

Sri Lanka's approach to Primary Health Care: a success story in South Asia

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ABSTRACT

This paper argues that Sri Lanka's primary health care program succeeded in reducing mortality and promoting health in the early twentieth century as it tackled the most serious health problems across the country with the help of local communities. The early achievements in health were sustained by broad-based social welfare measures adopted by successive governments since political independence in 1948. This was the key strategy of the *selective* primary care promoted by the Rockefeller Foundation.

Key words: Selective primary care, health units, Kalutara, Rockefeller Foundation

Introduction

The World Health Organization (WHO) advocates primary health care as the *key* to promoting health in developing countries. Since the Alma-Ata Declaration (1) in 1978, which recommended *comprehensive* primary health care, the WHO has been promoting an ever-expanding program of primary care to promote the health of all people throughout the world (2).

By contrast, international non-governmental organizations such as the Rockefeller Foundation suggested that *comprehensive* primary health care would be prohibitively costly to implement for most nations(3). Instead, it recommended a relatively inexpensive *selective* primary care program that could easily deal with most widespread infectious diseases in developing countries (4).

The basic premise of the *selective* primary health care is that traditional indicators of health, such as infant mortality and life expectancy, are composites of many different health problems endemic to developing countries. Some health problems are more serious than others are, in terms of their prevalence and the impact on mortality and morbidity. The *selective* primary care classifies diseases in the developing world into three priority groups: high, medium and low. The high priority group represents “infections causing the greatest

amount of most easily preventable illness and death”(5). If the mortality from the diseases in the high priority group can be reduced, it would have a significant impact on overall mortality rates in developing countries. The diseases in the “medium” and “low” priority groups are either less important or not amenable to containment (6).

A strong argument supporting the *selective* primary care can be made based on Sri Lanka's health experience. The community-based health unit program in Sri Lanka was an earlier version of the *selective* primary health care developed by the International Health Board (IHB) of the Rockefeller Foundation and the Sri Lankan public health experts in the early twentieth century, which later became an integral part of the overall welfare strategy. As a developing country, Sri Lanka has achieved outstanding health indicators, such as low mortality rate (5 per 1000) and high life expectancy (75 years), which are the results of historical commitment to health as a social goal, welfare orientation to development, community participation in the decision-making process pertaining to health, and the universal coverage of health services (7). Drawing from archival and secondary sources, this paper will examine the key aspects of the health unit program and specific welfare policies that strengthened the primary health care in Sri Lanka, which is considered a model for the region (8).

Health Unit System: Conceptual Framework

A “health unit” referred to a geographical area comprising up to 80,000 to 100,000 inhabitants (9). Initially, according to the program, the island was to be demarcated into approximately 63 health units. It was argued that “by dividing the island into health districts it [would be] possible to determine principally the total problem to be met including the personnel needed, and secondarily to determine the relationship of hospitals and dispensaries”(10). The aim was to identify specific health problems in an area, and to determine the required health care personnel and the facilities to deal with them.

W.P. Jacocks and S.F. Chellappa, representing the Rockefeller Foundation and the Department of Public Health and Medical Services of Sri Lanka respectively, led a team of medical and public health experts in designing and implementing the program. While recognizing the universal nature of the public health principles, they maintained that the methods adopted in dealing with health problems must be “determined according to public health problems found in a given country.” Besides carrying out routine health works, each health unit would function “as a field laboratory” that undertakes experiments to determine appropriate methods of disease prevention and health education. Accordingly, the programs were to evolve in response to health problems in each community, and the first health unit was to become the “training center” for all public health personnel in the country (11). As the first step, each health unit was to undertake a detailed health survey of the area to identify the preventable disease peculiar to the district, and the order of their importance as causes of morbidity and mortality. The survey was also to gauge the public support for the health unit work. The community support was deemed vital for the work that until sufficient public support was evident a community would not be considered ready for health unit work.

Health Unit Personnel

The required personnel for the health unit work revealed the nature of the anticipated work. For a population of 40,000, the program recommended one medical officer, five public health nurses, five sanitary inspectors, and ten midwives. They were expected to work as a ‘team’ in their field operations.

The medical officer was to serve as the director of the health unit (12). He/she must coordinate all activities to ensure that “public health inspectors, nurses, and midwives carry out their work as planned. This is accomplished by making frequent visits to each member of the field staff in every part of the area”(13). The medical officer must investigate health problems in the area, make regular visits to schools, conduct clinics for vaccinations, maternity and child welfare services, and provide health education through public lectures and propaganda. Further, the medical officer was responsible for bringing social and economic problems of the community to the attention of local authorities and respective government departments for action.

The post of public health nurse was created for the first time in the country with the establishment of the first health unit in 1926. A matron from the Colombo general hospital was selected and trained as a public health nurse. The initial recruits came from the existing nursing staff in various hospitals. They were given further training in maternal and childcare, administration of treatment for hookworm infection and malaria.

The sanitary inspectors were recruited from the existing cadre of the local governments and given further training on the development of sanitary programs, malaria control, and the mass administration of hookworm treatment. They were also to undertake experiments to determine the appropriate type of latrines and wells for specific terrains in the health unit area, and conduct regular inspections regarding the sanitary conditions.

The midwives were placed under the immediate supervision of the public health nurses, and each midwife was expected to serve about 4000 people within a radius of three miles. The midwives were responsible for locating expectant mothers, arranging early medical examinations and attending the birth if the pregnancy was normal. Following the birth, she visited the mother and newborn daily for ten days. Following the advice of W.S. Carter, a nursing educator representing the Rockefeller Foundation, the Kalutara health unit developed a manual on maternal and childcare (14).

Implementation of the Program

The inauguration of the first health unit in 1926 at Kalutara-Totamune, a suburb 43 km south of

Colombo, was a landmark event in the history of public health in the country. During the inauguration, Dr Jacocks stated that, “[This day] will be remembered by health workers in Ceylon as the day on which a real step forward was taken in rural health work along modern lines. Health work up to now in Ceylon has dealt, largely, with the environment, but in this new development the hygiene of the individual is receiving attention in addition”(15).

The activities of the health unit were divided into following steps: 1) Conduct a general and special health survey on all aspects of the health problems in the district, 2) Collect and study vital statistics of the area, 3) Promote health education, 4) Undertake measures to control infectious disease, 5) Organize maternal and child health programs, 6) Conduct school health programs, 7) Develop rural and urban sanitation projects.

This general procedure was to be repeated in all subsequent health units. The first health survey identified several major infectious diseases in the Kalutara health unit area as major causes of death: 1) dysentery, 2) typhoid, 3) hookworm infection, 4) measles, 5) tuberculosis, 6) influenza, 7) smallpox, and 8) whooping cough. In addition, among infants below one year, three major causes of death were identified: 1) convulsion, 2) premature birth, and 3) infantile debility. More than half the deaths occurred during the first three months.

In light of these problems, several measures were taken to control them:

Health Education

A series of lectures were delivered at market places and schools to educate the public. A number of health exhibitions were held at Kalutara town to encourage mothers on breastfeeding. These exhibitions were part of the regular “Health and Baby Week” program, which aimed at educating mothers on post-natal care. The “Saturday conference” involving the health unit staff and the local administrative officials, *Ayurvedic* doctors, teachers, and parents was a regular feature of the health unit. In 1929, the Kalutara health unit received the “Empire Challenge Shield” from the *National Baby Week Council* of England for organizing the best *Baby Week* in the British Empire (16).

Improving Sanitation

Large-scale sanitary projects were undertaken in all health unit areas with the inauguration of a sanitary engineering division of the Department of Medical and Sanitary Services in 1927. This particular division spearheaded the campaign to improve public health (17). In 1929, for example, the Weudawili Hatpattu health unit constructed 421 private latrines in partnership with the local government. Other health units, such as Matara, Paranakuru Korale and Kalutara, constructed over one thousand private and public latrines during the period (18). In addition to these new latrines, hundreds of existing ones were restored according to the specifications of the sanitary engineering division.

A major water supply scheme was undertaken by the Kurunegala health unit in 1929, and a similar project had already been completed at Kalutara. A feasibility study for water supply was carried out by the Trincomalee health unit in the same year. The construction of latrines and water supplies were considered one of the priorities of all health units. Further, to improve the sanitary conditions in the towns and villages, regulations were enacted regarding the operation of restaurants, bakeries, butcher shops, fish and vegetable markets, dairy farms and laundries. These sanitary programs and regulations demonstrated a serious commitment on the part of the authorities to improve public health.

Mass Immunization Program

Sanitary works were followed by a mass immunization campaign for typhoid and smallpox in all health unit areas. The recurring epidemics of typhoid and smallpox killed thousands of people in many parts of the island. In 1930, for example, 6128 people were vaccinated against smallpox by the Kalutara health unit. The immunization program at the beginning relied heavily on private donations and charities (19).

Child Welfare

One of the most important activities of health units was the “child welfare” works, which were organized by the public health nurses in collaboration with the local schools. The public health nurses visited schools in the province to

conduct clinics on sanitary matters. Further, they made regular home visits to advise mothers on childcare. Commenting on the declined infant mortality rate, from 235 in 1924 to 216 per 1000 live births in 1927, the Principal Civil Medical Officer of Sri Lanka attributed the trend to the child welfare programs carried out by the health units (20). Those in need of these services often outnumbered the available nursing personnel. The Trincomalee health unit, for example, established three permanent child welfare and maternity centers in the Trincomalee town. They were financed by the Trincomalee Health League and the local authorities.

Treatment for Hookworm Infection and Malaria

In partnership with rural dispensaries and hospitals, the health units undertook mass treatment campaigns for hookworm infection in Southern, Western and Northwestern provinces. Besides the routine examination and treatment at clinics organized by the health units, the government hospitals and dispensaries treated thousands of people throughout the country. Since the opening of the first health unit in 1926, an island-wide hookworm treatment campaign for school children was carried out. In 1930, the program treated 88,448 children, while hospitals and dispensaries throughout the island treated 640,167 adults. In addition, five health units - Kalutara, Kegalla, Kurunegala, Matara and Trincomalee - treated 9,124 people for hookworm infection during the year (21).

Although the health unit program made significant improvements in public health on the island, recurring malaria epidemics undermined the health of the people across the country. While sporadic malaria control campaigns were conducted by various government departments and the local authorities since the late nineteenth century, they had very little effect in controlling the disease. The outbreaks of malaria occurred quite regularly (22).

As early as 1925, the IHB sponsored two medical experts on malaria - Drs M.E. Barnes and P.F. Russell - to carry out a survey on the intensity of the malaria problem, and the appropriate measures to control it. They pointed out that malaria was “endemic and occasionally epidemic in Ceylon, and that the disease constitutes a public health problem of sufficient importance to merit special attention”(23). In light of the frequent outbreaks of malaria

throughout the country, Barnes and Russell recommended a comprehensive program instead of the scattered efforts to control the disease. However, the government did not implement these recommendations due to financial difficulties.

The “great malaria epidemic” in 1934-35, which began in the Northwestern province, gradually spread to Western and Southern provinces. At the height of the epidemic, almost the entire population, or more than five million people, were affected by the disease (24). The epidemic has been described as the “greatest pestilence in the recorded history of the Island, and a catastrophe of the first magnitude”(25). By the end of 1935, the epidemic had killed more than 80,000 people (26).

The turning point of the battle against malaria came with the development of DDT during World War II (27). In 1945, several malaria observation stations carried out experiments with DDT in a number of districts in the North-Central province. The results showed a remarkable decline in malaria incidence within six months. A program of residential spraying of DDT was established in malaria endemic regions. The program was under the administrative control of the medical officer of health of the district. The IHB representatives provided technical advice in malaria control in those areas where the health units had been established.

An intensive three-year-program of residential spraying of DDT brought malaria under control. By 1948, the malaria morbidity rate had declined to 109 per thousand. The decline of malaria incidence after the late 1940s directly contributed to the dramatic fall of mortality rate in the country (28). As one observer noted: “At a reported cost of two dollars per capita, the people of Ceylon acquired a modern life expectancy. A great deal of land previously in the possession of malaria mosquitoes was opened up for cultivation”(29). In comparison with the programs conducted elsewhere, the approach taken by the health units to control malaria in Sri Lanka had been described as an “example for others to follow.”

Multi-Pronged Approach to Health

Following political independence in 1948, the Sri Lankan state undertook to consolidate the early achievements in health by implementing a broad-based social welfare program. The mortality rate had declined from 25 per 1000 people in 1930 to just 13

by 1948. The infant mortality rate, which was 175 per 1000 live birth, dropped to 92, while maternal mortality declined from 21 to 8 per 1000 during the same period. Although the underlying causes of these declines have been subjected to many interpretations, ranging from the effective control of malaria and improved sanitation to the expansion of medical services throughout the country, these achievements may not have been sustained without the broad-based welfare measures adopted by successive governments since political independence.

Free education from kindergarten to university (inclusive) established in Sri Lanka in 1947 led to the expansion of primary and secondary schools throughout the island. The educational facilities became available to every child within a radius of approximately 4 km anywhere in the country. Secondary and post-secondary education was further expanded in the 1970s and 80s, adding a number of new universities, campuses and technical colleges to increase access for those who were living in less developed regions of the country (30). It has been shown that the level of education among women in any society is one of the critical factors that determine mortality, particularly infant and maternal mortality rates. Sri Lanka's success in reducing mortality rates has been widely attributed to gender equality in both education and health services at all levels (31).

In terms of health service, there was a considerable increase in government spending for health: "free health services (inclusive of maternity services, hospitalization facilities and free drugs) also contributed substantially to the satisfaction of basic needs"(32). In the early 1960s, all major district hospitals expanded bed-capacity, which was already at one bed for every 370 persons. One important aspect of the expanding health services during this period was the considerable emphasis on maternal and child specific health services that focused primarily on pre-natal, post-natal and infant health. As a part of the maternal and child-specific health services, supplementary feeding program for mothers, infants and school children were introduced to reduce low birth weight, and childhood malnutrition.

A robust network of health care service delivery developed over the years has been praised by many multilateral organizations. Today, within a radius of

3 km, every Sri Lankan has access to a primary care hospital. Unlike in most other developing countries, the problem of access to basic health care "virtually does not exist in Sri Lanka"(33).

On food security and nutrition, besides a concerted campaign to increase local food production through land distribution among landless peasants and guaranteed price schemes to ensure higher income for the farmers, the government policies also ensured a nation-wide distribution of essential food items such as rice, legumes, dried fish and milk powder (or tinned milk) at minimum mark-up price. The government department of consumer affairs implemented a price control program for essential food items to prevent excessive price increases, thereby protecting the consumer. These measures helped to increase the per capita consumption level and the caloric intake by the entire population, in particular the low-income groups. All governments from different ideological perspectives remained committed to protect food subsidies even at times when the country's foreign reserves had drastically declined. The government expenditure for health, education and food subsidies, as a percentage of the gross domestic product, climbed from 5 percent in the early 1950s to 12 percent in 1965. These efforts, as a whole, had a positive impact on health, and the continuing decline in mortality and rising life expectancy of the entire population.

Conclusion

The community-based health unit program, as a model of *selective* primary health care, was developed by the IHB in collaboration with the Sri Lankan health experts long before the WHO began to advocate primary health care for developing countries. Unlike the *comprehensive* primary health care advocated by the WHO, the health unit program restricted itself to the most serious health problems in the community, and attacked their root causes by using available techniques and the local resources. The health unit system was developed in view of local conditions, resources and administrative mechanisms in partnership with the local communities. One of the key objectives of the health unit program was to build a network of health services through cooperation of the people, so that the community itself becomes a major stakeholder in health promotion.

An equally important aspect of the health unit program was its substantially low per capita cost to the health care budget. The cost of health unit work for 1933 was about Rs. 240,205/- (about \$ 81,000). This represented about 3% of the annual budget of the Department of Medical and Sanitary Services for the year. The average per capita cost of health unit work was about Rs. 1.03 (less than \$.50) (34). The government and the local authorities of the district financed the regular public health and sanitary work of health units. The IHB's financial support was limited to what it described as "special circumstances," such as an unexpected shortfall of government funding for established programs, the need to recruit additional personnel for specific programs, and to create "special projects" by the representatives of the IHB. One of the most important "special projects" that the IHB financed was the training of public health workers for Sri Lanka and other South and Southeast Asian countries (35). In 1933, for example, as part of the IHB's campaign to expand the health unit concept in Asia, a group of eighteen medical officers of health and public health nurses from India, Burma, and Java was invited to Kalutara for up to six months training on disease control and health education. Recommending a grant for this particular purpose, Dr. Jacocks wrote that, "Kalutara has been, and continues to be, the chief training center for the East. Without the facilities, which it offers, our rural work would be immeasurably handicapped"(36).

In terms of Sri Lanka's long-term health achievements, the health unit program laid the foundation for a well-integrated primary health care network often seen as a model for other developing countries. The mortality rates slowly declined until the mid-1930s and with the effective control of malaria, hookworm infection and typhoid in the 1940s, the mortality rates declined steadily, marking the beginning of the epidemiological transition in Sri Lanka. Although Sri Lanka ranks today among the world's middle-income countries, its impressive record of health achievements has often been compared to that of industrialized Western nations. These achievements, no doubt, are the cumulative results of a host of public health and social welfare measures that were introduced during the last seventy-five years. A recent report by the WHO points out that Sri Lanka's success story of health is, in large measure, due to its early start with a solid

foundation for "equitable" and "community-based" approach to primary health care. The report specifically acknowledges the "equality of access" to health and education at all levels for both men and women as one of the core principles of national health priorities, and development policies in Sri Lanka that have contributed to outstanding health indicators.(37) Although the health unit program began as a *selective* primary care model, in time it became an integral part of a broad strategy of "intersectoral" action for health.

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- group includes a range of diseases, such as African trypanosomiasis, leprosy, ascariasis, diphtheria, filariasis and dengue fever. Both the prevalence and mortality rates are low, and the effective control is difficult. *Ibid.*, p. 148.
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