternal mortality rates. These rates began to fall dramatically from the 1940s to become one of the success stories of the island. Mortality and morbidity rates for the infant and the pre-school child began to decline, but at a much slower pace than the infant mortality rate. Child malnutrition, which impacts directly on health, remained a significant problem till the end of the twentieth century. An examination of the nutrition and anti-poverty programmes can suggest possible factors that lie behind this singular anomaly.

POVERTY, NUTRITION AND CHILD HEALTH: AN OVERVIEW

In his 1953 Medical Report, Dr D. L. J. Kahawita (DHS), while lauding his department's success in bringing down maternal and infant mortality rates, also pleaded that 'measures undertaken to ensure that more children will live is not justifiable unless we make efforts at the same time to ensure that life is worth living.'[7] Between the end of the Second World War in 1945 and 1960, there were indeed dramatic improvements in health indicators in Sri Lanka. Infant mortality fell by over 60 per cent from 1940–60 (149 to 57 per 1,000 births), and life expectancy rose from 45 to about 70 years of age (see the Introduction). These figures largely reflected the greatly increased chances of survival of the most vulnerable groups in society—infants, pre-school children, and women during their child bearing years.[8] However, this overall decline in mortality masked the extent of morbidity in the population, especially that of the children. Kahawita highlighted the need to address the illnesses of childhood, as their effect was not revealed in the improving mortality statistics; furthermore, this data gave no

6 Margaret Jones, *Health Policy in Britain's Model Colony: Ceylon, 1900–1948* (Hyderabad: Orient BlackSwan, 2004), 209–58.

7 D. L. J. Kahawita, *Annual Medical Report 1953*, B6.

8 Sunil Amrith, *Decolonising International Health: India and Southeast Asia, 1930–1965* (Basingstoke: Palgrave Macmillan, 2006), 95.

indication of the inequities in this general decline in mortality. The presence of hardcore deprivation and poverty ensured that many infants and young children did not survive, and for those that did, it was a life of sickness and misery. As one researcher argued in the early 1980s, 'a child's well-being depends on the social and economic status of its household.'[9]

Poverty produces a myriad of interrelated detrimental effects on the health of the child. Insufficient food for pregnant mothers produces low weight and premature babies; and a poor diet leads to children with an increased susceptibility to infections. Quality of housing, in particular, the access to pure water and safe sewage disposal, dictates the risks of gastro-intestinal infections, one of the main causes of death in the early years of life.[10] The description of the slums of the urban poor in Colombo provided in Chapter 2 powerfully illustrates the pertinence of insanitary, overcrowded housing to child health, contributing as it did to both diarrhoeal and respiratory infections. The family where the mother has to work leads to both early weaning onto nutritionally poor foods (possibly prepared with dirty water) and inadequate child care, neither being the fault of the mother. Therefore, while Sri Lanka had a good coverage of primary healthcare services, and a high percentage of mothers giving birth in specialised institutions with trained midwives, both of which contributed to the low infant mortality and maternal mortality rates, foundationally the socio-economic circumstances of a family determined the health of the child. This, in turn, resulted from the wider economic environment, and the extent of the government's commitment to addressing the problems of poverty.

A set of data that does indicate the effect of poverty on child health and survival is a comparison of the estate sector in Sri Lanka, for whom separate statistics were collated, with the rest of the population. The living and working conditions of Tamil labourers in tea plantations rendered them the acknowledged poorest group in the island.[11] Table 3.1 is a breakdown of mortality rates of the estate and non-estate sectors during the period when Sri Lanka was a social welfare state, from 1948–74, taken from S. A. Meegama's 1980 study.

Table 3.1 shows that during infancy, the child born on an estate had more than double the chance of dying before their first year than a child born as part of the rest of the population. Some of the difference could be accounted for by fewer and less accessible health services, such as ante-natal care, trained midwives and institutional delivery; but economic deprivation was also a significant factor. Moreover, these differences persisted; Table 3.2 shows a very similar pattern 30 years later despite government efforts to remedy the situation.

The difference between urban and rural areas is slight, but the gap between both of these and the estate sector is still considerable, and it suggests a high level of morbidity for estate children. The authors of this report reiterate the factors outlined above and in Meegama's 1980 study. The three main causes of death cited in this 2008 study were respiratory illness, diarrhoeal infection and accidental death. The authors link these to the mother's health, nutritional levels in pregnancy, and her access to good quality ante-natal and post-natal care. A connection with the educational attainment of the mother was also noted, but this in turn can be related to the socio-economic status of the household. Literacy rates for both males and females in estates were consistently lower than the average for the country as a whole. In 2005, for example, the figures were 76.9 per cent for the estates against 91.8 per cent for the general population; and only 20.2 per cent had secondary education, as opposed to 52.2 per cent on an average.[13] Furthermore, only 53 per cent of female children on estates completed primary

9 G. I. O. M. Kurukulasuriya, 'Welfare Policies and Programmes Affecting Children, 1931–1981, Background Paper', Marga Institute, Colombo, n.d., 4.

10 See S. A. Meegama, 'Socio-economic Determinants of Infant and Child Mortality in Sri Lanka: An Analysis of Post-War Experience', *Scientific Reports*, vol. 8 (Voorburg, Netherlands: International Statistics Institute, 1980), 1–53, for a detailed analysis of these factors and their effects.

11 See, for example, Ahmed Llyas, 'Estate Tamils of Sri Lanka: A Socio-economic Review', *International Journal of Sociology and Anthropology* 6, no. 6, 2014, 184–91.

schooling.[14] Diarrhoeal infections were also highlighted by the authors of this Child Poverty Report, as one of the 'main causes of poor growth and development, often resulting from poor sanitary conditions and unsafe drinking water'.[15] Sanitary and water supply indicators support this contention. The 2002 Government *Annual Health Bulletin*, for example, noted that 50 per cent of the population at the end of the twentieth century got their drinking water from a protected well, 27 per cent from a mains water supply, and 17 per cent from an unprotected well or river, tank or stream.[16] However, while 95 per cent of urban households had access to safe drinking water, 67 per cent of estate households depended on unreliable sources such as the stream, river or tank.[17] Moreover, the 2001 Census found that only 4.3 per cent of the population were without proper toilet facilities, and that they were concentrated in certain districts, namely Nuwara Eliya (centre of tea production), and Ampura, Puttalam and Anuradhapura (very poor rural areas).[18] The health chances of the children in these deprived areas, whether on estates or among the general rural poor, continued to be adversely affected by their living conditions.

The government, often with international aid initiated a number of welfare programmes designed to alleviate poverty through rural reconstruction projects, general improvements in water and sanitation, improving access to primary education and medical services, family planning, and nutrition policies. An exploration of all these programmes in any depth cannot be undertaken here. Thus, the particular focus in this next substantive section will examine measures to deal with a major contributory factor in childhood disease, and one which despite considerable efforts, is still a problem in Sri Lanka today—malnutrition.

Nutrition studies gained a foothold in the interwar decades, and were taken up by both national and international policy-makers; they were an integral aspect of the rising star of social medicine. The League of Nations set up a Nutrition Committee within its Health Division; and nutrition studies were undertaken throughout Europe after the Berlin Conference of 1932. Then, in 1936, the British imperial government set in train nutrition surveys through its colonial empire.[19] After the Second World War, nutrition studies and policies following the lead of the League of Nations were taken up by the new international agencies such as the WHO, UNICEF and the Food and Agriculture Organization (FAO). FAO focused on agriculture and rural development with the idealist aim of banishing world hunger. There have been a number of studies of nutrition and these agencies; they highlight issues such as the geopolitics of food security, population control, and the interactions between agencies. They also explore how nutrition was variously perceived and how policies were constructed within the field of wider economic and agricultural development as well as within the context of health.[20] There

13 Llyas, 'Estate Tamils of Sri Lanka', 187.

14 Ibid., 189.

15 Centre for Poverty Analysis, *Child Poverty in Sri Lanka*, 4. See also Priyanka Jayawardena, 'Underlying Causes of Child and Maternal Malnutrition in the Estate Sector of Sri Lanka', *Journal of South Asian Studies* 2, vol. 3, 2014, 242.

16 *Annual Health Bulletin 2002* (Colombo: The Department of Health, 2001), 10, 1.6.1.

17 *Annual Health Bulletin*, 10, 1.6.1.

18 *Annual*, 1.6.2.

19 Iris Borowy, 'International Social Medicine Between the Wars: Positioning a Volatile Concept', *Hygiea Internationalis* 6, no. 2, 2007, 13–35. See also Michael Worboys, 'The Discovery of Colonial Malnutrition Between the Wars', in *Imperial Medicine and Indigenous Societies*, ed. David Arnold (Manchester: Manchester University Press, 1988), 208–26.

20 See, for example, Amy Staples, *The Birth of Development: How the World Bank, Food and Agriculture Organization, World Health Organization Changed the World, 1945–1965* (Kent, Ohio: Kent State University Press, 2006), 64–121; Nick Cullather, *The Hungry World: America's Cold War Battle Against Poverty in Asia* (Cambridge, Massachusetts: Harvard University Press, 2010); Alison Bashford, 'Population, Geopolitics and International Organizations in Mid-Twentieth Century', *Journal of World History* 19, no. 3, 2008, 327–47; Michael Connelly, *Fatal Misconception: The Struggle to*

have been few studies, however, on how the problem of malnutrition was perceived and policies constructed and implemented at the national and local levels in the developing world.[21]

Child malnutrition in Sri Lanka received its first public exposure with the introduction of medical inspections of schools in 1920. These inspections revealed that malnutrition was endemic among Sri Lanka's school children. During the 1934–35 malaria epidemic, a temporary school meals service was introduced, and then taken up permanently by the independent government.[22] In 1942, in response to wartime food shortages and economic distress, food subsidies and rationing were introduced. The subsidies continued into the post-war period to become one of the cornerstones of Sri Lanka's post-colonial welfare state. These policies were undoubtedly an example of a policy transfer from the UK, but were innovative within the colonial context, and helped shape the welfarism of the successor independent state.

Table 3.1. Infant and Child Mortality Per 1,000 Live Births, for Estate and Non-Estate Areas from 1948–1974[12].

Area	*Neonatal*	*Post Neonatal*	*Total*	*Child Mortality**
Estate	81	53	134	36
Non-estate	35	19	54	31

Note:
* Child Mortality is for the period 1948–1970.
Source: S. A. Meegama, 'Socio-economic Determinants of Infant and Child Mortality in Sri Lanka: An Analysis of Post-war Experience', *Scientific Reports* 8 (Voorburg, Netherlands: International Statistics Institute, 1980), Table 57, 38.

Table 3.2. Mortality by Sector Per 1,000 Live Births, 2002 (Excluding North and East).

Sector	*Neonatal Mortality*	*Post Neonatal Mortality*	*Infant Mortality*	*Child Mortality*	*Under-five Mortality*
Urban	9.1	5.8	14.9	2.5	17.3
Rural	13.5	3.9	17.4	1.1	18.6
Estate*	31.0	16.5	47.5	4.1	51.6

Note:
* Based on a sample of 500.
Source: Centre for Poverty Analysis, Briefing Paper 11, *Child Poverty in Sri Lanka* (Colombo: Centre for Poverty Analysis, 2008), 5.

'SURVIVAL OF THE CHILD IS A NECESSARY BUT NOT A SUFFICIENT CONDITION': NUTRITION POLICIES IN THE SOCIAL WELFARE STATE[23]

In the years when the general mortality rate had been decreasing, the 'disturbing factor', according to Dr Kahawita, had been that the 'pre-school child and the 5 to 9-year group have been contributing less to this decrease.' The percentage of deaths of children under five to total deaths was 44.9 per cent in 1955, which he stated was the result of a '[a] vicious circle of malnutrition, bowel infection, round worm infection and chronic

Control the World Population (Cambridge, Massachusetts: Harvard University Press, 2008); Amrith, *Decolonizing International Health*.

21 Sarah Hartley, 'Interweaving Ideas and Patchwork Programmes: Nutrition Projects in Colonial Fiji, 1945–1960, *Medical History* 61, no. 2, 2017, 200–24.

22 Jones, *Health Policy in Britain's Model Colony*, 252–55.

12 Neonatal is death within one week, post-neonatal is death in the first year, and child mortality in those who survive the first year.

23 *Report of the Seminar on Role of Voluntary Sector in Child Survival and Development* (Colombo: Ministry of Plan Implementation, 1984), 4.

diseases results in a dystrophic development with a low resistance against illness in the child of the average family whose standard of living is generally below the minimum particularly as regards nutrition.'[24]

This exposed exactly the dilemma that faced the nation in its early days and still faces Sri Lanka today. The significance of the socio-economic conditions of the people to their health was continually highlighted by the medical authorities; and it was the child who suffered the most in this environment. However, these problems could not easily be remedied.

The presence of separate sections on nutrition in schoolchildren in the Medical Department's annual medical reports from 1948 onwards testify to the awareness of malnutrition and its significance for child health by the authorities. As Dr Kahawita categorically stated in 1954: 'Nutrition is everything in childhood. Childhood is the particular and the only occasion when it is true to place nutrition in the first place.'[25] As noted previously, school inspections were instrumental in establishing its extent among Sri Lanka's schoolchildren in the interwar period, and this persisted in the following decades. In 1948, for example, in the first year of independence, 3,390 schools throughout the island were inspected (the majority 1,230 were in the Western Province), and out of the 71,000 children examined, 19,000 (13 per cent of the total) were found to be suffering from malnutrition. This, the DHS, Dr Wickremesinghe argued, was 'without doubt due largely to the economic condition of the parents …. Parents cannot afford to give their children the right type of food.' He acknowledged that in some cases, the 'ignorance of the parents regarding dietetics was a contributing factor', but in the majority of the cases, 'lack of income' was the 'sole cause'.[26]

Also, in 1948, the Nutrition Division of the Medical Research Institute conducted a survey of eight schools (a total of 1,086 children) to identify the nature of the malnutrition that was found. The results are assembled in Table 3.3.

Seven per cent of the children surveyed had symptoms that indicated the type of nutritional deficiency they were suffering from—phrynoderma or toad skin that is associated with Vitamin A deficiency, and Bitot's spots (keratin build-up in the eye), erosion of the tongue and angular stomatitis (swelling of the mouth and lips) with iron and Vitamin B deficiencies. In 1954, one in six children examined in schools suffered from malnutrition, and as Dr Kahawita added in his report, 'Gastro-intestinal troubles, Tuberculosis, Rheumatism, and it may be Dental caries, Adenoids and middle ear diseases are often nutritional in origin.'[27] Propaganda 'on a wide scale' was being done to educate the public on the necessity for 'essential elements of nutrition and that less than enough and no amount of anything else will do'.[28] Yet, later in the same report, he also admitted that nearly a third of the rural population 'could not obtain a sufficient quantity of food for economic reasons and that diets of many were deficient in protective foods—Proteins and Calcium, and Vitamin A and Riboflavin'.[29] No amount of public health education would remedy this situation.

The school midday meals, intended as a welfare measure, did little to improve it, consisting, as the DHS, Dr Wickremesinghe described, mainly of a 'tea bun or a slice of bread and a cup of plain tea with sugar'; very few schools offered any vegetables or *dhal* (pulses). Dr Wickremesinghe argued that a much better solution would be to substitute this snack for a glass of milk, but the major obstacle to this was the insufficiency of milk being produced in the island.[30] The Nutrition Division of the Medical Research Institute conducted an experiment on school-feeding at the Talwatta School in 1948 to test the effect of supplementing this midday meal. The children

24 D. L. J. Kahawita, *Annual Medical Report 1955*, Para. 9, 1.

25 Kahawita, *Annual Medical Report 1954*, B9.

26 W. G. Wickremesinghe, *Annual Medical Report 1948*, Malnutrition, C112.

27 Kahawita, *Annual Medical Report 1954*, B9.

28 Kahawita, *Annual*, B9.

29 Kahawita *Annual*, B172.

were divided into four groups, and each group received a different supplement over a period of a year. Their height and weight were measured at the end of the fourth, eighth and twelfth month. The supplements were variously lime juice with sugar for the control group, *dhal* soup, *dhal* and yeast soup, and skimmed milk for the other three groups. At the end of 12 months, the height and weight of the children on *dhal* and yeast soup increased the most, and the control group the least, suggesting that a supplement or improved meal could have a positive effect.[31]

A decade after this, in 1957, a scheme to assess the nutritional status of school children was set up in school MO areas in Colombo, Galle, Matara, Morutawa, Panadura and Kandy. Children were examined in their first, fourth and seventh years in school for age, height, weight, average weight for height, underweight and overweight, and the deficiency signs found in the 1948 survey. A total of 167 reports were sent in, and 18,592 children were examined.

Table 3.4 shows that one in 10 of these children were sufficiently malnourished to have obvious symptoms of malnutrition, and that one in four, on an average, were what was described as being in a 'sub-nutrition' state, that is, underweight. There was also a significant difference between girls and boys; nearly four per cent more girls were underweight. In 1957, Dr Kahawita did get his glass of milk added to the school meal, but apart from that, the meals did not appear to have been improved substantively during this period, and in 1960, it was still only a bun.[32] Yet in that same year, the DHS, Dr Wickremesinghe, recorded a rise in the incidence of malnutrition in schoolchildren from the previous year's total of 18,500 cases to 26,000 cases; and he noted that it now topped the list of 'defects' found, ahead of hookworm and malaria.[33]

Child malnutrition reflected, of course, the general extent of poor nutrition across the population during this period. In 1955, Dr Kahawita reported that investigations into the nutritional content of food consumed by a random sample of the population showed that their diet consisted mainly of cereals and other starchy foods. This provided as much as 80 per cent of the required calories, but it lacked vital proteins, minerals and vitamins. In the same year, one quarter of the children who were medically inspected were malnourished.[34] Again, he highlights the reason for this: 'Health education alone …. will not meet this situation where owing to low per capita income what is considered to be hardly a minimum standard of nutrition in Western countries has become a luxury in these parts.'[35] He made this point again a year later and emphasised that malnutrition was a problem beyond the ability of the Medical Department to remedy. Supplying vitamin, mineral and drug supplements 'to correct diet deficiency will not touch the fringe of this problem which is inextricably tied up with the availability of the kind of food the people need and their ability to afford that food'.[36] He was adamant, therefore, that the malnourishment of the people had virtually nothing to do with their attitudes. The number of people who, because of 'ignorance, traditions and religious scruples' would refuse to eat the right food if offered, was 'small'. It was up to the other government agencies which dealt with 'food production and distribution, fixing of wages of the working class, mid-day meals of school children and workers, maternity benefits' as much as it was up to the Health Department to remedy.[37] A decade later, Dr H. A. Aponso, Lecturer at the Department of

30 Not surprising, then, that 19 per cent of the children examined had teeth and gum problems; Wickremesinghe, *Annual Medical Report 1948*, C109, 112.

31 Wickremesinghe, *Annual Medical Report 1948*, Nutrition Division, 48.

32 Wickremesinghe, *Annual Medical Report 1957*, B182; *Annual Medical Report 1960*, B213.

33 Wickremesinghe, *Annual Medical Report 1953*, B179–180.

34 D. L. J. Kahawita, *Annual Medical Report 1955*, B13.

35 Kahawita *Annual*, B14.

36 Kahawita, *Annual Medical Report 1956*, B13.

Paediatrics, the University of Peradeniya, argued for much the same thing in the pages of the national English newspaper, *The Ceylon Observer*. Malnutrition, he claimed, needed to be tackled at three levels:

1). At the individual level by physicians and paediatricians, public health workers and social workers at the hospital, at the health clinic, and in the home;
2). At the school level by teachers and public health personnel;
3). At the national level by economists, agricultural and medical scientists, and politicians.[38]

The issue of food security raised by Dr Kahawita was addressed by various agricultural projects in the 1960s and 1970s, which focused on food production and distribution. However, Dr Aponso's plea to 'Marry health with agriculture' was asking for a level of cooperation seldom seen in systems of governance anywhere.[39]

The impact of a poor and inadequate diet was manifested as acutely in the infant and the pre-school child, the two most vulnerable groups in the population. Data on the infant was easily accessible in official documentation; the increasing level of institutional deliveries and the network of mother and child health clinics made the health of this age group accessible for assessment. It was more difficult to chart the plight of the pre-school child from the age of one year when their attendance at clinics tended to tail off. They were largely invisible in the public record because their contact with officialdom was limited. They dropped out of sight until they started school, and yet, this was the period in their lives when they were most susceptible to disease and the effects of a poor diet, particularly if they had had a poor start to their lives.

This poor start in life was charted in medical reports over the decades, and its connection to nutrition was continually highlighted. Despite the year-on-year reduction in infant mortality and maternal mortality rates, the increasing levels of deliveries with trained midwives, either in institutions or at home, the care given to mother and infant, Dr Kahawita argued in 1953, required 'intensification'. Malnutrition, he pointed out, affected 'infant mortality, growth of children, occurrence of specific deficiency signs among the population, poor physique and susceptibility to infection'.[40] In particular, he noted that 35 per cent of children born in institutions were premature, compared with 5 per cent in Western countries. He argued that this was 'chiefly due to malnutrition of the mother'.[41] Dr Cumpston described the plight of these mothers graphically in his report on the health services in 1950:

> Upon my visits I have, at every hospital, been deeply impressed with the anaemic and debilitated condition of many of the women who are approaching or are completing their labour …. It is self-evident that many women are arriving at hospital in a physical condition inadequate for their ordeal because of malnutrition and infection.[42]

37 Kahawita *Annual*, B13.

38 H. A. Aponso, 'Wealth of Nation Depends on How Well-nourished are its People: Marry Health with Agriculture', *The Ceylon Observer*, 10 June 1967, 4. This phrase harks back to the linking of nutrition to food production by the League of Nations in 1935 that led to the establishment of the League of Nations Nutrition Committee. See Staples, *The Birth of Development*, 71–74. Amrith argues that the establishment of the Food and Agriculture Organisation (FAO) and the WHO as separate organisations had 'important consequences in disassociating "public health" from its earlier conjunction with nutritional thought'. Amrith, *Decolonizing International Health*, 65.

39 The many schemes of rural development that the Sri Lankan government embarked upon with international agencies, cannot be dealt with here. A useful summary of this can be found at Country Case Study, Sri Lanka, 'Impact of Decentralisation on Rural Development at the Local Level, Bedgar Perera, Sri Lanka', available at www.fao.org/3/AC158E/ac158e0g.htm (accessed 10 October 2016).

40 D. L. J. Kahawita, *Annual Medical Report 1953*, B120.

41 Kahawita, *Annual*, B120.

The infants born to these mothers were likely to be of low birth weight and vulnerable to infections of all kinds. Prematurity consistently featured as the largest cause of neonatal deaths. For example, in 1956, it was the cause of 54 out of the 96 neonatal deaths at the Castle Street Maternity Hospital.[43] Ten years later, in 1966, neonatal deaths accounted for two-thirds of all infant deaths; most deaths in this group were 'due to low birth weights especially among the estate and rural areas' and 'many of these deaths could be avoided by improved nutrition of the mother'.[44] Those babies who survived took a legacy of vulnerability into their childhood. The pre-school death rate in 1966 was 11 per 1,000, which was high, the DHS, Dr D. B. Gunasekara noted, in comparison to Sri Lanka's infant mortality rate, and in contrast to that, more in line with the other countries of South-East Asia. Malnutrition heads the list of causes of mortality and morbidity in this age group, followed by worm infestation and diarrheal diseases.[45]

The evidence on the effects of malnutrition on the health of the infant and child were irrefutable, but since the underlying cause for this was poverty and food insecurity, the actions available to the Medical Department to remedy this were limited to tinkering around the edges. Policies were targetted at solving the nutritional problems of the infant and child through school meals, as we have seen, milk-feeding schemes, food supplements for mothers, and public health education.

About 3,500 milk-feeding centres were being run by the Department of the Food Commissioner in the late-1940s, in close cooperation with the Department of Health (which housed 200 of them), and according to the DHS, Dr Wickremesinghe, in 1949 they 'played an important part in the dieting of expectant mothers and of pre-school children'.[46] Through a government agreement in 1950, the UNICEF agreed to supply skimmed milk powder (110 tons in 1950) for special milk centres. The first shipment arrived in October, but as was not uncommon, 'administrative difficulties' delayed the start of its distribution until January 1951.[47] It was given to pregnant women, the pre-school child and schoolchildren through 236 special centres, and Wickremesinghe said that it showed 'a substantial improvement in the nutritive aspect of the mothers and children who consumed the milk regularly'. However, despite this advantage, 'some mothers were reluctant to use it.'[48] Wickremesinghe does not record why they refused it. However, one reason may have been the usual economic one; although it was a free supplement, mothers would have to take the time and effort to get to the centres, which might not be within an easy distance and might entail transport costs. An article in the *Daily Mirror* in 1967 by Priyani E. Soysa, which outlined the problems in the feeding of the pre-school child, also suggested a cultural factor. There was, he said, 'a widespread belief that when a child starts eating rice, he must not be given milk. Such mixed feeding is erroneously thought to be the cause for worm infestation so therefore milk is discontinued in the pre-school age.' Instead of milk young children were given 'coriander, barley and conjee water and cheap rusks'.[49] This belief about milk was also mentioned in another article in the same edition of the paper written by Dr Terence Perera, Assistant Director of the Maternity and Child Health Services.[50]

42 J. H. L. Cumpston, *Report on the Medical and Public Health Organizations of Ceylon, February 1950*, Paras 107,8, 44–45.

43 W. G. Wickremesinghe, *Annual Medical Report 1956*, B61.

44 Wickremesinghe, *Annual Medical Report 1966–67*, B 328.

45 Kahawita, *Annual*, B120.

46 Wickremesinghe, *Annual Medical Report 1949*, B135.

47 Wickremesinghe, *Annual Medical Report 1950*, B187.

48 Wickremesinghe, *Annual Medical Report 1951*, B239.

49 Priyani E. Soysa, 'Nutrition of the Pre-school Child', *Daily Mirror*, 8 June 1967, 14.

50 Terence Perera, 'Needs of the Ceylon Child', *Daily Mirror*, 8 June 1967, 16. A whole series of articles on nutrition were featured in this edition of *Daily Mirror*, as People's Health Week of 1967 was part of the 'national "grow more food"

In January 1957, the Department of Health took over the milk distribution scheme from the Food Department (the title was changed to Free Milk Distribution Scheme). Its administration was then decentralised and placed under the authority of the 15 divisional SHS. The supply of skimmed milk was also taken over by the Co-operative for Relief and Assistance (CARE), who promised 500 tons in 1958.[51] The consumption of fresh milk had begun to overtake that of skimmed milk as more centres converted to providing fresh milk in response to demand. It seemed that nursing and expectant mothers and the children preferred fresh milk to milk powder. At the end of the year, there were 3,193 centres, of which 1,352 were then distributing fresh milk (6,185,521 pints in all in 1957). Most of this fresh milk came from government farms, the milk board and cooperative dairies. However, the transport of fresh milk did pose greater problems, especially when it was going to the rural areas. If trains were disrupted (a not infrequent occurrence), then it was undrinkable when it arrived. As far as possible, it began to be sourced from local cooperatives when they were available.[52] Ten years later, in 1966–67, the scheme was still thriving. The government centres were now overwhelmingly distributing fresh milk; nearly 89,000 mothers and children received it at 1,981 centres, and only 18,000 at the 919 dried milk centres. Under the CARE milk scheme, just over 3,591,000 lbs of skimmed milk powder was given to 29,970 pregnant mothers, 28,970 pre-school children, and 14,450 nursing mothers. While these figures may testify to the success of the programme in reaching this needy population, it also poignantly evidences the extent of the continuing need.[53]

All government welfare programmes came under increasing pressure as the economy began to deteriorate in the 1970s and the food situation worsened. The universality of the food subsidy and rationing began to be questioned. The years 1972–73 were drought years, which drastically affected rice, tea and coconut production. This was coupled with balance of payments problems and high import prices, including rice, upon which Sri Lanka depended even in its good years to feed its population (it made up 32 per cent of food imports). The food subsidies could not be developed fast enough to offset the increased need, and for the first time in Sri Lanka, in 1975, there was a risk of famine. Evidence taken from surveys and studies during the decade suggest that malnutrition was a serious problem throughout the 1970s.

In 1976, the WHO consultant nutritionist, Dr Victor O. Tantengco, summarised the findings of various studies on child nutrition being undertaken at the time. One such study conducted by CARE and the Medical Research Institute in 12 municipal clinics in 1974 found that 42 per cent of those clinically examined were suffering from various forms of malnutrition—14 per cent from second- and third-degree, and 28 per cent from first-degree malnutrition.[54] In general, he concluded that 'Starchy staple food—cereals, starchy fruits, roots and tubers—are the dietary mainstays in the low income groups owing to the relatively cheap cost of such food', and that there was 'very limited animal protein intake in children for economic and agronomical reasons'. As so often with such 'expert' assessments, mothers incurred their share of the blame: 'Feeding practices arising from ignorance, indifference or prejudice have resulted in early weaning to bottle feeding, and late supplementary feeding, compounded with the poor choice of foods and low standards of sanitation, contributes considerably to the problem.'[55] Tantengco noted that he himself had seen cases of kwashiorkor when travelling outside Colombo (locally called *mandama*), for which, he said 'mothers preferred to consult ayurvedic healers who prescribed further dietary restrictions.'[56]

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campaign'. Health Week Committees. had 'organized home gardens, tree planting campaigns, mass cultivation programmes and demonstrations in food preparation, preservation and hygiene'; *Daily Mirror*, 127–28.

51 D. B. Gunasekara, *Annual Medical Report 1957*, B252, B314.

52 Gunasekara, *Annual*, B252.

53 Gunasekara, *Annual Medical Report 1966–67*, B327.

54 Victor O. Tantengco, 'Assignment Report, Public Health Nutrition Programme in Sri Lanka (Control of Protein–Calorie Malnutrition)', 6 June–10 September 1974, 3, Project Files, SRL/NUT/001 1972–1978, Nutrition, WHO Archives, Geneva.

55 Tantengco, 'Assignment Report', 4.

A research paper on childcare for the Ministry of Plan Implementation in 1980 by Malsiri Dias presented a detailed account of the failures of welfare provision to meet the challenges of the economic downturn and the effect that this had on the health of the child. Dias cited the 1970 socio-economic survey, which showed that 43.6 per cent of the population lived in poverty.[57] Additionally, food shortages and poor distribution of the 1970s led to a decrease in the consumption of calories as well as proteins among all income groups. Table 3.5 illustrates this decline (2,200 calories and 48 grams of protein were considered as the minimum daily requirement).

The decline in consumption of the lower income group, in particular, is evident in this table, and it shows that they were below the minimum level of the required nutrition. Given that the 1970s, as a whole, was a turbulent period for the economy, it was likely that these inadequate levels of consumption for the lower income groups continued throughout the decade with the result, through the nutritional status of mothers, of high rates of infant and child mortality for this group. Dias stated, for example, that 'of the 3,75,000 infants born in 1975 approximately 10,000 did not survive beyond the first month. Approximately 17,000 in all died in the first year of their life and another approximately 22,000 in the next four years of their life.'[58] The threat to household living standards also pushed more women into the labour market, the majority of whom were in unskilled trades, the service sector, or casual agricultural labour on a daily paid basis. Women also made up at least half of the labour force on the tea estates. All this work was low-paid, exhausting, and often, with long hours. Many of these women had children under the age of 10, when there was little or no provision for childcare on a formal basis. Children were left in the care, usually of the extended family, which could be of variable quality, given the poverty of the family environment. Dias stated that 'at least 2/3rds of the children were living in poor families of larger than average size, suffering from inadequate nutrition and parasitic diseases.'[59]

By the late 1970s, the percentage of expenditure on aspects such as milk schemes, food subsidies and rationing were in the frontline of the increasing attack against welfare programmes for their diversion of government funds from investment in growth, and for their ineffectiveness. Food rationing and wheat and rice subsidy were widely criticised for the share of the government budget they pre-empted (averaging 20 per cent in the 1970s decade), for being a universal benefit that failed to discriminate against the better off, and for acting as a disincentive to indigenous agriculture.[60] In a lengthy critique of this view, Paul Isenman argued that the subsidy's universality in reaching the poor and those in rural areas meant that it increased the food consumption of the neediest and also freed up income to be used on meeting other basic needs. In doing so, he claimed, it acted as a means of income redistribution without having to resort to unpopular taxation. As evidence, he cited the 1969/1970 Socio-Economic Survey that showed that the ration provided about 20 per cent of the total calorific intake for families in the under Rs 400 per capita income bracket.[61] Isenman concluded that 'Sri Lanka's experience, both positive and negative, with food ration and subsidy programmes suggests that while these programmes were very expensive and must be approached with caution, they can have substantial benefits.'[62]

56 Tantengco, 'Assignment Report', 4.

57 Malsiri Dias, 'Child Care: Background Paper', Children's Secretariat, Ministry of Plan Implementation, 1980, 5.

58 Dias, 'Child Care', 5a. The years 1972 and 1973 were drought years that drastically affected rice (the staple food of 80 per cent of the population), tea and coconut production. This was coupled with balance of payments problems and high import prices (rice made up 32 per cent of food imports) in these two years. The subsidies could not be developed enough to offset the increased need and there was a risk of near-famine.

59 Dias, 'Child Care', 6–7.

60 Paul Isenman, 'Basic Needs: The Case for Sri Lanka', *World Development*, 8, 1980, 240. The rice and wheat ration varied, but stayed between 2–4 lbs per week, 1–2 lbs of which were free, and the remainder of which was sold at a subsidised price.

61 Isenman, 'Basic Needs', 241.

62 Isenman, 242.

These general food subsidies directed at the whole population perfectly addressed the nutrition component of the PHC declaration; but ironically, their demise virtually coincided with this international emphasis.

Table 3.3. Signs of Malnutrition in 1,086 Children in Eight Schools Surveyed, 1948.

Signs of Malnutrition	*Number*	*Percentage*
Phrynoderma	29	2.67
Bitot's Spots	26	2.4
Erosion of Tongue	7	0.64
Angular Stomatitis	14	1.29
Total Number of Children with Defects	76	7.0

Source: W. G. Wickremesinghe, *Annual Medical Report 1948*, Nutrition Division, C43–44.

Table 3.4. Assessment of Nutritional Status of Schoolchildren by Sex, 1957.

	Boys					*Girls*				
	1st	*4th*	*7th*	*Total*	*Per Cent*	*1st*	*4th*	*7th*	*Total*	*Per Cent*
Number Examined	4,068	3,416	1,908	9,392		3,763	3,291	2,146	9,200	
Deficiency Signs of Malnutrition	532	429	139	1,100	11.7	449	331	204	984	10.7
Underweight	915	806	530	2,251	24.0	781	1,076	686	2,543	27.6

Source: Compiled from the *Annual Medical Report 1957*, Table LIV, B205.

Table 3.5. Per Capita Daily Consumption Per Income Group, 1950–1973.

Year	*Upper Income Group*		*Middle Income Group*		*Lower Income Group*	
	Calories	*Protein (grams)*	*Calories*	*Protein (grams)*	*Calories*	*Protein (grams)*
1950	3,055	93	2,593	47	2,067	50
1955	3,271	84	n/a	n/a	n/a	n/a
1969/70	2,641	66	2,437	58	2,064	47
1973	2,800	58	2,400	43	1,900	37

Source: Statistical Profile of Children, 1977 Department of Census and Statistics, in Malsiri Dias, 'Child Care: Background Paper', Children's Secretariat, Ministry of Plan Implementation, 1980, 5a.

TRIPOSHA: A SUCCESSFUL INTERVENTION FOR THE YOUNG CHILD?

The *Triposha* food supplement programme for infants and young children was a nutrition policy that was established in the pre-PHC era. It survived and developed into the period of the neo-liberal state not only for the poorest, but also as a universal benefit. CARE, under the auspices of the Ministry of Health, had been responsible for the provision of the midday 'bun' in schools; but in 1973, with government backing, it began to operate one of the most significant and enduring food supplement programmes. As Irwin Hornstein stated in his assessment for United States Agency for International Aid (USAID), *Triposha* was initially devised as a response to the nutritional crisis generated by the government cuts and economic depression in the early 1970s. He claimed that it sought to have a

> … distinctive image as a nutritional supplement …. (b) progressively increasing the locally-produced component …. until a wholly indigenous nutritional food, not dependent on foreign food donations or

> imports would become a reality; and (c) ultimately selling Triposha through commercial outlets, as well, to reach those not qualifying for the feeding program or not reached by it.[63]

It was also designed to be attractively packaged to increase its acceptance and to disassociate it from the stigma of being a 'poor man's food'.[64] Initially, it was composed of a wheat soy blend (WSB), donated by the US government, shipped to Sri Lanka in 50lb bags, and then repackaged in bags of 750 grams, which were made locally. Directions for use and information on the product were printed in the three languages of the country; in this way, it aimed to have a local identity. In 1974, indigenous cereals were added to the produce when cooked sorghum was substituted for 20 per cent of the WSB. Subsequently, WSB was replaced by Instant Soy Milk (a 'food for peace' donated by the US), indigenous maize, soya, and later, vitamins and minerals were added. By 1985, it was made up entirely of locally sourced ingredients.[65] In 1974, that is the first year, according to Hornstein, the number of *Triposha* recipients was 42,000.[66] Following this, in 1975, as part of an initiative on family health, the Health Ministry decided to integrate the distribution of *Triposha* into its maternal and child health activities. It was then routinely distributed to mothers and pre-school children through their local health centres, when they accessed their welfare services and targetted those who were showing signs of malnourishment.

By 1976, 1,37,000 pre-school children and mothers received aid, 1,14,000 through the MOH clinics, and 35,000 in the tea estates.[67] Mothers were given one month's supply of two 750-gram packets to prepare at home, and it was deemed particularly important at the weaning stage, given that this was a particularly vulnerable stage for children.[68] However, these aggregate figures on the distribution of *Triposha* through government health workers gloss over the problems with regard to accessing it. Increasingly, the processing of the supplement could not keep up with demand, and in response, the Ministry of Health and CARE established a processing plant for *Triposha* at Ja-Ela (20 miles north of Colombo) that began production in 1979. This, Hornstein argued, 'represented a new commitment' by the government to the *Triposha* programme, as until then, its continuation depended upon the annual renewal of the agreements that set yearly targets for recipients. The new plant was part of a 10-year plan to progressively expand the number of recipients.[69]

At the same time, plans were put into effect to market *Triposha* commercially to prevent malnourishment in children, which was not reached by the feeding programme. Preliminary surveys suggested that it had a recognisable and positive image as a highly nutritious product for children. Therefore, in 1980, Lever Brothers initiated a test market operation in four sales areas—Matara, Kandy, Galle and Mutale—through its extensive retails network. *Triposha* 'now took its place—alongside soap, toothpaste and other household items—in 2,000 outlets including many small shops in rural areas'.[70] To begin with, it was supported by posters and leaflets, but not conventional advertising. Moreover, between 1980 and 1983, sales averaged to about 48,000 pounds per month in the four test areas, and its sales were extended to Ambalangada and Tangalle. It sold in 1980 for Rs 5.5,

63 Irwin Hornstein, *Triposha Product and Program* (USAID, 1986), 3, available at www.usaid.gov/pdf_docs/PNAAW638pdf (accessed 10 November 2016).

64 Hornstein, *Triposha*, 3.

65 Hornstein, *Triposha*, 5–6, 14.

66 Hornstein, 5.

67 R. Burzina, *Public Health Nutrition in Sri Lanka, Assignment Report, 21 December 1975–1 February 1976*, 4, Project Files, SRL/NUT/001 1972–1978, Nutrition, WHO, Geneva.

68 Hornstein, *Triposha Product and Program*, 10.

69 Hornstein, *Triposha*, 6.

70 Hornstein, 13.

which rose to Rs 9 in 1984 to cover increased costs; but even so, it was much cheaper than commercial weaning products that sold for up to 10 times its cost.[71] A survey of 1984 conducted by the Sri Lanka Market Research Bureau showed that 52 per cent of the interviewees purchased *Triposha* once a month, buying on an average three 1 lb packages; 82 per cent of children between zero and two years and 72 per cent aged three to five consumed it at least once a day. Furthermore, a substantial percentage purchasing it had quite low incomes; 40 per cent had a monthly income of Rs 750 or below, and 19 per cent under Rs 500 (the eligibility for government food aid was Rs 400). The survey also showed that some purchasers were participating in the government feeding programme—38 per cent of the rural and 15 per cent of the urban samples.[72] Hornstein suggested four main reasons for *Triposha*'s apparent commercial success in this first decade. First, it benefited from the favourable image it had gained from the government feeding programme. Second, was its cheapness, facilitated by the low production costs and cheap packaging. Third, was Lever Brothers effective distribution system.[73] The last reason, its ease of use as a take-home processed food, explained equally its take-up in government feeding programmes and the success of its commercial sales. As Dr Beatrice de Mel, paediatrician at the Medical Research Institute, noted in 1979:

> *Triposha* has led the way in our country for the women who find it so difficult to put one, two three ingredients together to make a weaning food. It's all there and all processed, and I think that is one of the biggest things in its favor. It is considered both a convenience and a nutritious food.[74]

As an example of this, Hornstein explained that *Triposha* provided a convenient pre-cooked base for making the traditional snack, *Aggala*, which was eaten by all family members.[75] The *Triposha* programme began as a government and charitable initiative, but in the 1980s, it evolved into a mix of both a commercial/private and public venture, in that it was hugely symbolic of its time.

1977–2000 NUTRITION POLICIES IN THE NEO-LIBERAL STATE

In 1977, the United National Party (UNP) came to power and initiated a package of neo-liberal reforms with the help of the World Bank and the IMF, which included removing the impediments to the operation of free-market forces in trade, industry and finance. There was massive public investment, financed largely by foreign aid, and crucially, drastic reductions in consumer subsidy, in particular the food subsidy.[76] The abolition of this subsidy was done in three phases to minimise popular opposition. First, in February 1978, the subsidy was targetted by a means test to households with a monthly income between Rs 300 and Rs 750, depending on the household size; this means test was based on self-declared income. This restricted the subsidy to half-the-population. The second phase, the food stamp scheme, was introduced in September 1979. Households were allotted non-indexed food stamps according to income (again self-reported) and household size: Rs 25 for children under eight years, Rs 20 for children aged 8–12 years, and Rs 15 per member over 12 years. The stamps could be used to buy rice, wheat flour, bread, milk foods and pulses from authorised distributors. Families were also awarded kerosene stamps

71 Hornstein, 13.

72 IHornstein, 13–14.

73 Hornstein, 14.

74 B. De Mel, 'Question and Answer Session', in *Low Cost Extrusion Cookers, Second International Workshop Proceedings*, eds David E. Wilson and R. E. Tribelhorn (Fort Collins, Colorado: Medical Research Institute, Agricultural and Chemical Engineering, Colorado State University, 1979), 201. Quoted in Hornstein, *Triposha Product and Program*, 9.

75 Hornstein, *Triposha Product and Program*,14.

76 S. R. Osmani, 'Economic Reform and Social Welfare: The Case of Nutrition in Sri Lanka', *American Economic Review* 84, no. 2, 1994, 291.

worth Rs 9–50 a month, and these could be used to buy food, but not vice versa.[77] In her assessment of the scheme in 1986, Dias highlighted the problems in the implementation of the scheme, such as '[a]dministrative negligence, deliberate discrimination and error which resulted both in the exclusion of some deserving households as well as inclusion of others who do not qualify. Surveys have revealed that nearly 10 per cent of households who were qualified were excluded.'[78]

There was a regular revision of the food stamp eligible rolls, and the numbers receiving aid were not reduced; they may even have had been increased because of the widespread under-declaration of income. In the last phase, food subsidy was abolished.[79] The impact that these reforms had on nutrition levels has been much debated, and it is accepted that the general socio-economic effects of the liberalisation of the economy were mixed. The switch to an open economy, where market forces were allowed to determine prices and allocate resources alongside government investment in infrastructure projects funded by foreign investment led to unprecedented growth rates. However, as Laksiri Fernando has highlighted, the 'expansion of the economy was uneven and lopsided' in that the 'rural sector was largely excluded from the benefits' flowing from this economic expansion.[80] Local food producers and small local industries were seriously affected by the opening up of the economy to foreign imports, and at the same time, there was price inflation. Between 1978 and 1982 alone, prices of food items increased by 94 per cent, non-food items by 91 per cent, which meant that as the value of the food stamps was fixed and not adjusted for inflation, their value declined by 50 per cent. The proportion of these poorest households (defined by those who consumed less that 80 per cent of the recommended calorie consumption) increased from 9.5 per cent in 1978 to 25 per cent by 1982.[81] Acute malnutrition increased in the years between 1977 and 1985, from 6.6 per cent to 8.2 per cent, and chronic malnutrition, while decreasing, still stood at nearly 22.8 per cent. As Dias concluded in 1986, 'Inequality had worsened. The lower 20 per cent which received 7.1 per cent of the total household income in 1973 received 5.7 in 1982.'[82] Thus, 'the burden of cuts in food subsidy was likely to have fallen disproportionately on the poor.'[83]

In recognition of this and in an attempt to mitigate the effects of price inflation, the government passed the Poor Relief Act No. 32 in 1985. Responsibility for the food stamp scheme was transferred from the Food Department to the Department of Social Services, and the income ceiling for food stamp eligibility was raised from Rs 300 to Rs 700 per month. In addition, the numbers in a household who were eligible for food stamps varied according to income, so that in households with a monthly income of less than Rs 200, five members were entitled to the stamps, and thereafter, the eligible number decreased accordingly. In the income class Rs 200–399, it was four members, and in the income classes Rs 400–599 and Rs 600–700, three and two members, respectively. To obtain the stamps, application had to be made to the Poor Relief Committee, and the names of the applicants were to be publicly displayed as a check of their eligibility.[84] According to Neville Edirisinghe, when the scheme was finally

77 M. H. Suryanarayana, 'Some Experiments with Food Stamps', *Economic and Political Weekly* 30, no. 52, 1995, A-151–A-159, A-153.

78 Malsiri Dias, 'UNICEF Country Office Background Paper: The State of the Child in Sri Lanka, October 1986', Issued by the Children's Secretariat, Ministry of Plan Implementation, Colombo, 38. This is available as a research paper in the library of the Marga Institute.

79 M. H. Suryanarayana, 'Some Experiments with Food Stamps', 30, no. 52, 1995, A-151–A-159, A-153.

80 Laksiri Fernando, 'Three Phases of Political Development after Independence', in *Sri Lanka's Development Since Independence: Socio-Economic Perspectives and Analysis*, ed. Weligamage D. Lakshman and Clement A. Tisdall (New York: Nova Science Publishers, 2000), 84.

81 Suryanarayana, 'Some Experiments with Food Stamps', A-154.

82 Dias, 'UNICEF Country Office Background Paper', 10.

83 Suryanarayana, 'Some Experiments with Food Stamps', A-154.

84 Neville Edirisinghe, 'Recent Targeting Attempts in Sri Lanka's Food Stamp Scheme', *Food Policy*13, no. 4, 1988, 401.

implemented in June 1986, the number of beneficiaries under this scheme increased from 6.8 to 7.2 million. However, based on the official consumer index, he noted that the value of food stamps in 1986 was only about 40 per cent of their 1979 value.[85] The trade-off between equity and growth that the Premadasa government had made may have benefited the majority of the population and allowed them to maintain or even increase their calorie consumption levels. However, Edirisinghe concluded in 1988, 'the nutritional welfare of the bottom 20% of the population has declined significantly.'[86] Moreover, these policy changes in the eight years between 1977 and 1985 represented a huge ideological shift in the approach to dealing with food insecurity and shortage, and hence, malnutrition. From a subsidy that was a universal benefit available to everyone, food aid was transformed into a targetted benefit solely for the poor, and one possibly tinged with the stigma of the poor law, especially with the public naming of the recipients.[87]

The children of the poor were in the frontline of this inequality. In the immediate years after these policy changes, despite the continued downward trends in infant and child mortality, malnutrition among children remained high. Dias stated in 1986 that one in 12 children in the age group of zero to four years was acutely malnourished, and one in five chronically malnourished. The prevalence of acute malnutrition was highest in the age group of six to 24 months of age rising sharply at 12 months at the weaning stage. Chronic malnutrition (the long-term result of underfeeding) was highest in the three to five-year age group. This meant that nearly half of the children under five showed signs of undernourishment.[88] Underpinning this childhood malnutrition was the continuation of the high incidence of low birth weight babies. As noted earlier, a birth weight of under 2,500 grams was a significant handicap to health and survival in childhood, and a low birth weight indicated the ongoing high proportion of under-nourished and anaemic mothers. While this obviously related to levels of household income, Dias suggested that it also resulted from the distribution of food within the family. 'It is probably correct', she claimed, 'to generalise that in most poor families, the male, particularly the breadwinner, has a greater claim for the available food in the household', and that mothers were likely to forgo their share in order to feed the children. It was important, too, to 'dispel any incorrect perceptions and taboos regarding diet, and to promote the awareness that women in pregnancy or lactation calls for special care and attention'.[89] In 1985, a National Birth Weight Surveillance System (aided by the UNICEF) was instigated; it was intended to be island-wide, but a lack of resources restricted it to 17 Regional Divisional Health Services (RDHS) only. In the five years between 1986 and 1990, the recorded percentage of low birth weight in these divisions varied only a little—24.5 per cent in 1986 and 22.8 per cent in 1990.[90]

From the 1980s onwards, the UNICEF's Child Survival Policy initiative advocated the adoption of a fourfold strategy for increasing the survival and long-term health of the child. Known as GOBI—growth monitoring, ORT, breastfeeding and immunisation—all of these four interventions pertain to the question of child health. Immunisation is dealt with fully in the following chapter, Chapter 4, but only a brief summary of growth monitoring and ORT is provided in this chapter. They derive more from SPHC than PHC in that they were vertically organised specific interventions, and as such, have been subject to the same major criticism directed at all these top-down international initiatives. Also, despite its reliance on simple technologies for promoting child health, 'the way in which the campaign worked in practice undermined local initiatives and competences.'[91] However, these interventions were not innovations for Sri Lanka's maternal and child healthcare services, but

85 Edirisinghe, 'Recent Targeting Attempts in Sri Lanka's Food Stamp Scheme', 402.

86 Edirisinghe, 'Economic Reforms, Food Policy and the Poor in Sri Lanka', *Food Policy* 13, no. 1, 1988, 114.

87 Frustratingly, I have come across no sources where this issue of the effect of the association with the Poor Law has been investigated.

88 Dias, 'UNICEF Country Office Background Paper', 31.

89 Dias, 'UNICEF Country Office', 33.

90 *Annual Health Bulletin Sri Lanka 1990*, Ministry of Health and Women's Affairs, 1990, 115–16.

extensions of them. The last two were policies that had been pursued for many decades. However, as a result of this international initiative, they received extra impetus from the resources and technical assistance provided by the UNICEF and the WHO after their global launch. Growth monitoring and ORT were embarked upon in Sri Lanka as soon as the resources were made available by the WHO/UNICEF in 1984.

Growth monitoring, which was aimed at directing the mother's attention to the child, was kick-started in Sri Lanka in 1984 with a pilot project in the Moneragala District, and thereafter, was adopted island-wide. Mothers were expected to keep a growth chart (based, in this case, on the CARE chart and the Yellow Card of the Ministry of Health) of their child's progress.[92] The progressively high levels of literacy of Sri Lankan women provided circumstances conducive for success, as the policy relied on mothers being able to interpret the chart and record the child's growth correctly. However, a 1997 study found that literacy alone appeared to be insufficient and that 'length of schooling rather than literacy' *per se* was the 'marker of comprehension'.[93] The food supplements and supplies of *Triposha* offered by the welfare clinics also acted as a powerful incentive to encourage mothers to take their child to the local clinic if he or she was below the norm. The pilot project was largely successful, but Dias cautioned in 1986 that it would be 'imprudent to over-estimate the acceptance and practice of this method, particularly among poor households where the problems of childcare are at their acutest and where levels of education and literacy are relatively low'.[94] Pre-packaged salts based on the WHO/UNICEF recommendations began to be provided for diarrhoeal diseases again in a limited area at first, made available through hospitals, clinics, trained health workers and public health midwives in three SHS divisions. The UNICEF supported a unit for the home-based manufacture and distribution of ORT salts; in the first year it produced about one-third of the estimated requirement of 2 million packets, and it was planned to expand this to one 50 per cent of total needs.[95] Manufactured therapies such as these packaged salts have been criticised as bypassing and undermining local knowledge, but Dias commented in 1986 that 'at present, home preparations for rehydration are not generally known or in use.' At the same time, she advocated their development: 'medically approved homemade substitutes have a vital role to play in diarrhoea control, and should receive high priority.'[96]

The intervention most directly related to the nutrition of the infant and the very young child was the promotion of breastfeeding. A framework, without which this policy would have faltered at the start, had received a firm basis in Sri Lanka. First, a legislation relating to maternity benefits for working women was passed, and given that the most vulnerable of children came from poor households where mothers had to work, this was an essential prerequisite.[97] The earliest legislation on maternity benefits was a 1939 Act giving working mothers some basic rights; these were improved and expanded in a further Act in 1978. This act gave working mothers three months' maternity leave with full pay; a women could not be dismissed because of her pregnancy or five months before birth that would deprive her of maternity benefit; she could not be dismissed while on maternity leave; and nursing break provision was given for two nursing intervals of not less than one hour each a day, in addition to meal breaks.[98] In comparison, the earliest legislation for women workers in the UK was the Social

91 Justice, 'The Politics of Child Survival', 13; Ben Weiner, 'GOBI Versus PHC? Some Dangers of Selective Primary Health Care', *Social Science and Medicine* 26, no. 9, 1988, 963–69.

92 The growth chart produced by the Ministry of Health was based on the recommended WHO chart 'after appropriate modifications to suit local needs'. Malinga Fernando, *Annual Medical Report, 1984*, 76.

93 Manouri P. Senanayake, M. K. S. Gunawardena and D. S. P Peiris, 'Maternal Comprehension of Two Growth Charts in Sri Lanka', *Archives of Diseases in Childhood* 76, 1997, 361.

94 Dias, 'UNICEF Country Office Background Paper', 36–37.

95 Dias, 'UNICEF Country Office', 27.

96 Weiner, 'GOBI Versus PHC?', 966–67; Dias, 'UNICEF Country Office Background Paper: The State of the Child', 28.

97 Dias, 'UNICEF Country Office Background Paper', 36–37.

Security Act of 1973, which gave women maternity allowance for up to 18 weeks but no right of return to the job. This was followed by the 1975 Employment Protection Act, which gave 29 weeks leave and the right to return.

Second, bottle-feeding had to be discouraged. In 1981, the Thirty-fourth World Health Assembly had adopted an international code on the marketing of breast-milk substitutes. The code was a set of non-binding guidelines for governments, including the provision of objective information for mothers and all professionals involved in the nutrition of the infant and the young child, of the elimination of all direct marketing through advertising, gifts and samples etc., and of the recommendation that no health facility be used to promote infant formula.[99] Sri Lanka subscribed to this code, and no advertisements for infant milk foods were allowed in the public media.[100] Dias reported that 87 per cent of infants who were under six months were breast-fed, but according to data in the 1988 *Annual Health Bulletin*, the duration of breastfeeding had dropped from 19.4 months in 1974 to 17.3 months in 1986. Within this, there were some variations; the urban mothers of Colombo breast-fed for 13 months, while the rural mothers continued for another five months. The level of education also produced differences; the mean for women with little education was 19.5 months, but for those with higher education, it was 15.1 months.[101] Breastfeeding rates for the first six months remain high in Sri Lanka. Data from a recent Department of Health survey puts it at an average of 76 per cent for the first six months.[102] These figures appear quite favourable, but Dias, in 1986, pointed out a related issue. Studies of samples of breast milk by paediatricians showed that the average daily supply of Sri Lankan mothers was approximately 500 ml, very much below the average 800 ml of woman in the developed world. This made supplementary feeding more vital, but the weaning stage had proved to be the weakest stage of the infant's nutrition.[103]

A 1996 study of 2,956 children in urban and rural areas in Galle, Matara and Hambantota showed that there was a 'precipitous fall in the rate of weight gain' at around three–four months, just when supplementary feeding began, which D. G. Harendra de Silva attributed to both the inadequacy of 'energy density' weaning foods and to the 'amounts' of such foods. Mothers tended to rely largely on liquid foods (breast or formula milk and liquid *cunjee* [conjee or rice porridge]) and a few well-tried foods such as rice, lentils and potatoes), prompted, De Silva suggested, by a belief that other foods caused illness, especially diarrhoea.[104] Thus, this study found that there was no significant difference in weight between the various income groups in the first three–four months of growth; thereafter, children from higher income groups had marginally better growth, but all groups faltered in weight gain at five months. De Silva therefore concluded that 'the attitudes and practices of weaning is the major factor responsible for poor weaning practices rather than availability of food.'[105] His remedy to prevent this fall-off in weight was to improve 'the knowledge and practices regarding weaning more than improving the food

98 Laws of Sri Lanka, Maternity Benefits Ordinance, Act No. 13, 1978, available at www.srilankalaw.lk/Volume-V/maternity-benefits-ordinance (accessed 29 November 2016). It is difficult to ascertain how effectively these provisions were implemented.

99 UNICEF. *Annual Report 1981*, 18–19, available at www.unicef.org/about/history/files/unicef_annual_report (accessed 14 February 2015).

100 Dias, 'UNICEF Country Office Background Paper', 33.

101 *Annual Health Bulletin 1988*, Ministry of Health and Women's Affairs, 1988, 23.

102 *Sri Lanka Demographic and Health Survey, 2006/7*, Department of Census and Statistics, Colombo, 2008, Table II, available at www.statistics.gov.lk/social/dhs (accessed 27 August 2016).

103 Dias, 'UNICEF Country Office Background Paper', 35.

104 D. G. Harendra de Silva, 'Observations on Infant Nutrition, Weaning Practices, Probable Causes of Undernutrition and Recommendations', ADB Project, Marga Institute, 1996, 7.

105 De Silva, 'Observations', 13.

resources', but then he qualified this in parenthesis with the acknowledgment that food resources also 'may be important in the very low income groups'.[106]

A significant voluntary contribution to feeding the vulnerable was developed with aid from international donors in the late 1970s by the self-help Buddhist Sarvodaya Shramada movement. Founded in 1958, the general objective of this movement was to motivate people 'irrespective of age or social status to share their time, thought, and effort voluntarily to bring about the general well-being of all individuals, families, groups, villages, and urban communities'.[107] Specifically with regard to children, its objective was to provide adequate nutrition to the child and his or her family. The programme that it developed centred around the community kitchen in a village, and was planned with the assistance and guidance of the local mothers' group, with village girls trained to organise it. These community kitchens provided a breakfast of *Kola Kande* (a nutritious herbal porridge), a fruit drink mid-morning, and a lunch of rice, breadfruit, sweet potatoes, jackfruit, etc. The food was prepared by the mothers of the village from green leaves and fruit that was locally abundant, but did not form part of the normal diet of families, deemed by the organisers to be 'due to ignorance'.[108] The meals were primarily for pre-school children, but if there was sufficient available, then the sick and aged were also included. Home gardens were encouraged where the Agricultural Department and the Sarvodaya nursery and stores distributed plants and seeds, and gave technical assistance and instructions.[109] In the 1980s, Sarvodaya received financial help from international donors to extend its work across the whole island. From the early 1990s, these funds dried up and it became reliant on its own resources as in the beginning; but it has continued its work in community building to the present.[110]

In the 1990s, the government turned its attention to anti-poverty programmes within which food aid was integral. The first of these, President Premadasa's Janasaviya Programme, introduced in 1989, was designed to narrow the growing gap between the top 20 per cent of wage earners and the bottom 20 per cent, and to address the deficiency in calorie consumption of those at the bottom. In the first phase of the programme, everyone who received food stamps was given a Janasaviya Entitlement Certificate (this was 2.3 million out of a population of 16 million). In the second phase, a proportion of those holding the Entitlement Certificates were selected by popular participation to receive a Janasaviya grant. This was divided into two parts: Rs 2,500 per month was paid into the recipient's bank account, and Rs 1,042 was set aside for two years, at the end of which the capital sum was to be used for some income-generating venture. The remainder Rs 1,458 per month was paid in the form of two coupon cards—one for Rs 1,000 and the other for Rs 458. The former was for buying goods from the Janasaviya basket of goods stocked at the local cooperative stores.

These were goods designated for ordinary consumption, but did not include what might be termed luxury items, such as hot chocolate. The other coupon could be used either to save or to buy more from the food basket. In return for these benefits, the household was to provide 24 days of labour per month to a training or production programme.[111] This programme was billed as a development strategy with the ultimate aim of creating employment, and not a welfare benefit. However, it was even at the outset somewhat unrealistic; unemployment was about 20 per cent of the workforce (about 1.2 million people), and to create sufficient jobs through

106 De Silva, 13.

107 'Sarvodaya Child and Family Welfare Services in Sri Lanka', Background Paper, 1981, 1.3, 2. Issued by Sarvodaya, available at the Marga Institute Library. See also the website, available at www.sarvodaya.org, for general information about the organisation's history and present-day activities.

108 'Sarvodaya', 4.

109 'Sarvodaya', 4–5.

110 Sarvodaya Website, available at www.sarvodaya.org (accessed 6 December 2016).

111 M. L. Marasinghe, 'Poverty Elimination Through Poverty Alleviation: The Janasaviya Programme of Sri Lanka for National Development', *Third World Legal Studies* 12, no. 1/2,1993, 12–42, 16, 19–21.

Janasuviya would involve vast sums of unattainable funds.[112] The election of the People's Alliance Government saw the replacement of Janasuviya by the Samurdhi Programme in 1995; all other welfare benefits were discontinued. Samurdhi was also designed to promote employment and worked on the same lines as its predecessor. It had three components: the first was a consumption grant transfer (a food stamp) to eligible households; the second, a savings and credit programme operated through Samurdhi banks; and the third was a rehabilitation and development of community infrastructure through workfare and social development processes.[113]

There is a strong economic argument for the means testing of benefits and the targetting of those who were most in need, which became the approach of the Sri Lankan government after 1977. However, means testing and targetting rely on administrative integrity and objectivity, and if that is not present, then the help does not always go to those who are entitled to it. The following are two illustrations from the Sri Lankan context 20 years apart, which illustrate how such intentions can be distorted. They also illustrate the difficulties of relying on communities to identify need. Communities themselves have hierarchies, harbour conflicts, disputes and individual interests, and thus, they cannot be relied upon to be disinterested actors.[114] The first case is taken from a Marga Institute study on nutrition in 1983. In this study, the villagers of Minipogoda complained to a visiting researcher about inconsistency in the distribution of the *Triposha* supplements by the public health midwife. The midwife had announced that only those who came to her discussions would be given *Triposha* but then it was seen that others who had not attended, 'presumably her favourites', had been given *Triposha* anyway. She had also appointed two children, again from her 'favourite households to help her in her work'.[115] The second example is taken from a World Bank assessment of the Samurdhi programme in 2003. It found that 'There are large disparities in Samurdhi coverage of income across provinces and types of settlements. Households residing in urban middle income neighbourhoods, irrigation colonies and estates are least likely to receive food grants.'[116]

This can be attributed again to some form of favouritism:

> The probability of being a Samurdhi recipient differs significantly by ethnic status. Qualitative results unambiguously suggest that other characteristics such as party affiliation and voting patterns also influenced allocation of Samurdhi consumption grants. These patterns indicate that targeting errors are non-random, but rather reflect flaws in the design of the program that allow for the deliberate omission of certain groups of individuals.[117]

An example of this, cited in the Report, was of a fishing village where 'respondents stated that a man with two machine boats was selected because he had strong influence with the ruling party.'[118] The result of this, Elena

112 Marasinghe, 'Poverty Elimination', 33.

113 Elena Glinskaya, 'An Empirical Evaluation of Samurdhi Program', Paper Prepared as a Background Paper for Sri Lanka Poverty Assessment, Report No 22-535-CE, World Bank, June 2003, 1, available at www.worldbank.org/INTDECINEQ/resources/samurdhi/June042003.pdf (accessed 6 December 2016).

114 See, for example, Nici Nelson and Susan Wright, *Power and Participatory Development: Theory and Practice* (Bradford: ITGG Publishing, 1995); Giles Moran and Kritian Stokke, 'Participatory Development and Empowerment: The Dangers of Localism', *Asian Third World Quarterly* 2, no. 21, 2000, 247–68.

115 Chandrani Wanigasooriva, 'Action Research Project on Health/Nutrition/Home Gardens (Progress Report No. 2 February 1883)', Marga Institute. Sri Lanka Centre for Development Studies, Colombo, 1983, 17.

116 Glinskaya, 'An Empirical Evaluation of Samurdhi Program', 18.

117 Glinskaya, 'Empirical Evaluation', 18.

118 Glinskaya, 20.

Glinskaya argued, was that 'Samurdhi misses almost 40 percent of households ranked in the lowest expenditure quintile' while a 'substantial number of households with higher relatively welfare receive Samurdhi consumption grants and other forms of Samurdhi assistance'.[119] This unfairness, she argued, could be solved in time with the application of good governance. The problems with these targetted anti-poverty programmes highlighted in these two examples suggest at least some reasons why Sri Lanka has, despite these efforts, failed to remedy the problem of poor nutrition among its most vulnerable citizens.

CONCLUSION

These policies to reach the poorest in the community, through welfare and development programmes, placed emphasis on integrated food aid benefits in order to raise levels of nutrition, especially important to children in poor households. They have clearly failed in their objective. Table 3.6 shows that at the millennium, 27 per cent of Sri Lanka's children still suffered from some kind of malnutrition, 13.5 per cent of whom were acutely malnourished.

Children in the estate sector continued to suffer from the highest levels of malnutrition, as shown above; and given that 91 per cent of households on the estates fall into the poor category, compared with 42 per cent and 20 per cent in the rural and urban sectors, respectively, this is understandable. Priyanka Jawardena has argued that improvement depends on inter-sectoral policies aimed at improvements in healthcare services, education, and agricultural reform and rural development in the estate sector particularly; but such policies are also relevant for the poor generally.[121] These are just the problems that are hardest to address in the face of economic constraints. She also interestingly found that a 'significant reason for child malnutrition was the intake of the 'wrong' kind of food.'[122] This would seem on the surface to be an easier problem to address; but how do governments and health workers encourage people, and not just the poor, to want what they need? This is a task made hugely more difficult today by the forces of global food capitalism. Nutrition has been, and still is, a major public health issue for governments, in both rich and developing countries. Bad nutrition is a cause of ill health, obesity is a growing worldwide problem, and Sri Lanka now has the double disease burden of both malnutrition and obesity. Encouraging good eating habits will fail if it is not rooted in people's real-life capabilities and experiences. Injunctures on eating healthily are particularly sensitive, given how integral food is to family and cultural life. Moreover, food is a source of pleasure as well as nutrients. As Jayawadena found in her 2014 study, among the poorest on the estates, the nutritional component of food was not the only, or even the most essential criterion upon which their purchases were based. B. S. Rowntree castigated the working classes of England a 100 years earlier for their reliance on bread and jam and sugary tea for sustenance, when they could have spent their meagre wages on the healthy alternatives of porridge, pease pudding and vegetable broth.[123] Perhaps, as Abhijit Banerjee and Esther Duflo have suggested for the poor today, 'getting more calories was not a priority. Getting better tasting ones was.'[124]

Accessible affordable healthcare, especially maternal and child health services; education, particularly of women; food security and employment opportunities; all are necessary prerequisites and all have featured in Sri Lanka's government welfare policies. However, they have so far still failed to address the problem of malnutrition in children and its subsequent effects on child health. These policies underwent profound change during the period

119 Glinskaya, 2.

121 Priyanka Jawardena, 'Underlying Causes of Child and Maternal Malnutrition in the Estate Sector of Sri Lanka', *Journal of South Asian Studies* 2, no. 3, 2014, 250.

122 Jawardena, 'Underlying Causes', 254.

123 See B. S. Rowntree, *Poverty: A Study of Town Life, 1901* (London: Macmillan, 1902).

124 Abhijit Banerjee and Esther Duflo, *Poor Economics: Barefoot Hedge-fund Managers, DIY Doctors and the Surprising Truth about Life on Less Than $1 a Day* (London: Penguin Books, 2011), 24.

of this study—from universal to targetted benefits—but this change was driven by economic policy, which narrowed the range of welfare interventions, and which paradoxically was at odds with the broad perspective advocated at Alma Ata at the same time. Sri Lanka continues to follow its unique path of infant mortality rates at par with the developed Western world, but with childhood malnutrition levels typical of a developing country. The root cause of this remains poverty and social inequality, and the patterns of behaviour that they induce among rich and poor. On a more optimistic note, the next chapter, Chapter 4, charts one of its more successful interventions for child health, based on the narrower approach of an SPHC policy—childhood immunisation.

Table 3.6. Nutritional Status of Children, 2000.

	Chronic Malnutrition (Height for Age)	*Acute Malnutrition (Weight for Height)*	*Weight for Age (Composite of Acute and Under-nutrition)*	*Number of Children*
Child's Age (in Months)				
Three-Five	3.9	1.3	0.7	152
Six-11	5.7	10.3	20.2	282
12-23	16.2	18.2	28.8	549
24-35	12.4	13.3	34.0	526
36-47	13.4	13.9	30.7	531
48-59	19.1	15.9	37.9	491
Sector				
Colombo	12.2	10.1	18.2	336
Other Urban	8.6	6.3	21.3	221
Rural	12.8	15.9	30.8	1,770
Estates	33.8	11.8	44.1	204
Total	13.5	14.0	29.4	2,531

Source: Compiled from Table 1.9, Annual Health Bulletin 2002, (Colombo: Department of Health Services, 2002), 11.[120]

120 The figures used in this table by the Department in the Bulletin came from the *Sri Lanka Demographic and Health Survey 2000*.

4. The Technological Fix for Child Health

Immunisation

Immunisation against communicable diseases is a powerful weapon in the public health armoury, and as a policy directed towards saving children's lives, has an instant appeal. Also, by the late-1970s, children's health was given a high priority on the global stage. How vaccines are produced, administered and perceived, however, greatly affect the degree of immunity they convey both on the individual and the community. There has to be a reliable supply of potent vaccine, cold-chain resources, easy access to health services, the political will of authorities at the top, and a commitment from local health workers at the bottom. There crucially also has to be a willing public, preferably a public with an active demand rather than a mere passive acceptance of immunisation in order for programmes to be sustainable.[1] Immunisation programmes raise fundamental questions of state power. The provision of services to provide care and cure for the sick generally provokes such questions only in times of epidemics; but immunisation is a preventive measure to be inflicted on the healthy, and particularly, on healthy children. Its benefits, except in times of outbreaks, are not immediately obvious. The population has to be persuaded to give up some autonomy in their decision-making for the sake of the greater good. The alternative is coercion, and that is even more likely to provoke resistance.[2] Immunisation programmes thus exemplify, in essence, that public health conundrum of the conflict between the collective good and individual liberty. Arguably, therefore, success depends on two aspects, not only the 'organisation and robustness of a health system', but also on the 'popular trust in it'.[3] Sri Lanka's long-established medical services provided a good basis for an extended vaccination programme, both in terms of their coverage and their popular use.

In the decades up to the 1970s, immunisation coverage in developing countries was patchy and sporadic. Influenced by the success of the Smallpox Eradication Campaign in 1974, the WHO launched the Expanded Programme of Immunization (EPI). The EPI had the objective of improving the coverage of vaccinations, estimated to be fewer than 20 per cent of the 85 million children born annually in developing countries. With the technical assistance of the WHO and material resources from the UNICEF, the intention was to expand the coverage so that the majority of the world's children were immunised. Furthermore, as highlighted by the UNICEF in its 1977 Annual Report, immunisation was 'an important component of primary health care which because it is based on the widest possible access to communities presents a unique opportunity to extend coverage'.[4] To achieve the targets laid down by the EPI, Ralph Henderson, head of the WHO EPI Unit, argued that existing health facilities would have to 'develop outreach services' and provide 'effective coverage' through the 'construction of new facilities or the development of mobile services that reach those residing outside of existing catchment areas'.[5] Immunisation services would break the 'vicious cycle of infection and malnutrition' in the child. To some extent, therefore, primary healthcare and immunisation were interdependent. However, he continued, the EPI was 'best viewed as one of a limited number of low cost, high impact health intervention programs'. These included 'oral rehydration for diarrheal disease; malaria treatment and prophylaxis; and

1 See Mark Nichter, 'Vaccinations in the Third World: A Consideration of Community Demand', *Social Science and Medicine* 41, no. 3, 1995, 617–32.

2 See Nadia Durbach, *Bodily Matters: The Anti-Vaccination Movement in England, 1853–1907* (Durham: Duke University Press, 2005); Neils Brimnes, 'Variolation, Vaccination and Popular Resistance in Early Colonial South India', *Medical History* 48, 2004, 199–228.

3 Stuart Blume, Jagrati Jani and Sidsel Roalkvam, 'Saving Children's Lives: Perspectives on Immunisation', in *Protecting the World's Children: Immunisation Policies and Practices*, ed. Sidsel Roalkvam, Desmond McNeill and Stuart Blume (Oxford: Oxford University Press, 2013), 28.

4 UNICEF. *Annual Report 1977*, 16, available at www.unicef.org/history/files/unicef_annual_report_1978pdf (accessed 27 November 2015).

5 Ralph H. Henderson, 'Primary Health Care as a Practical Means for Measles Control', *Reviews of Infectious Diseases* 5, no. 3, 1983, 592–95.

counselling in child spacing, nutrition during pregnancy, breast feeding, weaning, maintenance of clean water, and sanitation'.[6] From this perspective, the EPI was therefore the perfect fit for James Grant's Child Survival and Development Revolution of the 1980s, and it formed an integral part of the GOBI strategy.

Vaccines offered a technical fix and the opportunity for evading the socio-economic conditions (beyond remedy by poor governments on their own), which caused the frequently fatal interaction between infectious agent and poverty diseases, such as respiratory infections and gastro-intestinal problems. Critics argued, however, that expanding immunisation services, rather than providing the opportunity to extend primary healthcare services, directed limited resources away from them, and distorted healthcare delivery. Additionally, the reliance on the technological fix was just another example of how international policy directives attempted to bypass local social behaviours and cultures.[7] Examining immunisation policies in Sri Lanka presents the ideal opportunity to explore the questions raised in Introduction. How successfully did Sri Lanka protect its children against communicable diseases? What role did the WHO play? And what are the debates around PHC and SPHC and the impact of an international policy transfer to a developing country?

Nevertheless, however contentious it was as an international health policy, for the individual child and for the medical professional charged with her care, immunisation offered the hope of prevention and the ending of unnecessary suffering. Consider, for example, this distressing description of pertussis or whooping cough in young children as experienced by a health worker in Sri Lanka: 'The health worker's usual image of pertussis is a thin child between two and six years old, perhaps with alarming red spots in the eyes, suffering an agonizing cough and whoop, vomiting ….' The only advice that could be given was 'to feed the child again after vomiting'.[8] For even younger children, however, the illness was much more threatening:

> In infants, pertussis may present with episodes of not breathing (apnoea). Hypoxia due to either apnoea or prolonged coughing spells may cause neurological problems ranging from tremors or convulsions …. Pneumonia is another common complication …. Children who develop the disease lose weight and may take more than 8 months to catch up lost growth.[9]

Immunisation against infectious diseases began in Sri Lanka with the 1886 Vaccination Ordinance for smallpox. This was followed by BCG in 1949, vaccination against diphtheria, pertussis, tetanus (DPT) in 1961, and the oral vaccine against poliomyelitis in 1962. There was only a patchy coverage of the population until 1977 when EPI was first phased in; in the following year, it became operational throughout the whole island. In 1985, the measles vaccine was included; in 1988 the Japanese Encephalitis vaccine was introduced, and the government committed itself to the target of polio eradication by 2000. Rubella was included in 1996, and Viral Hepatitis from 2003. Dr W. S. Jayakuru, Sri Lanka's Epidemiologist, claimed that by 1989, 'Universal Child Immunization …. was achieved with coverage rates of more than 80% for all antigens', and subsequently, she added, there had been some 'fine-tuning' of the programme.[10] The first section of this chapter concentrates on the BCG vaccination programme and complements the account of TB in Chapter 2. The second section of this chapter will chart the progress of the EPI from the late-1970s, exploring its effectiveness, and the organisational,

6 Henderson, 'Primary Health Care', 593.

7 See, for example, Peter Wright, 'Global Immunization: A Medical Perspective', *Social Science and Medicine* 41, no. 5, 1995, 609–16; Blume, Jani and Roalkvam, 'Saving Children's Lives: Perspectives on Immunisation', 20–21.

8 'Pertussis', *Weekly Epidemiological Report*, Vol. 37, 1990, 8–14, 3, Medical Library, University of Colombo.

9 'Pertussis', 3.

10 W. S. Jayakuru, Epidemiologist, Consultation on Strategies for Acceleration of Initiatives for Reduction/Elimination/Eradication of EPI Diseases in SEAR Countries—Thailand—19–23 December 1994, 'Country Report—Sri Lanka', 2, Third Generation Files, 18-446-7SRL (Jkt1), EPI, WHO.

logistical and human problems encountered in its implementation. Both sections are limited, again, in their analysis by the nature of the sources. Significantly, the perspective of the recipients of immunisations is obscured by their top-down nature; it can only be teased out from official reports, whether originating at the international or national level. How the individual responded demands a more ethnographical approach, which is not attempted here and is left to those better qualified to pursue the subject. That there were doubts as to the efficacy of the official programme, however, can be found in these sources and in the published research of Sri Lankan medical professionals.

THE BCG VACCINATION PROGRAMME

The mass vaccination of populations with BCG, as Christian McMillen has argued, is 'the most far reaching and longest-lasting prophylactic medical campaign in world history'; developed in 1908, BCG remains the only TB vaccine, and an estimated 4.5 billion people have received it till date.[11] Trials of the vaccine were conducted in the interwar period, and campaigns were instigated in a war-ravaged Europe. But this was also when the WHO decided to make TB the focus of its efforts on the world health stage, and BCG vaccination was launched across the globe.[12] India became the first developing country to begin a campaign under the auspices of the International Tuberculosis Campaign (ITC), but Sri Lanka followed not far behind when the government similarly entered into an agreement with the ITC early in 1949. In January 1949, the MO, Dr H. M. Vanderwall, undertook a course of training in Copenhagen and the UNICEF provided him with field experience on a BCG campaign in Czechoslovakia. Three local teams were appointed, consisting of a doctor, a nurse and a clerk, and were given preliminary training; and in March, a Scandinavian demonstration team (a doctor and two nurses) arrived on the island. The Campaign was launched on 14 March by the Minister of Health and Local Government, S. W. R. D. Bandaranaike, and the vaccine given for the first time in Colombo on 29 March. The headquarters of the BCG campaign was at the Darley Road Chest clinic in Colombo, where the MO-in-charge was based on his return in May 1949.[13]

BCG vaccination, since its inception, has been a controversial measure; doubts as to its safety and its efficacy have accompanied its spread across the globe. In 1930, a contaminated strain of the vaccine killed 76 out of 250 vaccinated infants in Lubeck, Germany, a tragedy that has haunted BCG to this day.[14] The question of its safety in the early stages of campaigns was consistently raised, but soon settled. However, its effectiveness remained a matter of dispute. It continued to be tested in numerous trials, the results of which ranged from zero effectiveness to 80 per cent. From this divergence, McMillen has argued, 'two camps emerged: the skeptical and the faithful'; both camps at times questioned their stance, but in the absence of any other means to protect the world's population from TB, it came down to 'if a possibility existed that a cheap vaccine could reduce the world's burden of TB, why not try it?'[15] The controversy over the vaccine generated opposition to campaigns, but it was India which was home, McMillen claims, to the most far-reaching of any anti-BCG movement where it 'lasted longer and reduced the number of vaccinations significantly'.[16]

11 Christian McMillen, *Discovering Tuberculosis: A Global History, 1900 to the Present* (New Haven; London: Yale University Press, 2015), 74.

12 McMillen, *Discovering Tuberculosis*, 84–90; Niels Brimnes, 'Vikings against Tuberculosis: The International Tuberculosis Campaign in India, 1948–1951', *Bulletin of the History of Medicine* 81, no. 2, 2007, 407–30; Niels Brimnes, *Languished Hopes: Tuberculosis, the State and International Assistance in Twentieth Century India* (Hyderabad: Orient BlackSwan, 2016).

13 *Report of the Director of Medical and Sanitary Services, 1949*, BCG Campaign, B100. S. F. Chellappah, the DMS, did consider the option of making BCG compulsory, but did not pursue the idea. Chellappah to Chisholm, 7 September 1948, 458-9-1, Technical Questions, Tuberculosis BCGH Campaign in Ceylon, WHO Archives.

14 McMillen, *Discovering Tuberculosis*, 74–75.

15 McMillen, 76.

Sri Lanka did not escape these controversies altogether when the BCG vaccination campaign was initiated; the debates on the island mirrored those in India. However, it did not follow its northern neighbour and generate any organised opposition that affected the ultimate take-up of the vaccination.[17] Interviewed by *The Ceylon Daily News*, Dr E. Mayer from the WHO, who had arrived for the launch of the campaign in March 1949, began with the statement: 'BCG is perfectly harmless vaccination and cannot produce tuberculosis.'[18] He was responding, the article claimed, to the 'controversy in the Indian press, and to some degree in medical circles in Ceylon' that BCG was not being used in the US until further trials had established its 'efficacy and harmlessness', the implication being that the population of the developing world were being used as guinea pigs.[19] It was in the spring of 1949 that, according to McMillen, the opposition to the vaccine in India 'was most energetic and visible', and thus, it is not surprising that this debate spilled over into Sri Lanka.[20] The first recipients of the vaccine were the 2,000 strong staff of the Colombo General Hospital; this included the doctors, nurses, midwives and attendants. The three Sri Lankan teams and the ITC team under Dr S. L. Norstedt conducted the Mantoux Test on all the staff and then vaccinated those who were deemed in need.[21] It seems that it was with the planned extension of the vaccination to schoolchildren in the Colombo area that resistance emerged.

The Ceylon Observer of 5 July 1949 carried the front-page headline, 'BCG: DOCTORS IN TWO OPPOSITE CAMPS: Puzzled Parents Refuse Consent'.[22] To prepare the ground for vaccination in Colombo's schools, a meeting among 40 school principals, leading officers from the BCG teams and the acting DHS, Dr J. de S. Siriwardena, had been held on 29 June 1949. The active help of the teachers was seen as essential in gaining the cooperation of the parents.[23] Although at this meeting, all the principals agreed to provide their support, it became clear in the week that followed that many had reservations, perhaps in response to the reactions of the parents. While the Rector of St Joseph's College gave his full backing to the campaign, other principals were not so eager. Mrs L. G. Loos, principal of the Methodist College, Colombo, stated that at first the majority of the parents had been in favour, but then several had withdrawn their consent after medical advice. At Musaeus College, the majority of the parents were against BCG vaccination, according to the principal, not on medical advice, but 'because it was something new and they did not know the full implications of the treatment'. At Bishop's College, the parents were more or less split down the middle; the principal of Visakha Vidyala was going to hold a meeting of the staff to sound out opinion before sending out the consent forms; and the Warden of St Thomas' College was awaiting the results of the campaign in the Colombo Schools where it was being tried out first.[24] These schools were among the most prestigious in Sri Lanka. They served the middle classes, who would have the education and confidence to question the government's decision, and it seems that they did so and

16 McMillen, 92. See also Brimnes, *Languished Hopes*.

17 For an account of resistance in India, see Christian McMillen and Neils Brimnes, 'Medical Modernisation and Medical Nationalism: Resistance to Mass Tuberculosis Vaccination in Post-Colonial India, 1948–1955', in *Comparative Studies in Society and History*, 52, no. 1, 2010, 180–209, available at 10.1017/S0010417509990375 (accessed 1 January 2019).

18 'Potency of BCG Vaccine', *The Ceylon Daily News*, 14 March 1949, 3.

19 'Potency of BCG', 3.

20 McMillen, *Discovering Tuberculosis*, 98.

21 'BCG Vaccine Campaign Will Begin on Monday: Tests on 2,000 Hospitals Staff to Begin With', *The Ceylon Daily News*, 12 March 1949, 1. The vaccine was flown in weekly by plane from the Institute at Madras as it only kept its potency for 10 days.

22 'BCG: DOCTORS IN TWO OPPOSITE CAMPS: Puzzled Parents Refuse Consent: Minister Determined to Go on with Campaign', *The Ceylon Observer*, 5 July 1949, 1.

23 'Campaign of BCG Vaccination to School Children', *Dinamina*, 29 June, 1949, 1.

24 'BCG: DOCTORS IN TWO OPPOSITE CAMPS'.

understandably, when the medical profession in Colombo was openly undecided about the safety and efficacy of the vaccine.

While Dr Siriwardena assured the *Daily News* that he knew of no doctors in government service who were against BCG, private practitioners had more scope to question it. One such Colombo doctor, E. V. Ratnam, had advised parents not to vaccinate their children immediately on the grounds that the 'authorities had not done much work nor achieved any results as yet. "Wait and see" would be his policy.'[25] Dr A. R. Perera was more categoric: 'I am not in favour of it', he was quoted as saying, as it was still in the 'experimental stage'. He was not going to allow his children to be vaccinated.[26] Other doctors were cited as being in favour of the vaccination. Those parents and doctors who resisted the vaccination were denounced by the Minister of Health, S. W. R. D. Bandaranaike: 'If there is opposition from certain parents, it may be that their children live in surroundings and under conditions (such as those that obtain in the Cinnamon Gardens) that did not make liable for infection.' This opposition from (by implication) a few well-off, selfish parents was to have no effect; the campaign, he stated, was 'to be intensified on a mass scale. For in a poor country, like ours, it is the only way to arrest the spread of tuberculosis.'[27]

However, confusingly for parents, alongside this assertion, an accompanying article contains an opposing message from the Sri Lankan Director of Tuberculosis, Dr G. E. Ranawake. He 'preferred', the article wrote, 'natural immunisation. No child was born with tuberculosis resistance but gradually acquired it. This immunisation became permanent, whereas, B. C. G. lasted only for a period.'[28] In his 1967 account of TB, Dr L. H. F. Jayasuriya, Chair of the CNAPT, aired and refuted this idea, suggesting that this may have been a constant argument. Jayasuriya was unequivocal in his support of the vaccination: 'a thorough and extensive programme of BCG vaccination is imperative in Ceylon on account of the large reservoir of infection in the community.'[29]

In order to encourage the take-up of BCG in the face of these claims and counter-claims, the Medical Department embarked on a health education campaign. As Paul Greenough has observed, for immunisation to be successful, '[t]he public must feel itself to be a willing subject.'[30] The education of the public into its benefits was a crucial element of immunisation campaigns. Two hundred thousand copies of a leaflet entitled 'What is Tuberculosis?' were distributed—1,00,000 in Sinhalese and 50,000 each in English and Tamil. A poster about BCG was issued, a series of cinema slides on the BCG campaign were displayed in all Colombo cinemas, and articles were placed in the English and vernacular press.[31] For example, the March 28 edition of the Sinhala-language newspaper *Dinamina* carried an article, 'Things You Should Know About Tuberculosis', which was designed to show why BCG was necessary. TB was a germ, it informed its readers; it was not 'hereditary' but was caught from the 'saliva' of TB sufferers, and its spread was due to the 'social and economic conditions' of the country. It was described as 'the heritage of modern countries' and as 'abundant in urban areas'. If the readers were in any doubt as to the need for BCG, they were reminded that the symptoms of TB were 'dangerous and silent'.[32] According to the Medical Department, the campaign for the vaccination of schoolchildren in this year,

25 'BCG'.

26 'BCG'.

27 'BCG'.

28 'Dr Ranawake Prefers Natural Immunisation', *The Ceylon Observer*, 5 July 1949, 1.

29 L. H. F. Jayasuriya, *The Challenge of Tuberculosis* (Colombo: Wesley Press, 1967), 113, 116.

30 Paul Greenough, 'Global Immunization and Culture: Compliance and Resistance in Large Scale Public Health Campaigns', *Social Science and Medicine* 41, no. 3, 1995, 633–45.

31 *Report of the Director of Medical and Sanitary Services, 1949*, Special Activities, BCG Campaign, B167.

32 'Things That You Should Know about TB: What is Expected from the BCG Vaccination', *Dinamina*, 28 March 1949, 6.

1949, was reasonably successful. Out of the 5,964 schoolchildren Mantoux tested, 1,755 or over 90 per cent of the negative reactors had been vaccinated by the end of December. Candidates for vaccination were at first tuberculin-tester (Mantoux Test) to ascertain if they had an existing immunity to TB, and only those who had a negative reaction to this test were vaccinated. This twofold process remained the standard procedure until BCG vaccination by direct injection, as recommended by the WHO Expert Committee, was adopted in 1967 and freeze-dried vaccine was introduced.[33]

By the end of 1949, the plans for extending the campaign to the whole island were finalised. This scheme would involve all MOHs in the designated area, who, after being given the necessary information would, three months before the vaccination campaign began, carry out intensive propaganda, first of all, within their own staff. They would then extend this to schools, to other adult groups, and hopefully secure the cooperation of local authorities, medical practitioners, priests, teachers and local societies. This was Health Education-centred, as it had been pioneered the year before, on public meetings, posters and handbills, cinema shows, distribution of pamphlets on TB and BCG, talks to local authorities and house-to-house propaganda. A 'serious handicap' to these BCG educational efforts was, the DMS reported, the lack of a cinema van and electricity to power the projector. Hence, 'in most of the villages where cinema shows could have been particularly useful, this most persuasive form of Health Education could not be used.'[34] Furthermore, even when films could be shown, they were foreign, whereas locally made films would 'prove of greater interest to local audiences'.[35]

In January 1950, the new plan was put into operation, initially only in the western division of the health services. One team continued the work in Colombo, and as soon as schools reopened in January, two further teams began operating successively in Kalutara, Matugama, Agalawatte and Horana. During school holidays, non-school groups such as outstation hospital staff and the estate population were vaccinated. The ideal was that four or five schools should be visited every day (a maximum of 1,000 children), but this target could only be achieved where roads could be driven on and where schools closed together. More often than not, this was not the case; schools could be scattered apart and not accessible by car or van, and thus, teams 'transporting their equipment have had to walk long distances to schools, sometimes as far as three miles'.[36] As it was acknowledged that three teams were not enough to conduct an island-wide campaign covering two million people within the target time of three years, the ITC provided assistance for a further five teams. In all, eight teams began to operate in 1951 (one permanently based in Colombo as a base team). For most of the year, these teams worked in the Western Province (WP), until September, when an intensive campaign began in the NWP.[37] As with most health initiatives, programmes radiated out from Colombo and the WP, only gradually extending to the further outreaches of the island, indicating again the inequities in health provision. In 1951, for example, the CNAPT claimed to have repeatedly urged the government to carry out an intensive BCG campaign in the Jaffna area where TB flourished, particularly amid the 'insanitary conditions in overcrowded slum conditions' of the provincial town.[38] Their pleas were ultimately successful, and two teams arrived in the following year and tested 27,022 cases.[39]

33 Jayasuriya, *Challenge of Tuberculosis*, 115. Although direct injections of BCG meant that those already infected were injected superfluously, it saved time and money, and increased coverage and output.

34 *Report of the Director of Medical and Sanitary Services, 1950*, Special Activities, BCG Campaign, B 138, SLNA.

35 *Report of Director, 1950*, BCG Campaign.

36 *Report of Director, 1950*, BCG Campaign, B 139.

37 *Report of the Director of Medical and Sanitary Services, 1951*, BCG Campaign, B 201, SLNA.

38 CNAPT, Annual Report, 1951, 'Appendix B, Report of the Jaffna Branch', 18.

39 CNAPT, Annual Report, 1951, 'Jaffna Branch', 58.

The BCG target of 3.5 million people vaccinated was reached by the end of 1957, and in 1958, the campaign was decentralised so that the seven teams were permanently based in the provincial chest clinics at Colombo, Kandy, Galle, Ratnapura, Kurunegala, Anuradhapura and Jaffna.[40] In October 1959, BCG work was focused entirely on the school population under a planned three-year programme, with the objective of covering all schools in the island within three years.[41] The 1960s saw two further three-year plans to vaccinate all schoolchildren, starting in 1963 and 1967. A further extension of the work was the vaccination of all newborns, beginning in the De Soysa and Castle Street Maternity Hospitals in Colombo in 1963, with the aim of eventually extending it to the other major hospitals.[42] By the end of 1967, 20 hospitals were vaccinating newborns and it was also being done in the eight municipal maternity homes of Colombo (the injections were done by specially trained nurses), and a total of 63,603 babies, it was reported, had been vaccinated since the practice had begun.[43] This strategy was based on the fact that the majority of deliveries took place in a hospital or maternity home. In 1975, for instance, this amounted to 70 per cent of deliveries, and in the same year, it was claimed that 1,60,000 newborns (about 45 per cent of the total) had been vaccinated. A further 70,000 infants returned to the hospital for vaccination, and the MOH clinics had vaccinated another 1,00,000.[44] Children were re-vaccinated in the fifth grade at school, originally by the special teams; but by 1975, PHIs had largely taken over this task. In 1975, 4,05,000 children were re-vaccinated. The leader of the chest clinic was responsible for planning, organisation and evaluation, and scar counts were routinely conducted in schools. In villages where low scar counts were found, special campaigns were launched with the help of volunteers.[45] Although these efforts were directed at infants and children, this was done as it was thought that the BCG vaccination offered protection against TB in adulthood. It was only after the Chingleput Trial that it was marketed as preventing childhood TB.

With the instigation in 1968 of the integrated tuberculosis control programme, the specialist BCG teams were wound up, and the vaccinations were conducted by the staff of the hospitals or the general health agencies, thus integrating it into the primary healthcare services. The next significant step for the BCG programme was the launch of the EPI in Sri Lanka in 1978, of which the BCG programme became theoretically a part, although its methodology remained unchanged, and it continued to be delivered by the general health staff. After the initial resistance to BCG when it was first introduced, there is little evidence in the sources of outright opposition; but there were indications of indifference on the part of both professionals and parents.

The effectiveness of BCG was continually brought into question as trials continued to show varying results. However, as McMillen has so cogently argued, whatever the results of the studies, a 'combination of faith and futility won—the faith that the problems could be solved, and the futility that stemmed from knowing that in many places there was simply nothing else to use.'[46] Explanations could always be found for the varying results, even for those that gave a verdict of zero per cent protection. One group of arguments focused on the logistical problems of administering the vaccine in developing countries. To take an example from Sri Lanka, after 10 years of its use in the island, an advisory WHO BCG Assessment Team in Sri Lanka had estimated that only one-third of the population who had been vaccinated had acquired immunity. For Dr A. M. D. Richards, Head of the Anti-Tuberculosis Campaign, this did not reflect on the vaccine itself, as BCG was the 'most potent

40 Administration Report for the Director of Health Services, 1957, BCG Campaign, 80, SLNA; J. R. Wilson, Annual Administration Report, Chest Services (Anti-Tuberculosis Campaign), The BCG Campaign, 8.

41 Administration Report for the Director of Health Services, 1960, BCG Campaign, B225, SLNA.

42 'Address by the Hon'ble M. D. H. Jayawardene, Minister of Health', CNAPT, *Annual Report*, 1965, 17.

43 Administration Report for the Director of Health Services, 1966–67, BCG Campaign, 338, SLNA.

44 'Project Document, Expanded Programme of Immunization. BCG Vaccination', September 1977, 5.1, 7, Third Generation Files, 18/370/2SRL (Jkt 1), Ministry of Health, Colombo, WHO.

45 'Project Document', 7.

46 McMillen, *Discovering Tuberculosis*, 117.

weapon in our hands in the prevention and the control of Tuberculosis'.[47] Its failure, he argued, stemmed from problems in implementation: 'Tuberculin testing, reading, its interpretation, the technique of the BCG vaccination, the care of the vaccine, all contribute to the realization that this is a highly specialized technique, which has to be handled by a few hand-picked men and women, specially trained for the purpose.'[48]

Maintaining the potency of the vaccine did present particular problems in under-resourced countries. The BCG vaccine used in the first two decades of the campaign in Sri Lanka, for instance, was in liquid form, acquired from the Guindy Laboratories in Madras. It had to be preserved in ice, protected from sunlight, and even then its potency only lasted for two weeks from the date of manufacture. Maintaining its potency was a task that was fraught with difficulty, away from the main urban centres where there were no proper storage facilities. The obvious answer Richards observed was to use the freeze-dried vaccine, which retained its potency for a month at normal room temperature and up to a year if stored in ice. However, the freeze-dried vaccine was approximately 25 times more expensive than the liquid vaccine they were using, and it was another seven years before the government sanctioned its use.[49]

In 1968 the WHO and the Indian Council of Medical Research set up the Chingleput Study in South India that lasted for 11 years, covered a population of 3,60,000 and seemed to show that BCG had no protective effect at all.[50] Instead of dealing the deathblow to BCG as Brimnes has shown, it led to the conclusion that this startling outcome was caused by the 'specific epidemiological, environmental and immunological characteristics of the population studies'.[51] The suggestion that South Indians had different immune responses meant that the '*universality* of the BCG trials suddenly disappeared.'[52] Another explanation for this result was that Chingleput had been focused on adults, and thus, yet more studies were needed, which would concentrate on babies and young children, especially as most BCG campaigns were aimed at this age group. In the late-1970s and early-1980s, therefore, the WHO sponsored a series of trials in developing countries that included Brazil, Burma, Argentina, Indonesia, Colombia and the Cameroon. These were randomised, double-blind, placebo-controlled trials, very few of which had been conducted in less developed countries previously, as they were expensive and demanding on available health resources.[53] A cheaper, smaller scale alternative to these trials was also suggested. In 1981, at the request of the Minister of Health, Siva Obeyesekere, the WHO supported Dr P. G. Smith of the London School of Hygiene and Tropical Medicine to conduct one such study in Sri Lanka.[54]

Smith's argument for the study perfectly illustrates the search for evidence that would explain the Chingleput result and maintain the integrity of BCG. The study was necessary, Smith argued, to test whether it was 'valid to assume that the absence of a protective effect in South India implies that the same will be true in other less developed countries and even in other parts of India'.[55] He observed that there was a 'general belief' in Sri Lanka

47 A. M. D. Richards, 'Tuberculin and BCG', 1, 1960, 73–77. This edition of the journal was a collection of papers from *Journal of Public Health Association*, a seminar held by the Ceylon Public Health Association at the University of Colombo in October 1959 entitled 'Immunisation in the Control of Communicable Diseases'. Other articles discussed poliomyelitis, typhoid, pertussis, diphtheria and tetanus.

48 Richards, 'Tuberculin and BCG', 73–77.

49 Richards, 'Tuberculin and BCG', 74–75.

50 Neils Brimnes, 'BCG Vaccination and WHO's Global Strategy for Tuberculosis Control 1948–1983', *Social Science and Medicine* 67, 5, 2008, 863–73.

51 Brimnes, 'BCG Vaccination', 869.

52 Brimnes, 870.

53 P. G. Smith, 'Case-control Studies of the efficacy of BCG Against Tuberculosis', *Tuberculosis and Respiratory Diseases* 67, 1987, 73–79.

54 SEARO Memorandum, 13 January 1981 and Antonio Pio to P. G. Smith, 28 January 1981, Third Generation Files, T9/370/12 SRL, WHO Archives.

'that BCG protects against tuberculosis'. This was supported by the reduced number of cases in children's wards, and a decline in TB meningitis and military tuberculosis. Smith argued, however, that the data was not definitive; it could show a protective effect, but it 'would also be possible to argue' that it was 'compatible with no effect of BCG'.[56] The method he advocated was a retrospective assessment of the effectiveness of past BCG vaccinations, by identifying new cases of TB in children aged zero to nine years. These children would be examined by a paediatrician who would confirm the diagnosis, and determine their BCG status. A control group of children of similar age, sex and socio-economic status as the TB patients would also be examined in an identical way. The two-year Colombo based study commenced in 1982 with a team of three workers. The preliminary results of this and the other studies in developing countries provided no answers, as Smith noted: 'It is perhaps a little depressing that the range of efficacies measured in the case-control studies parallel, in range at least, the results observed over the last fifty years in randomized trials of BCG vaccination.'[57]

The protective effects of BCG in Sri Lanka, based on his preliminary finding, appeared to be around 30 per cent.[58] Within Sri Lanka, the uncertainty among professionals was evident. In 1991, for example, G. N. Lucas, the consultant paediatrician at the Lady Ridgeway Hospital, Colombo, asserted that while BCG had been in use for 70 years, it had 'not been possible to quantify or even identify the critical factors that govern the level of protection conferred by BCG'.[59] To contribute to this debate, he conducted an analysis of the 143 cases of childhood TB admitted to the paediatric unit of the hospital over a two-year period. Given that in 1991, 95 per cent of children in Sri Lanka were vaccinated, this number of cases of TB was a 'matter of concern'.[60] He noted that several reasons had been put forward for the occurrence of TB in BCG-vaccinated children. The commonest one was continuous contact with an infectious adult. In these cases, as Lucas so vividly described it, 'the tubercule bacillus runs a race with the BCG bacillus', and so often, the latter lost.[61] In his study, 56 per cent of the cases had a history of close contact with an infectious adult, usually a parent or grandparent.

Second, poor nutrition was accepted as significant, borne out by Lucas's study where 88 per cent of the cases were suffering from malnutrition. His conclusion was that although BCG might 'limit the multiplication and dissemination of tubercule bacilli and the development of lesions after infection', it did not prevent the establishment of infection. 'Thus', he stated, 'it is evident that in the prevention of childhood TB, too much reliance should not be placed on BCG vaccination.'[62] In 2002, Lucas was clearly still undecided. In an Editorial in the *Sri Lanka Journal of Child Health*, he argued that it was 'proven beyond doubt that BCG provides protection against the dissemination of TB'. However, he then follows this positive verdict by the qualification that the 'inability of BCG to prevent primary infection necessitates research for a better vaccine which will not only prevent natural infection …. but also destroy dormant bacilli in various lesions to prevent their endogenous reactivation.'[63] BCG was evidently still a highly questionable prophylactic to those involved with child health. It was, however, accepted that even if BCG was not necessarily an effective preventive for pulmonary TB, the vaccination of babies did prevent TB meningitis, and military and bone joint TB, all of which became rare in Sri

55 P. G. Smith, 'Proposal to Conduct a Case Control Study to Evaluate the Protective Effect of BCG Vaccination against Tuberculosis in Sri Lanka', 1, Third Generation Files, T9/370/12 SRL, WHO.

56 Smith, 'Proposal to Conduct', 8.

57 Smith, 'Proposal to Conduct', 77.

58 Smith, 76.

59 G. N. Lucas, 'Tuberculosis in BCG Vaccinated Children', *Ceylon Journal of Child Health* 20, no. 1, 1991, 34–38.

60 Lucas, 'Tuberculosis', 37.

61 Lucas, 37.

62 Lucas, 38.

63 G. N. Lucas, Editorial, 'Childhood Tuberculosis', *Sri Lanka Journal of Child Health*, 31, no. 4, 2002, 103–05.

Lankan children by the end of the twentieth century.[64] In the absence of any other vaccine, BCG continued as an integral part of the immunisation programme. By the end of the century, almost total coverage, that is, 99.5 per cent in 2002,[65] had been achieved, and the decline of TB in the population was attributed by many commentators to the vaccination. However, active TB, as has been seen, remained in the population, albeit at a much-reduced rate (a static 6,000–7,000 cases) because the underlying causes of its spread, highlighted by Lucas —malnutrition, poor housing and poverty—remained.

THE EXPANDED PROGRAMME OF IMMUNISATION, 1978–2000

The twenty-seventh World Health Assembly launched the EPI in 1974. It followed the usual pattern of such WHO endeavours—to assist with the organisation of programmes, give technical assistance, assure the quality of vaccines, help with training and provision of equipment and transport (in conjunction with the UNICEF), and support research.[66] The targetted diseases initially were diphtheria, pertussis, tetanus, measles, poliomyelitis, TB and smallpox. Sri Lanka was one of the first countries in the region to eliminate smallpox; the last case of indigenous smallpox had been in 1962. Immunisation services (and BCG after 1968, as has been seen) were integrated into the maternal and child health (MCH) services, which were provided through the 108 MOH areas, administratively completely separate from the curative services (see Chapter 1). These, in turn, were sub-divided into public health inspectorate/nursing areas, and again, into family health workers (midwife areas). Table 4.1 shows the extent of coverage of immunisations in 1975 and the intended target coverage in the first three years of the EPI.

These figures illustrate the task confronting the first three years of the EPI, as the intended targets represent considerable increases in coverage, for example, from 25–80 per cent for DPT coverage in infants under one. In a draft programme sent by Robert Hogan, Chief, Special Projects Branch, Bureau of Smallpox Eradication, to Geneva in August 1976, the opinion was that the 'most encouraging indication' of the likely success of the EPI in Sri Lanka was the fact that 'nearly 95% of the population has access to basic health care centres.'[67] In this context, the EPI in Sri Lanka was focused primarily on strengthening the existing services to improve coverage. The government's commitment to free immunisation was evident in President J. R. Jayawardene's Statement of Government Policy in August 1977: 'Great emphasis will be placed on preventive medicine by instituting a programme encompassing health education and immunization schemes.'[68]

Immunisation was one of the component activities of the Family Health Programme and the responsibility of its Assistant Director (Family Health and Nutrition). Under the agreement between the Ministry of Health, the WHO and the UNICEF in September 1977, the EPI was overseen by the Deputy Director of the Public Health Services, but the responsibility for its organisation, implementation and evaluation was to remain with the Assistant Director for family health with the title of Immunisation Manager. It was financed by the Ministry of Health, but in the development phase of the first three years, there was financial support from the international agencies. Each phase covered one-third of the population. Beginning in areas where targets could be met most

64 Sanath P. Lamabadusuriya, 'Immunisation of Children: A Sound Investment for the Millenium', *Sri Lanka Journal of Child Health* 29, 2000, 39–46.

65 Department of Health Services Sri Lanka, *Annual Health Bulletin* 2002, Table 52, Immunisation Coverage by DPDHS Division, 2002, BCG Coverage.

66 'WHO Expanded Programme on Immunization', World Health Assembly 27.57, Fourteenth Plenary Meeting, 23 May 1974, available at www.who.int/iris/bitstream/10665/92778 (accessed 5 November 2015).

67 'Draft Programme Statement, WHO Expanded Programme on Immunization: Country Profile: Sri Lanka', 30 August 1976, 2, Expanded Programme of Immunization (Jkt1).

68 'Project Document: Expanded Programme of Immunization', Colombo, September 1977, 2.1, 2, Expanded Programme of Immunization (Jkt1), quoted in Ministry of Health.

easily, Phase 1 in 1978 concentrated on Colombo, Kalutara and Jaffna where there were high reported levels of the diseases, high population density and sufficient manpower available. Phase 2 in 1979 went to areas with all of the above criteria, although to a lesser extent. In this phase, it also went where there was geographical contiguity so that it would have maximum impact on the community. This included Kandy, Galle, Kurunegala. Kegalle, Puttalam and Matale. Phase 3 extended the Programme out to the rural areas of Anuradhapura, Badulla, Batticaloa, Matara, Vavuniya and Ratnapura, with special village campaigns where there was low take-up of immunisation.[69]

The one change from the previous schedule of vaccination was to give BCG on school entry as opposed to the previous practice of doing this at the fifth or sixth grade. Immunisations were given by PHNs and PHMs at hospitals, health centres, dispensaries, child welfare clinics, and so on. Altogether, there were 1,200 such centres where immunisations could be received. However, as seen in Table 4.1, coverage with all vaccinations was inadequate, and as was noted in the 1977 Health Ministry Report, 'with this coverage the epidemiological situation of diphtheria, tetanus and pertussis was unlikely to be much improved by existing immunization services.'[70] The problems with the existing programme related to management, manpower, lack of equipment, vaccine logistics, and low public demand and acceptance. Since lack of resources largely underpinned these deficiencies, the input of financial and material support from the international agencies would certainly mitigate some of them. As far as management was concerned, the appointment of an Immunisation Manager was intended to provide better overall direction. In addition, he was supported by an Immunisation Committee which was to meet at least every three months and was composed of the DHS, the Deputy DHS, Directors of Medical Research and Health Education, and the epidemiologist. Its role was to deal with the lack of coordination between the different channels through which vaccinations were administered—hospitals, chest clinics, welfare clinics, and so on. Not all of the participating institutions were carrying out immunisations according to the policy, and they needed mobilising to do so. They needed supervision to ensure full participation, and this was severely hampered by the perennial time constraints (immunisation was just one among many other duties), transport difficulties (insufficient vehicles and fuel costs), and lack of motivation since immunisation was not always accorded proper priority.[71]

The provision of basic materials was a resource problem. At the level of the vaccinating agency, there were shortages that indicate the struggle that peripheral centres had to deliver their services. Staff were not always available for vaccinations among their many other duties, and some had not been trained to do the procedure. Much of the time of the public health staff in rural areas was also taken up by travelling, thus limiting their time for immunisations. For PHMs, for example, this meant travelling from place to place on public transport, or by foot where there was no transport. The provision of bicycles would, it was presumed, enable them to increase the time they actually spent seeing patients.[72] There were also insufficient funds to purchase syringes, needles, sterilisers, and so on in many health centres. Against all correct procedure, the same syringes and needles had to be used for immunisations and injections of the sick (penicillin, for example). In some areas, there could be no immunisations because there was no surgical or methylated spirit.[73]

The sourcing of vaccines, ensuring their quality and their distribution, in addition, presented major logistical problems.[74] Freeze-dried smallpox vaccination was produced in Sri Lanka, freeze-dried BCG came from Japan, and oral polio vaccine from the USSR. Sourcing the other three vaccines for DPT, DT and Tetanus Toxoid (TT)

69 'Project Document', 1, 4–5.

70 'Project Document', 5.2, 7.

71 'Project Document', 6.2.2–6.2.7, 11.

72 'Project Document', 7.2.6, 15.

73 'Project Document', 6.4.3, 12.

was more problematic. These were obtained from different sources and bought on a tender basis, with the cost being the primary criterion, which meant that the quality of these vaccines was variable. In 1973, for example, 6,00,000 doses of imported DPT was rejected because of poor quality. The following year, in 1974, more satisfactory vaccines had been obtained through the UNICEF. In the early-1970s, these three vaccines were also in short supply; hence, the drop in coverage in 1974 from 1972.[75] Exacerbating this general shortage was that each SHS was allocated a budget for drugs and vaccines, and the tendency in practice was for them to buy drugs rather than vaccines; no doubt this being the more pressing need on a limited budget and reflecting the bias in favour of curative medicine.[76]

Once the vaccine was obtained, the second problem was storing it on its arrival and during its distribution throughout the whole island, while at the same time, maintaining its potency. In an under-resourced, tropical environment, this could present a formidable challenge as an effective island-wide unbroken cold chain system needed to be in place. The polio and BCG vaccines arrived by air and were then transferred to cold rooms in the General Hospital and the National Tuberculosis Institute in Colombo. DPT, DP and TT came by ship from Europe in a refrigeration compartment, and were taken again to the General Hospital cold room or to the Fisheries Corporation cold rooms, where they could be kept below zero degree Celsius. At these two cold rooms, temperatures were checked and deemed satisfactory, but no records of temperatures were taken during the transportation to Sri Lanka.

The next hurdle, to distribute the vaccines to the intermediate and local health agencies, was fraught with even more difficulty. The vaccines were first transferred from the central cold stores in Colombo to the Old Railway Yard cold store, where it was not possible to check the temperature. The next stage of the journey to the divisional cold stores was by ordinary passenger train; polio vaccine was packed in rigiform containers (no cold packs), and the others in wooden packing cases. This part of the distribution process could involve long delays (for example, the journey by train from Colombo to Badulla itself took 12 hours); then there was delay in collecting the vaccines to place them in the divisional cold store, where again, there was no system of monitoring the temperature. From there, the vaccines were taken by road to the health agencies and no special arrangements were made for transporting them in cold boxes or thermos flasks.[77] Establishing an effective cold chain depended wholly on sufficient funds to buy and maintain refrigerators at every level of the health services, down to the smallest health agency, and refrigeration equipment for when vaccines were on the move—a substantial drain on limited budgets which were also faced with acute health demands. In theory, then, the worst of these deficiencies could be remedied with more funding to provide the necessary refrigeration equipment.

Under the government's agreement between the WHO and UNICEF, supplies of such equipment and vaccines for DPT, BCG and TT would come from the UNICEF, along with help with training workshops, communication and audio-visual material, and the maintenance of mobile units and freight. The WHO provided fellowships, consultants for technical assistance, and help with programme reviews. The greatest commitment came from the government in the form of salaries and travelling allowances for the EPI staff (the biggest cost), transport expenditure, polio vaccine, health education and miscellaneous items like kerosene for the fridges, methylated spirit and cotton wool.[78] Since the EPI was just one aspect of the work of the government health staff, their salaries obviously did not represent new expenditure by the government.

74 See Sanjoy Bhattacharya, *Expunging Variola: The Control and Eradication of Smallpox in India, 1947–1977* (Hyderabad: Orient BlackSwan, 2006), 75–104, for a discussion of these problems in the smallpox campaign in India.

75 'Project Document', Colombo, September 1977, 5.4, 9.

76 'Project Document', 6.4.1, 7.4.3, 12, 16.

77 'Project Document', 5.4, 11.

78 Dr Ranjit Sen, WHO Short Term Consultant, 'Expanded Programme of Immunization, Assignment Report', 15–31 October 1979, 4, WHO Third Generation Files, EPI.

Increasing acceptance of immunisations presented different kinds of problems. In general, because of the high coverage of health agencies in Sri Lanka by the mid-1970s, some type of medical institution was accessible to the population within a radius of five miles. However, that was an average, and in some areas, of course, the distance would be far greater. Furthermore, in reality, it was noticed that even where there were adequate immunisation facilities, they only seemed to attract patients within a three-mile radius. The 1977 Ministry Report attributed this to a 'lack of appreciation of the value of immunization by the public'.[79] There is evidence to support this view. An article in *Dinamina* in December 1977 highlighted this problem of parental indifference: 'although our children are fairly fortunate some parents carelessly neglect their duties towards their children.' Apathy existed alongside ignorance: 'It is sad that some parents still do not know that they can get these vaccination injections free of charge at children's clinics, health centres and MOH offices.'[80] Dr S. Y. S. B. Herat, Assistant Director of Health, also commented on this ignorance in a 1979 radio interview he gave for the WHO on Sri Lanka's EPI programme: 'There was quite a lot of fear in my country, perhaps there were a lot of myths that immunization would be bad, and that children immunized served no purpose when an infection breaks through.'[81]

Since public ignorance was considered a major contributory factor in the lack of take-up, a programme of health education was incorporated into the EPI, which included using village volunteers to promote it. A special edition on immunisation of the quarterly 'Health' (15,000 copies were distributed to health workers, teachers, government officers and community leaders); radio programmes; slides shown at the cinema; articles in the press; and the inclusion of immunisation in the health curriculum of schools were some of the promotional activities.[82] Dr Herat confidently commented, somewhat contradictorily, in his 1979 radio interview, that with health education and Sri Lanka's literacy rates (reaching between 70 and 75 per cent at the time), 'we find that mothers and fathers themselves call on us as medical men to immunize their children from preventable diseases …. The factor of immunization comes in very well in vogue today.'[83]

WHO-aided initiatives placed great emphasis on both internal and external evaluation of the projects, and these external evaluations by outside experts provide valuable insights into how effectively projects were working, and also what problems were encountered when these policies had to be transposed from paper to the field. Dr Ranjit Sen from the Indian Medical Service visited Sri Lanka for two weeks in late-October 1979 to evaluate Phase 1 of the EPI for the Sri Lankan Government. Dr Sen acknowledged that because of the short time he could spend on the island, he would limit his activities to Colombo and Kalutara, and there being no time to go to Jaffna. He based the conclusions in his report on discussions with the EPI officers at the central and local levels, and some field visits to see immunisation sessions in operation. He also followed the cold chain operation from the Colombo cold stores out to peripheral agencies in Gampana, Welikade, Kalagedihena, Panadura, Kalutara and Pitipara.[84] Phase 1 had only been in operation for less than two years, and it was unlikely in that short time that the problems identified in 1977 would have been resolved, as is evident in the picture Dr Sen presents.

He listed the ongoing problems with the maintenance of the cold-chain operation. Cold rooms at central and divisional levels were not monitored sufficiently, especially at weekends and holidays when no checks were made and power cuts were not infrequent. Fridges broke down with no replacements to hand. More training was needed on the correct storing of vaccines at all levels of the service. The field staff were using thermos flasks that

79 'Project Document', Colombo, September 1977, 6.5, 13.

80 'The Protection of Child Health is the Protection of the Nation', *Dinamina*, 14 December 1977.

81 S. Y. S. B. Herat, Sri Lanka, 'The World of Health: Radio Information Programme: Immunize and Protect', August 1979, 2, Third Generation Files, 18/370/2SRL Expanded Programme of Immunization (Jkt1), WHO.

82 'Project Document', Colombo, September 1977, 7.5, 19–20.

83 Herat, 'The World of Health', 2.

84 Sen, 'Expanded Programme of Immunization', 1.

had a short 'cold life', and often storing unused vaccines overnight in private fridges that could not be monitored. Thus, they needed vaccine carriers that could maintain the right temperature for up to two days. In addition, there was as yet no quality control unit to test vaccines.[85] In Dr Sen's field visits, at every clinic he had attended, he had seen the use of a single syringe to give many injections, a practice that, as he pointed out, could result in abscesses and hepatitis. He noted that they were 'well-attended and in fact could be said to be overcrowded'; and that this meant long waiting times for parents with children. The 'available clinic staff were doing the best that could be expected', but staff needs were not assessed realistically and 'deficiencies such as non-filling up of posts and transfers without replacements' were a factor in this.[86] Inadequate staffing was a perennial problem throughout government service and naturally had an impact on the EPI. According to Dr Sen, 'commitment to the programme was total from the highest level to that of the peripheral health worker' but the 'staff designated for EPI had other responsibilities and duties besides EPI'. Moreover, while it 'would not be realistic to expect all the staff to devote their full time to EPI', he recommended that at least at the central level, there should be someone with fulltime responsibility for the programme.[87]

Insight into how EPI clinics operated at the micro-level, which contributes towards understanding the obstacles to full coverage, can be found in a study conducted on immunisations clinics in the Kandy Division in 1984. For this study, four of the 14 MOH MCH clinics in the Kadugannawa district of Kandy, and three of the five municipal child welfare clinics operating in Kandy (municipal clinics had no direct links to the national EPI being administratively independent) were selected. Also included in the study were three tea estate clinics in the Nuwara Eliya district adjacent to Kandy. Immunisations at tea estate clinics (the third arm of the MCH services) were run by what were termed certain 'key' estates through a series of satellite clinics on the adjoining estates. This study included one 'key' and two satellite estates. The stated objective of the research was to compare the costs of each immunisation at different clinics, but in doing so, the findings also indicated their manner of operation. The study reported that the low and relatively uniform costs by international standards (costs ranged from $2.65 to $10.26, which gave a mean of $5.23) indicated an 'efficiently organized delivery strategy'.[88] Refrigeration and vaccine-storage facilities were kept at the MOH or Municipal Head Office, and in the 'key' tea estates that reduced fixed EPI costs by limiting cold chain needs and staff time commitments. Table 4.2 presents a breakdown of the costs and coverage of immunisations in the 10 clinics studied.

The most expensive immunisations per child were in the municipal clinics. This was attributed to the fact that municipal clinics were held fortnightly, and therefore, operated below their capacity. However, switching to monthly clinics could, it was argued, affect attendance levels. The estate clinics worked most efficiently, although of course, they did have the advantage of a more captive catchment area and the smallest population number. They held monthly clinics solely for immunisations. They operated an appointment system so that both the mother and the clinic knew in advance when the child was to be brought in. This equalised the load between clinics and allowed vaccine requirements to be assessed beforehand. More importantly, in terms of coverage, non-attenders could be followed up with promptly. The lack of an appointments system at Municipal and MOH clinics, however, meant that time was taken identifying which children needed immunisation before the session began. This took up unnecessary staff time, meant long waiting times for mother and child (an obvious disincentive), and hampered the identification of non-attenders. It is also apparent from these figures that only the estate clinics surveyed reached the targets of full immunisation before the age of one.

85 Sen, 'Expanded Programme', 7–10.

86 Sen, 9.

87 Sen, 5.

88 Managers Consultative Meeting, 30 April–3 May, New Delhi, 1985, Country Report Sri Lanka, Andrew Creese, WHO Consultant, 'Expanded Programme of Immunization, Economic Appraisal', 15. In 1983, $1 = Rs 25.

Dr Herat's positive assessment in his 1979 radio interview of the general acceptance of immunisation was understandable, given that this was an opportunity to laud Sri Lanka's efforts to the world; but it was consistently challenged by the evidence. Dr Sen devoted a whole section in his report to the problem of what he termed the 'drop outs'; those who failed to complete the full schedule within the prescribed time of the first year of an infant's life. Table 4.3 illustrates the extent of these rates in the three Phase 1 areas for the first two years.

Most drop-outs occurred between the second and third dose, and as Dr Sen observed, the success of the programme depended on minimising this fall-out. Those implementing the programme had various explanations for the incomplete immunisations. Some of these related solely to statistical inadequacies. First, a child who died before its first birthday would not have necessarily been removed from the records, and thus, would appear as a negative. Second, mothers registered in one PHM area could move to a different health division, and again, this would not be recorded. This factor was particularly highlighted by Dr Sen's informants in the Colombo and Jaffna Divisions. Last, under this category, the records of immunisations were collected in the PHM's register and then relayed to the centre; but if there was no PHM or a PHM transferred, then figures were again not collected, and hence, they would not appear in the central records. Some explanations did refer to the issue of parental behaviour. At the first visit for immunisation, the infant was given a health check and assessed for eligibility to receive *Triposha*. Both of these things were powerful incentives for the mother to attend this first session, but if neither was on offer for subsequent visits, then more positive commitment on her part was required.[89] The simple solution to this was to offer both at subsequent immunisations. Another perceived problem was the schedule of the immunisations that demanded that they were completed within the first year, and this often proved for various reasons difficult for parents. The child might be ill, for example, on the scheduled date and receive the last dose after the first birthday.

Many of these children did complete their immunisations after their first birthday. Again, this would not show up in the records. Sen argued that the target set for Phase 1 of 80 per cent for childhood immunisations should receive less emphasis in the light of these realities.[90] In 1982, to remedy some of the above problems, changes were made to some aspects of the programme. The schedule of immunisations was revised, and the interval between the second and third doses reduced from four to six months to six to eight weeks. In addition, the list of contraindications for the doses was also reduced to a minimum. For all vaccines, a temperature of at least 100 degrees was needed as a reason for not vaccinating; plus, for DPT, a temperature of 103 degrees, with or without convulsions following the first dose; for BCG, prematurity or jaundice, and for polio, diarrhea were laid down as contraindications.[91] The failure to complete immunisations was an ongoing problem, and the same explanations for it recur constantly in subsequent reports and studies.

A study, for example, in 1983 at Jaffna General Hospital's University Paediatric Unit examined the immunisation history of 209 children, aged one to five years, admitted to the Unit from 1 July for a three-month period. First, it looked at BCG and found that out of these 209 children, 36 (17.2 per cent) had not received the vaccine at all. Out of these 36 children, 13 had been born in government hospitals, 14 in municipal maternity homes, four in a private nursing home, and five were home deliveries. With regard to these deliveries in the hospitals and

89 A recent study in Rajasthan showed how offering even quite small incentives encouraged the take-up of immunisation. See Abhijit Banerjee, Esther Duflo, Abdul Latif Jameel, et al., 'Improving Immunisation Coverage in Rural India: Clustered Randomized Controlled Evaluation of Immunisation Campaigns With and Without Incentives', *BMJ* 2010; 340: c2220, available at 10.1136/bmj.c2220, 1-9 (accessed 25 February 2016).

90 Sen, 'Expanded Programme of Immunization', *Triposha* was a food supplement given to mothers and children who were vulnerable to malnutrition. It was jointly funded by United States Agency for International Development (USAID) and the government, and was a targetted replacement for the general food subsidy programme that was ended in 1977. See, for example, Irwin Hornstein, *Triposha: Product and Program*, January 1986, available at www.usaid.gov/pdf-docs/PNAAW638.pdf (accessed 21 January 2015).

91 18/370/SRL2 (Jkt 1), Managers Consultative Meeting, New Delhi, 30 April–3 May 1985, Country Report Sri Lanka, 2, 3.

maternity units, only half the parents had been advised about it in the first place. The half who had been offered the vaccine for 'various socio-economic reasons' had refused. Out of the children who had been vaccinated, 135 of them had been vaccinated at birth as per the policy, but 21 of them had no scar. This suggested a failure in the actual procedure, which the authors of the study attributed to ineffective vaccines, incorrect procedure and the poor immunological status of the children. At the Jaffna General Hospital, only one child, because of prematurity, had not been given BCG at birth, but for 13 of those who had received it there was no scar. Despite these inadequacies, only one child was diagnosed with TB, and this was because of a contact history with an active case.[92] With regard to the other immunisations, DPT and TT, a similar pattern emerged; 135 children had received all three doses, 36 were partially immunised, and 38 not immunised at all. Parents themselves gave various reasons for what the authors perhaps unfairly describe in this case as their 'neglect' when they do, in fact, reveal the 'socio-economic reasons' previously referred to. Parents stated that they were 'unable to find time' and they had 'travelling difficulties and economical pressures'. The authors also cited parental ignorance in 19 of these cases, where the parents, they claimed, were 'unaware of the importance of vaccination and some parents were scared to give vaccines to their children thinking that they might get the disease like polio'. In their conclusion, they attributed the failures in the programme 'to the vaccine not being available in the Maternity homes and local hospitals, various types of ignorance on the part of the mother and insufficient motivation by paramedical personnel'.[93]

A survey of rubella coverage in Colombo conducted 16 years later in 1999 revealed many similar factors for the non-take up of this vaccine. The objective was to assess the immunisation coverage with rubella vaccine among all females aged 11–15 years, and eligible females between 16 and 44 years. It formed part of a larger survey conducted in the Colombo Municipal area on immunisations generally, and it used the 30-cluster sampling technique recommended by the WHO. It focused on 50 randomly selected females for each of the two groups. In the first group of the 1,428 children surveyed, 710 had been immunised (according to their record and history), providing a coverage of 51.8 per cent; out of these, only 594 (80 per cent) had record cards of immunisation. In the age group of 16–44 years, 1,682 children were surveyed, out of whom 1,566 were found to be eligible, but only 360 were immunised (again, according to record and history), providing a coverage of 23 per cent, with 239 (66.4 per cent) of these producing their record card. Various reasons were considered for the lack of a record card; some were lost or misplaced, some had not received one as they were not available at the time of the immunisation, and others did not understand the importance of retaining it. For non-immunisation, the reasons given by those surveyed were very familiar. These were:

1. Lack of awareness of the need for rubella immunisation (722–46 per cent);
2. Lack of interest (183–11.7 per cent);
3. School immunisation programme not conducted (81–5.2 per cent);
4. Lack of knowledge of the place or time of immunisation (74–5 per cent);
5. Completion of family (59–3.8 per cent);
6. Wrong ideas about the contraindications for immunisation (51–3.3 per cent);
7. Absence from school on the day of vaccination (46–2.9 per cent);
8. Immunisation not conducted at school to date (37–2.4 per cent);
9. Fear of adverse reactions (31–2 per cent);
10. Rumours about vaccine (30–1.9 per cent).[94]

92 D. Ramadas, P. Sivakumar, K. Black and S. Arumugam, 'Immunisation Status of Paediatric Patient', *Jaffina Medical Journal* XIX, no. 1, 1984, 25–26.

93 Ramadas et al., 'Immunisation Status', 24–25.

94 'Immunization and Vaccine Preventable Diseases Survey—Underserved Areas of Colombo Municipal Council', *Weekly Epidemiological Report* 27, no. 50, 4–10 December 1999, 1–4, and continued in 27, no. 51, 11–17 December 1999, 1–4 Medical Library, University of Colombo.

These figures highlighted the need for more effective public health education, as the largest cluster of reasons for non-immunisation can be grouped under the heading of lack of information. Following this category was that of institutional failure since programmes had not been conducted in all schools in the area as they should have been (this was three years after the rubella vaccine had been introduced). Children in the older age groups had not been immunised either at school or in special clinics; and children who were not at school were not provided for. The authors of the report attributed only 16 per cent of non-immunisations to lack of motivation.[95] There is no evidence cited in either of these two studies of opposition to immunisations per se, but rather, to non-take up resulting from the vicissitudes of life. As in the previous study, some of the responsibility for failure to achieve full coverage lay with the authorities, and this also most probably reflected a lack of resources rather than a lack of will.

These studies exemplify how EPI operated at the micro-level; they serve as a useful counterpoint to the positive macro-level picture of EPI presented in the official reports. In 1985, EPI went into what the government termed an 'accelerated Programme' aimed at covering every child within one year. This was launched on the 6 September 1985 in the presence of Prime Minister Ranasinghe Premadasa and Director of the UNICEF, James Grant, at a Child Welfare and Maternity Centre in Colombo. The government mounted a massive publicity campaign to bring the population on board. First, on 5 September, 2.5 million commemorative stamps on the programme were issued. According to James Grant's comments as recorded in the *Daily News*, a day later, this was the 'first time he had come across a developing country issuing such a large number of commemorative stamps'.[96] At the test match against India in September 1986, *The Daily News* also reported that '"Immunize Your Child Today" screamed at thousands of spectators who were there and those who watched the match on TV. High white letters near the boundary line was also seen by watchers in India with satellite coverage reaching millions in both countries.'[97]

In 1988, the concept of elimination rather than just prevention and control was incorporated into EPI, when the government committed itself to the eradication of polio before 2000 as part of the Global Polio Eradication Initiative (GPEI), launched in 1988 by the WHO in partnership with the Centers for Disease Control and Prevention (CDC), UNICEF and the national governments.[98] Polio is a viral disease that can cause paralysis and sometimes death, and to which children under the age of five are the most vulnerable. It is today on the brink of being eradicated, which will make it only the second disease to be eradicated from the world after smallpox. It spreads among dense populations amid poor sanitation and occurs most frequently in the summer. In 1955, the first polio vaccine (Inactivated Polio Vaccine [IPV]) was discovered by Jonas Salk, and this was followed by Albert Sabin's oral polio vaccine (OPV) in 1963. It is claimed that the GPEI has driven a 99 per cent reduction in polio cases during the last two decades, from nearly 3,50,000 cases in 1988 to fewer than 1,500 in 2010.[99] Today, polio is endemic to only three countries: Nigeria, Pakistan and Afghanistan. William Muraskin has argued that the choice of polio as the next target for disease eradication after the success of smallpox was not determined by the worldwide threat it represented, but rather, by the politics of international health; in this case, it was determined by the 'ideology of a small number of powerful and well placed players in global public health who were dedicated to the concept of so-called eradication as perhaps the major tool for international public health'. The cost of this policy for developing nations, he further argues, was to force them to divert their limited

95 'Immunization and Vaccine', 11–17 December 1999, 3–4.

96 'Immunisation and Love Make a Healthy Child', *The Ceylon Daily News*, 6 September 1985, 10.

97 Vijita Fernando, 'How Medica Can Help in Immunization Programs', 17 October 1986, 4.

98 'Global Eradication of Poliomyelitis by the Year 2000', 13 May 1988, Forty-First World Health Assembly, 13 May 1988, Agenda Item 12, available at www.who/int/iris (accessed 30 November 2015).

99 '10 Facts on Polio Eradication', 15 October 2015, WHO Poliomyelitis, available at www.who.int.poliomyelitis (accessed 2 February 2016).

resources away from strengthening basic healthcare services towards what was for them a relatively minor disease simply in order to 'prove the point that disease eradication can be maintained as a major tool of public health'.[100]

However, in opposition to this perspective, Taylor has argued that 'there is little question that an eradicated disease constitutes an unusually pure form of public health good'. Furthermore, 'at the local end of implementation …. the population-intensive nature of eradication ultimately forces stakeholders to focus more, than is often the case, on conditions of inequity among groups, and those in the population living in conditions of extreme exclusion and disadvantage …'[101] Polio was not a major ongoing threat to children's health in Sri Lanka when placed alongside the other threats—TB, malaria, gastro-intestinal and respiratory diseases, malnutrition—but for each child who was afflicted with this preventable disease, it was, of course, a tragedy. Moreover, given the well-established immunisation programme already in operation by 1990, of which trivalent OPV (TOPV), or Trivalen had been a part since 1962, the commitment to eradicate polio in Sri Lanka would not be diverting resources from basic services. As Drs J. Keja, Imam Mochny and J. Milstein (WHO Consultants) concluded in their review of the initiative in early 1989, there were 'no technical barriers to the eradication of poliomyelitis in Sri Lanka. Rather, the most important need is fine-tuning of managerial strategies.'[102] The sources have divulged no dissenting voices in Sri Lanka to the eradication project, but rather, an apparent enthusiasm to reach what was perceived as an achievable goal.

Polio was made a notifiable disease in 1944; in 1945, four cases were reported and in 1948, 307 cases and 37 deaths. From 1951–86, the annual average number was 277 reported cases. Within this, there were epidemic years, the greatest one being 1962 (mainly in February), with 1,810 cases and 149 deaths.[103] In 1962, the government allocated Rs 2 million for an anti-polio drive. Every child between the ages of three months and 15 years in the Western Province, and in large towns in the other provinces and rural areas would be given three doses of OPV. The target was one and-a-half million children, and from 1962, OPV was integrated into the immunisation programme.[104] The 1962 epidemic was centred in Colombo, and the Colombo and Jaffna regions reported the maximum number of cases most frequently throughout the period. In the following years, there were epidemics in 1968, 1974 and 1980, with 1,009, 608 and 264 cases, respectively. The downward trend in the cases was reflected even in these epidemic years. In 1987, there was another spike in the cases up to 96 by the mid-year, from just nine the year before, but all these cases were reported from the northern Region where the civil conflict there had interrupted EPI activities and there was frequent movement to and from south India because of the unsettled conditions.[105] Under the EPI system, a suspected case was notified by phone or telegram to the epidemiologist and to the MOH area where the case was situated, and control measures were then put in place. Every child under the age of 10 was given TOPV in the village or ward of the town, either from scratch or to complete immunisations. A house-to-house search was carried out to detect any cases of flaccid

100 William Muraskin, 'Polio Eradication Was an Ideological Project', *BMJ* 345: e8545, 2012, 1–3. See also William Muraskin, *Polio Eradication and Its Discontents: A Historian's Journey Through an International Public Health (Un)Civil War* (Hyderabad: Orient BlackSwan, 2012) for the full exposition of this argument and an analysis of the major dissenting voice against this policy's imposition on developing countries (specifically, Chapter 6, 'The Case of India'). For useful comparisons of the smallpox and polio eradication campaigns, see Sanjoy Bhattacharya and Rajib Dasgupta, 'Smallpox Eradication in India: Comparative Histories and Lessons for Contemporary Policy', *Ciencia e Saude* 16, no. 2, 2011, 433–44; and S. Taylor, 'Political Epidemiology: Strengthening Socio-political Analysis for Mass Immunization: Lessons from Smallpox and Polio Programmes, *Global Public Health* 4, no. 6, 2009, 546–60.

101 Taylor, 'Political Epidemiology', 547.

102 J. Keja, Imam Mochny and J. Milstien, 'The Eradication of Poliomyelitis: Country Visit to Sri Lanka, 27 February to March 3', 2, Third Generation Files 18/446/7SRL.

103 Mochny, 'Memorandum', 6 March, Part II, 'Surveillance', n.p., 18/466/7SRL, Jkt 1.

104 Observer Reporter, 'Rs 2 M Allocated for Anti-polio Campaign', *The Ceylon Observer*, 1.

105 Mochny, 'Memorandum', 6 March, Part II, 'Surveillance'.

paralysis in the affected area, and then the search area was extended depending on the movement of the initial case. Extra attention was paid to monitoring the cold chain.[106]

The first step to eradication was to raise the coverage of the vaccine and then to ensure the investigation of every case of paralysis in order to ensure correct diagnosis. For example, the symptoms of Guillain-Barre Syndrome could easily be mistaken for polio and vice versa. In 1992, for example, 68 per cent of suspected cases of polio turned out to be Guillain-Barre after stool analysis.[107] The last case of polio in the country was recorded in 1993, and in 1995, in the light of the 'remarkable performance that the country had shown', it was decided that the strategy of National Immunisation Days (NIDs) would be adopted, as advocated by the GPEI, to mop up children who had hitherto escaped the net of the campaign, in particular, those in the troubled north and east.[108] The first of these was held on the 4 November 1995; a second one followed on 9 December. Before the NID, an intensive publicity campaign was conducted through the TV, radio, banners at the special temporary vaccination sites, handbills and leaflets to mothers. Volunteers helped with the transport of vaccines to the centres, most notably Rotary Club members, who also provided refreshments to the staff. The Weekly Epidemiological Review (WER) of the week of the first NID reported that there was 'overwhelming public enthusiasm for the NIDs—parents were seen queuing up with their children from early in the morning'.[109] The overall coverage on this day was estimated to be 95.79 per cent, and even Jaffna and Vavuniya, which were 'in a disturbed state' had achieved coverage rates of 65.92 per cent and 63.05 per cent, respectively. The rates of over 110 per cent in the adjoining districts of Trincomalee, Batticaloa and Ampara, according to the WER, indicated that many of those not covered in the northern districts 'must have received their immunization in the Eastern District'.[110] The 'disturbances in the North', as they were frequently and somewhat euphemistically termed in reports, was the major obstacle to eradication, as was elsewhere throughout the world's conflict zones.

The strategy developed to deal with this was to negotiate ceasefires between the warring groups.[111] These so called 'days of tranquility' were based on the idea of children as 'zones of peace', a concept first coined in 1983 by Neils Thedin, Head of the Swedish Save the Children organisation. This was taken up by James Grant and the UNICEF and was used to create 'zones, bubbles, and days of peace or tranquility to immunize children, deliver food or supplies, evacuate civilians during armed conflict'.[112] Furthermore, according to Margo Kleinfeld, James Grant was a frequent visitor to the Sri Lanka UNICEF office and convinced the government and the LTTE of the importance of these ceasefires in 'establishing external legitimacy and territorial sovereignty' to secure their agreement.[113] Two days were set aside for the ceasefires—the first, to transport vaccine and equipment to the

106 Mochny, 'Memorandum', 6 March, Part IV 'Outbreak Control'. In 1990, for the first time, cold chain monitors were appointed to detect any breakdown in the chain and ensure that it was properly maintained. Initially, this extended down to the MOH/hospital level, but the intention was to take it to the site of immunisation. 'Use of Cold Chain Monitors', *Weekly Epidemiological Review*, 17 February–23 February 1990. The *Weekly Epidemiological Review* was published by the Epidemiologist Unit.

107 'Update on Polio Eradication Sri Lanka', *Weekly Epidemiological Review* 23, no. 24, 10–16 January 1995, 1. Guillain-Barre Syndrome is an auto-immune disease that causes muscle weakness and breathing difficulties.

108 'NIDs—First Phase Completed!', *Weekly Epidemiological Review* 23, no. 45, 4–10 November 1995, 1–4.

109 'NIDS', 4.

110 'NIDS', 4.

111 For example, see R. H. Tangermann, H. F. Hull, H. Jafari, et al., 'Eradication of Poliomyelitis in Countries Affected by Conflict', *Bulletin of the World Health Organization* 78, no. 3, 2000, 333–38.

112 Margo Kleinfeld, 'The Political Utility of the Non-political Child in Sri Lanka's Armed Conflict', *Annals of the Association of American Geographers* 99, no. 5, 2005, 874–83. In this article, Kleinfeld explores the political implications of the 'days of tranquility' that were embedded in this ostensibly humanitarian impulse.

113 Kleinfeld, 'Political Utility', 879.

special centres, and the second, to conduct the immunisations. In the years of conflict, periodic 'polio days' (as they were called locally) were held in the conflict zones. They were pronounced as successful by the government and the UNICEF, but kleinfeld's fieldwork in the area suggested that the reality deviated considerably from this official picture. Kleinfeld claimed that internal UNICEF documents and Ministry of Health field reports recorded examples of both sides violating the ceasefeld, or even using them to conduct covert operations. There were reports of shelling, military checkpoints, travel restrictions, fighting and displacement. These presented enormous obstacles and prevented both health workers and families from attending the centres. In a visit to Vavuniya and Trincomalee in 2001, she found that while 'polio days' appeared to be a 'life affirming event for families' and vaccination was 'scaled up' on those days, most conflict children were immunised through the regular health infrastructure by 'dedicated government health officers, volunteers and international organisations such as MSF, and the International Committee of the Red Cross'. On her trip, she stated that she 'observed neither a geographic nor temporal space of tranquility'.[114] Kleinfeld's experiences lend further weight to the necessity of adopting caution when considering the overall and official picture of policy initiatives. Even so, Sri Lanka has been considered polio-free since 1993, and if polio was never a major health problem, there is little evidence that the eradication policy had any negative impact.

Table 4.1. 1975 Coverage and Target Coverage for 1978–80.

Eligible Population	Coverage	Targetted Coverage		
	1975 (In Per Cent)	1978 (In Per Cent)	1979 (In Per Cent)	1980 (In Per Cent)
Infants by First Birthday:				
DPT: 3 Doses	25	60	70	80
Polio: 3 Doses	30	60	70	80
BCG	70	75	70	80
Children School Entry Age:				
Diphtheria (DT)	4	60	60	80
BCG (Re) Vaccination		80	80	80
Pregnant Women:				
Tetanus Toxoid: 2 Doses	7	25	35	50

Source: WHO, Third Generation Files, 18/370/2SRL, Expanded Programme of Immunisation (Jkt.1), 'EPI Country Profile', 1–4 December 1976, III.B. 3.

Table 4.2. Costs and Coverage of Immunisations by Clinic, 1984.

Clinic	*Total Immunisations*	*Total DPT by 1-year-old*	*Cost Per Fully Immunised Child in Rs*	*Coverage by Clinic (In Per Cent)*
Municipality				
Bhuvelikada	995	108	123.6	32
Ampitiya	500	49	259.6	21
Arupulla	697	72	178.7	27
MCH				
Dodanwalla	1,295	135	106.5	30
Kadugannawa	846	87	121.1	28
Mampitiya	2,686	268	85.7	62

114 Kleinfeld, 'Political Utility', 879, 880–81.

Table 4.2 continued from previous page.

Clinic	*Total Immunisations*	*Total DPT by 1-year-old*	*Cost Per Fully Immunised Child in Rs*	*Coverage by Clinic (In Per Cent)*
Bombaradeniya	3,831	352	67.0	54
Estate				
Somerset	1,730	59	112.4	95
Radella	912	55	114.7	98
Edinburg	694	40	150.3	100

Source: Compiled from WHO, Third Generation Files, 18/370/2SRL Expanded Programme of Immunisation (Jkt.1), Table 4, Managers Consultative Meeting, 30 April–3 May, New Delhi, 1985, Country Report Sri Lanka, 'Expanded Programme of Immunization, Economic Appraisal', 21.

Table 4.3. Drop Out Rates in Phase 1 Areas, 1978–9.

Division	*Year*	*DPT Drop-out Between Doses*			*TT Drop-out Between Doses*
		1 and 2	*2 and 3*	*1 and 3*	*1 and 2*
Colombo	1978	23.6	36.3	51.3	37.3
	1979	22.8	38.1	52.2	20.3
Jaffna	1978	24.4	43.7	57.4	44.5
	1979	18.1	49.9	58.9	37.1
Kalutara	1978	22.0	41.5	54.3	40.2
	1979	26.7	38.1	54.7	40.1

Source: Ranjit Sen, 'Expanded Programme of Immunization, Assignment Report', 1979, Para. 12, 13.

CONCLUSION

While acknowledging the problems exposed by ground-level studies, the immunisation programme at a macro-level has to be seen as a success and of real benefit to the children of Sri Lanka. It removed at least one of the major groups of health threats they faced. Table 4.4 reveals the substantial decline in the incidence of targetted diseases from the mid-twentieth century to the millennium.

There is one notable exception in this picture of success, and that is, TB. But then, TB alongside malnutrition stems from poverty and inadequate living conditions, and these cannot be not solved by a technological fix.

The delivery of the mass immunisation programme in Sri Lanka was dependent upon the already existing primary healthcare services. It therefore suffered from the inadequacies that were typical of those services—inequalities between rural and urban areas, insufficient staff, and lack of basic equipment. Additionally, poor quality vaccines resulting from faulty cold chains undermined their potency, and doubtless, the trust in them. Thirty years of civil conflict greatly exacerbated regional and local inequities in healthcare as the difficulties of accessing immunisation in the north and the east were not entirely overcome by the NIDs and the 'days of tranquility'. However, these negatives were outweighed by the factors favourable to immunisation take-up. Undoubtedly, assistance from the WHO and UNICEF had a positive practical effect in the provision of equipment, reliable vaccines and technical advice. The launch of the global EPI programme in Sri Lanka in 1974 gave a noticeable impetus to the already existing vaccination programme, which was subsequently expanded,

structured effectively, and given added importance within the health services. As significant in this success, however, were factors peculiar to Sri Lanka. Public health education was a crucial element of the immunisation programme, as has been seen, but success in such preventive measures, as Blume, Roalkvam and McNeil have argued, depends ultimately on two factors: 'legitimacy and trust'; the education of the public in itself is not enough.[115] The decisions of politicians and public health authorities had to be accepted as legitimate and representative, vaccines had to be accepted as safe, and the health services had to be trusted.

Sri Lanka was a democracy, and the government could claim legitimacy on this basis. It had an extensive and growing system of primary healthcare clinics that had, since 1926, offered preventive services to the population. For many decades, free care and treatment at the point of delivery had contributed to an acceptance and an expectation that the government would take responsibility for the health of its citizens. This was particularly true of maternal and child welfare services, which were the primary deliverers of vaccination. The trust placed in welfare clinics by mothers no doubt had a positive influence on the take-up of immunisation, which was one of the many services on offer. Since immunisation was fully integrated into these primary health services and administered by the same staff, mothers and children were already accessible to them. Furthermore, when it came to the BCG vaccination of newborns, the majority of mothers were delivered in government institutions, and thus, it could be offered to them easily. There was also a high degree of female literacy in Sri Lanka, and it has been argued that a crucial element for this success 'is the existence in the community of a critical number of educated women'.[116] These were all factors that provided a favourable environment for the EPI initiative. The sources have exposed no real opposition to vaccinations. Rather, they suggest that the failure to take up immunisation was more due to contingent and practical difficulties than due to ideological and cultural beliefs.[117]

EPI straddled the period before and after Alma Ata and carried within itself aspects of both PHC and SPHC. Critics of EPI, as an international policy transfer, pointed to the fact that it was yet another vertically organised programme that diverted limited resources from the general health services, and as with all SPHC measures, was 'tied to international or bilateral resources in New York, London, Geneva or elsewhere'.[118] Supporters of EPI argued that it could act as a means to extend primary healthcare services throughout a population. Neither of these scenarios, however, applies to Sri Lanka. Mass immunisation was delivered through the already existing primary healthcare services, and only the BCG campaign in its first20 years was organised on the basis of vertically organised specialist teams. After 1968, BCG, too, was delivered through existing services. These services were funded from the normal health budget, hence the problems, and these were a part of the limited assistance already noted, not provided through any separate funding dependent on outside resources. The immunisation programme in Sri Lanka contained within itself elements of both PHC and SHPC. It was a technological fix, and it was given impetus by an international policy transfer, but its implementation was through already existing primary health services. The exploration of this particular health policy testifies to the

115 Stuart Blume, Sidsel Roalkvam and Desmond McNeil, 'Concepts and Approaches', in *Protecting the World's Children*, ed. Roalkvam, McNeil and Blume, 52.

116 Blume et al., Concepts and Approaches', 54.

117 As Banerjee et al. have shown in a 2010 study in India, that having a good supply of immunisation services is a necessary but not a sufficient factor in a take-up. Many mothers in this study took up the first injection, but did not come for the subsequent ones. Banerjee et al. have argued that this was not because of 'great antipathy', but it was because they had not been persuaded enough of the benefits to 'overcome the natural tendency to delay a slightly costly activity (immunization is free but it takes time and effort to get the child immunized and the child might get a fever afterwards)'. Immunisation thus presented 'small barriers', but the implications of its failure could be wide. Bannerjee et al. 'Improving Immunization Coverage in Rural India', BMJ 2010; 340: c2220, 17 May 2010, available at 10.1136/bmj.c2220, 8.

118 Kenneth Newell, 'Selective Primary Health Care: The Counter Revolution', *Social Science and Medicine* 26, 9, 1988, 905.

dangers of ignoring the context when assessing health initiatives and viewing initiatives through a too simplistic lens.

Table 4.4. Case Rates Per 1,00,000 Population of EPI-targetted Diseases in Selected Years, 1955–2005.

Year	*Poliomyelitis*	*Diphtheria*	*Pertussis*	*Tetanus Neonatorum*	*TB*	*Measles*
1955	1.8	13.5	22.2	-	-	40.1
1960	3.1	10.5	18.0	-	106.3	30.9
1965	4.4	11.0	13.2	-	62.0	18.2
1970	3.2	7.9	9.9	230.2	46.0	32.6
1975	2.9	2.3	3.7	216.0	54.3	37.0
1980	1.8	0.3	3.4	83.9	42.1	34.1
1985	0.3	0.1	1.0	19.5	37.2	59.3
1990*	0.3	0	1.9	4.7	39.2	4.0
1995	-	-	1.0	3.0	31.5	0.9
2000	-	-	1.1	0.3	42.0	21.2
2005	-	-	-	0.6	48.4	0.4

Note:
* Excludes, apart from TB, Jaffna, Kilinochch, Mullaitivu and Ampara Districts.
Source: Compiled from the Department of Health Services, *Annual Health Bulletin, 2009*, Table 51, 112; *Annual Health Bulletin 2006*, Tables 64, 67.

5. Non-communicable Diseases

The Double Disease Burden

In his 1954 Annual Medical Report, the DHS, Dr D. L. J Kahawita, advanced the claim that 'The goal of Public Health is not only to preserve as many lives as possible to reach the upper limit of living but also to keep the individual fit, active and free from chronic disease until he dies.'[1] It was an acknowledgement that it was not sufficient to aim at preventing people from suffering an early death, but that it was also the duty of the health services to ensure that they lived a healthy as well as a long life, and that the quality of life had also to be addressed as life expectancy improved. This entailed attending to the problem of morbidity caused by diseases that lead to impairment, disability, and ultimately, preventable premature death. Three years later in his 1957 Report, Kahawita elaborated further on the health challenge facing Sri Lanka in the years ahead. The past 25 years, he noted, as a result both of improvements in socio-economic conditions and medical advances, had seen

> not only a reduction in deaths but also a dramatic change in the pattern of mortality from disease. A whole range of major infectious diseases has ceased to be a major cause of death. A great saving of life in early years has received a shift in the age distribution so that cancer, diseases of the heart arterio-sclerotic hypertensive and coronary artery diseases and vascular lesions of the central nervous system affecting the middle aged and the elderly have taken the predominant place in the mortality tables formerly.[2]

This insight would not, however, receive due prominence in health policy planning for nearly 40 years. Understandably, Sri Lanka as a low-income country directed its attention and limited resources to the more acute and pressing health threats presented by infectious diseases such as malaria, TB, leprosy, the infectious diseases of childhood (as discussed in Chapter 2 and Chapter 4), and maternal and infant mortality. The effective control of the transmission of these diseases, their prevention through vaccines and insecticides, and the reduction of case fatalities through improved therapies (antibiotics and other drugs) reduced mortality over the period, and the result was, as Kahawita had predicted, that alongside other developing countries such as Hong Kong, Malaysia and Singapore, for example, Sri Lanka underwent an epidemiological and demographic transition in the latter years of the twentieth century.[3] At the beginning of the twenty-first century, Sri Lanka had the highest percentage of people over the age of 65 in South Asia; in 2003, the percentage of the population over 60 was 8 per cent, and this is predicted to rise to 22 per cent by 2031, with life expectancy rising to 76 for men and 81 for women.[4]

During the second half of the twentieth century, the proportion of all deaths due the circulatory diseases (such as heart disease and stroke) increased from 3 per cent to 24 per cent, while that due to infectious disease decreased from 42 per cent to 20 per cent.[5] Sri Lanka at the millennium was in the later stages of the epidemiological

1 D. L. J. Kahawita, *Annual Medical Report 1954*, B7, SLNA.

2 Kahawita, *Annual Medical Report 1957*, B6, SLNA. For an analysis of the development of ideas about NCDs, or chronic disease, as they are alternatively termed, see George Weisz, *Chronic Disease in the Twentieth Century: A History* (Baltimore: Johns Hopkins Press, 2014).

3 Lado T. Ruzieka and Harald Hansluwka, 'Mortality Transition in South and East Asia: Technology Confronts Poverty', *Population and Development Review* 8, no. 3, 1982, 567–88.

4 Palitha Abeykoon, 'Health and Social Welfare in Sri Lanka: Its Evolution and Future Research Priorities', *Technical Report Series 2, Country Studies in Health and Welfare Systems: Experiences in Indonesia, Islamic Republic of Iran and Sri Lanka*, WHO KOBE Centre, 2003, 82, available at www.apps.who.int/iris/bitstream/10665/70654/1/WHO-WKC.Tech.Ser (accessed 21 June 2016).

5 Michael Engelgau, Kyoko Okamoto, Kumari Vinodhani Navaratne and Sundararajan Gopalan, *Prevention and Control of Selected Chronic NCDs in Sri Lanka: Policy Options and Actions, Health Nutrition and Population (HNP) Discussion Paper*, World Bank, Washington, 2009, xv. For example, Sri Lanka was declared malaria-free in 2012.

transition characterised by 'receding pandemics, control of infectious disease, improved maternal and child health and increasing life expectancy', but 'accompanied, in part because of an increased aging population, by NCDs becoming more common'.[6] Non-communicable diseases (NCDs) now account for the greater part of the disease burden of Sri Lanka.[7] This means that health services, previously geared towards the control of infectious diseases, and maternal and child health services, needed by the end of the twentieth century to adapt to this changing situation. It was also evident that although Sri Lankans were living longer, they suffered many more years of disability compared to the ageing populations of developed countries.[8] Sri Lanka is now facing what a contemporary commentator has described as a potential 'explosive epidemic of NCDs'.[9] In this changing context, the delivery of effective preventive and primary healthcare services acquires extra significance.

At the same time, however, infectious diseases still take a greater toll in Sri Lanka than in developed countries, as we have seen in Chapter 2 in the case of TB; and there is also the emergence of dengue fever and leptospirosis as resurgent infectious diseases. It also has, as Chapter 4 illustrated, the twin burdens of malnutrition and increasing obesity, the latter associated more commonly with the developed world. Furthermore, this demographic and epidemiological transition happened in a far shorter time frame than in the developed world. As Milton Lewis and Kerrie MacPherson have pointed out, 'Developed countries had the historical "luxury" of dealing with chronic diseases after much of the burden of communicable diseases had disappeared.'[10] Paradoxically then, Sri Lanka's success in dealing with the health problems associated with a developing country was simultaneously creating and then having to meet the problems associated with affluent societies. It has now, in common with other low and middle-income countries, to deal with what is termed the double disease burden.[11] In the second half of the twentieth century, however, NCDs within the global health agenda were largely overshadowed by infectious disease and maternal and child health issues, for example; they were not included in the millennium development goals (MDGs), and set goals for NCDs only arrived on the international scene in the 2000s. The WHO Global Strategy for Prevention and Control of Non-Communicable Diseases in 2000 was followed by the Global Strategy on Diet, Physical Activity and Health in 2004, the Global Alliance against Chronic Respiratory Disease in 2004, and the 2008 Action Plan on the Global Strategy for the Prevention of Chronic Disease.

This general sidelining of NCDs forms the backdrop for this chapter, which aims at examining policy responses towards NCDs through two case studies—cancer and heart disease—chosen because their causes are associated particularly with lifestyle, and thus, they relate closely to the question of preventive and promotive healthcare as an aspect of primary healthcare.

THE INCIDENCE AND AWARENESS OF NCDS

A major obstacle when examining their incidence in Sri Lanka, for both contemporaries and historians, was and is the lack of reliable and extensive statistics on the morbidity and mortality from the most common NCDs—heart disease, cancer, diabetes and hypertension. Throughout this period, the reliability of mortality and

6 Engelgau et al., *Prevention and Control*, 3.

7 The term 'NCDs', as described by the WHO, refers to four disease groups: cardiovascular diseases, cancers, chronic respiratory diseases and diabetes.

8 Engelgau et al., *Prevention and Control of Selected Chronic NCDs in Sri Lanka*, 3.

9 R. Premaratne, A. Amarasinghe and A. R. Wickremasinghe, 'Hospitalisation Trends due to Selected Non-communicable Diseases in Sri Lanka, 2005–2010', *Ceylon Medical Journal* 50, no. 2, 2005, 52.

10 Milton J. Lewis and Kerrie L. MacPherson, 'Health Transitions and the Double Disease Burden in Asian Pacific Countries: Some Introductory Observations', in *Health Transitions and the Double Disease Burden in Asia and the Pacific: Histories of Responses to Non-communicable Diseases*, ed. Lewis and MacPherson (London: Routledge, 2013), 1.

11 See, for example, Lewis and MacPherson, Disease Burden'.

morbidity statistics generally cannot be taken for granted, but there was also little attempt, unlike for many of the infectious diseases, to collect data on NCD mortality, and particularly, the morbidity they caused. Extensive statistics on the special campaigns against the infectious diseases appeared assiduously in the annual medical reports, health bulletins and weekly epidemiological reports, but data on NCDs can only be obtained from hospital records, as Sri Lanka, alongside other developing countries, did not collect population-based morbidity statistics. As annual health bulletins repeatedly stated throughout the 1980s and 1990s, these hospital records were the only source of data on morbidity, and they could only therefore present a partial picture. There was no data, as for example, the 1992 Annual Health Bulletin explained, on those who 'were admitted to Ayurveda and private hospitals, and the large numbers who attending the outpatient departments of Government medical institutions, dispensaries of private practitioners and offices of Consultants'.[12]

Furthermore, it was estimated that 'the private sector comprising western and traditional medicine, accounts for 55 per cent of the patient load which is mainly outpatient management'.[13] Added to this, there was the factor of self-medication, facilitated at this time, as highlighted in this Bulletin, by the 'laxity of the Cosmetic Devices and Drugs Act which permits the purchase of a wide range of drugs without professional prescription'.[14] It therefore concluded that 'the morbidity load, as indicated by statistics obtained from Government hospitals is only the tip of the iceberg.'[15] Given these problems, the best that can be obtained from hospital data is an estimation of possible trends. Table 5.1 shows the trends for selected diseases in hospital morbidity and deaths at government institutions for selected years.

Changes in hospital diagnostic and recording practices over the period cannot be ascertained, but it is generally accepted that the trends revealed in this table are more than a statistical artefact. It not only shows that infectious and parasitic diseases still dominated hospital mortality and morbidity, but it also points to a steady rise in diseases associated with ageing. For instance, by 1996, ischaemic heart disease was the leading single cause of death in hospitals. These figures confirm the presence of the double disease burden facing Sri Lanka.

Although in the sources from the 1950s to the 1980s, material on NCDs is limited, there is evidence that the Medical Department recognised the need to pay attention to their incidence despite the almost overwhelming prevalence of infectious and parasitic diseases. Kahawita, DHS, again noted in his 1957 report, that second to infectious diseases, inpatient hospital admissions were dominated by four major disease groups—malignant neoplasms, diabetes mellitus, cardio-vascular diseases and rheumatic disease. He also highlighted the particular problems they presented, and the change in approach from the health services they necessitated. These problems were:

> obscure aetiology, insidious onset and multifarious symptoms. Since the aetiology is largely obscure primary prevention is not a practical proposition as in most infectious diseases. Yet there is much that can be done in these diseases by preventive health measures based mainly on secondary prevention. This implies early detection and diagnosis followed by prompt treatment and rehabilitation. We have to go a long way before most of our doctors and nurses, geared towards diagnosis and therapy alone, are made to

12 'Health Transitions and the Double *Annual Health Bulletin Sri Lanka* (Colombo: Ministry of Health, 1992), 4; Sec. 'Morbidity and Mortality', 26. This explanation was repeated almost verbatim in subsequent bulletins up to 2000.

13 *Annual Health Bulletin Sri Lanka, 1992*, 26.

14 *Annual*, 26.

15 *Annual*, 26.

> recognize that on either side of the care of the acute ill there is preventive medicine and rehabilitative medicine.[16]

As Chapter 1 has shown, recognising the importance of preventive medicine was not easy to translate into practical policy. Given the economic resources available to Sri Lanka, how successfully did the medical services respond to the challenges outlined above? And to what extent did their approach to tackling NCDs fit in with their avowed commitment to delivering health care for all? These questions are explored in the two main sections of this chapter on cancer and heart disease.

Table 5.1. Trends in Hospital Morbidity and Deaths at Government Facilities for Selected Diseases for Selected Years.

Disease Groups	*Cases Per 1,00,000 Population*				*Deaths Per 100,000 Population*			
	1965	*1975*	*1985*	*1996*	*1965*	*1975*	*1985*	*1996*
Diseases of the Respiratory System*	3,501	2,341	2,180	2,150	32	31	17	15
Neoplasms	127	156	121	200	8	9	7	12
Diseases of the Circulatory System	538	575	659	940	32	42	38	50
Diabetes Mellitus	n/a	96	87	154	n/a	5	2	3
Hypertensive Disease	129	122	187	340	4	6	5	3
Ischaemic Heart Disease	n/a	76	164	256	n/a	8	16	17
Tuberculosis	120	114	74	53	9	8	4	3
Helminthiasis	617	231	112	15	5	2	0	0
Malaria	n/a	800	437	290	0	1	0	0
Infectious and Parasitic Diseases	2,633	2,341	2,081	2,185	49	42	19	14

Note:
* This would include pneumonia, bronchitis, influenza, lung cancer, but not TB, which was computed separately.
Source: Compiled from Table 2.2.e: Trends in Hospital Morbidity and Hospital Deaths at MOH Facilities by Diagnostic Category, 1965–1996, in William Hsiao, *A Preliminary Assessment of Sri Lanka's Health Sector and Steps Forward* (Cambridge Massachusetts: Institute of Policy Studies Health Policy Programme, Sri Lanka: 2000), 26.

CANCER: 'THE DEFINING PLAGUE OF OUR GENERATION'[17]

Cancer is the only NCD that it is possible to trace through with any detail from the late-1940s to the year 2000. The annual medical reports of the 1940s to 1960s, for example, refer to the heart, diabetes and cancer outpatient clinics at the General Hospital, Colombo (GHC), but for the most part the information given is limited to enumerating the numbers of cases attending the specialist clinics and mortality and morbidity numbers in hospital returns. However, in the 1950s, a separate facility for cancer was established, which makes it possible to follow the approach to the disease and the kind of cancers suffered through to the end of the century.[18]

16 *Annual Medical Report 1957*, B7.

17 Siddhartha Mukherjee, *The Emperor of all Maladies: A Biography of Cancer* (London: Fourth Estate, 2011), xvii.

18 The General Hospital in Colombo was the major hospital on the island, and as the most of the up-to-date facilities and specialists were located there, it drew people from all over the island. See Margaret Jones, *The Hospital System and Health Care: Sri Lanka, 1815–1960* (Hyderabad: Orient BlackSwan, 2009), for an account of the development of these curative institutions in the colonial and immediate post-colonial period.

Cancer is the generic term for a large group of diseases that can affect any part of the body (other terms used are neoplasms and malignant tumours). As modern medicine now knows, it is caused by the uncontrolled growth of a single cell that has been unleashed by mutations in the Deoxyribonucleic acid (DNA) of the sufferer, and which occurs in one part of the body and then spreads to adjoining parts in a process known as metastasizing. There can be no single cure, although for much of the twentieth century, cancer specialists directed their efforts, with some success for certain cancers, to finding one. The sequencing of the human genome in 2003 has led to similar projects to sequence the cancer genome in the hope that drugs can be specifically targetted towards an individual cancer. Although this renders the way forward clearer, the end is still some way off, and cancer remains one of the leading causes of death worldwide. In 2015, it was the second leading cause of death globally, responsible for 8.8 million deaths (nearly one in six of all deaths), and approximately 70 per cent of those deaths occurred in low- and middle-income countries.[19] As with heart disease, many cancers are preventable. The WHO estimates that around one-third of cancer deaths are due to 'behavioral and dietary risks: high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use and alcohol use'.[20] These are all factors associated with the other NCDs, too, and thus, prevention should be a viable option for reducing mortality and morbidity even among an ageing population. One way forward to reduce cancer is therefore to persuade people to make better choices about their lifestyle; but this strategy places the burden of prevention on individuals and bypasses the social and economic determinants that lie behind their choices.

Recognition of the incidence and types of cancers that predominated in Sri Lanka resulted in special provision for cancer patients at a time when, in terms of sheer numbers, they were less of a problem than heart disease, let alone compared to infectious disease. The treatment regimes for cancer patients in Sri Lanka mirrored the therapies practised in the West, namely surgery and radiotherapy, and then later chemotherapy, as it became available. These treatments were expensive; the costs of the purchase, maintenance and the replacement of outdated X-ray equipment, for instance, was a burden on the health service budget that could not always be met, given the competing demands. Furthermore, specialist medical personnel and technicians also needed to be trained. As with TB, charitable activity attempted to fill some of the gaps left by the government provision. In 1948, the Sri Lanka Cancer Society was established, and like the CNAPT, it was responsible over the years for raising funds for wards, homes and hospices, public education, and for the provision of volunteers to help with the care of patients.[21]

The cancers found in Sri Lanka reflected for the most part those found anywhere in the world, but because of the habit of betel-chewing, there was also a notably high incidence of cancers of the mouth and throat throughout the period. The 1948 DMS Report referenced a rise in all cancer patients in the 10 years prior to independence, from 941 cases in 1938 to 2,344 in 1948, and noted that buccal cancer made up 48.2 per cent of these cases. Buccal cancer, as it was pointed out, was a 'preventable disease if oral hygiene was insisted on and betel chewing is reduced', but it continued to be one of the major cancers that patients presented with at the hospital clinics.[22] In 1951, of the 2,169 cases treated with X-ray therapy, nearly 700 were suffering from some form of mouth cancer. The next most common forms were cancers of the cervix and breast—216 and 110, respectively.[23]

A second cancer clinic was opened at Kandy Hospital in 1951. It was held on the first Saturday of every month for patients from the Central Provinces, NCP and Uva province, but cases needing treatment were sent to the

19 WHO, Cancer Fact sheet, Updated February 2017, 1, available at www.who.int/mediacentre/factsheets/fs297/en/ (accessed 8 March 2017).

20 Ibid.

21 See Sri Lanka Cancer Society, available at www.cancersocietysrilanka.org/about_us/milsetones.htm (accessed 14 March 2017).

22 *Annual Medical Report 1948*, C30.

23 *Annual Medical Report 1951*, B27.

clinic at the GHC. Radium mould therapy had begun there for cancers of the palate, jaw and mouth for the first time at the beginning of the year, which had apparently 'yielded very encouraging results'. The GHC had four machines for X-ray therapy that could administer contact, superficial, intermediate, deep and super voltage therapy. The two machines primarily for cancer therapy, it was noted, had had very heavy usage over the year, and in order to meet the increasing demand for X-ray treatment, the radiology building was being extended and three more plants for X-ray therapy were in the budget for 1951–52.[24] For the first time in 1951, there was some attempt to establish a follow-up system to maintain contact with patients after treatment. Reportedly, the Medical Department was also active in public education. It provided propaganda against cancer for the Kolonnawa, Trincomalee and Kalutara health exhibitions: a booklet in the three languages, entitled (somewhat optimistically, it might be said), 'Cancer Can be Cured' was distributed 'freely' by the department 'for the education of the masses': a film, 'Challenge Science against Cancer', was shown in various cinemas in Colombo and the outstations, and all correspondence from the Medical Department bore the emblem, 'Protect those you love against Cancer'.[25] This propaganda, the DMS claimed, had had the 'desired effect of bringing patients in stages of the disease where cure is deemed possible'.[26]

The increase in cancer patients two years later in 1953 was attributed to the success of the intensive propaganda campaign for the early detection and treatment of cancer. Out of the 2,262 new patients who were treated in the radiography section in that year, again the largest single cancer (856 patients) was of the mouth, followed by 247 and 283 patients with cancers of the breast and cervix. The promised extension was nearing completion and there were now three senior X-ray technicians trained in deep ray therapy to staff the new plants when they went into operation. Sir Standord Cade, a world expert on cancer therapy, had visited the Department in September. He had 'remarked on the high standard of work that appeared to be carried out' and 'complimented it on the efficient Anti-Cancer propaganda work done'.[27]

The importance placed on cancer is highlighted by the decision to establish a specialist cancer clinic for the whole island at Maharagama, just outside Colombo, the designs for which were in place by 1953. This singling out of cancer for special attention is perhaps partly explained by the Director of the Medical Department, Dr Kahawita's recognition in his 1953 report that there had been a global increase in cancer mortality (whether real or because of better diagnosis). In his opinion, unlike heart disease, which he saw as 'mostly degenerative' and 'the result of the physiology of old age', cancer was 'incontrovertibly a pathological condition'. Although the cure and prevention of cancer was still unsolved, he argued, surgery remained the 'treatment of choice', and 'early detection' remained the 'only hope of cure'.[28] Detecting cancers at the early stages was the primary message of public education on the disease at this time, as illustrated by an article in the *Ceylon Daily Mirror* in March 1961. Headlined 'BEWARE! CANCER IS NO RESPECTOR OF PERSONS', and quoting the Moratuwa MOH, Dr R. B. Rajakone, it warned that cancer 'does not confine itself to any class or race of people. Its only restriction is with regard to age'. As people lived longer and the health services improved, he stated, 'the control of cancer assumed more and more importance', and the 'first step in controlling cancer should be taken by the individual. It was firstan individual problem and then a collective problem'.[29]

24 *Annual*, B259.

25 *Annual*, B259.

26 *Annual*, B259.

27 *Annual Medical Report 1953*, B111. Sir Standord Cade, a British cancer surgeon, had pioneered radiotherapy treatment at Westminster Hospital in the UK in 1929.

28 *Annual*, B6.

29 'BEWARE! CANCER IS NO RESPECTOR OF PERSONS', *Ceylon Daily Mirror*, 7 March 1961, 3, SLNA.

The Maharagama Cancer Institute (MCI) was finally completed and opened in 1957. At this time, it had accommodation for 168 inpatients, but as the central clinic for the diagnosis, treatment and control of cancer, it steadily expanded in size and scope. By 1966, its bed strength had risen to 254, but because the number of beds was so restricted, very few patients received inpatient care. Only the cases, it was stated, 'that need and could benefit from in-door treatment' were admitted to the institute, and the selection of such cases was done by the specialists at the cancer clinics.[30] Given that nearly 3,000 new cases were seen from October 1966–September 1967, and over 6,000 existing cases reviewed, the selection of eligible patients must have been a well-nigh impossible task.[31] This was not a shortfall that charity could compensate for, although the Cancer Society was active in funding accommodation for the care of cancer sufferers; for example, the Bandaranayake Memorial Homes was established in 1958 and the Karl Beven home in 1962. Each had accommodation for 60 cancer patients, again only touching on the problem.[32] Patients at the MCI received the standard combination of surgery and radiotherapy that included cobalt therapy, and it is noted that a daily average of 100 patients were treated with this therapy, and 50 were treated with deep X-ray therapy for 22 days a month.[33]

By the middle of the 1970s, as Sri Lanka's demographic change advanced, the question of cancer and how to prevent it received more public attention. For example, *The Ceylon Daily News* devoted a full page on the Sri Lanka Cancer Society Cancer week in September 1976, which featured pieces by, among others, the Prime Minister, Sirima Bandaranaike, the Minister of Health, Siva Obeyesekere and the president of the Cancer Society, Dr D. F. De S. Goonewardena.[34] This was the second Cancer Health Week launched by the Sri Lanka Cancer Society. The first in 1975 was inaugurated under the theme, 'Early detection cures cancer'.[35] The subject of this cancer week was 'Betel chewing and cancer' and included an article by a visiting radiotherapist to the MCI, Dr H. K. T. Fernando, in which he outlined the problem. He began by pointing out that 35–40 per cent of all cancers in Sri Lanka were mouth cancers and that there was a clear association with the habit of betel-chewing as the commonest part of the mouth affected was the cheek. He offered four pieces of advice to readers for prevention: to chew 'moderately', to 'use less lime and tobacco', to wash the mouth after chewing, and to not 'leave the chew overnight in the mouth'.[36]

Within Sri Lanka and internationally, interest in cancer in the developing world was growing. For instance, in 1975, Dr S. Sivayoham, an MO with the Epidemiology Unit, was requested by the government to develop an epidemiology of cancer. At the same time, the WHO was also beginning to focus on NCDs in the developing world, and this mutual interest came together in the Cancer Epidemiology and Research Project agreed between the Sri Lankan government and the WHO in 1977.[37] This was a two-part initiative. In 1977, Dr Thomas Mack, a WHO cancer consultant, spent three months on the island to assist in setting up a methodology of cancer epidemiology and advise on the organisation of a national cancer control programme for early detection,

30 *Annual Medical Report 1966–67*, B363.

31 *Annual*, B363.

32 WHO, Cancer Fact Sheet.

33 *Annual Medical Report 1966–67*, B182.

34 'SRI LANKA CANCER SOCIETY: CANCER WEEK', '76', *The Ceylon Daily News*, 27 September 1976, Advertising Supplement, 6.

35 William Gopallawa, 'Important Theme', CANCER WEEK, '76', 6. Gopallawa was the last Governor-General of Sri Lanka before the declaration of the republic in 1972.

36 H. K. T. Fernando, 'Cancer in Sri Lanka: CANCER WEEK, '76', 6.

37 B. K. Anand to V. T. H. Gunaratne Regional Director, SEARO, 30 November 1976, SRL/Can/001, Project Files, WHO Archives. As noted in Chapter 1, Dr Gunaratne was a previous DMS in Sri Lanka (1964–67) and was the Regional Director of SEARO in 1976. As further evidence of this increased interest, the Cancer Society expanded and opened two more branches in Kandy in 1971 and Galle in 1973.

diagnosis and treatment. The following year, a second consultant, Dr Ivan Koza, was funded to organise combined therapy for cancer treatment and to train health personnel.[38] Both doctors, as was usual, came from richer Western countries, and thus, the contrasts between what they were familiar with in cancer services and what they encountered were no doubt stark.

Even so, Mack argued that Sri Lanka had many advantages for a successful cancer control programme. The island was small with a high literacy rate, the population was 'strongly oriented to the benefits of Western medicine, physicians were "relatively numerous" and there was a free medical service that was accessible "even to the inhabitants of remote villages'.[39] The factors that made it an interesting case study for cancer specialists, in his opinion, were that its population was diverse in 'ethnic origin, religion and occupation', which led to differences in personal habits (tobacco and alcohol use), diet (from vegetarianism to a completely Westernised diet), and past history of disease. Furthermore, it had some labour-intensive industries of specific interest for cancer (asbestos, rubber, chemical and tea).[40] This project was thus advantageous to both parties: the Sri Lankan government obtained funds and expertise towards setting up a cancer control programme, and the WHO had the opportunity to test strategies from the West in a developing country. The resulting reports from Mack and Koza provide valuable information on the epidemiology of cancer and the state of cancer services by the late-1970s.[41] Their findings exemplify the dilemma that NCDs like cancer presented to the government. As they received increasing attention from the medical profession and public alike, expectations for their treatment and cure created ever more pressure on the medical services and its budget, and as is evident in these reports on cancer, meeting these demands was possibly unattainable.

Dr Sivayoham had decided to set up the surveillance system based on patients seen at MCI and had, by the time of Mack's arrival in the island, collated the data for 1975 and part of 1976.[42] Tables 5.2 and 5.3 show the most common cancers for men and women, for the most at-risk age groups taken from the 1975 figures, collected by Dr Sivayoham.

These figures were not precise as they were based solely on the cancer notification forms completed by the staff at the MCI. No other institution collected these figures and there was no population-based registry of patients, the establishment of which was one objective of this WHO/Government project. However, as most cancer patients were funnelled into the MCI, Koza considered that they did reflect fairly accurately the types of cancers in the population, if not their actual number, which was likely to be higher than these figures.[43] They confirm that the most common cancers were of the mouth for men and mouth, breast and cervical cancers for women.

As a result of Mack's visit, two pilot research studies were instigated into the most common cancers. The first was conducted by Dr Sivayoham; described as a 'preliminary fishing expedition', it was a case-control study that looked at the quantitative role of the various factors involved in buccal-pharyngeal, oesophageal, breast, and cervical cancers. The second was on oral cancers, based at the Dental Medical School in Peradeniya.[44] The

38 Thomas Mack, WHO Short-term Consultant, 'Cancer Epidemiology and Research, Sri Lanka: Assignment Report', 28 December 1977–18 February 1978, 1, SRL/Can/001, Project Files, WHO Archives; Ivan Koza, 'Cancer Epidemiology and Research in Sri Lanka: Assignment Report', 22 October 1978–26 January 1979, SRL/Can/001, Project Files, WHO Archives.

39 Mack, 'Cancer Epidemiology and Research', 28 December 1977–18 February 1978, 1.

40 Mack, 'Cancer Epidemiology', 1–2.

41 Mack was Director of the Cancer Surveillance Programme, Los Angeles County, University of Southern California Cancer Centre, Los Angeles, and Koza was Chief of the Department of Haematology, Institute of Clinical Oncology, Bratislava, Czechoslovakia. Mack mentions the one previous cancer study visit by the WHO consultant, T. Hirayam, sometime in the early- to mid-1960s, but unfortunately, I have been unable to locate any sources on this.

42 Mack, 'Cancer Epidemiology and Research', 28 December 1977–18 February 1978, 2.

43 Koza, 'Cancer Epidemiology and Research', 1.

purpose of establishing the epidemiology of cancer was in order to find ways to prevent and control it. This could best be done through screening to detect cancers early, but as Mack highlighted, there were particular obstacles to successful population screening programmes in Sri Lanka. Screening for cervical cancer was a well-established practice in the developed world, and since it was a common cancer in Sri Lanka, it was an obvious policy choice.[45] Additionally, Mack reported that the 'informed opinion' of medical and lay leaders, and the 'conventional wisdom prevalent in the offices of the Ministry and the Cancer Society, uncritically espouse such screening'.[46] However, he noted, there were serious obstacles to an effective programme. For the women who were most at risk—the rural and the middle aged—the pelvic examination 'would be generally unacceptable'.[47] The women who would be available for screening, such as young women who attended the maternity and family planning clinics and educated middle-class women who would volunteer for it, were in any case at low risk. Furthermore, the costs of the necessary public education, employment and training of field workers, and the processing of the smears would be expensive. Lastly, he argued, once it had been initiated, it would be impossible to terminate even if it proved ineffective. To satisfy the 'demand' for such a programme, he advised setting up a pilot project to gain 'familiarity' with the difficulties of recruiting the appropriate women to be screened (those who would not normally take advantage of a voluntary programme), and to train field workers and cytology technicians.[48]

Mack had similar reservations about early detection of breast cancer as he considered it, first, not common enough to warrant, and again, that the women most at risk, the well-educated women (most at risk because of later child-bearing and fewer months of breastfeeding), already received information about self-examination. Another important factor was that the safety of mammography for young women had been questioned, and this was even more relevant in a 'country not able to provide close technical monitoring of the doses of radiation delivered'. Moreover, the equipment was expensive and its purchase could not be justified, given the other demands on the health service budget. However, he noted that given the rising age of first pregnancy, breast cancer would undoubtedly become more common in the future.[49]

The causes of the most common cancer, that of the mouth, were so well-known that they presented the most realistic possibility of intervention through the control of betel-chewing and/or smoking. They would be, Mack argued, the 'logical first choice' for a screening programme. However, screening for bucca-pharyngeal cancer, he noted, had 'not been shown to be effective'; many precancerous lesions 'regress spontaneously' and the only way to screen was by an invasive biopsy rather than by a harmless cytology. Nevertheless, he thought that the high incidence of mouth cancers in Sri Lanka, the fact that they could be prevented, and that oral examination was an acceptable field procedure meant that research on the subject should have 'high priority'. High-risk practices such as sleeping with the quid in the mouth could be identified, and this information could be used for screening those people at risk who would be willing to undergo the procedure.[50] The most effective means of control, he argued, was public education about the effects of the misuse of the betel packets, with the emphasis on the

44 Mack, 'Cancer Epidemiology and Research', 28 December 1977–18 February 1978, 9; Koza, 'Cancer Epidemiology and Research', 1.

45 It was first used in US in the 1940s and offered to all women in the UK from the 1950s onwards, but a national screening programme did not start in the UK until 1988. See L. A. Reynolds and E. M. Tansey (eds), *History of Cervical Cancer and the Role of the Human Papillomavirus, 1960–2000, Wellcome Witnesses to Twentieth Century Medicine*, vol. 38 (London: Wellcome Trust, 2009).

46 Mack, 'Cancer Epidemiology and Research', 28 December 1977–18 February 1978, 11.

47 Mack, 'Cancer Epidemiology', 11.

48 Mack, 11.

49 Mack, 10.

50 Mack, 10.

dangers of the practice of sleeping with the quid or chewing more than five times a day, and the dangers of particular combinations of ingredients. It would also be more effective, he thought, if the young were specifically targetted before the habit was established. He decried the fact that current health education activities did not focus on the habit because of the mistaken belief that the problem was not important compared to infectious diseases. However, despite this belief, it caused as many deaths as tetanus and affected twice as many people annually as rabies and polio combined.[51]

In conclusion, while recommending improvement in registration processes and research projects, Mack rejected nation-wide screening programmes. Screening programmes are an obviously effective measure for the early detection of cancers and were working in the developed world, but for developing countries like Sri Lanka, the fundamental problem was, as Mack highlighted, 'whether or not the available pathological and treatment facilities can be made to cope with the burden added by screening'.[52] Moreover, as he also suggested, it would be those who least needed it who would take advantage of the measure. It raised the question of whether this particular policy transfer would be the best use of Sri Lanka's limited resources. Dr Koza's Report on the many inadequacies and inefficiencies of Sri Lanka's cancer care services in 1979 unreservedly supported this contention that detecting cases early would not necessarily lead to better outcomes.

Dr Koza spent three months in the island focusing mainly on assessing the facilities available at the MCI as the only cancer centre. The MCI then had 450 beds, with a medical staff of six senior consultants, two visiting senior consultants in gynaecology, one visiting plastic surgeon, one anaesthetist, and eight to 10 house officers.[53] A cancer unit had been planned for at Kandy General Hospital, but the 160 bed unit was not functioning, and already, 60 of its beds had been occupied by other specialists (urologists and neurologists). Koza was doubtful that they would be transferred back in the foreseeable future. There was only one functioning operating theatre at the MCI (another was due to open in 1979 but it was located far from the first one). There were two surgical teams; one specialised in head and neck cancers, while the other performed all cancer surgery with the exception of thoracic and brain surgery; but most cancer surgeries were performed at the general hospitals. The MCI was the primary centre for treatment other than surgery, but some gynaecologists outside the MCI used chemotherapy. Koza noted, however, that the combinations of radiotherapy and chemotherapy, and surgery and chemotherapy were rarely used. Most patients were treated by surgery and radiotherapy, and the latter was only available at the MCI where the facilities were clearly inadequate.[54]

There were three radiotherapy wards and each radiotherapist-in-charge had been trained in the UK, but it was clear that the demand for radiotherapy far outstripped the MCI's capacity to provide it. In 1978, the equipment consisted of one superficial radiotherapy unit and three cobalt-60 units, two of which needed replacement parts. There was no preventive maintenance service, and thus, breakdowns were an ever-present possibility. The cobalt units were in operation for 12 hours a day, 5 days a week, operated by 17 radiographers under the direction of one of them. There was no radiotherapist-in-charge of either the units or their staff. Approximately, 300 patients were treated daily by the cobalt units, and 10 with superficial radiotherapy; radiation dosages were checked once a week by the radiation physicists. Radium insertion was used for oral cancers and gynaecological tumours, but no X-rays were taken to check proper insertion.[55] The MCI also had a nuclear medicine unit that had one scintillation counter and one scanning unit.[56] The fact that the MCI had a nuclear medicine unit by the mid-1970s was evidence of the desire to have the most up-to-date treatment facilities, but again, the usual

51 Mack, 12.

52 Mack, 10.

53 Koza, 'Cancer Epidemiology and Research', 3.

54 Koza, 'Cancer Epidemiology', 3, 2.

55 Koza, 3.

problems arose. The budget for purchasing the latest medical technology was found, but there was little money for its maintenance, or for the training of people on its correct use and for sufficient staff. The scanning unit at the MCI at the time of Koza's visit had not been working for two months because of a shortage of spare parts. Radioactive iodine for the treatment of thyroid cancer was not available because of 'minor technical and administrative problems' and there was no physician in charge of the unit, and hence, all the work was done by the technician and the physicist. Although scans were evaluated by the senior consultants, Koza concluded that this could not 'be considered satisfactory'.[57]

Koza praised the departments of Pathology, Haemotology and Biochemistry, even though again staff and equipment shortages meant that not all necessary tests could be done regularly. In fact, he highlighted the general shortage of staff in all departments—from consultants to nurses to maintenance staff—as the major factor in the medical, technical and administrative inadequacies evident at the MCI. Five out of the six senior consultants were more than 50 years old, on the verge of possible retirement, no plans had been formulated for their replacement, and 'very few young doctors', he claimed, 'select cancer medicine for permanent specialization'. Out of the 10 house officers there in January 1979, only two had expressed an interest in pursuing radiotherapy in future.[58] Furthermore, there was no Chemotherapy Department or an experienced consultant in administering it; this was a most noticeable absence in the treatment of 'haemotological malignancies' (leukaemia, lymphoma and myeloma).[59] Koza also emphasised the administrative failings. The MO in charge was responsible for administration, but was not involved in routine and scientific cancer work. The MCI had no director who 'could promote coordination of work and cooperation among staff members, stimulate scientific work and prepare plans for the further development of cancer medicine'. As a result, there had been no scientific or business meetings at the MCI for several years which, he considered, had impeded the 'development of effective cancer control activities at the centre'.[60]

The recipient of this problematic service was the patient, and it is rare that their perspective can be ascertained directly, but it is possible to understand a little of what their experience would be like from the critical assessment of services in Koza's report. According to his account, it seems that for them the ordeal began at the diagnostic stage; a diagnosis of cancer was usually made in the general hospitals, but with a few exceptions, histological confirmation of the initial diagnosis was needed before treatment was begun. This was the first delay to be endured by patients. Delays at all stages of the process, from the onset of symptoms to diagnosis, and then to treatment, Koza reported, were evident for a 'significant number of patients' due to a number of factors. First, there was a lack of diagnostic facilities; only one scanner and one tomography unit were available in Colombo, and there were no facilities for 'radioimmunoassay evaluation of alpha-phetoprotein, HCG and carcinoembryonic antigens'.[61] After diagnosis, insufficient bed capacity and overcrowding at the MCI meant that 'many cancer patients have to wait for treatment', with the result that 'some receive only palliative treatment since cancer becomes incurable by the time definite treatment is begun'.[62] Understandably, too, patients caused some delay themselves by neglecting their symptoms at the outset.[63]

56 Nuclear medicine had been used in cancer therapy in the West since the 1950s and was recognised as a medical specialty by the 1970s.

57 Koza, 'Cancer Epidemiology and Research', 3.

58 Koza, 'Cancer Epidemiology', 4.

59 Koza, 4.

60 Koza, 4.

61 Koza, 2.

62 Koza, 2.

63 Koza, 2.4, 2.

After what would undeniably have been an anxious wait for diagnosis, the care that the patient experienced left much to be desired. The overcrowding affected their physical environment. Some wards, Koza stated, were 'very good and clean, but greater efforts should be made in respect of orderliness and cleanliness of other wards'. Lack of basic equipment added new hazards to their care; no disposable syringes or needles were available so that 'protection against Hepatitis virus cannot always be assured'.[64] Koza, even more tellingly, considered that not enough time was given to patients. In the outpatient clinics, 'not all patients receive careful and complete examination during their visit', and in the wards, too, not all 'received enough attention during the ward rounds'.[65] He attributed some of this, but not all of it to the shortage of medical staff and the heavy workload. He acknowledged that the great majority of the senior staff were 'interested in the management of their patients, and a number of examples of the excellent work of surgeons, radiotherapists and pathologists can be seen', and that the medical staff did a 'large amount of work'.[66] However, he felt that with 'greater discipline and greater commitment the quality of the work in the Institute can be improved considerably'. This applied particularly to the 'quality of patient records, evaluation of treatment results and the filling up of cancer notification forms'.[67] His major complaint was that senior staff committed too little of their time to patients at the Institute. Apart from their weekly one-day clinic at the GHC, the majority only held their outpatient clinics at the MCI in the mornings; two-thirds of the senior consultants, therefore, only worked in the mornings and only very exceptionally in the afternoons. This, Koza explained, had 'some influence on house officers, who do not work hard in the absence of their chiefs'.[68]

Given that the majority of patients, according to Koza, arrived at the MCI in 'an advanced state of the disease', the best strategy for control Koza emphasised (as had Mack before him) was prevention through better public health education. Also, given the limited success rates of cancer therapies at the time, this made sense in any context, not just in developing countries. As with TB, the health education of the public about cancer in Sri Lanka was largely left to charitable initiative. The Sri Lanka Cancer Society had developed information on early detection '(seven signals for action, breast self-examination, etc.,)', and on anti-smoking and anti-chewing.[69] With the assistance of the Lions Club (another charitable organisation), they had produced an anti-chewing film entitled 'Watch that Chew'. Koza concluded that awareness of cancer was evident in Colombo and the other larger cities but that greater efforts were needed to 'spread knowledge about the early symptoms of cancer, the importance of early detection and treatment, as well as information on the curability of cancer', especially to the 'remote rural areas'.[70]

Based on the catalogue of deficiencies outlined above, Koza's list of recommendations numbered as high as 17. Included in this wish list of improvements were the appointment of more staff, more specialist training, more equipment and better maintenance services, the establishment of a chemotherapy department at the MCI, and two more cancer centres of between 60–100 beds at Jaffna and Galle. Preparations should be made for post-graduate training in cancer at the MCI, and it should have a scientific board whose head would have overall

64 Koza, 'Cancer Epidemiology', 2.8.8, 5.

65 Koza, 2.8.6, 4; 2.8.8, 5.

66 Koza, 2.8.8, 5.

67 Koza, 2.8.8, 5.

68 Koza, 2.8.6, 4; 2.8.8, 5. Koza provides no explanation for these limited working hours. In 1972, the government had abolished private practice for medical specialists in Colombo, but whether this included the MCI is not clear. See Kamalika Pieris, *The Medical Profession in Sri Lanka, 1843–1980* (Colombo: Visidunnu Prakashakayo Ltd, 2001), 146. If it was not included, then it could be that the senior consultants were seeing their private patients when they were unavailable at the MCI.

69 Koza, 'Cancer Epidemiology', 2.2, 1–2.

70 Koza, 2.2, 1–2.

responsibility for all aspects (medical, scientific and administrative responsibility) of the Institute. An information system should be established for cancer registration and notification, initially in Colombo and Kandy hospitals, but legislation should be enacted to make cancer a notifiable disease throughout the island. All these improvements would stem from his first recommendation, that a national cancer programme be formulated at the end of June 1979.[71]

Acting on these recommendations, the National Cancer Control Programme (NCCP) was established in 1980 with the aim of reducing cases through primary prevention, early detection, diagnosis, the organisation of a referral system, quick therapeutic care, pain relief and research. Three more cancer units were opened in 1983 at Kandy, Galle and Jaffna, with radiotherapy facilities including cobalt-60 units, and in 1985, the first Cancer Register was issued in 1985 based on information from all medical institutions.[72] However, the 1993 *Annual Health Bulletin* reported that the Registry had not been maintained because of the 'lack of resources'.[73] As it got underway, the control programme was responsible for the training of medical personnel—doctors, nurses, oncologists, radiotherapists and nurses—in cancer patient care.[74] The importance of health education was also emphasised in the 1990 *Annual Health Bulletin*, where it was claimed that 'even literate people in the community have a number of false notions on cancer', and that they were 'quite unaware of the fact that cancer is caused by certain lifestyles, let alone the early symptoms of cancer and early detection'.[75] Various forms of public information were used to promote this essential general awareness: pamphlets on breast examination were distributed to family health workers and PHIs, a poster on the seven cardinal points of cancer was distributed throughout the island, articles were published in newspapers and magazines (for example, *Vidunena* and *Subastheta* highlighted two stories about cancer), and State Television also broadcasted programmes on cancer on at least three occasions (two of them were in Sinhala and English).[76] This *Bulletin*'s reference to pain relief hints again at the nature of the patient experience. It acknowledged that 'pain relief is a very important aspect in patient care', but noted that at present it was limited to the 'institutions where treatment is carried out for cancer patients', and also stated that with the 'expected home based management of terminal cancer it is necessary to educate the people and health workers on effective management of pain'.[77]

This critical assessment of the deficiencies of Sri Lanka's cancer care services illustrates Sri Lanka's dilemma. At a time, from the 1970s onwards, when the emphasis was on the provision of health for all through primary healthcare, there was also increasing demand from the population to provide the best treatments offered by Western medicine, and this meant committing more and more of the limited resources to this curative endeavour. Mack and Koza's reports, for example, highlighted the difficulties of trying to replicate the therapeutics of the affluent world. Funds for capital-building and expensive medical technology could be found as a one-off cost, but it was a far greater challenge to find the continuing finances for staffing and maintenance. Hence, the apparent rationality behind the point made in the Alma Ata declaration, that healthcare should be affordable and use 'appropriate technologies' for the context. The problem with that idea, as Paul Farmer has so cogently argued, is that it denies to the poor of the world the best in therapeutics that is taken for granted by the rich.[78]

71 Koza, 4–5, 7.

72 *Annual Health Bulletin 1990*, 108.

73 *Annual Health Bulletin 1993*, 121.

74 *National Health Development Plan 1993* (Colombo: Ministry of State for Health, Democratic Republic of Sri Lanka, 1993), 51.

75 *Annual Health Bulletin 1990*, 108.

76 *Annual*, 109.

77 *Annual*, 110.

Table 5.2. **Incidence of Cancers in Men Per Million by Selected Ages in 1975.**

	40-49	*50-59*	*60-69*	*70 Plus*	*World: All Ages*
Lip	5.6	11.2	15.4	15.3	3.4
Tongue	11.7	55.1	64.9	76.2	76.3
Salivary gland	0.7	5.1	6.8	6.1	1.4
Mouth	67.3	151.1	271.4	345.0	56.7
Oesophagus	16.8	32.7	61.4	48.8	12.0
Larynx	0.7	6.1	12.1	3.7	2.7
Lung	16.8	9.2	1.9	0	3.1

Source: Compiled from WHO Archives, SRL/Can/001, Project Files, Thomas Mack, WHO Short-term Consultant, 'Cancer Epidemiology and Research, Sri Lanka. Assignment Report, 28 December 1977–18 February 1978', Annex 2, 16.

Table 5.3. **Incidence of Cancers in Women Per Million by Selected Ages in 1975.**

	40-49	*50-59*	*60-69*	*70 Plus*	*World: All Ages*
Mouth	33.3	61.6	92.6	87.5	20.5
Oesophagus	38.3	45.9	54.7	18.1	14.9
Breast	81.7	78.6	81.1	45.2	29.1
Cervix	97.5	147.5	143.4	144.8	44.5
Uterus	5.0	12.1	13.2	12.1	3.4
Ovary	13.3	13.3	11.1	3.0	3.1

Source: Compiled from Mack, 'Assignment Report, 28 December 1977–18 February 1978', Annex 2, 17.

HEART DISEASE

An article *Ceylon Observer* of April 1951, entitled 'Heart Disease; Woman in the Home Plays a Star Role in Fighting Illness' illustrates an awareness of heart disease and its causes, which would not be out of place in any Western newspaper of the time. It was a plea to women to be active in preventing heart disease in their husbands.[79] After pointing out that women were protected by their hormones from heart attacks, the author Rohan Peiris appealed directly to the wives of the island (or more accurately, to the English-speaking elite wives): 'We might not think men are great guys but still we like them to live as long as we do or even longer if they like to. Otherwise with whom could we argue, quarrel or make up with?'[80] She based her plea on interviews with different heart specialists who linked heart disease variously to diet, diabetes and smoking. One doctor she interviewed thought it was too much coconut and coconut milk in the diet that contributed to a fatty build-up and hardening of the arteries. A second specialist, on the other hand, thought vegetable fats such as those in coconut were not harmful, but it was rather animal fats in, for example, 'butter, ham and bacon', and the cholesterol in eggs that were the culprits. He also pointed out that in rural areas where no animal fats were eaten, the incidence of heart disease was much less.[81] *The Ceylon Observer* was an English-language newspaper read by

78 See, for example, Paul Farmer, 'Conversion in the Time of Cholera: Reflections on Structural Violence and Social Change', in *Conversations with Dr Paul Farmer and Fr Gustavo Gutierrez In the Company of the Poor.*, ed. Michael Griffin and Jennifer Weiss Block (New York: Orbis Books, 2013), 95–145.

79 Rohan Peiris, 'Heart Disease: Woman in the Home Plays a Star Role in Fighting Illness', *The Ceylon Daily Observer*, 4 April 1951, 6. *The Ceylon Daily Observer* was an English-language newspaper, and was obviously read by the urban English-speaking elites, as this article clearly shows, particularly in the references to 'butter, ham and bacon'.

80 Peiris, 'Heart Disease', 6.

the urban English-speaking elites, as this article clearly illustrates in its references to the entirely Westernised diet of 'butter, ham and bacon'.[82]

However, there is very little information on heart disease in the sources for the first three decades, mainly because data was not available. The medical reports of the 1950s and 1960s merely provide information on the numbers of cases treated at the heart clinic at the GHC, and they highlight the continuing problems with the poorly maintained and insufficient equipment, in this case, the electrocardiogram (ECG) machines. In 1976, the World Health Assembly passed resolution WHA.29.49, requesting the Director General to initiate long-term planning in the prevention and control of cardiovascular diseases (CVDs), evidence that NCDs were beginning to appear on the international health agenda. This bore fruit in Sri Lanka in a WHO/Government project on CVDs in the following year when the Danish cardiologist, Professor A. Tybjaerg Hansen, visited the island from 9 June–8 September 1977 to report on them. His assignment was to train health personnel in the epidemiology of rheumatic and ischaemic heart disease, to initiate and give help to research projects on these diseases, and to advise on prevention and control.[83] There were no available statistics on heart diseases, but the incomplete figures on rheumatic fever were enough, he suggested, to indicate that this at least was relatively common in Sri Lanka. However, as rheumatic fever was associated with poverty, rheumatic heart disease would then disappear 'wherever and whenever the socio-economic conditions are improved, as has been the case in the industrialised West'.[84]

This meant for Hansen, however, that Sri Lanka presented an opportunity for research on the causes of the fever as they could only be assessed retrospectively from the circumstances of its decline in the West. He argued that a study on the island might make it possible 'to sort out more specific factors in a prospective study and thereby reach a better understanding of which individual elements in a socio-economic development carry the most weight'. If these could be uncovered, it 'might lead to a preventive strategy which is more practicable and less expensive' than trying to raise general socio-economic levels which had, after all, he noted, had taken 'over approximately a century' in industrialised countries.[85] The analysis of ischaemic heart disease presented similar challenges, although he assumed that it was 'not a rarity' that there was no information that could produce an 'absolutely reliable picture of the situation'.[86] This applied not only to morbidity, but also to the more 'well-defined and more easily detected complication of acute myocardial infarction'. The only available statistics came from hospital admissions, and they were not sufficient 'even to indicate the trend of this serious facet of ischaemic heart disease'.[87]

These general comments about the situation with regard to heart disease were not, he admitted, 'sufficient justification for the application of Western standards to the situation in Sri Lanka'. Given the lack of resources, the prevention of heart disease was the only feasible strategy as both types of heart disease only became obvious when patients' symptoms became prominent, and by then, the disease was 'symptomatic, not curative' and treatment was of 'only limited effect'. Furthermore, as he pointed out, modern treatment required 'sophisticated and expensive equipment, and highly specialized and ample personnel'.[88] Hansen argued, as Mack had also for cancer (their stay in the island overlapped, and thus, it would be safe to assume that they met and discussed their

81 Peiris, 6.

82 Peiris, 6.

83 A. Tybjaerg Hansen, WHO Short-Term Consultant, 'Cardiovascular Diseases in Sri Lanka: Assignment Report, 9 June–8 September 1977', 1, Project Files, SRL/CVD/001, Cardiovascular Diseases—Sri Lanka, WHO Archives, Geneva.

84 Hansen, 'Cardiovascular Diseases', 2.1, 1. One long-lasting effect of rheumatic fever caused by the *streptococcal bacterium*, and still common in children living in poor socio-economic conditions, can be a damaged heart.

85 Hansen, 'Cardiovascular Diseases', 2.1, 2.

86 Hansen, 2, 1; 2.2, 2.

87 Hansen, 2.2, 2.

projects), that Sri Lanka had the right conditions for an epidemiological study of rheumatic and ischaemic heart disease in a developing country. This would be a good opportunity to embark on preventive work 'for the direct benefit of the population of Sri Lanka and, as a corollary, acquire important experiences also to be applied elsewhere in the developing and the developed world'.[89] However, the kinds of epidemiological studies carried out in affluent countries would not, he noted, be appropriate because they required 'sophisticated and expensive organization and heavy costs', which is why he advocated 'an elementary epidemiological approach'.[90]

The first necessity for any preventive action, or as Hansen saw it, 'almost a *conditio sine qua non*' was the establishment of 'simple but comprehensive and complete morbidity statistics'. This could be accomplished, first, by making rheumatic fever a notifiable disease based on agreed clinical criteria. Trends on rheumatic fever would be revealed in lesser time than trying to establish them for rheumatic heart disease; thus, the fever incidence should be the basis of an epidemiological study. Similarly, for iscahemic heart disease, it would be better to concentrate on acute myocardial infarction, as again this was easier to recognise; almost all patients suspected of having a heart attack were hospitalised and could be diagnosed through an ECG examination.[91] Even so, this should only be attempted in pilot studies in 'suitably manageable administrative areas', not across the whole island.[92] Furthermore, the pilot project should include within its scope the possibility of 'its serving as a leading centre for other developing (tropical) countries'.[93] Once again, as Mack's comments above suggested, Sri Lanka was perceived as being a testing ground for assessing the feasibility of international policy models within the developing world. Hansen also recommended the establishment of registers for rheumatic fever and for deaths from heart attack and strokes.

In 1982, a team of cardiac surgeons, cardiologists and technicians (16 in all) from the US spent 10 days on the island at the invitation of the government to perform coronary artery by-pass surgery and to train Sri Lankans in the technique. This request was impelled by the high incidence of coronary artery disease, particularly among the 35–45 years age group, for which by-pass surgery was the most important method of treatment.[94] Dr T. A. Don Michael's report of this visit supports Hansen's conclusion that prevention was by far the best option, but the team's presence on the island also confirms that it was impossible to ignore the demand for the best, albeit the very costly treatments of Western medicine. This visit was sponsored by the Sri Lanka Overseas Foundation and the Elias S. Hanna Foundation jointly, but Michael noted that it would be left to 'the ingenuity of the Ministry of Health and the Sri Lankan surgeons to proceed with the example' set by the team.[95] Along with training surgeons in bypass surgery, the team also evaluated the facilities for this service, advised on how to organise and finance it, investigated the high incidence of the disease at such a young age, and the best methods of prevention. The team successfully performed 10 bypass operations, the last one of which was done entirely by a Sri Lankan team. The problem was that the continuation of this effort would be hampered by financial constraints. For example, there was no allocation in the 1982 Health Budget for this surgery, and given that the surgical team would need to perform between 100–300 operations annually in future to remain proficient, continuing funding was vital.[96] The advice of the US team on this question reflected more closely their cultural medical background for the funding of health services than a proper understanding of the Sri Lankan context.

88 Hansen, 4, 7.

89 Hansen, 4, 7.

90 Hansen, 5, 8.

91 Hansen, 3.3, 4–5.

92 Hansen, 5, 8.

93 Hansen, 5, 8.

94 T. A. Don Michael, Professor of Medicine, University of California, 'US Team to Sri Lanka', 1, Project Files, SRL/CVD/001, Cardiovascular Diseases—Sri Lanka, WHO Archives, Geneva.

95 Michael, 'US Team', 11.

They suggested levying patient fees and obtaining financial assistance from voluntary organisations, and setting up a privately funded highly specialised cardiac unit that could provide such surgery at 'a fraction of the cost which is levied in the United States and the United Kingdom'. This would, moreover, 'attract adjacent countries, particularly those of the Middle East, Malaysia, South East Asia, as well as perhaps even countries in certain parts of Europe'.[97] In other words, Sri Lanka could use its expertise to become a centre for what is now termed 'medical tourism'.

The advice on prevention was less contentious. What was needed, Michael argued, was once again an epidemiological pilot study to 'include a very careful appraisal of risk factors'. These included the 'obvious factors of diet with a high quantity of salt, cholesterol, sugar, cigarette smoking, diabetes mellitus, hypertension, stress', although he felt that 'the stresses were less likely in a developing country like Sri Lanka as compared to the United States'.[98] This is a striking example of the Western lens in action; given the stress that must be induced by poverty and its resultant insecurities, this comment speaks of a complete lack of understanding and a very blinkered view of life in a developing country.

According to Dr U. D. Wijayawardena, Director of GHC's Institute of Cardiology (in a report to an international meeting of the WHO on CVDs), mortality statistics issued by the Registrar General in the early 1980s showed that CVDs topped or came second as a cause of death in Sri Lanka, and that based on 'clinical impressions', coronary heart disease (CHD) was as common in Sri Lanka as in developed countries.[99] Dr Wijayawardena attributed this situation to the 'high consumption of coconuts, rich in saturated fats', adding that as their consumption did not differ much between social classes, all classes were equally affected by CVD.[100] He also reported that the national action to prevent and control CVDs was still in the planning stage as it was awaiting the finalisation and evaluation of the results of several pilot surveys. The fact that eight years had elapsed since Hansen's recommendations with no national plan yet actually in operation points to the difficulties in finding resources for completing even the pilot epidemiological studies that he had suggested. However, it is worth noting that at this meeting of national programme managers on CVDs, convened by the WHO, Sri Lanka stands out as almost the sole example of a low-/middle-income country that was working on a national plan. Apart from Jordon and Singapore, all of the other 16 countries represented were from the affluent developed world, such as from Europe, the US, Australia and New Zealand.[101] Again, Sri Lanka stands out as a standard-bearer for the developing world.

NCDS BECOME VISIBLE

From the 1990s onwards, as interest in NCDs quickened, medical professionals and health policy-makers turned their attention to addressing their ignorance of the true burden of NCDs in the population. Little could be achieved in devising policies for prevention or treatment without a proper understanding of their incidence and the effectiveness of the health services in dealing with them. NCDs needed to be made visible in the national health landscape. However, assessing their incidence in a context where the approaches used in developed counties (population surveys or clinical records) were not feasible, meant a greater reliance on community-based sample surveys. Thus, in the 1990s and early-2000s, evidence began to emerge on Sri Lanka's NCD burden. It was recognised that diabetes was a growing problem, but there was little hard evidence of its incidence, following

96 Michael, 3, 7, 8.

97 Michael, 10

98 Michael, 9.

99 Michael, 14.

100 Michael, 14.

101 WHO Intensified Programme for Coronary Heart Disease Prevention, 1.

which a number of surveys were conducted from the 1990s onwards to elucidate the nature of its distribution throughout the population as well as its prevalence. These varied from sample sizes of 220 in the first one in 1993 to 6,047 in a 2005 survey. All the surveys indicated a rise in the prevalence of diabetes in the population from 2.5 per cent in the 1993 survey to 14.2 per cent and 13.5 per cent for men and women, respectively, in the 2005 survey.[102]

These surveys were not comparing like with like; the age ranges, ways of testing for diabetes and the structure of the samples (rural, urban, age ranges), all differed, but the upward trend seemed certain. The most extensive 2005 survey was conducted over four provinces: the WP, NCP, Southern and Uva on individuals in the age group 30–65 years (3,355 of whom were women). The WP was the most urbanised and had the highest population density; the other three were mainly agriculture-based. The highest incidence of diabetes for both men and women was found in the WP, which had the most affluent population, three times that of the Southern Province (SP), which had the lowest prevalence, except in Uva province, where its prevalence was higher in men than women, and in all provinces, it increased with age.[103] This survey, the authors argued, indicated that 'diabetes affects a significant proportion of the Sri Lankan population', and this makes diabetes 'a substantial burden to the current and future health of the country'.[104] These surveys had been limited in age group or socio-demographic profile because of resource constraints, but in 2005–06, a nationally representative survey of 5,000 adults aged 18 and over in nine provinces found that one in five adults had either diabetes or pre-diabetes, and tellingly, that one-third of those with diabetes were undiagnosed at the time of the survey. The risk factors for developing diabetes and pre-diabetes appeared to be 'older age, obesity, positive family history, urban living and physical inactivity'. This signified that Sri Lanka could be categorised as a country with a high-risk incidence, and that 'the high prevalence of pre-diabetes and the rapid socio-demographic transition of this population indicated the potential for a further rise in diabetes in Sri Lanka.'[105]

The 2005, Wijewardene survey was also to determine the prevalence of risk factors for CVD, and thus, it looked at the incidence of hypertension and obesity. It found that the prevalence of hypertension was 19.4 per cent for men and 20.6 per cent for women.[106] However, this was lower than in most developed countries—28 per cent in the US and 44 per cent in Europe, for example. It was therefore not on its own a primary risk factor.[107] Obesity is a risk factor not only for CVD and diabetes, but also for some cancers, and overall obesity levels have been steadily increasing for 20 years. The Wijewardene survey found that 20.3 per cent of men and 35.5 per cent of women were obese.[108] A second survey by Katulanda, specifically on obesity, found that the percentages of overweight, obese and centrally obese categories were 25.2 per cent, 9.2 per cent and 26.2 per cent, respectively, and being female, middle-aged, urbanised, having higher education qualifications and a higher income were shown to be associated with overweight and obesity in Sri Lankans. This survey documented a relatively high prevalence of overweight and obesity, particularly abdominal obesity among adults in Sri Lanka, and deemed that urgent public health interventions were needed to control the problem.[109]

102 P. Katulanda, M. H. R. Sheriff and D. R. Matthews, 'The Diabetes Epidemic in Sri Lanka—A Growing Problem', *Ceylon Medical Journal* 51, no. 1, 2006, 26–28.

103 K. Wijewardene, M. R. Mohldeen, S. Mendis, et al., 'Prevalence of Hypertension, Diabetes and Obesity: Baseline Findings of a Population-based Survey in Four Provinces in Sri Lanka', *Ceylon Medical Journal* 50, no. 2, 2005, 62–70.

104 Wijewardene et al., 'Prevalence of Hypertension', 68.

105 P. Katulanda, G. R. Constantinet, J. G. Mahesh, et al., 'Prevalence and Projections of Diabetes and Pre-diabetes in Adults in Sri Lanka: Sri Lanka Diabetes, Cardiovascular Study', *Diabetes Medicine* 25, 2008, 1062–69.

106 Wijewardene et al., 'Prevalence of Hypertension, Diabetes and Obesity', 68.

107 Engelgau et al., *Prevention and Control of Selected Chronic NCDs*, 17.

108 Wijewardene et al., 'Prevalence of Hypertension, Diabetes and Obesity', 69.

The NCCP was set up in 1980, and in 1985 it started an institution-based Cancer Registry to track cancer morbidity.[110] This shows that the overall rate of all cancers was rising: the age-adjusted rate increased from 37.6 per cent in 1985 to 70.6 per cent in 2005. Cancer rates had risen for both men and women, and as might be expected, they rose with age as most cases were in the over-50 years age group.[111] Gender determined the type of cancer: among men, oral and lung cancer accounted for 30–35 per cent of all cancers, but while oral cancer declined by 20–25 per cent from 1985–2005, lung cancer increased two to three times during this period. Among women, breast and cervical cancer account for 35–40 per cent of all cancers, with breast cancer rates having doubled from 1985–2005 while cervical cancer rates have remained steady.[112] In 2005, for example, the age-standardised rate per 1,00,000 population for female breast and cervical cancer was 18.3 per cent and 8.9 per cent, respectively.[113]

Screening for these cancers was undertaken in Sri Lanka from the 1980s. Pap smear clinics were started at the De Zoysa Hospital for Women and the Castle Street Hospital (both in Colombo) in 1983, and in 1996, the Well Women's Clinic (WWC) programme was inaugurated with the support of the United Nations Population Fund [UNFPA]), focusing on the reproductive health needs of women above 35 years of age. The WWCs are fully integrated within the existing MCH/Family Planning (FP) services within the primary healthcare structure, and by 2015, there were 900 such clinics operating throughout the island.[114] In 1998, Pap smear screening was offered in all WCCs; the clinics also provided health education on cancer, including self-breast examination instruction and clinical breast examination (they also screened for hypertension and diabetes mellitus.) However, data and surveys have suggested that, as Mack had predicted, the target-group women were reluctant to come forward for these services, with the result that cases of breast and cervical cancer presented at a late stage. The obstacles for primary and secondary prevention have been given as the 'hesitation to visit the physician, patients' embarrassment and lack of knowledge about the risk factors and screening methods'.[115]

Sri Lanka has also been proactive since the 1990s in the prevention of lung cancer through the control of tobacco consumption. Awareness of the link between the two was present in Sri Lanka from the 1950s. In his 1957 report, Dr Kahawita referenced the recent work by Richard Doll and A. Bradford Hill that had linked lung cancer to smoking, commenting that if it was correct, then 'lung cancer as a public health problem is also a unique problem in that in its control health education can play an important part by preventing young people from smoking and by encouraging the non-addicted to give it up altogether.'[116] The 1960 Medical Report noted

109 P. Katulanda, M. A. R. Jayawardena, M. H. R. Sheriff, et al., 'Prevalence of Overweight and Obesity in Sri Lankan Adults', *Obesity Reviews* 11, no. 11, 2010, 751–56.

110 Population-based cancer registries are the most accurate, as they include all cancers in a given area, whereas institution-based registries only include those who attend the hospital or clinic for care. However, given that most people will access care, then hospital/clinic records can still be a useful source.

111 Engelgau et al., *Prevention and Control of Selected Chronic NCDs*, 18.

112 Engelgau et al., *Prevention and Control*, 18.

113 R. I. W. Nilaweera, S. Perera, N. Paranagama and A. S. Anushyanthan, 'Knowledge and Practices on Breast and Cervical Cancer Screening Methods among Female Health Care Workers: A Sri Lankan Experience', *Asian Pacific Journal of Cancer Prevention* 13, 2012, 1193–96.

114 WHO, Regional Office for South-East Asia, *Strategic Framework for the Comprehensive Control of Cancer Cervix in South-East Asia Region*, Sri Lanka (2015), 47, available at www.aps.searo.who.int/PDS-DOCs/B5155.pdf (accessed 24 March 2017).

115 Nilaweera et al., 'Knowledge and Practices on Breast and Cervical Cancer', 1194.

116 *Annual Medical Report 1957*, B12; Richard Doll and A. Bradford Hill, 'Smoking and Carcinoma of the Lung', *The British Medical Journal* 2, no. 4682, 1950, 739–48. Richard Doll and A. Bradford Hill had begun publishing the results of their epidemiological study on the link between lung cancer and smoking in 1951, 1954 and 1956. See Mukherjee, *The Emperor of all the Maladies*, 245–50. This is a riveting account of the history of this most-feared of diseases.

that the Colombo municipality had begun action to prohibit smoking in the cinemas and other places of entertainment. In 1959, a 'drive', as it was termed, was also initiated to 'prohibit smoking in hospital wards and clinics'.[117] These attempts at prevention spoke more of intentions than enforceable policies, as there was no body with the power to implement such prohibitions. Although there is no extensive information that charts tobacco consumption from the 1950s onwards, periodic medical surveys suggested a steady rise in smoking among men, from 48 per cent in 1969 to 55 per cent in 1987.[118] A 1991 survey found that 38–51 per cent of men (lowest in Colombo district, higher in the farming areas) and 1 per cent of women used tobacco. A 2000 national survey found similar differentials across districts, but much lower prevalence among men (24 per cent nationally, 17–27 per cent for the three districts surveyed), and a worrying rise among women to 6 per cent nationally, varying from 3–8 per cent in the three districts. Prevalence is highest in the 30–60 years age groups, among people with low education, and in the lowest socioeconomic groups.[119] The decline in the prevalence of tobacco consumption among men is a testament to the Sri Lankan government's efforts to reduce tobacco consumption in order to prevent lung cancer.

The efforts began in the early 1980s when the Ministry of Health set up an interdisciplinary 'anti-smoking' committee to prepare an anti-smoking legislation and plan an educational programme addressed to schoolchildren to prevent them from taking up smoking. However, Dr Wijayawardena, in his report to the WHO in 1985, hinted at the difficulty in implementing anti-smoking measures. 'Anti-smoking activities', he noted, 'are influenced by the fact that the country is exporting and producing tobacco and therefore the vested interests have to be taken into account'.[120] These vested interests in Sri Lanka resided in the Ceylon Tobacco Company (CTC), a subsidiary of British American Tobacco (BAT), a multinational company which turned its huge resources to targetting developing countries in the 1990s in the search for new markets. There are also small-scale cottage industries in Sri Lanka that produce cheap local *beedi*s (cigarettes) and *suruttu* (cigars) from inferior tobacco. These are mainly smoked by the lower-income groups where the highest prevalence of tobacco use prevails.[121] These two types of producers presented different challenges to government efforts to control them. The local cigarettes are manufactured by unlicensed producers in the economically depressed areas and they are not easily susceptible to government regulation, and suppressing them would add to the lack of economic opportunity in those areas. CTC presents a far more formidable and devious challenge to regulatory attempts. Tamsyn Seimon and Garrett Mehl exposed some of the tactics they used in the 1990s to hook young people, especially, into the habit. CTC 'uses discos, music shows, free giveaways, powerboat races, attractive employment packages, and other measures to draw smokers'.[122] Advertisements for John Player Gold Leaf could be found in snack shops, including those frequented mainly by schoolchildren. Benson and Hedges targetted the country's English-speaking youth through the 'Golden Tone News', a weekly pop music supplement published in an English-language newspaper. In and among the articles were 'bright advertisements for Benson and Hedges cigarettes with the motto "Turn to Gold"'.[123] The government had already banned cigarette advertising on the

117 *Annual Medical Report 1960*, B266.

118 Kalinga Tudor Silva, 'Does Alcohol and Tobacco Legislation Help Reduce Poverty? The Evidence from Sri Lanka', in *Law and Poverty: Poverty Reduction and the Role of the Legal System*, ed. L. Williams, A. Kjønstad and P. Robson (London: Zed books, 2003), Pt. 4, Ch. 11.

119 Nisha Aruntilake and Maduwanthi Opatha, *The Economics of Tobacco in Sri Lanka Paper 12*, Health Nutrition and Population Discussion Paper, World Bank, 2003, x111, available at www.worldbank.org/hnppublications (accessed 9 May 2017).

120 U. D. Wijayawardena, 'Sri Lanka', *WHO Intensifled Programme for Coronary Heart Disease Prevention. Report of a Meeting of National Programme Managers, Geneva, 20–22 November 1985*, 14, Project Files, SRL/CVD/001, Cardiovascular Diseases—Sri Lanka, WHO Archives, Geneva.

121 Tudor Silva, 'Does Alcohol and Tobacco Legislation Help Reduce Poverty?', Ch. 4.

122 Tamsyn Seimon and Garrett Mehl, 'Strategic Marketing of Cigarettes to Young People in Sri Lanka: "Go Ahead: I want to See You Smoke It Now"', *Tobacco Control* 7, no. 4, 1988, 429–33.

radio, and yet, CTC sponsored heavy radio publicity without mentioning cigarettes on YES-FM, again an English radio station aimed at the Westernised youth. Among all the adverts was one featuring a singer with the lyric 'Turn to Gold' repeated throughout.[124] This station was popular among lower-middle school children, not just teens and people in their twenties.

The low level of women who smoked in Sri Lanka represented a large and enticing new market, and CTC particularly focused on this group by using young women to push free merchandise and free samples at discos, shopping malls and university campuses.[125] Government policy measures to reduce tobacco use became stronger during the 1990s. Higher taxes, which helped raise the real price (adjusted for inflation) of tobacco products, were introduced in the late-1990s, and from 1999, advertising cigarettes on TV and radio was banned. In 1996, for example, Sri Lanka broke new ground by curtailing the covert promotion of tobacco through the promotion of smoking in films and television soaps.[126] Sport sponsorship was also ended; and in 2002, the Sri Lankan cricket captain Sanath Jayasuriya took part in a Health Ministry campaign. Under the headline, 'Don't Get Yourself Burnt', Jayasuriya told the poster's target audience, 'Let's walk to a healthy lifestyle without smoking'. As David Simpson highlighted, given the national importance of cricket, 'this was a ball hit for six by an important new player for the health side.'[127]

In November 2003, Sri Lanka became the first country in Asia and the fourth in the world to ratify the WHO Framework Convention on Tobacco Control (WHO FCTC), and in February 2005, the FCTC came into force. This prohibited smoking in many indoor public places, workplaces and public transport, but it is still permitted in designated smoking areas in airports, larger hotels and restaurants. Many forms of tobacco advertising and promotion are banned and there are restrictions on sponsorship, but product displays at point of sale are still allowed. Tobacco products are required to have pictorial and text health warnings covering 80 per cent of the package.[128] The effectiveness of these measures can be deduced from the fact that smoking prevalence at 18 per cent in Sri Lanka in 2006 was lower than that in other South Asian countries, with a considerable decline in the last two decades of the twentieth century. However, as the gender disparity in tobacco consumption continues, the actual rate of smoking in men is much higher: the breakdown in 2006 is given as 32 per cent for men and 2 per cent for women. Moreover, although smoking rates for children and young people are lower than in other low-income countries, they are still a cause for concern. The Global Youth Tobacco Survey of 2007 showed that 5.1 per cent of students aged 13–15 years had smoked cigarettes at some time, 39.5 per cent had smoked before the age of 10, and 8.6 per cent were current users of other tobacco products.[129] The control of tobacco consumption is also an important weapon in the battle against CVD. Michael Engelgau and others, for example, have deemed the cessation of smoking as 'the single most effective intervention' in preventing CVD and that 'success in reducing smoking has been the most important reason for the decline in CVD in developed countries'.[130]

123 Seimon and Mehl, 'Strategic Marketing', 430.

124 Seimon and Mehl, 430.

125 Seimon and Mehl, 431.

126 Diyanath Samarasinghe and Colvin Gooneratna, Editorial, *British Medical Journal*, 328, April 2004, 780.

127 David Simpson, 'Batting for Health', *Tobacco Control* 11, no. 3, 2002, 293.

128 *National Authority on Tobacco and Alcohol Act No. 27 2006*, available at www.tobaccocontrolllaws.org (accessed 3 November 2015).

129 Engelgau et al., *Prevention and Control of Selected Chronic NCDs in Sri Lanka*, 20.

130 Engelgau et al., *Prevention and Control*, 20.

CONCLUSION: THE CHALLENGE OF NCDS IN THE TWENTY-FIRST CENTURY

The question facing Sri Lanka as it approached the year 2000 was how to maintain its success in meeting the health needs of its population when confronted with the new challenges presented by the changing balance of its disease burden. At present, NCDs are the leading causes of mortality, morbidity and disability. Sixty-five per cent of all deaths in hospitals in 2012 were due to NCDs, and the probability of dying between the ages of 3 and 70 years from the four main NCDs (CVD, cancer, chronic respiratory disease and diabetes) was 18 per cent.[131] NCDs present a formidable challenge to Sri Lanka's curative, preventive and rehabilitative healthcare services. The demand from the public for the latest advances in the treatment of cancers or heart disease, which are costly in terms of facilities, specialist staff, drugs and equipment, conflicts with the commitment to health for all, for with limited resources, this demand cannot be met equally across the board. It can be assumed, as in the developed world that the most effective users of the health services are the educated classes, and as was discussed in Chapter 2, there were substantive regional differences in the distribution of, and accessibility to, services. Inequality is built into the structure. The injuncture in the Alma Ata Declaration, that only medical technologies appropriate to any one community should be used, that is, those technologies that can be afforded by that community, is surely questionable. On the grounds that all lives are equal, surely the populations of poorer countries deserve the same health chances as those of the rich. Similarly, there are obstacles to the prevention of these diseases because of their frequent link to the living conditions of their victims.

Lowering the disease burden from these diseases is therefore a complex task as their causation is multi-layered. They may start with the biology of the individual and their personal lifestyle choices, but these choices are not entirely free; they are hedged in by the socio-economic and cultural environment of the individual, and their chances at treatment and survival are dependent on the accessibility and availability of therapeutic services. As Lewis and MacPherson noted, 'multiple interacting factors cause these diseases with each factor increasing the probability of disease in an individual.'[132] More recently, furthermore, Blundell and Hine have challenged the label 'NCDs' as being too narrow and too negative. They argue, first, that NCDs can encompass infectious agent. Rheumatic fever as a cause of heart failure has already been highlighted, but, Chagas fever and the HIV virus can also lead to cardiovascular problems. There is no clear-cut division between CDS and NCDS. This connection goes in both directions as, for example, the link between chronic respiratory disease and bronchial infections. The separation into CDs and NCDs has thus created a false dichotomy. Moreover, they note, the term 'NCD' 'overlooks the biosocial contagions' implicated in their incidence. 'We must stop defining them', they argue, as what they are not and define them as what they are: 'human-made illnesses'.[133] This broader approach only serves to amplify the problem. Policies towards NCDs need to be as multi-layered as their Policies towards NCDs need to be as multi-layered as their causes. In order to maintain its health record, Sri Lanka has to respond to its health transition, as Amala de Silva has argued, with a 'health system transition'.[134] Providing universal health coverage that deals effectively with these 'human-made illnesses'—that is the challenge for Sri Lanka in the twenty-first century.

131 D. S. V. Mallawaarachichi, S. C. Wickremesinghe, L. C. Somatunga, et al., "Healthy Lifestyle Centres: A Service for Screening Non-communicable Diseases through Primary Health Care Institutions in Sri Lanka', *WHO South-East Asia Journal of Public Health* 5, no. 2, 2016, 89–95.

132 Lewis and MacPherson, 'Health Transitions and the Double Disease Burden', 4–5.

133 Harriet J. Blundell and Paul Hine, 'Non-communicable Diseases: Ditch the Label and Recapture Public Awareness', *International Health* 11, 2019, 5–6.

134 Margaret Jones and Amala de Silva, 'Good Health at Low Cost: The Sri Lankan Experience', in *Health Transitions and the Double Disease Burden in Asia and the Pacifıc Countries*, 136.

Conclusion

The Challenge of Health for All in the Twenty-first Century

'Health is not the monopoly of any group or class but the common heritage of all'[1]

This statement from the Director of Sri Lanka's Health Services in 1953 reflected the government's commitment to ensure good health for all since the inception of Sri Lanka's nationhood. This was not mere rhetoric; the social welfare state of the first nationalist governments pursued this objective through free education, food subsidies and a free healthcare system that was intended to bring to its citizens the health benefits enjoyed by the populations of the West. It could be described as a utopian venture, but this course was adhered to for nearly three decades until the economic problems of the 1970s, and pressure from the World Bank and the IMF caused the government to switch emphasis and resources from social welfare to developing the economy. At this point, economic growth was put at the forefront of government and international development policy; better health, it was deemed, would follow growth rather than precede and further it. Expenditure on health and welfare was reduced, imposing extra pressure on the healthcare infrastructure over the following decades. At almost the same time that these new financial restraints came into being, Sri Lanka renewed its commitment to health for all in its adoption of the Alma Ata declaration, and it has signed up to international health targets since.

One of the questions posed in the Introduction was the extent to which this achievement was influenced or led by the international health agenda put forward by agencies such as the WHO, UNICEF and the World Bank. Sri Lanka has consistently subscribed to successive internationally set goals, giving the impression that its health policy was indeed subservient to international policy direction. In 1948, the right to health, as defined by the WHO, was declared a fundamental right of citizenship. In 1978, the government accepted the PHC initiative in full, incorporating all eight points of the Alma Ata Declaration into their health policy planning. Sri Lanka has been a signatory to all subsequent global health targets. By the 1990s, progress to the Alma Ata goal of 'Health for All by 2000' had stalled and Sri Lanka signed up to the new objectives, the MDGs (set at the G8 summit in 2000), which addressed the major health threats of this century like AIDS, multi-drug resistant TB, and the rise of chronic diseases in both north and south.[2]

Despite this adherence to international health norms, it is unclear how far they have dictated shifts in the direction of government policy. The rhetoric of international policy developments was always apparent in government policy pronouncements on health, from PHC to universal health coverage, but not necessarily in the trajectory of government policy. The commitment was there, but the obstacles to fulfilling this commitment did not change. For example, after Alma Ata, the health delivery system did not change. For example, after Alma Ata, the health delivery system was restructured with the intention of operationalising the PHC model.[3] Coming as this did at a time of rigorous economic restraint that had an impact on the health budget, it became arguably as much a paper exercise as a radical restructuring. There was little input of additional resources to effect real changes or to improve the availability of good quality basic healthcare services evenly throughout the island. Peripheral and rural institutions may have changed their name, but hampered by scarce resources, they

1 D. L. J. Kahawita, *Annual Medical Report 1953*, B5.

2 WHO Website, Millennium Development Goals. Available at https://www.who.int/topics/millennium_development_goals/about/en/-59k (accessed 12 February 2020).

3 The government has since then expanded the eight points of Alma Ata to 17 policy objectives, which in full are: proper and adequate nutrition, safe water, basic sanitation and hygiene, maternal care, childcare, family planning, immunisation, prevention and control of common communicable diseases, prevention and control of NCDs, appropriate and early management of common minor ailments and emergencies, simple rehabilitation, mental health, school health, oral health, occupational health, prevention of blindness and visual impairment, health education and community organisation for PHC. Alma Ata also advocated using traditional medical systems as an integral part of the PHC system; Dr Lakshman Gamlath, Director, National Institute of Health Sciences, personal email communication, 12 March 2013.

performed largely as before. Second, as has been seen, the PHC 'revolution', with its emphasis on the broader socio-economic environment such as the need for good nutrition, coincided in Sri Lanka with the ending of general food subsidies and their replacement with targetted and arguably less effective means-tested food subsidies: a shift away from rather than towards PHC. What had been a universal benefit became enmeshed within anti-poverty programmes, reaching a narrower group of the population and subject to the problems associated with means-tested benefits.

Third, the emphasis on 'appropriate technologies' in PHC was subverted by the demand for the latest and most effective, but costly medical technologies available to the developed world. Moreover, with a government that was responsible to its public, this was difficult, if not impossible to withstand. TB control and immunisation both benefited from the WHO and UNICEF input of expertise and resources, but as the TB control programme explored in Chapter 2 revealed only too clearly, there were limits on successfully transferring a model merely lightly embedded into the local environment. It did not follow that subscribing to the tenets of PHC effected fundamental change on the ground. There was also a notable lack of real commitment to one aspect of the PHC declaration. Given that Ayurveda in Sri Lanka was government-funded and thriving, incorporating it into the PHC model, as advocated at Alma Ata, as a feasible means of extending healthcare to all, should have been attainable. However, there was no attempt to integrate it formally into the government healthcare system after 1978. The two systems existed and functioned side by side, but the hostility of the biomedical establishment assured that the integration did not happen. Not until 2004 was Ayurveda officially incorporated into the government primary healthcare structure when MOs from the Ayurveda medical community were appointed to assist in the public health efforts of the local MOHs, and even this proved problematic.[4] Government policy on health thus continued on much the same trajectory. There was a consistent commitment to the principle of primary healthcare both before and after Alma Ata; this did not change. However, PHC as implemented in Sri Lanka after Alma Ata resembled SPHC in many respects, for example, in the immunisation and TB programmes. Furthermore, the Sri Lankan healthcare system, as might be expected, remained as medicalised and as centralised after 1978 as it had been before. In this respect, it is uncertain whether there was any kind of 'revolution' in healthcare.

The government embarked on many projects in conjunction with the WHO, but this did not negate the agency of those who implemented them. Did accepting help tie the Sri Lankan authorities into internationally devised programmes that focused on narrow targets and diverted attention and resources away from community participation and development which, in the longer term, supported people's health more effectively?[5] The danger of such international 'one size fits all' policies, which come with money attached, is that they threaten the autonomy of individual countries by affecting the choices that they are able to make. This could mean the adoption of inappropriate or even harmful measures, which take no account of local circumstances. However, one example from Sri Lanka would be the immunisation programme. This was not a policy being imposed from outside, and it was already fully integrated into an existing maternal and child welfare system by the time EPI was launched. There is no sense that it conflicted with the preferred objectives of the government. Each policy, each context contributes to the construction of a variety of stories; 'one size fits all' should not be applied to an analysis of international health policies as that, too, ignores local differences and local agency.

4 For an analysis of the relationship between Ayurveda practitioners and primary healthcare in Sri Lanka, see Margaret Jones and Chandani Liyanage, 'Traditional Medicine and Primary Health Care in Sri Lanka: Policy, Perceptions, and Practice', *Asian Review of World Histories* 6, no. 1, 2018, 157–84.

5 See Judith Justice, 'The Politics of Child Survival', in *The Fallacy of the Level Playing Field*, ed. Linda Whitehead and Leonore Manderson (Boulder: Lynne Rienner Publishers, 2000), 23–38; Ben Wisner, 'GOBI Versus PHC? Some Dangers of Selective Primary Health Care', *Social Science and Medicine* 26, no. 9, 1988, 963–69.

Subscribing to the WHO norms certainly ensured technical and monetary assistance, but it did not signify wholesale surrender of autonomy. As this statement in 1979 by the DHS, Dr S. Y. S. B. Herat on the relationship with Western donors illustrates:

> Aiding agencies such as the UNICEF, the WHO, the UNDP in general assist many of us, and this assistance to us is very welcome …. Earlier there were times.… that if the aid was not given to us in a way we like that is most materialistic for this country, it is not worthwhile having this aid, but today, I'm very happy to say …. that the aid that is given to us by most of these countries is given in a way we like to have and ploughed into programmes we want to have.[6]

Furthermore, the context of these policy transfers was not, and could not be, entirely ignored by the donors. An example would be this piece of advice to one WHO consultant, Dr Sarah Rao, before her consultancy trip to Sri Lanka, from the SEARO Director, Dr V. T. H. Gunaratne, in 1973: 'The local administrative and organisational pattern should be carefully considered and your activities adapted to them, subject of course to technical soundness of the work done.'[7]

Dr Gunaratne was formerly Sri Lanka's DHS, and thus, was perhaps more aware of and sensitive to the need to respect the local circumstances. These projects were always collaborative ventures, as this acknowledgement in 1973 by two WHO consultants, Dr G. L. Martin and Dr I. Newman, revealed. Three of the five studies on health education underway at that time, they noted, namely family planning acceptance characteristics, the Ratnapura study, and the evaluation of health education aspects of the pilot project on community health, 'resulted from local ideas and plans which were implemented through this project and would otherwise likely have remained unfulfilled'.[8] The contributions from Western donors was significant in furthering policy initiatives already accepted, and the input of financial resources and expertise was welcome. Nevertheless, this aid was also often insufficient in content, and moreover, it was time-limited. When it was withdrawn, the initiative foundered, as Dr C. G. Uragoda pointed out with regard to the integrated TB control programme programme (Chapter 2). The list of recommendations for improvements, made by WHO consultants in their reports, point to the lack of resources even with this input. They frequently read more as a wish list than a viable catalogue of changes that could be made in the local context. In these reports, their sense of frustration at the failure of Sri Lankans to comply with the strictures laid down in the proposed model comes through, but so does their own failure to appreciate the obstacles faced by overworked and under-funded medical professionals, and a population who, struggling to provide the basics for life, did not always adopt what was deemed the appropriate behaviour to ensure their good health. There was a hiatus of understanding that always came between the donors and the recipients, which left space for agency. This is evident from the reaction of professionals and public to the WHO community orientation TB control programme, for example, or in the adaptations that individual medical professionals made to the planning guidelines that were handed down to them from the top by both their own national or donor overseers. These people who were charged with implementing these policies often had no choice but to adapt them. It was forced upon them by circumstance.

What has been always apparent in this account is that time and time again, a major obstacle for the successful implementation of a policy has been the lack of resources to provide sufficient staff, premises, medicines, equipment and good communications. PHC quite rightly linked health to the socio-economic environment, and it was designed to extend good health for all within this kind of a resource-limited context. However, countries

6 S. Y. S. B. Herat, 'The World of Health Radio Information Programme, Recording No. 4263', Transcript, August 1979, 3, Third Generation Files. 18?370/2SRL (Jkt. 1) Expanded Programme of Immunisation, WHO.

7 Dr V. T. H. Gunaratne, Letter of Guidance to Dr Sarah Rao, WHO Consultant on Family Health Education, 1 August 1973, Project Files, SRL/HED/002, Health Education in Family health (Jkt. 2), WHO.

8 G. L. Martin and I. Newman, Assignment Report on Health Education (Behavioural Study) June–August 1973,

with limited resources, such as Sri Lanka, are those that also find raising general living standards the most difficult, which was why the broad approach of Alma Ata was challenged almost immediately by contemporaries. The emphasis on providing good primary healthcare services can also ignore the legitimate wish of individuals to be able to access the best treatment that is on offer. The pull of the curative sector on the health budget in Sri Lanka has always been overwhelming as it is in affluent countries, and it brings us back to the quotation that started this account, the dilemma of having 'the taste of a Westerner and the pocket of an Easterner'. Sri Lankans want what the populations of more affluent countries have. The community in this case wants the best medical science to be available to them and why should they not? Why have one medicine for the rich and one for the poor, whether that be within countries or on the global arena? As Paul Farmer has argued in his work, *Infections and Inequalities*, to accept this as a proposition is to suggest that the lives of the poor have less value than the lives of the rich, and this is morally unacceptable.[9]

How does Sri Lanka's record stand in this century? At a macro-level, as indicated in the Introduction, the country appears to have reached its objective of good health for all, but a closer examination of this record has pointed to areas and populations who have not participated in this success. The overall picture of the healthcare infrastructure examined in Chapter 1 exposes the geographical variations; despite a largely rural society, the urban sector has been, and still is, better served with all elements of the health service, from PHNs to specialist hospitals and clinics. The decentralisation of health resources to the Provincial Councils in 1989 has exacerbated these regional differences in the quality of services. The absence of a referral system has ensured the continuing by-passing of rural clinics and hospitals by patients seeking good quality care, with the result that the 935 primary-level institutions available in 2012 (all staffed by qualified doctors) are underutilised.[10] In the past, this has had the effect of ensuring that rural health services of all types remained inferior in quality, and in turn, this led to overcrowding, queues and shortages of drugs in the favoured urban institutions. The difference in quality and accessibility in health services between the rural and urban sector, and the WP and the rest of the island thus remains a major obstacle to equity in health outcomes. This can be exemplified in these indicators from 2000, when the infant mortality rate for the rural area of Badulla was 27.5 per cent compared with the national rate of 16.3 per cent.[11] Similarly, 265 of the 368 specialists in curative care were based in Colombo.[12] The regional disparities, as found by Simeonov 25 years earlier, have endured.

Pockets of poverty have ensured that child malnutrition has been a continuing problem and remains so at the beginning of the twenty-first century. Poverty has also meant that despite considerable success in reducing the dreadful toll of TB, there is still a reservoir of infection in the community—an increasingly perilous situation with the development of multi-drug resistant TB. Infectious diseases were the major health threat at the start of the period and necessarily, the attention of the medical services was focused on them. An effective immunisation programme has dealt with the infectious diseases of childhood, but again poor socio-economic conditions have contributed to some lack of take-up. The conflict in the north disrupted this effort even further, despite attempts to keep it going through the 'days of tranquility'. Herd immunity, however, has been largely achieved and polio, for example, has been eradicated; the last case was in 1993. The ending of the war in 2009 has left its own legacy of destruction in the healthcare infrastructure, a dearth of medical professionals, and a notable inequality in health indicators. The services of the northeast require a substantial input of resources to raise the quantity and quality of healthcare provision in these areas.

9 Paul Farmer, *Infections and Inequalities: The Modern Plagues* (Berkeley: University of California Press, 2001); 278–79.

10 Susie Perera, 'Universal Health Coverage in Sri Lanka: The Challenge', in *Universal Health Coverage through Primary Care Reforms in Sri Lanka*, Organization Development Unit, Ministry of Health, 2012, 2.

11 M. A. Ferdinand, 'Health Care in Rural Areas of Sri Lanka', *Sri Lankan Family Physician* 24, 2001, 19–26.

12 Ferdinand, 'Health Care', 19.

Additionally, and indeed in part as a result of the achievement in raising health indicators over the period, there has been a creeping upward trajectory of NCDs in the community, which was largely hidden in the official health record until the 1990s. Sri Lanka is now facing a double-disease burden; it has to address the remaining incidence of infectious diseases (dengue fever is on the rise as malaria has gone) and respond to the beckoning NCD crisis. In 2004, NCDs accounted for 50.9 per cent of the total disease burden, and as Susie Perera has argued, 'significant changes' are needed in the healthcare system to 'achieve UHC when addressing the present health burden'.[13] Furthermore, she notes, chronic diseases require a more complex health package; the approach needs to be 'holistic, personalized and family centred'.[14]

Providing universal health coverage through primary healthcare and satisfying the competing demand for the best that modern medical science can offer is a formidable challenge when the plight of those left out from the successes of the health system may be worsening. As with elsewhere in the world, there is a widening gap between the rich and poor; the liberalisation of the economy after 1977 has led to the expansion of the private sector in health, which is only available to the better-off, has acted as a drain on government resources and personnel, and to which the poor have no choice but to resort. All these are substantial challenges for a developing country, and universal health coverage and equity in health outcomes is still some way off. The evidence suggests that the Sri Lankan government has recognised and is attempting to face up to them. The 2015 master plan for health services under the new framework of universal health coverage sets out to deliver health services that provide for: equity in the distribution of services, accessibility, quality services and financial protection for all patients.[15] There is nothing new in these objectives; they have always been at the forefront of Sri Lanka's commitment to good health for all. It remains to be seen whether the commitment to universal health coverage represents more than just a change in the way that health policy is framed, or how far it really does respond to the obstacles that hinder the search for health equity in this century.

13 Perera, 'Universal Health Coverage in Sri Lanka', 1.

14 Perera, 'Universal Health', 2.

15 Ministry of Health Sri Lanka, *National Strategic Framework for Development of Health Services, 2016–2025*, 3, available at www.health.gov.lk/moh (acessed 29 January 2018).

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