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**Health and Medicine in Soekarno Era Indonesia: Social  
Medicine, Public Health and Medical Education,  
1949 to 1967**

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Thesis prepared in fulfilment of the conditions for the PhD

Unit for the History and Philosophy of Science  
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# **Health and Medicine in Soekarno Era Indonesia: Social Medicine, Public Health and Medical Education, 1949-1967**

**Vivek Neelakantan**

## **Abstract**

In 1949, newly-independent Indonesia inherited a health system that was devastated by seven years of warfare resulting from three-and-a-half years of Japanese occupation and four years of revolutionary struggle against the Dutch. The country suffered from an acute shortage of physicians, and those few physicians were mostly concentrated in the large urban centres where a minority of the population lived. Additionally, the Indonesian Ministry of Health had to cope with the resurgence of epidemic diseases such as smallpox and endemic diseases such as malaria, tuberculosis and yaws. The Ministry of Health had initiated a number of symbolic public health initiatives—both during the Indonesian Revolution (1945 to 1949) and during the early 1950s resulting in a noticeable decline of mortality. These initiatives fuelled the newly-independent nation's confidence because they demonstrated to the international community that it was capable of standing on its own feet. The early 1950s were thus a period of great optimism in Indonesian public health. Unfortunately by the mid-1950s, Indonesia's public health program faltered due to a constellation of factors (a) political tensions between Java and the Outer Islands; (b) administrative problems particularly as the provincial and local governments implemented health policy but depended on the centre for the disbursement of finances; (c) political deadlocks; (d) corruption; (e) rampant inflation; and, (f) political instability. The optimism that characterised the early years of independence paved way for despair. The Soekarno era could therefore be interpreted as the era of bold plans and unfulfilled aspirations in Indonesian public health.

This thesis relates the history of health of post-World War II Indonesia to the political history of the 1950s and critically examines the way in which promoting the health of the population became closely related with nation-building. Beginning 1950, Indonesian physicians appropriated military metaphors associated with the revolutionary struggle for independence in order to depict campaign against malaria, tuberculosis, yaws and leprosy as a struggle against the ‘big four’ endemic diseases that drained the overall vitality of the population. They

conceptualised disease eradication as symbolic battles that would lead to further victories of the nation such as those against poverty and illiteracy.

In the post-World War II era—characterised by military rivalry between the US and USSR—the US in its bid to countervail the growing influence of USSR in newly-decolonised nations viewed the prevalence of poverty and disease as the breeding grounds of communist ideology. The US perceived the political significance of supporting disease eradication campaigns in developing countries as an attempt to lead these countries to a Western-style model of development, which made participation in these campaigns an essentially political act. Indonesian leaders were aware of the political ramifications of accepting foreign aid for the nation's public health programs. They sought to cautiously balance the country's ambitions of safeguarding its political sovereignty in health with increased openness to international assistance in health administered through the channel of UN agencies such as the WHO and the UNICEF. Indonesia did not uncritically accept the recommendations of international aid agencies. Indonesian leaders elected to follow what I have characterised as the 'Bandung approach' to health: it adhered to a non-aligned foreign policy which sought to minimise the intervention of either the US or the USSR, solidarity in health with nations in a similar socio-economic position, and a creative appropriation of WHO recommendations in health to reflect the country's unique demographic and epidemiological requirements.

This study sheds light on the nature of sovereignty and postcolonial governance in Indonesia. The country's sovereignty was more fissured than scholars have assumed. Political differences between Java and the Outer Islands were heightened as a result of these tensions, which affected policy outcomes. The fissured nature of Indonesian sovereignty was evident in the lack of coordination between the Ministries of Health, Finance and Education on one hand and the provincial governments on the other. This undermined the consistent implementation of the Leimena Plan for health—named after Indonesia's most influential Minister of Health since independence, Johannes Leimena—and medical education initiatives across the archipelago. The Indonesian bureaucracy proved to be the biggest impediment in the effective implementation of public health.

This thesis reveals the benefits of linking the historiography of postcolonial Indonesian medicine with the political history of the 1950s more generally. The synthesis of these two streams of historiography serves as a useful vantage point to examine how Indonesia managed to

implement its health policy independently during the height of the Cold War with minimal external intervention. Although the achievements in public health during the Soekarno era (1949-1967) pale in comparison to the authoritarian Soeharto regime (1967-1998), the holistic view of public health embraced by nationalist physicians during the 1950s that symbolically related health to nation-building form the backbone to the Ministry of Health's *Healthy Indonesia 2010* campaign implemented at the turn of the 21<sup>st</sup> century. Yet the realisation of these plans is still in jeopardy because of corruption, collusion, nepotism, and an inept bureaucracy, just like during the Soekarno era.

*In the memory of my late grandfather Mr N.N. Subramanian*

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It has been a long but very fulfilling journey. My interest in Indonesia began in 1998 as a high school student when the downfall of the Suharto regime made headlines in the international media and my interest in Indonesia has remained active since then. Events that stirred me in the direction of the history of medicine were more complex. In 2005, after earning a Master of Philosophy in International Studies from the University of Madras (Chennai, India) I happened to meet with Sanjoy Bhattacharya, now Professor of History at the University of York, at the Maharashtra State Archives (Mumbai) who encouraged me to undertake intensive study of Bahasa Indonesia and consult archival sources. In 2006, I was enrolled as a MA candidate in History at the University of Iowa and was selected for the prestigious Crossing Borders Fellowship that enabled me to pursue archival research at the headquarters of the World Health Organisation (WHO) and League of Nations Archives located in Geneva, Switzerland (mid-2007). In 2008, I was awarded the All-Net Fellowship for less commonly taught foreign languages at the University of Iowa that enabled me to independently learn Bahasa Indonesia with the assistance of a tutor. My MA thesis assessed the history of smallpox eradication in Indonesia.

In 2009, I was accepted in the PhD program at the Unit for the History and Philosophy of Science at the University of Sydney and was awarded a prestigious University of Sydney International Scholarship. Throughout my candidature, I have benefitted immensely from the guidance of Hans Pols and Warwick Anderson. As my primary supervisor, Hans has been enthusiastic about the project from the very beginning and introduced me to specialists in the field. I would like to thank Hans for his generosity, incisive comments on chapter drafts and good sense of humour that helped me to persevere in the midst of difficulties. I would also like to thank Warwick for raising several questions that propelled me to a higher plane of inquiry.

A major challenge that I have encountered over the last three years is the disparate nature of archival holdings related to the Soekarno era in Indonesia and elsewhere. In addition, Bahasa Indonesia has undergone a process of evolution, since it was adopted as a national language in 1928. As a result, the language retains several Dutch loanwords during the 1950s which made renditions of primary sources a challenge in itself.

Various versions of the thesis chapters were presented at international conferences, particularly the History of Medicine in Southeast Asia Conferences in 2010 and 2012. In this

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### **Special Note on Orthography and Translation**

Bahasa Indonesia is a dynamic language and has undergone several orthographic changes since it was adopted by the Indonesian nationalists in 1928 as the national language. Prior to 1972, the Indonesian spelling was influenced by the Dutch spelling system. The legacy of the Dutch spelling system survives in proper names. For purposes of consistency, I follow the old spelling system as it appears on documents published prior to 1972 for proper and common names. For example, Raden Kodijat, instead of Raden Kodiyat; *penjakit* (disease) instead of *penyakit*. With regards to place names in order to avoid ambiguity, I use the standardised spelling system adopted by the Indonesian government, *Ejaan Yang Disempurnakan* in 1972 (for example, Surabaya instead of Surabaja). All translations of Indonesian and Dutch sources, unless otherwise indicated, are my responsibility.

## **CHAPTER ONE**

### **INTRODUCTION**

In 1955, during the commemoration of the tenth anniversary of the proclamation of Indonesian independence, the Minister of Health, Johannes Leimena stated:

With the Declaration of Independence on August 17, 1945 the formation of a Government with its machine power (police and army), its territories and population, the Republic of Indonesia came into being. The Red-White flag was hoisted and the national anthem was heard in the smallest and most isolated places of Indonesia. It was previously gauged that this nation was going to face various difficulties if it was going to maintain its independence. These difficulties were felt in all fields of work, including Public Health, especially before the transfer of sovereignty on December 27, 1949. Yet, it may be said that the Indonesians during its early stage of independence showed a strong will to maintain its freedom amidst hardships and difficulties and no less did it show its courage to surmount the barriers during the transition period, also in the field of health.<sup>1</sup>

This quote illustrates the enormous challenges faced by the post-colonial state of Indonesia as it built itself as an independent nation. With respect to health, it had the task to develop and implement a health policy throughout its entire territory, including many far-flung islands soon after the proclamation of independence in 1945 and the transfer of sovereignty in December 1949. In 1950, the country inherited a ruined health system after seven years of warfare: the Japanese occupation (1942-1945) and the Indonesian Revolution (1945-1949). Towards the close of the Indonesian Revolution, Indonesia had only 1,200 physicians for a population of approximately 70 million people. Not surprisingly, the country was unable to combat the resurgence of epidemics not only because of a shortage of physicians but also due to the scarcity of essential drugs.<sup>2</sup> It was neither able to respond to these special challenges, nor to everyday challenges. During the Indonesian Revolution, nationalist physicians launched a number of highly symbolic albeit sporadic public health initiatives. When the armed struggle ceased, and the new nation was established, the tasks faced by Indonesian physicians had not become any easier. Despite the initial euphoria that surrounded independence, the Indonesian Ministry of Health still had to resurrect the health infrastructure destroyed by seven years of warfare.

In 1950, with independence won, the Indonesian leaders were confronted with the enormous task of re-establishing the state's administrative machinery, in many respects, building it from scratch. It confronted a situation in which there was a lack of transport and communication infrastructures and industrial productivity had been ruined. Reflecting on the challenges facing the newly-independent nation, President Soekarno lamented:

Thus ended our period of struggle. And thus began our struggle for survival. The deed to the house called Indonesia was now securely in our hands, but it was a badly damaged house. It leaked aplenty. Its windows, doors, roof, and walls were broken. Our economy, government, administration, transportation systems, communications, media, methods of production were all damaged. Even morally and mentally we needed repairs.<sup>3</sup>

Following the transfer of sovereignty Indonesia found itself on the verge of bankruptcy as it took over a large debt from the former Netherlands Indies.<sup>4</sup> This was a source of considerable bitterness, since it included some of the costs of the colonial war against the Republic and frustrated independent Indonesia's plan for economic development. Later, in the 1950s, rampant inflation led to great problems.

Despite the many difficulties the new nation faced, the early 1950s were a time of optimism and promise. Indonesians worked together to realise the promise of the revolution and develop a state on the basis of Soekarno's *pantjasila* principles (the five principles being the belief in the one and only God, just and civilised humanity, the unity of Indonesia, democracy guided by consensus and social justice for all Indonesians) and the ideal of modernisation and development. But, while Indonesia was willing to receive international aid and advice about how to achieve this promise, it carefully guarded its own independence. It did not want to end up in the orbit of one of the larger powers and presented itself as a non-aligned nation. In 1955, at the Bandung Conference, Indonesia declared the solidarity of African and Asian nations as a countervailing force to the dominance of the Soviet Union and the United States. This conference resulted in the germination of the Bandung spirit, a notion that developing countries would embark upon their own path to modernity without undue influence from either the Soviet Union or the US. The Bandung spirit was reflected within the field of Indonesian public health as well. Indonesia sought to carve a niche for itself in international health by aligning its public

health programs with the objectives of the WHO, the intention being to maximise international aid while jealously safeguarding its political sovereignty. Indonesia was not a passive recipient of international aid; rather it creatively refashioned aid to suit its own requirements. The Bandung spirit expressed the optimism that Indonesia was capable of pursuing its own trajectory to modernity in public health.

During the early 1950s, there was a sharp decline in mortality. This engendered much optimism in the Ministry of Health, i.e. the country had made satisfactory progress in meeting its milestones in public health despite an acute shortage of physicians. Between 1950 and 1955, the Ministry of Health launched an emergency program consisting of (a) infectious disease control, for smallpox, plague and cholera; (b) a campaign against endemic diseases, notably malaria, tuberculosis, yaws and leprosy; (c) public health education; (d) curative activities appertaining to the expansion of hospital beds; (e) training of health personnel; (f) the development of rural health services that would integrate preventive and curative health activities; (g) the establishment of maternal and child health bureaus; (h) nutrition research with the aim of raising the nutritional levels of the people; (i) health legislation intended to achieve an equitable distribution of physicians throughout the Indonesian archipelago, the regulation of private practice and subsidised treatment for the poor in the country's private hospitals; and (j) enlisting the cooperation of UN agencies particularly the UNICEF (United Nations Children's Fund) and the WHO.

Between 1950 and 1955, the progress for Indonesia's public health seemed promising. During these years, bold plans had been formulated and a number of promising initiatives had been launched. Leimena presented an ambitious blueprint for public health (The Bandung Plan).<sup>5</sup> During the second half of the 1950s, optimism yielded to despair. The Indonesian state became dysfunctional due to the lack of coordination between central, provincial, district and local governments in the implementation of policy, corruption and rampant inflation. Even though there was a lot of idealism in the few years after independence, the financial position of the state was very poor. When the Indonesian economy collapsed, health programs suffered as well. The challenges that were encountered appeared much more difficult to solve than was initially

estimated. The everyday reality of most Indonesians remained desperate and with little prospect of improvement.

The initial exuberance that characterised the early years of independence made way for pessimism and despair, as evident in the literature of the period. For example, Pramoedya Ananta Toer expressed his disillusionment about the fact that the high expectations of independence had not materialised into a higher standard for the Indonesian working class, in his collection of short stories entitled *Tales from Jakarta: Caricatures of Circumstances and their Human Beings*. In his short story *My Kampung*, set in urban Jakarta when the campaigns against infectious and endemic diseases were underway, Toer mocked the promise of the Indonesian state to guarantee a minimum standard of well-being for its citizens. In his short story, he expresses disgust that not even a small cautious guerrilla squad (referring to the Indonesian revolutionaries immediately after independence) would lose ten people in two years but in his *kampung* (urban squatter) with its squalor, ‘people die one after another.’<sup>6</sup> Toer then enumerates the numerous deaths in his *kampung*: there is the case of the person who died of chronic venereal disease, of a woman who overfed and killed her favourite child with an overdose of worm medicine, of the print setter who died from lead poisoning, and many routine cases of tuberculosis.<sup>7</sup> Alternating between irony and despair, the tone of Toer’s short story implicitly criticises the Ministry of Health’s emergency public health program for its failure to address the socio-economic causes of ill health: ‘If killing by weapons is punished by the government, killing because of ignorance and poverty is not punished in my *kampung*, even if the killing is of one’s own child. It is a routine situation and is perhaps quite understandable.’<sup>8</sup> Toer’s short story illustrated that it is easier to formulate plans than to execute them.

I began with Leimena’s reflections on the state of Indonesian public health in 1955 to examine how health became an important component of nation-building. It aimed to resuscitate the newly-decolonised nation from three-and-a-half centuries of Dutch colonialism, three-and-a-half years of Japanese occupation, and four years of revolutionary struggle. In this thesis, I argue that formulating and implementing Indonesia’s health policy constituted an enormous challenge which involved building a health infrastructure throughout the islands of the Indonesian

archipelago where none had existed before, without adequate financial support. At the same time, it meant achieving coordination between and within the state apparatus by negotiating the bureaucratic labyrinths at various levels, i.e., central, provincial, district and village. Of central importance to this thesis are: (a) the way in which health became a component of nation-building (*pembangunan*); (b) the way in which Indonesia sought to achieve an equilibrium between accepting international aid and ideas about public health while maintaining its hard-won political independence; (c) the way Indonesia positioned itself in the Cold War rivalry, which can be seen at both the Bandung Conference (1955) and in health matters; and, (d) the formulation of unique epidemiological strategies for disease eradication appropriate for Indonesia.

### **Health and Nation-Building in Indonesia in the 1950s: Integrating Disparate Historiographical Streams**

This thesis endeavours to integrate four disparate historiographical streams: (a) the political history of Indonesia before 1965 (the Soekarno era); (b) the history of international aid in the area of health, with focus on the Indonesian context; (c) the history of science, technology and society (STS) in postcolonial Indonesia; and, (d) the history of Indonesian public health during the 1950s. The development of Indonesia's health policy during the Soekarno era between 1949 and 1967 sits uneasily at the intersection of colonial and postcolonial histories and coincides with the period of decolonisation in Southeast Asia.<sup>9</sup> In postcolonial Indonesian political historiography, much of the literature is primarily focused on political developments and questions of political stability, the waxing and waning of parliamentary institutions and economic decolonisation. Two unexplored topics in the political history of Indonesia during the Soekarno era are how public health related to these political developments and how physicians and policy-makers related health to nation- building. Viewing politics as nation-building enlarges one's perspectives and enables one to locate the importance of health in it.

The history of international aid focuses on the diffusion of modernisation from the West to Indonesia whereas the history of science and technology studies explores the role of

technology in the form of national identity, often focusing on large technological projects. Frequently, the transfer of aid and technology is viewed as a relatively unproblematic unilateral process; but neither of these two streams of historiography critically examines how Indonesians appropriated scientific ideas from international agencies and refashioned them to suit their own purposes. Within postcolonial Indonesian medical historiography, the 1950s remain lightly explored. By relating it to the previous themes, I aim to conceptualise the history of health and medicine in the Soekarno era as a central element in nation-building. More specifically, I would like to explore the ways in which Indonesians creatively received and transformed international ideas to apply them to their own context. Major gaps in the existing scholarly literature on Indonesia are the ways in which Indonesia critically engaged with public health at the national, regional and international levels, particularly within the *Dewan Perwakilan Rakjat* (Indonesian House of Representatives), the annual SEARO sessions (WHO Regional Office for Southeast Asia) and at the World Health Assembly conducted at the WHO headquarters, Geneva.

Integrating the four disparate streams of historiography will further scholarly understanding of how Indonesia attempted to achieve an equilibrium between the alignment of its public health programs with policy prescriptions of the WHO and other international agencies while remaining fully independent despite foreign intervention. The central political positioning of Indonesia as the leader of the developing nations of Africa and Asia, who sought to chart their own trajectories to development based on the Western model but without either Soviet or American intervention, can be called the Bandung spirit. At the 1955 Bandung Conference, Indonesia aimed to present itself as a non-aligned nation, which in solidarity with other recently decolonised nations, wished to negotiate its own path to development and international politics. This thesis represents a challenge to the writing of the history of postcolonial health of Indonesia inasmuch as it draws upon a rich diversity of primary sources, in particular Indonesian, WHO and Australian archives, medical biographies, novels and Indonesian parliamentary proceedings to critically situate the country's health policies, the way it sought to negotiate a balance between accepting international aid while maintaining its independence, and its standing on international health.

### *Significance of the 1950s: How Historians Have Approached the Soekarno Era*

During the 1990s, historians of Indonesia depicted the 1950s as a disappearing decade due to the political polarisation between Java (the political core) and the Outer Islands (for example Sumatra and Sulawesi, the periphery) that complained of ‘Jakartaism’ or the diversion of natural resources from the Outer Islands to Java.<sup>10</sup> In addition, the 1950s witnessed rising tensions between political parties, the rise of political infighting and the growing importance of corruption.<sup>11</sup> The most influential question guiding the political historiography of the 1950s was the debate between Herbert Feith and Harry Benda as to whether Indonesia would follow Western-style modernisation or follow its own way. In 1955, Indonesia nurtured the Bandung spirit that sought to encourage developing countries to pursue their own trajectories to modernity without alignment with either the Soviet Union or the US, establish economic self-sufficiency, and develop solidarity with Asian and African countries in their struggle against imperialism.

The early years of Indonesian independence were characterised by a permanent sense of crisis attributable to political instability. Henk Schulte Nordholt argued that if 1950 had been the zenith of nationalism, the general elections of 1955 illustrated the success of electoral democracy because 90 % of the voters cast their votes in the absence of irregularities.<sup>12</sup> Nevertheless, the outcome of the 1955 elections was the failure of the Constituent Assembly to deliver a new constitution. The legitimacy of the nation-state was undermined by corruption.<sup>13</sup> Everyday Indonesians were disillusioned by the fact that the promise of the Revolution to establish a just and prosperous society had not materialised. In his short story ‘Creatures behind Houses,’ written 1955, Pramoedya Ananta Toer expressed disappointment because promises of a better standard of living were not fulfilled for all classes of Indonesian society.<sup>14</sup> In another short story ‘The Mastermind,’ Toer sketches the career of Mas Kariumun, who became a civil servant during the era of Dutch colonialism, a debt-collector during the era of Japanese occupation (1942-45), a hero of the Revolution, a bureaucrat and finally as Member of the Parliament

following the transfer of sovereignty in 1949. Kariumun was the embodiment of the political opportunism and corruption that characterised post-independent Indonesia. He regarded the common people as sheep who could be manipulated to further his political ambitions.<sup>15</sup> Toer's disappointment regarding the growth of political corruption during the early 1950s turned to outright cynicism by 1957, expressed in Mochtar Lubis' novel *Sendja di Djakarta* (Twilight in Jakarta) that captured the dark underside of urban life in Jakarta that was characterised by appalling poverty, inequality and the indebtedness of the common man.<sup>16</sup>

Ruth McVey, with reference to the general relationship between ideology and social change in Indonesia, observed that the fundamental question for historians dealing with the 1950s was 'commenting on what Indonesia should be like.'<sup>17</sup> The New Order Regime (1967-1998) represented the 1950s as Pandora's Box, the lid of which must be kept firmly closed as it represented political deadlock, economic decay and social tension.<sup>18</sup>

The chief disagreement between Harry Benda and Herbert Feith in 1964 had its genesis in the decline of constitutional democracy in Indonesia during the late 1950s.<sup>19</sup> Benda maintained that political developments during the Soekarno era should not be seen vis-à-vis adjudging the country's democratic institutions in terms of Western standards. Democratic institutions that functioned in the West were extrinsic to Indonesian culture. Feith argued that the process of modernisation of Indonesia arising from the nationalist movement in the pre-World War II period resulted in the establishment of Western-style democracy in Indonesia.<sup>20</sup> While one may not fully embrace Feith's thesis that the decline of constitutional democracy in Indonesia could be attributed to the different agendas of the 'solidarity makers,' personified by Soekarno and the 'administrators,' whom he identified with Hatta, opposition to liberal democracy was facilitated by the disillusionment of the Indonesian public with parliamentary institutions.<sup>21</sup> Although modernisation theory is used to analyse social and political change in Indonesia, an important lacuna remains in historiography. Historians have not adequately addressed the influence of the Bandung spirit in international development, i.e., the argument that Indonesia was not a passive recipient of international aid but actively sought to refashion aid to meet its requirements.<sup>22</sup> It sought to foster solidarity with the newly-decolonised African and

Asian nations and engineer its own path to modernity based on the framework of Western Science.

As a continuum to Feith's thesis, Dewi Fortuna Anwar argues that ideological differences between different political *alirans* (streams) such as Islam (modernist and traditionalist), secular nationalism, communism and socialism made political consensus difficult given the Cabinets' high instability on the eve of the 1955 elections.<sup>23</sup> Besides the polarization that persisted between different political *alirans*, political forces in Indonesia were divided into 'solidarity makers' and 'administrators.'<sup>24</sup> The 'administrators,' who were represented by Hatta, recommended that after achieving political sovereignty, Indonesia should leave the revolution behind and concentrate on rebuilding the national economy and advancing the welfare of the people. To achieve its goal of economic development, Indonesia needed to enlist the support of international organisations such as the World Bank which would provide monetary and technical assistance. The 'solidarity makers,' exemplified by Soekarno, thought that the revolution was far from over as West Irian was not yet liberated. During the 1950s, several political issues were contested such as whether to prioritise economic development over the liberation of West Irian, the proper relations between the central government at Jakarta and the provinces, or whether to have Islam officially recognised in the Constitution.<sup>25</sup>

The initiation of the Bandung Conference of 1955 coincided with the need to improve the image of the *Partai Nasionalis* Indonesia (Indonesian Nationalist Party or the PNI) prior to the 1955 elections. The events that precipitated the convening of the Afro-Asian Conference at Bandung were: (a) the failure of Indonesia to secure the liberation of West Irian by peaceful means; and, (b) the upcoming elections of 1955. The outgoing PNI's poor record regarding its economic policies attracted criticism from the Masjumi. The Conference generated considerable political capital for Prime Minister Ali Sastroamidjojo (from the PNI) as it established Indonesia's credentials as leader of the Third World.

Since 2005, historians have characterised the Bandung Conference as an epoch made up of little histories, reflecting unanswered questions as to whether the Conference was a continuation of Cold War concerns, a continuation of the struggle against imperialism, a protest

against centuries of racial humiliation or a communist plot.<sup>26</sup> Throughout Indonesia's tryst with multiparty democracy (1950-1957), foreign policy was a hotly contested issue among the nation's political elite. This seven-year period saw the rise and fall of no less than seven cabinets in rapid succession and no single government could form an absolute majority. A number of political parties such as the Islamist Masjumi sought to forge closer relations with the US and weaken communism at home. Other parties, e.g., the PNI espoused a more radical foreign policy.<sup>27</sup> During the Soekiman cabinet (1951-1952), when the dominant Masjumi politicians were vehemently anti-communist, Indonesia's Foreign Minister Subardjo secretly signed an agreement with the US, committing the country to US economic and technical assistance. Disclosure of the agreement led to the fall of the Soekiman cabinet in 1952.<sup>28</sup> The impact of the Bandung Conference within Indonesia was not only profound but benefitted Ali Sastroamidjojo's government and the PNI party (*Partai Nasional Indonesia*) prior to the country's first general elections in 1955 at a time when Indonesia's economic policies were in disarray.<sup>29</sup> Leading Indonesian political analyst Dewi Fortuna Anwar observed that at the time of the Bandung Conference, Sastroamidjojo rallied the Indonesians under the banner of Third World solidarity against colonialism and imperialism, a good example of Feith's 'solidarity making' activities.<sup>30</sup> Anwar interpreted the Conference as a continuation of struggle against imperialism.

The Conference established non-alignment with the two superpowers, the US and USSR, as the central pillar of Indonesia's foreign policy. Bandung provided the inspiration for the creation of a non-aligned bloc and subsequently the Non-Aligned Movement during the 1960s. It helped to link the idea of non-alignment, which had been confined to India, Burma and Indonesia, to the broader Afro-Asian family of nations. The Bandung Conference served Indonesia well, instilling a sense of self-confidence in its foreign policy and, for Soekarno, in distancing Indonesia from the West.<sup>31</sup> The Conference talked about the need to promote economic and technical cooperation among African and Asian countries. Its most lasting legacy was the promotion of the Bandung spirit which signified Third World solidarity in promoting global peace, justice and solidarity.<sup>32</sup> Dipesh Chakrabarty argued that Bandung was an attempt to

foster a sense of African-Asian solidarity in the midst of Cold War disagreements.<sup>33</sup> The prevailing discourse in the nations that came together at Bandung reflected an uncritical approach to modernisation.<sup>34</sup> Within the developing countries, the political leadership aspired for achieving modernisation, independent of Western intervention. Yet, the ideal of modernity was formulated in Western terms.<sup>35</sup> The emphasis on development as catching-up-with-the-West produced a sharp differentiation between the elite nations and their subaltern counterparts.

This thesis contextualises the history of postcolonial Indonesian medicine in the light of political developments. As Adrian Vickers points out, telling the history of modern Indonesia is complex as the nation does not have a single narrative.<sup>36</sup> Most historical accounts either focus on the activities of a small group of political leaders who led the country to independence, the decline of parliamentary institutions, or whether Indonesia should follow the Western style of modernisation or follow its own way. This thesis represents part of a complementary trend in historical scholarship that seeks to contextualise postcolonial health of Indonesia from a transnational perspective. As well, it critically examines the ways in which maintaining the population's health came to be seen as an essential part of nation-building.<sup>37</sup>

#### *Historiography of International Aid: The Indonesian Context*

The history of international aid in the Indonesian context is sparse and has largely remained the preserve of historians of Cold War and science and technology studies.<sup>38</sup> Their accounts reveal that technical assistance was a new form of diplomacy during the post-World War II era that sought to spread ideas of modernisation from developed to less-developed countries, often motivated by political agendas. This thesis seeks to disentangle itself from modernisation and instead, explores how Indonesia appropriated technical assistance, particularly from the WHO, and sought to cautiously balance Indonesia's hard-won sovereignty in the political sphere with increased openness to international aid.

In his monograph *Machines as the Measure of Men*, Michael Adas observes that the term 'modernisation' was used with reference to the post-World War II era to denote America's path

to political stability and prosperity through the rational management of its resources and the application of science and technology.<sup>39</sup> American policymakers and social scientists cited America's path to prosperity as the model for the underdeveloped nations of Africa and Asia. Modernisation theory was based on the postulate that non-Western societies not only could, but also would develop along scientific and industrial lines pioneered by the West. Though the modernisers regarded Western capital as critical to Third World development, they envisioned that Africans and Asians, not Westerners, were the major agents of transformation of underdeveloped societies.<sup>40</sup> Along similar lines, Michael E. Latham argues that during the Cold War (1945-1990) modernisation theory provided the means for US to redefine who it was vis-à-vis others.<sup>41</sup> Modernisation theory, with its claims to universality and assumptions about the malleability of traditional societies assumed that developing countries as diverse as Iran, Ecuador, Burma and the Congo could advance along a linear trajectory from tradition to modernity under the tutelage of America. Neither Adas nor Latham contextualise modernisation theory from the perspective of the birth of new nation states in Asia and Africa and the specific ways in which the UN agencies and the political elites of Africa and Asia reconfigured modernisation within the framework of state-mediated national development.

By the mid-1950s, Indonesia had become a major recipient of technical aid from the International Cooperation Administration or ICA, an American Federal agency that managed overseas assistance programs intended to promote American foreign policy.<sup>42</sup> American political interests equated peace and security in Indonesia with the promotion of economic and technical aid based on an ideology of development that would countervail the rising influence of communism. Suzanne Moon argues that Indonesian and American bureaucrats differed on strategies about the proper approach to development.<sup>43</sup> Whereas the Americans envisioned a linear transformation of Indonesian society from agricultural to industrial, the Indonesian leaders emphasised self-sufficiency, generally defined with respect to food and, by extensions to agriculture. In practice, technical assistance became a dialogue between the Americans and their Indonesian counterparts, rather than a unilateral transfer of technology from the US to Indonesia. Despite the ideological conflicts that persisted between the American and Indonesian technocrats

on how to achieve development, both shared the view that the goal of development was transformation to a Western ideal of economic growth and productivity.<sup>44</sup> Technical assistance as a policy prescription for less-developed countries to plan and modernise is well-represented in the scholarly literature on international development in terms of American modernization theory. However, the role of the UN as an autonomous diplomatic actor in terms of assisting the economic planning of newly-independent nations (particularly Indonesia) is less visible.<sup>45</sup> Technical experts recruited by UN agencies tailored economic development according to the requirements of the recipient country through liaison with the central planning bureau and transmitted scientific expertise to less developed countries that would ultimately lead them to a Western—if not an American—economic model.<sup>46</sup>

The Indonesian Planning Bureau originated with a call for centralised economic planning. The UN assigned technical experts to advise the Indonesian government on planning and the controlled financing of the Technical Assistance program but mandated that the foreign experts report to the Indonesian government. For Djuanda Kartawidjaja, who was Head of the National Planning Bureau (*Biro Perantjang Negara*), centralised planning was a formalised expression of exerting the sovereignty of the state.<sup>47</sup> In 1955, during the planning process, differences emerged between Djuanda and the foreign experts regarding the role of the state in economic development. Planner-politician conflict within Indonesia accelerated during the late 1950s as Soekarno and other nationalists began to turn away from developmentalist solutions and disengagement from international trade in favour of economic policies that ensured the country's self-sufficiency in economic affairs.<sup>48</sup> Although the existing historiography related to the history of international aid in the Indonesian context highlights the conflict between the foreign technical experts and the Indonesian politicians over the administration of the technical assistance programs, what needs to be studied is the actual implementation and evaluation of these programs.

Most scholarly literature pertaining to technical assistance focuses on the diffusion of modern technologies from the West to the newly-independent countries of Asia and Africa with a view to transforming the latter countries based on the Western model of development. Instead

of examining technical assistance solely as an American Cold War strategy intended to contain the spread of communism, this study seeks to examine the specific ways in which technical assistance (particularly in public health) was incorporated into Indonesia's nation-building ideology.

#### *The Historiography of Science and Technology Studies*

Current scholarly literature on science and technology studies in Indonesia largely centres on the role of technology in the formation of a national identity.<sup>49</sup> The contributions of individual Indonesian scientists are overshadowed by discussion of the institutionalisation of Indonesian science.<sup>50</sup> What needs to be studied in conjunction with the role of science in the emergence of Indonesian identity is the contribution of individual Indonesian scientists and the specific manner in which they rhetorically aligned their research with nation-building.

Suzanne Moon's article titled 'Justice, Geography, and Steel: Technology and National Identity in Indonesian Industrialization,' examines the interactions of technology and national identity through the lens of a steel plant in Cilegon, West Java.<sup>51</sup> The issue of industrialisation in Indonesia was associated with the socialist ideal of achieving technological self-sufficiency. The location of the steel plant in the town of Cilegon was invested with symbolic significance. Cilegon, which was an ostensibly impoverished town, was a lively part of the Majapahit empire, a Java-based empire that established its influence over the Outer Islands, particularly Sumatra, Bali, Borneo and the eastern islands that constituted the Indonesian archipelago. For Soekarno, the site of the steel plant symbolised the aspirations of the postcolonial state in its march towards modernization. Moon's article, however, does not examine the contribution of how individual Indonesian scientists sought to align their research with nationalist ideology.<sup>52</sup>

In his monograph *The Floracrats: State Sponsored Science and the Failure of the Enlightenment in Indonesia*, Andrew Goss contends that Indonesian science has had broad middle-class support since independence. It was linked to the global culture of science and scientists. For many Indonesians, the appeal of science was its enlightenment ideal of revealing

the workings of nature.<sup>53</sup> Viewed internationally, Indonesian research has been less competitive internationally as Indonesian scientists have sought to measure their success by their usefulness to the nation and the creation of a scientific community. The scope of Goss' monograph is restricted to biology, in particular to botany. Although nationalist physicians particularly Sarwono Prawirohardjo were influential in establishing a blueprint for Indonesian science during the early years of independence, the role of applied sciences (particularly medicine), while significant, remained marginal in Goss' narrative. A significant gap in the historiography of science and technology studies is the symbolic significance of the applied sciences such as agriculture and medicine in the furtherance of nationalist rhetoric of ensuring Indonesia's self-sufficiency in economic affairs (*berdiri di atas kaki sendiri*).

Physicians dominated the first generation of nationalists in the Dutch East Indies. Decolonisation was yoked to scientific progress as the physicians deployed organic metaphors of society and state, gained from their medical training, to diagnose and treat the ills affecting the proto-national body politic.<sup>54</sup> As Toer writes in his novel *Jejak Langkah* (Footsteps), 'A doctor not only aids in the recovery of a patient but also awakens the spirit of his people weakened by ignorance.'<sup>55</sup> This thesis contends that subsequent to the transfer of sovereignty to the Indonesian Republic in 1949, the legacy of physicians in shaping scientific thinking continued in terms of symbolically aligning medical research with Soekarno's characterisation of the Indonesian Revolution as a period of investment.

#### *Representing the Historiography of Indonesian Health within the Context of International Health: The 1950s*

The lack of interest in the history of public health in Indonesia during the 1950s may come as a surprise given the fact that there is a well-established scholarship on the history of welfare.<sup>56</sup> Anne Booth argues that despite the political instability that characterised the 1950s, there was some progress aimed at establishing planned economic growth in the Natsir government in 1951. The fruits of economic growth during the 1950s were unevenly distributed with bureaucrats and politicians benefitting in real terms whereas in the case of estate labour,

wage rates were falling in real terms due to inflation.<sup>57</sup> Between 1951 and 1960, the Gross National Product (GNP) grew at a rate of 36%; but, the population growth of 18% for the decade neutralised the growth of the GNP.<sup>58</sup> Human development improved somewhat in the late 1950s compared with two decades earlier. Life expectancy improved marginally due to the control of malaria and other diseases. Eminent economic historian of Indonesia Pierre Van der Eng sketched a nuanced picture of Indonesian famines during the 1950s characterised by the high prevalence of endemic malnutrition and hunger oedema that affected some regions of Indonesia more than others. He attributes the recurrence of famine in some regions of Indonesia to localised food shortages that resulted from population growth that outstripped the supplies of food, natural disasters, and excessive government controls related to the marketing of rice. These occurrences diminished the incentives for surplus food production and inhibited the capacity of the free market to alleviate supply shortfalls in deficit areas.<sup>59</sup> As the above authors indicate, the history of health in postcolonial Indonesia is closely related to the history of welfare.

Within the history of social welfare in post-colonial Indonesia, the question of health is invariably overshadowed by the housing problem. Freek Colombijn argues that in post-colonial Indonesia, political leaders were imbued with the conviction that they had to do better than the colonial state in fulfilling the basic needs of all Indonesians, particularly housing.<sup>60</sup> In August 1950, administrators from various Indonesian provinces congregated in Bandung to attend *Kongres Perumahan Rakjat Sehat* (Congress on Healthy Public Housing), their aim being to explore how the houses of the less well-to-do could be improved.<sup>61</sup> The Congress delegates were convinced that Indonesians had to shake off their inferiority complex. They should no longer regard small houses as inferior; rather they should pay specific attention to the construction of houses that were healthy, both in the physical and social senses. In 1952, Hatta observed that most houses in Indonesia resembled cowsheds and were inappropriate for an independent self-confident nation.<sup>62</sup> The implementation of *rumah sehat* (healthy housing) was entrusted to the local government; and the Ministry of Public Works and the Indonesian parliament pledged financial support for the project. Nevertheless, economic constraints damped the lofty ideals of the Congress of Healthy Housing. Limited state funds, available for public housing, became

eroded by inflation. As a result, the Ministry of Public Works had to restrict public housing to civil servants. Despite the empty rhetoric of *rumah sehat* for everybody and the notion of ‘self-help housing,’ a major difference between the colonial period and the 1950s was the fact that the Indonesian administration, at least in principle, professed a responsibility to house the whole population.<sup>63</sup> Colombijn’s article, which addresses the relationship between health, housing and national self-confidence, does not spell out how health embodied the notion of social justice as enshrined in the *Pantjasila*. In the history of welfare and housing, health concerns have played a central role. Yet, in these histories, the history of medicine did not receive any attention.

The history of medicine in the post-World War II Soekarno era in Indonesia remains overlooked within the current literature on international health. Since 2006, some attempts have been made to study the history of public health from a transnational perspective that sought to include some South and Southeast Asian nations including India, Burma and Indonesia.<sup>64</sup> But, Indonesian contributions to international health during the 1950s have been largely overlooked in the existing historiography in favour of developments within India. Similarly, the extant literature on the history of medicine in the Soekarno era is scarce and focuses on medical pluralism, family planning or the implementation of public health initiatives in Java whereas public health initiatives on the Outer Islands of the Indonesian archipelago, particularly Sumatra, Bali, Sulawesi, Kalimantan and Lombok, or the development of medical education remain unexplored.<sup>65</sup> In addition, there is no authoritative work that examines the nature of colonial medicine in the Dutch East Indies although there is a modest literature that explores the debate surrounding acclimatization in the nineteenth century (the effect of tropical climates on the health of Europeans), the limited reach of the Netherlands Indies Health Service, the initiation of medical education and how and why public health became a nationalist issue during the 1930s.<sup>66</sup>

One of the earliest studies of the history of post-World War II international health was undertaken by Sung Lee, who accorded primacy to the role of the WHO in international health subsequent to its creation as an arm of the UN in 1948. He argues that as an intergovernmental organisation operating within the jurisdiction of sovereign nation states, the WHO could not override the will of its member governments. Consequently, the historical, political and

economic relationships among nations were played out in the WHO arena.<sup>67</sup> The WHO saw itself both as waging a war against disease and an agent of modernisation, viz. leading the ex-colonial nations to Western-style society. The modes of assistance to newly-independent nations were hotly debated, but always within the paradigm of Western medicine. Western powers were adamant about restricting their aid to technical assistance whereas for the leaders of the newly-independent nations, the WHO served as a forum through which they could air their grievances against the ex-colonial powers and extract aid (medical supplies or funds). Randall Packard also privileges the role of the WHO as the agent of socio-economic modernisation of ex-colonial nations through the inauguration of the malaria eradication program and the association of malaria eradication with development.<sup>68</sup> Packard contends that within the US, there was a growing awareness that the development of the so-called underdeveloped world through the control of tropical diseases including malaria was a critical ingredient for US post-World War II economic interests in ensuring the uninterrupted supply of raw materials to American industries and creating an overseas market. Additionally, the control of tropical diseases such as malaria was perceived as a critical weapon in the fight against communism. Central to the malaria education campaign was a highly technological top-down solution to a health problem, which the WHO and technocrats hoped would be a model for other disease eradication programs. It required neither public health education nor extensive cooperation with local health agencies.

In *Cold War, Deadly Fevers*, Marcos Cueto contextualises malaria eradication within the context of the Cold War between the US and USSR from the late 1940s up to the mid-1960s that was marked by US technical assistance to developing countries to overcome poverty and disease.<sup>69</sup> During the 1950s, Mexico subscribed to a modernisation model of development that eased its strained bilateral relationship with the US. Malaria eradication was perceived by the Mexican government as a process of political centralisation and state building and a tool that would increase the national productivity of the population.<sup>70</sup> Cueto attributes the failure of malaria eradication in Mexico to resistance of the *anopheles* species to the insecticide DDT (dichlorodiphenyltrichloroethane), and popular resistance to anti-malarial operations. The literature on international health has not sufficiently explored how disease eradication campaigns

undertaken in developing countries shaped the epidemiological strategies of the WHO. Even less attention is paid to the differences between the WHO and the governments of developing countries related to the organisation of disease eradication campaigns. Unlike the majority of the literature on international health, I do not view the campaign against malaria and other endemic diseases as a Cold War strategy of the US to contain the spread of communism in the Third World. Rather, I seek to understand the motivations of the Indonesian state in aligning endemic disease control with the agenda of international agencies in which the continued interplay of nationalist health priorities with international development was crucial for ensuring financial support for the program.

Sunil Amrith represents the newer trend in the historiography of international health, which has transcended the politics of the Cold War. He explores the transnational circulation of public health technologies across the Southeast Asian region under the umbrella of the WHO. In his influential monograph *Decolonizing International Health: India and Southeast Asia, 1930-1965*, Amrith highlights the tension between the increased involvement of postcolonial states in international organisations, particularly the WHO, and the ineffectiveness of the states to govern the health of their populations.<sup>71</sup> Amrith contends that the history of public health in Asia during the twentieth century was irreducibly transnational and international. The problem of Asia's health emerged as a result of transnational debates between nutritionists and rural health officials channelled through international organisations. The WHO emerged out of a widely shared belief in the post-World War II era that modern disease control strategies could be standardised and implemented across national boundaries. India played a greater role in shaping Asia's problems than did the Burmese and Indonesians, who were preoccupied with the fundamental problems of establishing the legitimacy of the state amidst much ethnic violence.<sup>72</sup> This line of argument fails to do full justice to the Indonesian initiatives in transnational health that were implemented across the Southeast Asian region of the WHO, particularly the nurturing of the Bandung spirit in public health that sought to achieve an equilibrium between increased participation of Southeast Asian nations in the activities of the WHO and safeguarding their political sovereignty. Indonesia was not a passive recipient of international technical assistance in public health.

Rather, it questioned the very integrity of the epidemiological strategies designed by the WHO epidemiologists at Geneva. The Indonesian experience regarding the control of endemic diseases informed the WHO about the practicalities of executing disease eradication campaigns in developing countries with diverse socio-economic, demographic and climatic conditions where a uniform epidemiological strategy would not work.

Within the existing literature pertaining to the post-World War II Indonesian public health of the 1950s, the country's collaboration with the WHO in its campaign against endemic diseases and Indonesian appropriation of WHO ideas, remain lightly explored areas deserving further investigation. Steve Ferzacca argues that health became a part of nation-building in postcolonial Indonesia.<sup>73</sup> Ferzacca's essay overlooks the political significance of the 1950s in terms of how Indonesian physicians critically engaged with social medicine and reinterpreted it within the context of *pembangunan* ideology.

In *People, Population and Policy in Indonesia*, Terence and Valerie Hull move beyond a simple series of propositions that state that Soekarno was pro-natalist to argue that Soekarno was sympathetic to family planning and birth control in the interests of maternal health. Nonetheless, as President, he did not want to be seen as accepting advice from international aid agencies or advocating family planning programs that were associated with immorality.<sup>74</sup> Hull and Hull offer a nuanced reinterpretation of family planning during the Soekarno era and situate the controversy surrounding family planning within the broader political context. Their findings on family planning during the 1950s reveal that uncritical receipt of international aid for Indonesia's development projects was regarded within the Indonesian political establishment as an erosion of Indonesian political sovereignty.

In his essay 'Hygiene and Decolonization: The Rockefeller Foundation and Indonesian Nationalism, 1933-1958,' Eric Stein highlights the role of the Rockefeller Foundation-sponsored hygiene projects in contributing to the growth of a unified Indonesian geography even prior to the Proclamation of Indonesian Independence which continued into the Soekarno era. Stein argues that health professionals and physicians of the Soekarno era saw their work as revolutionary, tied to a particular feeling of struggle that arose from decolonisation and perceived

the vast rural populations as primitives.<sup>75</sup> Yet, many Indonesian health workers and physicians imagined a citizenry united by a shared scientific modernity through the health of its individual bodies.

Two important gaps remain in the existing historiography of postcolonial Indonesian health of the 1950s. First, whereas health issues are dealt with from a holistic perspective within the history of welfare, the history of medicine remains marginal in such narratives. Second, how did Indonesia carve a niche for itself in international health during the first two decades of the Cold War that sought to creatively appropriate international aid from the US and the WHO without compromising its political independence and following a Western trajectory of development without external intervention?

#### *Indonesian Medical Modernity: The 1950s*

Indonesia's vision of development during the 1950s was shaped by Soekarno's notion of *pembangunan* that sought to unify the country's centrifugal forces through a common project of shared national modernity.<sup>76</sup> The President's aspirations were evident in the government's efforts to promote comprehensive *pembangunan* by modernising agriculture, pilot health projects, a massive telecommunications system that aimed to knit the disparate islands of the archipelago together, and the construction of numerous monuments in Jakarta. These showcase projects epitomised the notion that a unified Indonesia was capable of pursuing its own path to modernity without external assistance. During the 1950s, the US supported disease eradication programs in developing countries as a Cold War strategy, to buy their political allegiances. The participation of the postcolonial nations of Africa and Asia in these programs had distinct political ramifications. In addition, accepting technical assistance often resulted in the continued dependency of these nations on Western technological knowhow. Instead, Indonesia favoured the Bandung approach that emphasised technological self-sufficiency, non-alignment and solidarity with nations in a similar position. The country's medical modernity, if viewed in terms of a tension between Indonesia's ambitions to maintain control over its public health programs

and the need to enlist support from international agencies. It reveals that the country's political elite engaged with medical modernity within the framework of Western medicine but wanted to implement it under its own auspices.

There is a rich international health literature that examines how nationalist leaders refashioned long-standing organicist ideologies that equated the strength of the nation with the health and vitality of its ordinary citizens.<sup>77</sup> Gilberto Hochman highlights the asymmetries in the relationships between international agencies, governments, epidemiologists and individual physicians which at particular junctures influence the design of health policies.<sup>78</sup> Brazilian malarialogists for example, opposed the WHO's decision to convert the country's malaria control program to eradication as it threatened the pre-eminence of Brazilian malarialogists and could lead to changes in national malaria eradication strategies considered to be Brazilian. Conversion of malaria control to eradication would lead to subordination of Brazilian malarialogists to international organisations such as the WHO.<sup>79</sup> A major gap in the scholarly literature addressing international health is the way in which political leaders from the Third World selectively appropriated international health ideas from the WHO that reflected their countries' demographic and cultural particularities (for example, the execution of the Indonesian anti-yaws campaign) as well as their desire to maintain control over the process.

The extant historiography pertaining to the Soekarno era is heavily biased towards the study of Indonesia's parliamentary institutions, the country's role in cementing Afro-Asian solidarity at the 1955 Afro-Asian Conference at Bandung and economic decolonisation. To substantiate Prasenjit Duara's argument that nationalist movements in Asia and Africa were faced with the challenges of fulfilling the promise of their humanistic ideals and create the conditions for international competitiveness, it would be interesting to examine how Indonesian physicians of the Soekarno era critically refashioned social medicine to reflect the nationalist aspirations of achieving a just and prosperous society.<sup>80</sup> The history of medicine during the Soekarno era serves as a lens to examine Indonesia's initiatives in international relations, particularly its role within the WHO. Indonesia's initiatives in transnational health reflected the newly-independent nation's self-confidence of pursuing its own path to medical modernity,

independent of US intervention but within the ambit of Western science. Between 1950 and 1955, there was a lot of optimism that Indonesia was making satisfactory progress in public health as the nation's leadership was faced with the daunting task of establishing a health infrastructure, particularly in the Outer Islands from scratch where none had existed prior to World War II. But by 1955, as the Indonesian state machinery became increasingly dysfunctional due to administrative frictions between the central, provincial, regency and local governments and corruption the overall optimism about the state of the nation's health proved elusive.

### **Plan of the Thesis**

Two gaps remain unaddressed in the scholarly literature appertaining to the history of medicine in Southeast Asia. First, few studies have analysed the development of post-World War II public health.<sup>81</sup> Second, none of the scholars have attempted to integrate perspectives combining WHO, Southeast Asian Ministries of Health and local dimensions of health interventions that involved the provincial governments. In other words, this thesis examines the contradictory process of formulating international public health campaigns by the WHO, appropriation and implementation by Indonesian authorities and the local response that they generated, particularly within the Indonesian parliament and the general population.

This thesis is organised as a pentaptych consisting of five main chapters. Chapter 2 traces the genesis of social medicine which originated in the context of the Industrial Revolution to examine the influence of specific factors such as age, sex, economic circumstances, domestic environment, occupation and nutrition on the incidence and prevalence of disease. At the turn of the twentieth century the two approaches to social medicine that emerged were: (a) a narrowly oriented biomedical approach that focused on disease control; (b) a broader social version that investigated the socio-economic causes of ill health. Indonesian physicians opted for the second approach, i.e. relating social medicine to nation-building. This chapter traces the genesis of Indonesian social medicine during the 1930s as a critique of Dutch colonialism, the formulation

of an Indonesian alternative to Western medicine during the Japanese occupation, and the ways in which Indonesian physicians aligned their vision of social medicine to nation-building after 1945. Eclectic in their approach, Indonesian physicians sought to creatively incorporate elements of public health from foreign countries into their own health system without blindly imitating the public health system of any country. Adopting a holistic approach, Indonesian physicians contextualised health in the light of socio-economic factors such as the availability of food, the diversification of the people's diets and the affordability of food and health services.

Chapter 3 examines the ideas and influence of Johannes Leimena, Indonesia's most influential Minister of Health in formulating the country's health policy. Leimena attempted to subordinate Indonesia's regional and religious identities to the cause of nation-building. He sought to establish Indonesia's pre-eminence in international health in the Southeast Asian region of the WHO by cementing solidarity with the Indian Ministry of Health from 1950 onwards. In addition, he closely adhered to WHO prescriptions on public health with a view to secure international funding for Indonesian public health programs. The Bandung Plan—the nucleus of Leimena's health program conceptualised in 1951—was an initiative to integrate preventative and curative public health activities based on the notion of community participation. Initially implemented with some success in the Bandung regency, the Bandung Plan was extended throughout Indonesia in 1954 as the Leimena Plan. Leimena's aim of extending the Plan throughout Indonesia proved somewhat premature due to financial difficulties attributed to the central, provincial and regency governments' jurisdiction of the Plan's activities.

Chapter 4 continues to examine Indonesia's initiatives in building national health. Concomitant with the onset of the Cold War, the US devised a political strategy encouraging developing countries to participate in disease eradication programs, the aim being to prevent the spread of communism to these countries. But, participation in these projects was essentially a political act. While executing its disease eradication campaigns, Indonesia maintained the Bandung spirit, i.e., maintaining a delicate equilibrium between maintaining its political sovereignty in health without superpower interference and emphasis on solidarity against

disease with developing nations. In this chapter, I critically expatiate how Ministers of Health, particularly Leimena and Azis Saleh, sought to redefine national health priorities within the agenda of international agencies, particularly the WHO, which related the control of endemic diseases particularly malaria, tuberculosis and to a lesser extent, yaws with maximising economic productivity. Compared to malaria, tuberculosis and yaws, the economic loss attributed to leprosy is negligible. But, within Indonesia leprosy patients were stigmatised due to superstition; therefore, the rehabilitation of leprosy patients was symbolically perceived within the Ministry of Health as recreating a modern Indonesia based on science. The way in which Indonesia received and refashioned international aid for disease eradication projects was determined by local factors such as the desire for self-sufficiency and ideology.

Chapter 5 traces the growth of medical education in the Soekarno era in Indonesia. After independence, Indonesia suffered from an acute shortage of physicians. The country was able to graduate only a modest number of approximately thirty physicians annually during the 1950s from its three medical schools at Jakarta, Surabaya and Yogyakarta. Indonesia attempted to increase its output of physicians by: (a) changing the curriculum at the medical schools at Jakarta, Surabaya and Yogyakarta; and, (b) establishing new medical schools at Medan, Bukittinggi and Makassar on the Outer Islands. In 1952, Indonesian academics proposed transforming the medical curricula at the medical schools in Jakarta and Surabaya from the existing Dutch model—that emphasized research, individual study and allowed individual students the freedom to appear for annual examinations whenever they felt prepared—to the American model, which facilitated cohort-based rather than individualised examinations and the development of critical thinking. The transformation of the medical curricula across all of the medical schools in Indonesia was never fully accomplished, due to the lack of infrastructure and the shortage of teaching staff in the medical schools at Surabaya and on the Outer Islands.

Chapter 6 explores the nature of Indonesian scientific thinking during the 1950s. Soekarno argued that science could support the cause of the Indonesian revolution by discovering new solutions to the country's existing problems. To this end, he urged scientists

to contemplate on how science could contribute to the achievement of a just and prosperous society. Problem-oriented research, particularly the work undertaken by the Department of Paediatrics at Universitas Indonesia (UI) that was symbolically related to Soekarno's conceptualisation of the Indonesian Revolution as a period of material investment in the human skills of the population, received considerable support from the government. In this chapter, I critically examine how a number of Indonesian physicians represented a medical problem as a national problem, thereby rhetorically aligning their research with Soekarno's interpretation of science. Two shortcomings that impeded the growth of scientific research in Indonesia included: (a) the weak foundation of most undergraduate students in basic science; and (b) a shortage of scientific manpower.

Analysis of the approximately twenty-year time period between the process of decolonisation (1945-1949) and the commencement of the New Order era in 1967 provides the opportunity to analyse Indonesian participation within the WHO and alignment of its health policy to WHO recommendations with a view to securing international legitimacy for its disease eradication and other public health programs. However, continued receipt of international support for Indonesia's disease eradication and other public health projects was not forthcoming due to political factors such as Soekarno's suspension of Indonesia's parliamentary institutions and political differentiation between Java (the political core) and the Outer Islands (the periphery). I reiterate my thesis statement that the implementation of Indonesia's health policy during the Soekarno era was indeed an administrative challenge. The incorporation of the political history of Indonesia during the 1950s into the history of Indonesian medicine will help to impart an understanding of how the framing of health policies during the Soekarno era reflected the President's interpretation of the Indonesian Revolution as investment in the human skills of the population. The limitation of the timeframe of this thesis to the Soekarno era provides me with an opportunity to thoroughly interrogate how and why certain physicians emerged influential within Indonesian policy thinking on health and their political agendas.

Year 1949: Indonesia Inherits a Health System Devastated by Three Years of Japanese Occupation and Four Years of Revolutionary Struggle Against the Dutch.



Two seriously ill women (South Asahan, 1949).

In the regency of South Asahan (North Sumatra province), numerous roads and bridges were in a poor condition that hindered the native population's access to timely healthcare. The poor state of the infrastructure and health services in South Asahan was symptomatic of the ruined health system that newly-independent Indonesia inherited in 1949.

Source: Accession Number 2.24.04.01, Component Number 4403, *Dienst voor Legercontacten Indonesië* (Nationaal Archief, The Hague).



President Soekarno arrives in the newly-created Republic of Indonesia, 28 December 1949. Soekarno declares that Indonesia, now free, will live in friendship with the world as he addresses his people for the first time from his palace at Jakarta. Formal transfer of sovereignty from the Netherlands to the United States of Indonesia took place on 27 December 1949.

Source: United Nations Photo 332531 (UN Photo Library, New York).

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- <sup>2</sup> Leimena, 'Ten Year Activities of the Ministry of Health,' 6.
- <sup>3</sup> Cindy Adams, *Sukarno, An Autobiography: As Told to Cindy Adams* (Indiana: Bobs Merrill, 1965), 264.
- <sup>4</sup> Robert Cribb and Audrey Kahin, *Historical Dictionary of Indonesia* (Lanham: Scarecrow Press, 2004), 107.
- <sup>5</sup> Johannes Leimena, *Public Health in Indonesia: Problems and Planning* (Jakarta: Van Dorp, 1956), 18-22.
- <sup>6</sup> Pramoedya Ananta Toer, 'My Kampung,' in *Tales from Djakarta: Caricatures of Circumstances and Their Human Beings*, ed. Pramoedya Ananta Toer, trans. Sumit Mandal (Ithaca: Cornell Southeast Asia Program, 1999), 54-55.
- <sup>7</sup> Toer, 'My Kampung,' 54-58.
- <sup>8</sup> Toer, 'My Kampung,' 56.
- <sup>9</sup> J.T. Lindblad and Peter Post, 'Indonesian Decolonization in Regional and International Perspective: An Introduction,' in *Indonesian Economic Decolonization in Regional and International Perspective*, eds., J.T. Lindblad and Peter Post (Leiden: KITLV Press, 2009), 1.
- <sup>10</sup> For an interesting account of the challenges faced by the newly-independent Indonesian state during the 1950s, see Cindy Adams, *Sukarno, An Autobiography*, 267-68; Gusti Asnan, David Henley, Diks Pasande, Remco Raben and Esther Velthoen, 'Nation, Region and the Ambiguities of Modernity in Indonesia in the 1950s,' in *Indonesian Transitions*, ed. Henk Schulte Nordholt (Yogyakarta: Pustaka Pelajar, 2006). The 1950s in Indonesia have been commonly described in terms of dialectic, i.e. between failed attempts to unify Indonesia through parliamentary democracy and of regional rebellions in Maluku, the Darul Islam Movement and the PERMESTA and PRRI (*Pemerintah Revolusioner Republik Indonesia* or Revolutionary Government of the Republic of Indonesia, a Sumatra-based revolt that challenged Soekarno's swing towards Guided Democracy). It would be a mistake to adopt a simple opposition between national and regional interests. The geographical and cultural fragmentation strengthened by the uneven spread of the world religions and the differential impact of colonialism across the Indonesian archipelago has created a strong sense of local identity. As much a manifestation of local chauvinism, regional rebellions in Indonesia were manifestations of frustrated expectations about the course the post-independent state had taken.
- <sup>11</sup> Pramoedya Ananta Toer, *Korupsi* (Bukittinggi: Penerbit Nusantara, 1961).
- <sup>12</sup> Henk Schulte Nordholt, 'Indonesia in the 1950s: Nation, Modernity and the Post-Colonial State,' *Bijdragen tot de Taal-, Land- en Volkenkunde* 167, no.4 (2011): 386-404, 395.
- <sup>13</sup> *Ibid.*, 395.
- <sup>14</sup> Pramoedya Ananta Toer, 'Creatures behind Houses,' in *Tales from Djakarta: Caricatures of Circumstances and Their Human Beings*, ed. Pramoedya Ananta Toer, trans. Kevin Dixon (Ithaca: Cornell University Press), 106-7.
- <sup>15</sup> Pramoedya Ananta Toer, 'The Mastermind,' in *Tales from Djakarta: Caricatures of Circumstances and Their Human Beings*, ed. Pramoedya Ananta Toer, trans. Gary Nathan Gartenberg (Ithaca: Cornell University Press, 1999), 122.
- <sup>16</sup> Mochtar Lubis, *Twilight in Djakarta*, trans. Claire Holt (London: Hutchinson and Co., 1963).
- <sup>17</sup> Ruth McVey, 'The Case of the Disappearing Decade,' in *Democracy in Indonesia: 1950s and 1990s*, eds., David Bourchier and J.D. Legge (Clayton: Monash University Centre of Southeast Asian Studies, 1994), 3-4.
- <sup>18</sup> McVey, 'The Case of the Disappearing Decade,' 7.
- <sup>19</sup> Harry J. Benda, 'Democracy in Indonesia,' in *Interpreting Indonesian Politics: Thirteen Contributions to the Debate*, eds., Benedict Anderson and Audrey Kahin (Ithaca: Cornell Modern Indonesia Project, 1982); Herbert Feith, 'History, Theory, and Indonesian Politics: A Reply to Harry J. Benda, in *Interpreting Indonesian Politics: Thirteen Contributions to the Debate*, eds., Benedict Anderson and Audrey Kahin (Ithaca: Cornell Modern Indonesia Project, 1982).
- <sup>20</sup> Feith, 'History, Theory and Indonesian Politics,' 26-27.
- <sup>21</sup> Jemma Purdey, *From Vienna to Yogyakarta: The Life of Herb Feith* (Sydney: UNSW Press, 2011), 242-44.
- <sup>22</sup> For a parallel with India, see Sanjoy Bhattacharya, *Expunging Variola: The Control and Eradication of Smallpox in India, 1947-1977* (Hyderabad: Orient Blackswan, 2006), 37-39. In his monograph, Bhattacharya argues that the

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Indian government had a complex relationship with the WHO post-independence, since 1947. At one level, the Indian government was an aid recipient wherein Ministers of Health like Amrit Kaur made energetic efforts to raise international support for specific disease control programs operating within India. At another level, Prime Minister Jawaharlal Nehru placed a very high premium on the country being recognised a dominant player within the international health fora.

<sup>23</sup> Dewi Fortuna Anwar, ‘The Cold War and its Impact on Indonesia: Domestic Politics and Foreign Policy,’ in *Southeast Asia and the Cold War*, ed. Albert Lau (London: Routledge, 2012), 137.

<sup>24</sup> *Ibid.*, 137.

<sup>25</sup> Anwar, ‘The Cold War and its Impact on Indonesia,’ 138-39.

<sup>26</sup> Jamie Mackie, ‘The Bandung Conference and Afro-Asian Solidarity: Indonesian Aspects,’ in *Bandung 1955: Little Histories*, eds., Derek McDougall and Antonia Finnane (Caulfield: Monash University Press, 2010), 9-10; Sally Percival Wood, ‘Retrieving the Bandung Conference... Moment by Moment,’ *Journal of Southeast Asian Studies* 43, no.3 (2012): 523-30, 523.

<sup>27</sup> Dewi Fortuna Anwar, ‘Indonesia and the Bandung Conference: Then and Now,’ in *Bandung Revisited: The Legacy of the 1955 Asian-African Conference for International Order*, eds., See Seng Tan and Amitav Acharya, (Singapore: NUS Press, 2008), 184-85.

<sup>28</sup> *Ibid.*, 184-185.

<sup>29</sup> Mackie, ‘The Bandung Conference and Afro-Asian Solidarity,’ 20; Anwar, ‘Indonesia and the Bandung Conference,’ 185.

<sup>30</sup> Anwar, ‘Indonesia and the Bandung Conference,’ 185; See also Joshua Barker, ‘Beyond Bandung: Developmental Nationalism and (Multi) Cultural Nationalism in Indonesia,’ *Third World Quarterly* 29, no.3 (2008): 521-540, 524-25.

<sup>31</sup> Wood, ‘Retrieving the Bandung Conference,’ 526.

<sup>32</sup> Anwar, ‘Indonesia and the Bandung Conference,’ 189; Mackie, ‘The Bandung Conference,’ 20-21.

<sup>33</sup> Dipesh Chakrabarty, ‘The Legacies of Bandung,’ in *The Bandung Moment and its Political Afterlives*, ed. Christopher Lee (Center for International Studies: Ohio University, 2010), 48-50. By the mid-1950s, the French lost their foothold in Indochina after their defeat at Dien Bien Phu. Some Asian nations particularly the Philippines, Thailand and Pakistan had entered into security agreements with the US. The Afro-Asian leaders who met at Bandung came from a divided world and did not share a common understanding of what constituted imperialism. Carlos Romulo, the Filipino delegate to the Bandung Conference was under the impression that Jawaharlal Nehru was highly cultivated intellect but was characterised by the affectations of cultural superiority, induced by identification with ancient Indian culture. Nehru had trouble trusting Indonesians with organising the Conference.

<sup>34</sup> Chakrabarty, ‘The Legacies of Bandung,’ 53.

<sup>35</sup> The formulation of modernity on Western lines was most evident in the great interest shown by newly-independent nations, especially Indonesia in accelerating the adoption and teaching of Western medicine by the mid-1950s. For Indonesia, see John S. Wellington, ‘Indonesian Physicians Studying Abroad,’ *Journal of Medical Education* 43(1968):1183-91.

<sup>36</sup> Adrian Vickers, *A History of Modern Indonesia* (Cambridge: Cambridge University Press, 2005), 3.

<sup>37</sup> For a comparison with India see Sunil Amrit, ‘Political Culture of Health in India: A Historical Perspective,’ *Economic and Political Weekly* XLII, no. 2 (2007): 114-21.

<sup>38</sup> David Webster, ‘Development Advisors in a Time of Cold War and Decolonization: The United Nations Technical Assistance Administration, 1950-59,’ *Journal of Global History* 6(2011): 249-72; For a STS perspective, in Indonesia, see Donna Mehos and Suzanne Moon, ‘The Uses of Portability: Circulating Experts in the Technopolitics of Cold War and Decolonization,’ in *Entangled Geographies: Empire and Technopolitics in the Cold War*, ed. Gabrielle Hecht (Cambridge, Massachusetts: MIT Press, 2011), 43-74.

<sup>39</sup> Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca: Cornell University Press, 1989), 402-3.

<sup>40</sup> Adas, *Machines as the Measure of Men*, 412.

<sup>41</sup> Michael Latham, ‘Introduction: Modernization, International History, and the Cold War World,’ in *Staging Growth: Modernization, Development and the Cold War*, ed. David C. Engerman (Amherst: MIT Press, 2003), 6-8.

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- <sup>42</sup> Suzanne Moon, 'Takeoff or Self-Sufficiency? Ideologies of Development in Indonesia, 1957-1961,' *Technology and Culture* 39, no.2 (1998): 187-212, 190.
- <sup>43</sup> Moon, 'Takeoff or Self-Sufficiency,' 211.
- <sup>44</sup> *Ibid.*, 211.
- <sup>45</sup> Randall Packard, 'Malaria Dreams: Postwar Visions of Health and Development in the Third World,' *Medical Anthropology* 17, no.3 (1997): 279-96; See also Moon, 'Takeoff or Self-Sufficiency.'
- <sup>46</sup> Webster, 'Development Advisors in a Time of Cold War and Decolonisation,' 259-60. One such technical assistance program that would lead newly-independent countries of Asia towards a western, if not an American trajectory of development was the Colombo Plan. In 1950, Australia was a founding member of the Colombo Plan—an umbrella structure in which donor nations could provide bilateral aid to South and Southeast Asian nations. The Australians saw the Colombo Plan as a vehicle for the acceleration of Western economic and strategic planning to counter the communist threat in South and Southeast Asia. For an in-depth understanding of the Colombo Plan as an Australasian variant of technical assistance, see David Lowe, 'The Colombo Plan and Soft Regionalism in the Asia Pacific: Australian and New Zealand Cultural Diplomacy in the 1950s and 1960s,' *The Alfred Deakin Research Institute Working Paper Series*, Working Paper No. 1 (Geelong: The Alfred Deakin Research Institute, 2010).
- <sup>47</sup> Webster, 'Development Advisors in a Time of Cold War and Decolonisation,' 265.
- <sup>48</sup> Webster, 'Development Advisors in a Time of Cold War and Decolonisation,' 267.
- <sup>49</sup> Suzanne Moon, 'Justice, Geography, and Steel: Technology and National Identity in Indonesian Industrialization,' *OSIRIS* 24(2009):253-77; Andrew Goss, *The Floracrats: State-Sponsored Science and the Failure of the Enlightenment in Indonesia* (Madison: University of Wisconsin Press, 2011); Warwick Anderson and Hans Pols, 'Scientific Patriotism: Medical Science and National Self-Fashioning in Southeast Asia,' *Comparative Studies in Society and History* 54, no.1 (2012): 93-113.
- <sup>50</sup> Goss, *The Floracrats*, 163-68.
- <sup>51</sup> Moon, 'Justice, Geography, and Steel,' 257.
- <sup>52</sup> Moon, 'Justice, Geography, and Steel,' 275.
- <sup>53</sup> Goss, *The Floracrats*, 143.
- <sup>54</sup> Anderson and Pols, 'Scientific Patriotism,' 95.
- <sup>55</sup> Pramoedya Ananta Toer, *Jejak Langkah* (Jakarta: Hasta Mitra, 1985), 120-21.
- <sup>56</sup> Anne Booth, 'Government and Welfare in the New Republic: Indonesia in the 1950s,' *Itinerario* 34, no.1 (2010): 57-76; Pierre Van der Eng, 'Food for Growth: Trends in Indonesia's Food Supply, 1880-1995,' *The Journal of Interdisciplinary History* 30, no.4 (2000): 591-616.
- <sup>57</sup> Booth, 'Government and Welfare in the New Republic,' 66-67.
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- <sup>59</sup> Pierre Van Der Eng, 'All Lies? Famines in Sukarno's Indonesia, 1950s to 1960s,' Paper Presented at *Asian Historical Economics Conference*, Hitotsubashi University (Japan), 13-15 September 2012, Accessed via [http://ahec2012.org/papers/S9C-2\\_van\\_der\\_Eng.pdf](http://ahec2012.org/papers/S9C-2_van_der_Eng.pdf).
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- <sup>61</sup> Colombijn, 'Public Housing,' 40-41.
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- <sup>63</sup> Colombijn, 'Public Housing,' 57.
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- <sup>65</sup> Steve Ferzacca, 'Governing Bodies in New Order Indonesia,' in *New Horizons in Medical Anthropology: Essays in Honour of Charles Leslie*, eds., Mark Nichter and Margaret Lock (Routledge: London, 2002), 35-57; Terence Hull and Valerie Hull, 'From Family Planning to Reproductive Health Care: A Brief History,' in *People, Population, and Policy in Indonesia*, ed. Terence Hull (Jakarta: Equinox Publishing, 2005), 1-69; Eric Stein, 'Vital Times: Power, Public Health, and Memory in Rural Java (PhD dissertation, University of Michigan, 2005); Eric Stein, 'Hygiene and Decolonization: The Rockefeller Foundation and Indonesian Nationalism, 1933-1958,' in

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<sup>66</sup> For an overview of the Netherlands Indies Health Service see Peter Boomgaard, 'The Welfare Services in Indonesia, 1900-1942,' *Itinerario* 10, no.1 (1986): 57-82; See also, Peter Boomgaard, 'The Development of Colonial Health Care in Java: An Exploratory Introduction,' *Bijdragen tot de Taal-, Land-en Volkenkunde* 149, no. 1 (1993): 77-93. For a detailed account of the specific activities of the Netherlands Indies Health Service see Peter Boomgaard, 'Smallpox, Vaccination and Pax Neerlandica Indonesia,' *Bijdragen tot de Taal-, Land-en Volkenkunde* 159, no.4 (2003): 590-617. For a critique appertaining to the limitations of colonial medicine see Norman G. Owen, 'Introduction,' in *Death and Disease in Southeast Asia: Explorations in Social, Medical and Demographic History*, ed. Norman G. Owen (Singapore: Oxford University Press, 1987). On pre-twentieth century debates on acclimatisation see Hans Pols, 'Notes from Batavia: The Europeans' Graveyard: The Nineteenth Century Debate on Acclimatisation in the Dutch East Indies,' *Journal of the History of Medicine and Allied Sciences* 67, no.1 (2012):120-148. On medical pluralism in the Dutch East Indies see Hans Pols, 'European Physicians and Botanists, Indigenous Herbal Medicine in the Dutch East Indies, and Colonial Networks of Mediation, *East Asia Science, Technology and Society: An International Journal* 3(2009): 173-208. On the history of nursing in the Dutch East Indies see Rosalia Sciortino, 'The Multifariousness of Nursing in the Netherlands Indies,' in *Healthcare in Java: Past and Present*, eds., Peter Boomgaard et al. (Leiden: KITLV Press, 1996), 23-50. On the history of medical education see Liesbeth Hesselink, *Healers on the Colonial Market: Native Doctors and Midwives in the Dutch East Indies* (Leiden: KITLV Press, 2011). For a nationalist critique of the health policy under the Netherlands Indies Health Service see Susan Abeyasekare, 'Health as a Nationalist Issue in Colonial Indonesia,' in *Nineteenth and Twentieth Century Indonesia: Essays in Honor of Professor J.D. Legge*, eds., David Chandler and M.C. Ricklefs (Clayton: Monash Centre for Southeast Asian Studies, 1986).

<sup>67</sup> Sung Lee, 'WHO and the Developing World: The Contest for Ideology,' in *Western Medicine as Contested Knowledge*, eds., Andrew Cunningham and Bridie Andrews (Manchester: Manchester University Press, 1997), 25-26.

<sup>68</sup> Packard, 'Malaria Dreams,' 279-80.

<sup>69</sup> Marcos Cueto, *Cold War, Deadly Fevers: Malaria Eradication in Mexico, 1955-1975* (Baltimore: Johns Hopkins University Press, 2007), 6.

<sup>70</sup> Cueto, *Cold War, Deadly Fevers*, 10.

<sup>71</sup> Sunil Amrith, *Decolonizing International Health: India and Southeast Asia, 1930-1965* (Basingstoke: Palgrave, 2006), 11.

<sup>72</sup> Amrith, *Decolonizing International Health*, 12.

<sup>73</sup> Ferzacca, 'Governing Bodies in New Order Indonesia,' 36.

<sup>74</sup> Hull and Hull, 'From Family Planning to Reproductive Health Care,' 13.

<sup>75</sup> Stein, 'Hygiene and Decolonization,' 65.

<sup>76</sup> Joshua Barker, 'Beyond Bandung: Developmental Nationalism and Multicultural Nationalism in Indonesia,' *Third World Quarterly* 29, no.3 (2008): 521-40.

<sup>77</sup> See Eric D. Carter, 'God Bless General Peron: DDT and the Endgame of Malaria Eradication in Argentina in the 1940s,' *Journal of History of Medicine and Allied Sciences* 64, no.1 (2009):78-122, 79.

<sup>78</sup> Gilberto Hochman, 'From Autonomy to Partial Alignment: National Malaria Programs in the Time of Global Eradication, Brazil, 1941-1961,' *Canadian Bulletin of Medical History* 25, no.1 (2008): 161-92,184.

<sup>79</sup> Hochman, 'From Autonomy to Partial Alignment,' 177.

<sup>80</sup> Prasenjit Duara, 'Introduction,' in *Decolonization: Perspectives from Now and Then*, ed. Prasenjit Duara (London: Routledge, 2003), 5.

<sup>81</sup> See Ayo Wahlberg, 'A Revolutionary Movement to Bring Traditional Medicine Back to the Grassroots Level: On the Biopolitization of Herbal medicine in Vietnam,' in *Global Movements, Local Concerns: Medicine and Health in Southeast Asia*, eds., Laurence Monnais and Harold Cook (Singapore: NUS Press, 2012), 210-12. Ayo Wahlberg highlights in his essay that during the 1950s, the revival of traditional medicine was a project of national cultural revival following almost a century of French colonialism. But, an unaddressed question in the essay is how Vietnamese physicians articulated their notion of social medicine.

## CHAPTER TWO

### THE APPROPRIATION AND TRANSFORMATION OF SOCIAL MEDICINE BY INDONESIAN PHYSICIANS

Social medicine was born during the industrial revolution in the mid-nineteenth century when physicians became worried about the effects of rapid industrialisation and urbanisation on the state of health of the new working classes. Instead of focusing on sick individuals, physicians interested in social medicine and public health aimed to investigate the relationship between social factors, health and disease. Thus, their focus was in the main upon statistics and epidemiology. Social medicine investigates the influence of specific factors such as age, sex, socio-economic status, domestic environment, occupation, nutrition, geography and education on the incidence and prevalence of disease. It proposes systematic interventions to improve health conditions.

In the 1950s, physicians from newly-independent Indonesia appropriated social medicine to articulate a perspective on public health in a country where the health system was under-resourced, medical personnel were sparse, and the state was weak. These physicians, who had an open eye for the importance of economic factors, interpreted social medicine in the context of availability of food, economic development, diversification of diet and other factors that affected health. A salient feature of Indonesian social medicine during the first decade of independence (1950-1959) was its emphasis on ensuring an adequate and equitable distribution of food for all its citizens. This was in part due to its symbolic significance in realising the nationalist goal of achieving a just and prosperous society and partly due to the significance of adequate nutrition for health.

This chapter contextualises the emergence of Indonesian social medicine during the 1930s as a nationalist critique of colonial medicine. Its emergence led to the formulation of an Indonesian alternative to the organisation of colonial medicine during the Japanese occupation and the articulation by Indonesian physicians of their vision of social medicine as a significant element of nation-building after 1945. Indonesian social medicine was eclectic and reflected the

Bandung spirit by selectively adapting and transforming public health ideas from an international context to suit the country's requirements.

### **Social Medicine and Public Health**

Social medicine emerged as a means to investigate the poor health conditions attributable to industrialisation and urbanisation that followed the industrial revolution in Europe during the nineteenth century. It proposed measures to ameliorate these conditions. By assigning medicine a prescriptive role to correct social disequilibrium, advocates of social medicine including Rudolph Virchow reacted to the relationship they had established between poverty and ill health. Nineteenth century public health was loosely aligned with sanitarianism and focused on preventive measures such as improved water supplies, the building of sewers and housing reform. By the mid-nineteenth century, public health based on the principles of sanitarianism was criticised as it overlooked the underlying causes of disease such as poverty. Social medicine is more holistic than public health in its approach to understanding the aetiology of disease.

Public health is inspired by an environmentalist philosophy and examines the origins, causes, distribution and prevention of communicable diseases.<sup>1</sup> Social medicine investigates the incidence and prevalence of communicable and chronic diseases, and relates the epidemiology of these diseases to social, geographic and occupational conditions. In this way, social medicine extends the scope of public health by contextualising disease not only in the immediate environment such as inadequate housing or lack of drainage but encompasses economic, nutritional, occupational and educational variables as well.

In 1848, Virchow, a liberal physician and founder of cellular pathology, was employed by the Prussian government to investigate an epidemic of typhus in Upper Silesia, an area then under Prussian occupation. He stated that the epidemic could not be resolved merely by treating individual patients with drugs but only by improving the socio-economic conditions of the people. He developed a 'socio-logical' epidemiology that attributed the spread of typhus to the population's impoverished living conditions resulting from their political subjugation to Prussian

occupation.<sup>2</sup> He envisioned the elimination of famine and ignorance in the prevention of population decimation from epidemics and advocated greater political participation by the population, the use of their language in education and other social measures. He outlined a political role for the physician as ambassador of the poor.<sup>3</sup> He advocated that ‘Social Medicine’ served as a means to articulate three principles:<sup>4</sup>

- 1) People’s health was a matter of social concern;
- 2) Social and economic conditions had a bearing on disease and must be the subject of scientific investigation; and
- 3) Measures involved in the prevention of disease must take into account social and economic factors.

Public health in early nineteenth century Europe and the United States was loosely tied to sanitarian efforts. Sanitarians were preoccupied with addressing the adverse consequences of industrialisation such as overcrowded and insanitary housing, and inadequate facilities for the disposal of human and animal waste. Sanitarians including Edwin Chadwick advocated the centralization of public health through the creation of public health authorities, who would supervise local health boards and the construction of sewage systems. The sanitarians further argued that disease was caused by general filth and could be remedied by the construction of drains and ensuring supplies of clean drinking water.<sup>5</sup> It is important to note that health could be improved by measures, mostly engineering such as city planning, measures of which the population did not need to be aware of.

The acceptance of the germ theory of disease in the 1890s coincided with the progressive reform movement in health in the US towards the close of the nineteenth century. Focus was centred on social and environmental reform; at the time, the new public health concentrated on changing individual behaviour by, for example, educating mothers about aspects of preventive hygiene in a bid to reduce infant mortality and the anti-spitting campaigns to prevent the spread of tuberculosis.<sup>6</sup> The new public health believed that further gains in health could only be achieved when individuals changed their behaviour. A salient feature of new public health was the emergence of the health centre, which sought to educate the public about disease and

hygiene. After the advent of the germ theory of disease, two approaches to disease became common in the US. On the one hand, there were physicians who adopted a narrow, biomedical approach towards public health by identifying germs, disease carriers and disease vectors. On the other hand, there were physicians who believed in exploring the socio-economic causes of ill health as well. For example, progressive health reformers such as Charles Chapin subscribed to the notion that new public health methods, such as the isolation of infected patients after bacteriological tests and a program of disinfecting the dwellings of victims, could control disease whereas epidemiologists such as Joseph Goldberger emphasised the link between poverty and disease.<sup>7</sup>

Indonesian physicians adopted the second holistic approach to public health during the twentieth century by relating it to the socio-economic development of their country. This form of holistic approach to health was related to nation-building and emphasised an adequate intake of nutrients in the diet and an equitable distribution of food. It was also emphasised that for a newly-independent country, nation-building in all respects was a priority.

### **International Health during the Inter-War Period, 1918-1939**

From the mid-nineteenth century until around 1920, international health efforts were mainly directed to protect Europe from epidemics of plague and cholera.<sup>8</sup> After 1920, international health was no longer centred exclusively on the prevention of infectious diseases but expanded its scope to include the promotion of health through public health education and preventive measures. International health was marked by a tension between a narrow focus on combating infectious diseases and a much broader perspective that embraced socio-political and economic factors. After 1920, due to the impetus of Health Organisation of the League of Nations and philanthropic organisations such as the Rockefeller Foundation, international health activities expanded from Europe and North America and to other parts of the world including the European colonies of Asia.

In 1909, the Rockefeller Foundation was established to advance the health and well-being of people both within the US and abroad. The Foundation was based on the premise that disease was the supreme ill of human life and the source of poverty, ignorance, vice, inefficiency and other evils.<sup>9</sup> Therefore, the key to both economic advancement and social improvement was the eradication of disease. In 1909, the Sanitary Commission of the Rockefeller Foundation chose hookworm as the target disease for eradication, given that it was an international health problem. Sufferers of hookworm exhibited a retardation of physical and mental growth and a decline in economic productivity.<sup>10</sup> It was a demonstrable disease as there was a clear link between hookworm infestation and loss of economic productivity; and, the cure was relatively straightforward. Diagnosis was relatively easy; however, for a permanent solution to the hookworm problem, the population had to be educated in preventative hygiene as well. The Sanitary Commission, which operated in the Southern states of the US including Virginia, initiated programs involving hookworm surveys, curing the disease, and educating the public through illustrated lectures about the importance of sanitation.<sup>11</sup> The Sanitary Commission used hookworm eradication as an example to inform governments that specific diseases could be stamped out with increased public investment. Importantly, it reflected American Progressive era concerns that science could aid the solving of human ills.<sup>12</sup> The successes of the Sanitary Commission in reducing the incidence of hookworm in the southern states of US encouraged the Rockefeller trustees to expand the anti-hookworm campaign on a worldwide basis through the International Health Division which would undertake hookworm surveys and formulate policy recommendations for colonial and national health authorities. This organisation would include training public health personnel, and financing the development of model health units in countries such as Chile, Brazil, Ceylon and the Dutch East Indies. These units served as models through which the International Health Board demonstrated new scientific knowledge applicable to local conditions.<sup>13</sup>

International philanthropy for the advancement of public health was a delicate issue for the Rockefeller Foundation as any kind of external assistance was construed as infringement of the political sovereignty of nation states. The Foundation was faced with a dilemma: should

international health should be solely left to the domain of philanthropic agencies or should the advancement of international health become the responsibility of the newly-founded League of Nations that represented the interests of its member states.<sup>14</sup> As a solution, the Foundation awarded grants-in-aid to the League of Nations enabling it to represent the sovereign states.

The League of Nations Health Organisation (LNHO) was founded in 1920, two years after the conclusion of World War I. LNHO contributions included: (a) the international circulation of medical discoveries; (b) the creation of an epidemiological intelligence bureau for the collection and dissemination of data on infectious diseases; (c) the international standardisation of vaccine production; (d) the expansion of the frontiers of social medicine with studies related to nutrition, housing, rural hygiene and water supplies; and, (e) furnishing technical assistance to governments needing external assistance to suppress epidemics, conduct health surveys, evaluate health services, advise on port sanitation and reorganise health administrations. The International Health Board of the Rockefeller Foundation closely liaised with the LNHO to establish hygiene institutes which served as bulwarks against epidemics.

The relationship between the LNHO and the Rockefeller Foundation was symbiotic. The Foundation supported the LNHO's weekly, monthly and annual epidemiological reports and its research pertaining to social deprivation whereas the latter provided a coherent structure for the Rockefeller-funded research institutions. The Rockefeller Foundation supported the LNHO's recruitment of staff. Between 1922 and 1930, the Rockefeller Foundation invested US\$1.3 million in the LNHO.<sup>15</sup> The complexities of Rockefeller's relationship with the LNHO were noticeable in the differences between Foundation Officers Selskar Gunn on the one hand and Frederick Russell on the other vis-à-vis their divergent conceptions of public health. Russell perceived the LNHO as a public health department and therefore was in favour of supporting the latter albeit for a short-term period only whereas Selskar Gunn argued that the LNHO was responsible for the 'welfare of mankind' and the prevention of war and was therefore eligible for long-term funding from the Rockefeller Foundation.

Gunn, who was the Vice-President of the Rockefeller Foundation in rural China, intended to use health measures to facilitate entry into rural development with a view to raising the

educational, social and economic standards of the people. This was at odds with the International Health Board's policy in the 1930s that emphasised control of specific infectious diseases. Gunn argued that the development of a medical policy was closely linked to progress in industry and agriculture.<sup>16</sup> His views on rural development were shared by Andrija Štampar, a distinguished Yugoslavian scholar of social medicine and Ludwik Rajchman, a Polish bacteriologist, who was Medical Director at the League of Nations. Rajchman provided Gunn with an opportunity to articulate his notion of using public health as a means to further rural development at a meeting on rural hygiene organized by the LNHO in Bandung, Indonesia in 1937. The meeting was held in Bandung—then known as *Parijs van Java* (The Paris of Java) in Dutch—due to its salubrious climate. The government of the Dutch East Indies intended to showcase the efficient organisation of their health centre at Purwokerto in Java as an exemplar for organising the health systems of other colonies. Raden Kodijat (then a regency doctor) represented the Dutch East Indies in the meeting.

The Bandung Conference approached the question of rural hygiene from an interdisciplinary perspective that involved collaboration of medical professionals with sanitary officers, architects, engineers, scientists, and agriculturalists. The Conference acknowledged that in the Eastern countries, preventive medicine was a cost effective way of improving health.<sup>17</sup> Such an approach would involve tracing the socio-economic causes of ill health; for example, the Conference recognised the correlation of overpopulation with a high rate of infant mortality in the East.<sup>18</sup> Poor diet, a low standard of living, and oppressive land laws were regarded as causative factors for malnutrition that led to infant mortality. Scientific research into nutrition, and demonstrations of the nutritive value of certain foodstuffs through village lectures, could help mitigate the problem of malnutrition in some Asian countries. The Conference acknowledged that good health was a part of overall population wellbeing. Decentralised health delivery to the rural areas (focusing on preventing disease) would likely prove a cost effective public health measure; but, first the rural public had to be educated through practical hygiene demonstrations.<sup>19</sup> The Bandung Conference was revolutionary in perceiving public health as a cog in the wheel of rural development, addressing sensitive political issues such as land reform

in colonial countries, and placing the villagers at the forefront of the development process. The delegates to the Conference saw public health as a means of nation-building. Nationalists such as India's Mohandas Karamchand Gandhi (1869-1948) were inspired by the ideals of rural reconstruction and incorporated them into their thinking.

During the inter-war period, with the active participation of the LNHO and philanthropic foundations, the scope of international health widened to include not only the prevention of infectious disease but also the promotion of primary healthcare, especially in the European colonies of Asia. Within the domain of international health, there was an unresolved dilemma related to the degree of involvement of philanthropic foundations within the sphere of what was otherwise considered a state responsibility. The Rockefeller Foundation developed a symbiotic relationship with the LNHO in the post-World War I period by funding the activities of the latter. At the same time, the LNHO provided a forum for Rockefeller Foundation officials such as Gunn to articulate their notions of public health.

### **Colonial Medicine in the Dutch East Indies**

Medical initiatives in the Dutch East Indies prior to the twentieth century were limited to curative care and catered to the European populations in the larger cities such as Batavia, Semarang and Surabaya. In the nineteenth century, the impact of Western medicine upon public health was marginal with the exception of smallpox vaccination.<sup>20</sup> Additionally, due to the shortage of doctors, both the local population and the Europeans relied on indigenous healing practices.<sup>21</sup> But, towards the beginning of the twentieth century, with the initiation of the effective anti-yaws campaign using salvarsan, the acceptance of Western medicine became widespread. This section explores colonial public health in the Dutch East Indies, the unpopularity of certain public health measures due to the highhandedness of the Public Health Service, and the ways in which health became part of the anti-colonial struggle at a time when colonial public health measures were subject to critique by Indonesian nationalists.

In the nineteenth century, the health personnel of the colonial state were attached to the Military Health Service (*Militair Geneeskundige Dienst*). A separate Civil Medical Service was established in 1911 and subsequently renamed *Dienst voor den Volksgezondheid* (DVG or Public Health Service) in 1925. The Public Health Service launched campaigns against endemic diseases such as yaws, malaria, hookworm and other epidemic diseases, such as cholera and plague. The Propaganda Division of the Public Health Service was established in 1924 to inculcate hygienic practices in the native population. In addition, the improvement of housing conditions was undertaken with a view to prevent outbreaks of plague after the Public Health Service acknowledged that faulty housing construction led to rat infestation. In particular, rats infested the bamboo used for the construction of houses by the indigenous population. In response, the colonial government advocated the destruction of houses. But such measures resulted in physical displacement of the people and ensuing economic hardship.<sup>22</sup> For these reasons, the Public Health Service's anti-plague measures were resented.

Between 1912 and 1940, the budget of the colonial administration of the Netherlands East Indies allocated to the Health Service ranged from 2.5 to 5%; but, this allocation registered a declining trend for much of the period.<sup>23</sup> Health was one of the foremost issues on the nationalist agenda in the Dutch East Indies.<sup>24</sup> During the colonial period, the *Volksraad* served as a political space for Indonesian nationalists to enter debate about the policies of the colonial government and present their own alternatives. The *Volksraad* was conceived as an advisory body by the Dutch government for the Dutch East Indies in 1918, and under the jurisdiction of the Governor General of the Netherlands Indies and the Dutch parliament. A few prominent Indonesian nationalists, including physicians, were members of this advisory body: among them was Abdul Rasjid. I will now briefly examine the contributions of Abdul Firman gelar Maharadja Soangkoepon (the *Volksraad* delegate from Eastern Sumatra) and nationalist physician Abdul Rasjid, also from Eastern Sumatra (in fact they were brothers), both of whom attempted to envision an Indonesian alternative to the dominant colonial health model, which focused largely on the prevention of infectious diseases in the 1930s.

Soangkoepon, who was critical of the high cost of healthcare in the Dutch East Indies, encouraged private initiatives for promoting hygiene and sanitation in rural areas, a task which could well be accomplished by enlisting Indies doctors, who were better placed than their Dutch counterparts to determine the health needs of the community. Rasjid argued that medicine not only affected the physical but also the spiritual wellbeing of the person and could be studied from scientific, religious and humanist considerations.<sup>25</sup> Rasjid's view of health embraced not only the narrow defence against disease but engaged broadly with the socio-economic aspects affecting the overall wellbeing of the people by orienting medical education to health conditions in the rural areas. Medicine anchored to Western science and adapted to the Indies way of life was essential for promoting the acceptance of basic hygiene practices. The nationalist leaders such as Soangkoepon and Rasjid thus used the *Volksraad* as a political space from which to critique the nature of colonial medicine of the 1930s.

A major dichotomy evident within public health between 1924 and 1939 concerned the authoritarian approach of the Dutch and the Rockefeller Foundation initiative of using health education to promote hygiene.<sup>26</sup> The hookworm eradication campaigns implemented by the Rockefeller Foundation in Java were a part of a much larger campaign that extended worldwide from Europe, Asia, Africa, Caribbean, and Pacific islands such as Fiji to the American South. In the Dutch East Indies, the hookworm campaign spanned a fifteen year period from 1924-1939 under the leadership of J.L. Hydrick. One of the consequences of the hookworm campaign was the emergence of small rural health units, which focused on preventative hygiene.<sup>27</sup> Hydrick visualised preventive hygiene as the lynchpin upon which medical care would be based. Educating people regarding hygienic habits would ensure efficient utilisation of the medical facilities available, thereby reducing the general cost of sickness. In contrast to the Rockefeller Foundation's approach of using health education to prevent hookworm, the Public Health Service of the colonial government insisted on mandatory treatment of hookworm patients with chenopodium (a worm medicine).

In 1936, Hydrick built a *Hygiene Mantri* school in Purwokerto to train *doekoen bajis* (traditional birth attendants) in safe birthing practices as the Dutch East Indies had a high rate of

maternal and neonatal mortality. Western educated doctors did not have the numbers to address this problem on their own; thus, maternal mortality was a significant cause of death in the rural areas of the archipelago.<sup>28</sup> Villagers in the rural areas were rather hesitant to seek Western medical help for childbirth as the costs were prohibitive.

By 1938, Hydrick's proposal to enlist the assistance of *doekoen bajis* provoked a debate between Poorwo Soedarmo on the one hand and Raden Mochtar and Sardjito on the other. Both were widely acknowledged as the doyens of Indonesian medical science during the 1950s (their contributions will be assessed later in Chapters 2 and 6). Poorwo Soedarmo specifically rejected the idea of training *doekoen bajis* as he considered them too set in their ways to adopt hygienic birthing practices. Instead, he proposed that women who had basic training in nursing be given short period of training as midwife helpers.<sup>29</sup> As he was presenting his case at the first congress of the *Vereeniging van Indonesische Geneeskundigen* (Association of Indonesian Physicians) at Semarang in December 1938, Sardjito, who served as the moderator, sidelined him. In contrast, Raden Mochtar presented a much longer argument that advocated the training of *doekoen bajis* in hygienic birthing practices which attacked Poorwo Soedarmo's argument.<sup>30</sup> Towards the close of the Congress, delegates adopted a resolution that supported Mochtar's advocacy of training *doekoen bajis* as a stopgap measure to address the shortage of doctors in rural areas.<sup>31</sup> The debate between Poorwo Soedarmo and Raden Mochtar illustrated the competing strategies amidst native physicians regarding the question of how to efficiently extend modern obstetrical services to the rural areas of the Indies archipelago where doctors were in short supply.

Even following the inauguration of the Public Health Service in 1924, the Dutch were still reluctant to launch health educational campaigns in the rural areas of the Indies archipelago due to enormous financial costs and the risk of disrupting the local *adat* (village customs). As a result, the colonial public health campaigns embodied narrow technocentric approaches such as the use of salvarsan to cure yaws, where concrete results of Western medicine were apparent to the indigenous population. Additionally, two anti-plague measures initiated by the colonial state including: (a) puncturing the spleen of corpses to detect the presence of plague; and, (b) rat proofing of houses were authoritarian and provoked considerable opposition from the native

population. The former measure was held by pious Muslims to violate the sanctity of the body after death.<sup>32</sup> In contrast, the Rockefeller Foundation promoted an educational approach to public health that sought to cultivate hygienic habits in villagers. Neither the authoritarian/technocentric public health approach of the Dutch nor the educational approach of the Rockefeller Foundation addressed the socio-economic causes of ill health.

### **Challenges Confronting Indonesian Public Health: Japanese Occupation to Independence (1942-1949)**

Between 1942 and 1949, the Indonesian health infrastructure was ruined by seven years of warfare, three-and-a-half years of Japanese occupation and four years of revolutionary struggle against the Dutch. During the Japanese occupation, public health became a vehicle of political propaganda. The Japanese were never tired of stressing the superiority of spiritualism (*semangat*) over technical skills and discipline in ensuring their victory in the Pacific War and achieving Indonesian independence.<sup>33</sup> Within this framework, Soekarno and nationalist physicians envisioned a niche for Indonesian doctors, not only for treating the sick but also in the creation of a strong and healthy citizenry free of disease.<sup>34</sup> Nationalist physicians such as Abdul Rasjid and Boentaran Martoatmodjo, who now had more responsibility than ever before, envisaged a holistic approach to public health characterised by (a) improvements to the standard of living; (b) increasing the nation's population; (c) reducing the high prevalence of maternal and infant mortality; (d) promoting nutrition; and, (e) ensuring the cost-effective measures of preventative health through recourse to *djamu* (Indonesian traditional medicine). After the Japanese occupation of the archipelago ended in August 1945 and Indonesia claimed independence, the fledgling Ministry of Health, fired with the spirit of freedom and self-confidence, under the revolutionaries initiated a number of scattered but symbolic initiatives for public health, which indicated that the Indonesian nation was capable of standing on its own feet. Unfortunately, most Indonesian public health initiatives failed to materialise due to the Dutch military action against the revolutionaries between 1947 and 1949.

During the Japanese occupation, the subordination of health initiatives of the Indonesian archipelago to the military, the appropriation of 50 per cent of the harvest for the military (*Gunseikanbu*), and the forced labour of Indonesians were responsible for many deaths by starvation.<sup>35</sup> The Japanese realised that ill health among the Javanese labourers was a constraint to their productivity, and would eventually thwart the success of the Japanese goal of establishing a ‘Greater East Asia Co-Prosperity Sphere’ in Southeast Asia.<sup>36</sup> Under the Japanese, the focus of the Central Office of Public Health (*Eiseikyokutyo*) was entirely upon its *Djawa Sehat* (Healthy Java) campaign, which was mainly intended to prevent endemic diseases such as malaria and yaws that affected economic productivity.<sup>37</sup> The implementation of the actual disease eradication campaigns was entrusted to the regencies. But, they were suffering from an acute shortage of medical supplies due to budgetary cuts and lack of access to supplies from abroad. As a result, the *Djawa Sehat* campaign was ineffective.

Unlike the *Eiseikyokutyo*, which used public health as a tool for political mobilisation of the population through mass disease eradication campaigns, Martoatmodjo advocated a comprehensive health program that envisioned raising the standard of living of the Indonesians through a reduction of maternal and infant mortality, malnutrition and chronic tuberculosis. This would require a comprehensive program of health education in schools.<sup>38</sup> Martoatmodjo attributed the high prevalence of tuberculosis during the War in the Pacific to the poor nutritional status of the average Indonesian family whose per capita consumption of protein-rich food was sub optimal. To alleviate the tuberculosis problem, Martoatmodjo recommended the introduction of nutrition education within the Indonesian family.

In 1945, shortly after the Japanese surrender, Indonesian medical care became mired in political uncertainty resulting from the Indonesian Revolution, the Dutch reoccupation of the archipelago and financial problems. The two Dutch Military Actions (1947 and 1948) caused displacements of the population and interrupted the supply of medications.<sup>39</sup> The revolutionary government’s Ministry of Health was translocated from Jakarta to Yogyakarta soon after the First Military Action. The Ministry attempted to address the problem of ill health by implementing a program to combat infectious diseases such as tuberculosis, malaria, yaws,

plague, typhoid and dysentery. Thus, unsurprisingly, the implementation of the program to combat infectious diseases fell short of expectations.

The Office of the Division of Hygiene and Health Education of the Ministry of Health of the Revolutionary government was conducted from Magelang in 1946. The Division of Hygiene and Health Education commenced enlisting the cooperation of the local people in the establishment of a rural hygiene service, which was active in promoting health education. The main feature of the health education work in Magelang which began as a health demonstration unit, was the campaign against soil and water pollution that enlisted the support of villagers in constructing a water supply facility and in mobilising joint action on health issues. In the regency of Banyumas in Central Java, paramedical personnel and health educators launched guerrilla warfare against the Dutch, marking the beginning of the First Dutch Military Action. In 1948, The Rockefeller Foundation had provided a financial aid of Rp. 165.000 to pay sanitary workers in Yogyakarta.<sup>40</sup> The rural hygiene demonstration units established during the Revolutionary period were particular instances of Indonesian initiatives in public health. Under the revolutionaries, the Indonesian Ministry of Health was unable to coordinate the activities of the rural hygiene units due to the Dutch Military Actions. Following the ‘Madiun Affair,’ and the Second Military Action, the rural hygiene services programs ceased.<sup>41</sup> After the proclamation of Indonesian independence, the Ministry of Health prioritised the upgrading of the qualifications of paramedical personnel as a means of alleviating the acute shortage of physicians. The Rockefeller Foundation supported the training of paramedical personnel such as vaccinators, public health instructors, and malaria campaign officials in Magelang.

Between 1942 and 1949, nationalist physicians were in the process of developing an Indonesian approach to public health that was holistic: it eschewed the narrow emphasis on preventing communicable diseases. Additionally, the Indonesian approach emphasised improving the living standards of the people in the expectation that it would reduce the prevalence of maternal and infant mortality, malnutrition and tuberculosis through a program of health education. During the Japanese occupation, Indonesian physicians created imageries of a strong and healthy citizenry free of disease and a hard-working population as necessary

preconditions for the attainment of independence. Between 1945 and 1949, challenged by Dutch military blockades and shortage of essential medical supplies, the country's leaders were optimistic that Indonesia could rebuild its health infrastructure devastated by war. But they initiated symbolic yet uncoordinated public health initiatives that suffered from lack of infrastructure and financial support. As a result, the holistic Indonesian approach to public health had failed to reach fruition by 1949.

### **Indonesian Thinking on Social Medicine**

During the 1950s, the nationalist ideal of creating a strong and healthy population was influential in shaping the course of Indonesian social medicine. Broadly aligning themselves with the World Health Organisation (WHO), which defined health as a state of complete physical, mental and social well-being and not merely as the absence of disease, Indonesian physicians adopted a holistic interpretation of social medicine that envisioned raising the population's standard of living through the reduction of maternal and infant mortality, the elimination of malnutrition and the provision of health education. In addition, they viewed the symbolic significance of nutrition not only in terms of safeguarding health but also as ensuring an equitable distribution of food for all Indonesians. They saw it as the key to realise the nationalist dream of a just and prosperous society. Syncretic in its approach, Indonesian social medicine critically evaluated and adapted healthcare models functioning elsewhere to Indonesian conditions. In this section, I will assess the contributions of Seno Sastroamidjojo, Raden Mochtar, Johannes Leimena and Poorwo Soedarmo and, to a lesser extent, of Soetopo in order to understand the comprehensive agenda of social medicine in postcolonial Indonesia that perceived health not only as the means of preventing disease but also its symbolic significance in nation-building.

The WHO was founded in 1948. The preamble to the Constitution of the WHO was revolutionary because it stated that the enjoyment of the highest standard of health was the fundamental human right of every human being. Within WHO circles, planners had recognised the need to convince governments about the cost-effectiveness of preventative health measures

and to translate figures related to infant mortality into national economic loss.<sup>42</sup> C.E.A. Winslow, who served as a consultant with the Public Health Administration for the WHO in the 1950s, emphasised that in the mid-twentieth century, public health was not limited solely to the controlling of communicable diseases: it also sought to raise the general efficiency of the population.<sup>43</sup> In Africa, tropical diseases such as the vector-borne African *trypanosomiasis* (sleeping sickness) inhibited the newly-independent nation's exploitation of cultivable land. Physicians working for the WHO recognised that public health was a vital part of a broader program of social improvement.

In its first decade of its operation (1948-1958), the WHO focused its attention largely upon mass campaigns against the treatment of endemic diseases such as malaria, tuberculosis, yaws and syphilis. To this end, it initiated a series of pilot demonstration projects, particularly in the Southeast Asia region.<sup>44</sup> Penicillin was used as the magic bullet in the campaign against yaws and venereal diseases. People in developing countries were urged as follows:

Let us spray your house, this will prevent malaria. Let us give you an injection, this will cure your syphilis and your yaws. Let us inoculate you, this will protect you from tuberculosis.<sup>45</sup>

In the early 1950s, the WHO approached the problem of public health in newly-decolonised nations of Asia through an amalgam of campaigns intended to control endemic diseases. Its ultimate aim was to provide a technological fix to the problem of disease. The WHO implemented its campaigns in a top-down manner that overlooked fundamental questions such as addressing the basic needs of the population in developing countries.

Unlike the narrow technocentric approach to public health pioneered by the WHO, Indonesian physicians interpreted public health from the perspective of resuscitating a newly-independent nation that was enfeebled by three-hundred-and-fifty years of colonialism, three-and-a-half years of Japanese occupation and four years of revolutionary struggle against the Dutch. In contrast to the reductionist perspective of the WHO physicians, who associated public health measures with the elimination of disease and improving the overall productivity of the population, Indonesian physicians advocated a comprehensive program that envisioned raising

the living standards of the people. This involved the introduction of initiatives to reduce maternal and infant mortality, improve the nutritional standards of the people and ensure an equitable distribution of food.

President Soekarno's vision of *Pembangunan* (nation-building) had left a deep imprint on the development of Indonesian social medicine of the 1950s. This vision reflected the newly-decolonised archipelagic nation's aspirations for a brighter future based on the notion that the Indonesian nation possessed immense physical and psychological strength engendered by the independence struggle.<sup>46</sup> *Pembangunan*'s basic pillar was the *Pantjasila* doctrine, i.e., the philosophical underpinnings of the Indonesian state which specified belief in one God, just and civilised humanity, democracy, and social justice for all Indonesians. The principle of social justice for all Indonesians was reflected in Soekarno's concern for ensuring Indonesia's self-sufficiency in rice that would lead to the fulfilment of one of the most basic needs (food) of all Indonesians.<sup>47</sup> Soekarno's version of *pembangunan* embraced the notion of *kemerdekaan* (freedom) that stood for multiple possibilities such as prosperity, human dignity, and the physical and spiritual welfare for every Indonesian. *Pembangunan* was associated with achieving the highest standard of living for every citizen, investment in human skills, and achieving an equitable distribution of wealth.<sup>48</sup> Soekarno's *pembangunan* was internationalist in the truest sense: he first evaluated successful socio-economic models functioning elsewhere in the world and then adapted them to suit Indonesian conditions. In the following paragraphs I explore the ideas of Sastroamidjojo, Mochtar, Leimena and Poorwo Soedarmo in order to ascertain how the Indonesian physicians eschewed the narrow biomedical model of public health that focused on disease control and instead, embraced a holistic program that included nutrition and other social factors that affected health outcomes.

Seno Sastroamidjojo was a leading social medicine expert during the Soekarno era in Indonesia. His vision of social medicine serves as a vantage point from which to examine how social medicine ideas were appropriated in an Indonesian context. Sastroamidjojo had enjoyed an eclectic educational experience initially at a *pesantren* (*madrasah*) in Grabak (Java) and was a STOVIA alumnus, 1916. He later pursued specialist training in gynaecology and social medicine

at the University of Amsterdam, trained in midwifery at Berlin University, venereology at Budapest (Hungary) and social medicine at Stockholm. He served as a doctor for the Dutch East Indies Public Health Service for a brief period after which he worked as a private practitioner in Jakarta for six years and then as a surgeon for the Biliton mining company. His international training influenced his social medicine outlook.

According to Sastroamidjojo, social medicine was a synthesis of sociology and public health.<sup>49</sup> His definition of health as a state of material and spiritual well-being resonated with the WHO definition. His thinking on health was comprehensive as it embraced all phases of a person's life including prenatal, postnatal, childhood, adolescence, adulthood and old age. A major public health problem discussed in Sastroamidjojo's writings was the prevalence of venereal diseases in Indonesia.<sup>50</sup> Recognising that venereal diseases embodied the degeneration of the nation's population both physically and morally, he advocated the medical examination and sex education of couples before marriage. Another health problem frequently discussed by Sastroamidjojo was malnutrition. The high rate of oedema among Indonesian infants in the 1950s, according to Sastroamidjojo, was due to a shortage of food; according to his logic, a malnourished child mirrored the poor health of the economy.<sup>51</sup> By linking malnutrition to the poor state of the Indonesian economy, Sastroamidjojo reflected the idea of *pembangunan* or developmentalism.

A second influential physician who reflected the WHO's definition of health was Raden Mochtar. Mochtar, who served as Head of the Department of Health Education of newly-independent Indonesia, and was instrumental in instituting community health programs both academically and practically. His chief concern in the 1950s was how to achieve the best possible standard of health for the average Indonesian through cost-effective preventive health measures such as the construction of latrines and stimulating community health initiatives through pilot health demonstration projects such as those initiated in Rawasari and Magelang.

Mochtar was born on 23 July 1900 in Cilacap. After graduating from the STOVIA in 1924, he was employed by the Rockefeller Foundation as an assistant doctor in Central Java to promote intensive hygiene work in the area, using hygiene films and lantern slides to educate the

public about hookworm disease.<sup>52</sup> The Rockefeller Foundation bequeathed to the nationalist physicians, the model of a regency health service, initially established in Purwokerto. In 1937-38, the Dutch East Indies Health Service underwent decentralisation through the establishment of Regency Health Units in Kebumen and Demak in Central Java.<sup>53</sup> From 1939 onwards, the health demonstration units of the Rockefeller Foundation were taken over by Indonesians. Mochtar envisioned the establishment of village hygiene units made available to village households.

Around 1946, the idea of establishing a village health service was realised in the regency of Banyumas.<sup>54</sup> Mochtar had observed that the Dutch Military Action (1947) had forced the village health service to relocate to the Yogyakarta Sultanate at Magelang. Village hygiene work based on the Magelang model was also replicated with some success in Madiun; but, owing to the Military Action, the rural hygiene organisation was disrupted.<sup>55</sup> However, following Indonesian independence in 1949, the rural hygiene work re-commenced in Magelang through the efforts of the Demonstration Centre which mobilised villagers to construct water supplies by appealing to the Javanese notion of *gotong rojong* (mutual cooperation). Mochtar was convinced that health education would help stimulate demand for hitherto unmet health needs. This meant mobilising the community around rural development projects.

Mochtar became the Head of the Department of Community Education within the Ministry of Health soon after Indonesia's independence in 1949. He served as Professor of Public Health within the Faculty of Medicine at the newly-established Universitas Indonesia. He also served as a visiting faculty member for the Universities of Gadjah Mada, Airlangga and Hasanuddin. Mochtar reiterated the WHO thinking of the 1950s, i.e., that health was not merely an absence of disease but a state of physical, psychological and social well-being.<sup>56</sup> At the time, environmental factors affecting population wellbeing included inadequate housing and diseases caused due to nutritional deficiencies such as kwashiorkor. Public health was a means of alleviating human suffering:<sup>57</sup> it was not an isolated pillar standing on its own but was anchored in public welfare, the rights of labour, and the humane care of the mentally ill. As well, according to Mochtar, it was a means of achieving human dignity.<sup>58</sup>

As Professor of Public Health at Universitas Indonesia (UI), Mochtar saw public health education as a means of improving health by inculcating hygienic habits.<sup>59</sup> Mochtar viewed health education as an active process. In other words, the health educator had to convince the public that health, like food, was one of the basic necessities of life. Health education necessitated a coordinated approach to various levels of government: central, provincial and district.<sup>60</sup> It consisted of imparting communication of the health message through films, lectures, newspapers, and/or radio.<sup>61</sup> The ‘two-way Socratic method,’ an important pedagogic technique for public health education, consisted of discussions of public health issues initiated by public health officials with schoolchildren.<sup>62</sup> Mochtar thus envisioned the public as an active partner in the health education process. In the interests of sensitising future medical practitioners to social conditions in the rural areas, Universitas Indonesia introduced a course on preventive medicine.

Mochtar’s ideal of achieving the highest possible standard of health through cost-effective preventative measures – one that emphasised community participation – crystallised in the form of *Puskesmas* (Primary Health Centres) in the late 1960s. The full realisation of Mochtar’s ideals may have been inhibited by the waxing and waning of Indonesia’s parliamentary institutions, the lack of coordination between the centre and provinces regarding financing health projects, and the Dar Ul Islam insurrection in West Java in 1956. Although these initiatives were both rooted in local circumstance and constrained by its politics, similar challenges faced Johannes Leimena as he sought to adapt international exemplars to the unstable environment of the new republic.

Johannes Leimena, who was probably the most influential thinker on social medicine during the Soekarno era, officiated as Minister of Health between 1947 and 1956 (except in the first cabinet of Ali Sastroamidjojo from 1953-1955). In addition, he sought to achieve congruence between Soekarno’s vision of relating health to nation-building and the WHO definition of health. An eclectic thinker, he sought to evaluate public health models of various countries and adapt these models to suit Indonesian conditions.

According to Leimena, the symbolic capital of public health was evident in reconstructing the Indonesian nation. He contended that public health and socio-economic

development mutually reinforced each other.<sup>63</sup> In other words, an optimal level of social and economic development could only be achieved in the presence of good health. Leimena's logic was that disease and poverty constituted a vicious circle. A sick person became poor and his/her impoverishment precipitated further disease. Improving the people's socio-economic conditions would in itself ensure the development of a basic standard of health.<sup>64</sup> A healthy nation was reflected in the physical and mental wellbeing of its inhabitants.<sup>65</sup>

As curative care was expensive and did not cover more than a minuscule section of the population living in the urban areas, Leimena laid great emphasis on prophylactic-hygiene work, particularly in rural areas of Indonesia where nearly 90% of the country's population lived.<sup>66</sup> He conceptualised the village (*desa*) as a self-supporting administrative unit, capable of funding its own health activities. The inhabitants of the *desa* would be approached not only for prophylactic hygiene work, but also for curative health measures such as the treatment of yaws-affected villagers where the concrete results of Western medicine were visible. The kernel of Leimena's thinking on health was the Bandung Plan (1951), an ambitious program that attempted to integrate preventive and curative health activities through the establishment of *desa* polyclinics and sub-district health centres under the direction of the regency physician (*dokter kabupaten*).<sup>67</sup> But, execution of the Bandung Plan throughout Indonesia in 1954 was impeded by financial and administrative bottlenecks.<sup>68</sup> Not all regencies and *desas* were sufficiently self-supporting to finance the public health programs devolved to the local governments under the Plan.

In 1953, a year prior to the extension of the Bandung Plan throughout Indonesia, the WHO offered a fellowship to Leimena to study the organisation of public health in Norway, Britain, Yugoslavia, Egypt, India and erstwhile Malaya (Singapore).<sup>69</sup> During his stay in Norway, Leimena noted that the Norwegian government had recognised tuberculosis as a social disease. In order to reduce the prevalence of the disease, the government had undertaken efforts to raise the standard of living of the people by raising their nutritional standards and improving their conditions of work.<sup>70</sup> In Britain, Leimena observed that the National Health Service, a publicly funded healthcare system, was available to every citizen. However, he was not impressed with the bureaucratic functioning of the organisation and the lack of emphasis given to

preventive health measures. During his visit to Yugoslavia, Štampar impressed upon Leimena the necessity of instituting health education and integrating preventative and curative health services under the direction of the health centre.<sup>71</sup> The Central Institute of Hygiene constituted the apex of the Yugoslav health services and advised the hygiene institutes at the district level which had considerable autonomy in advising the health centres that came under their jurisdiction.

After observing the organisation of the health services in Europe, Leimena visited Egypt to evaluate the functioning of the Health and Demonstration Centre at Calioub, established with US and WHO assistance to ameliorate rural poverty among the *fellahins* (peasants).<sup>72</sup> The last two countries visited by Leimena before the conclusion of his WHO fellowship were India and Singapore.<sup>73</sup> In India, he explored along with India's Minister of Health, Raj Kumari Amrit Kaur the possibility of using rural reconstruction as a means of socio-economic uplift of the population. In Singapore, the last country on Leimena's official tour, Lloyd Davies (Head of Department of Social Medicine at the University of Malaya) discussed the postgraduate teaching of public health in that country which involved the integration of the study of the social aspects of disease into clinical training.

Leimena's thinking on health was undoubtedly influenced by the Norwegian health system that envisioned raising the people's living standards through nutrition and improving their conditions at work. In his *Public Health in Indonesia: Problems and Planning*, published in 1956, Leimena argued that health activities carried out without improving the social and economic conditions could create an unbalanced situation in the community.<sup>74</sup>

Later, as Minister of Public Distribution in 1958, Leimena perceived that an adequate quantity and quality of nutritious food was critical to the health of expectant mothers, and children and to ensuring the productivity of workers. Leimena viewed the question of nutrition through the lens of scarcity. He held that in order to overcome nutritional and calorific deficiencies, Indonesia would need to achieve self-sufficiency in rice production. Indonesia's per capita consumption of rice was 84 kg prior to World War II and was 93 kg in the late 1950s.<sup>75</sup> However, the country experienced a population growth at 1.7 to 2 per cent per annum in

the late 1950s which outstripped its food production.<sup>76</sup> Indonesia compensated its shortfall of rice production through imports. Leimena thought that Indonesia could become self-sufficient in rice by maximising its production and distribution to feed its ever growing population. He envisioned building Indonesia's capacity in rice production through intensification of paddy cultivation on the island of Java and extensive dry land farming of paddy on the Outer Islands, e.g., Kalimantan and Sumatra, as a means to achieve *berdiri di atas kaki sendiri* (economic self-sufficiency).

Leimena viewed Indonesia's nutritional problems through the lens of the *Pantjasila* doctrine which had social justice for all Indonesians as one of its tenets.<sup>77</sup> He trained his focus on the state machinery in a bid to ensure an equitable distribution of food by maximising the production of rice; but his plan to achieve this proved overambitious. The Ministry of Public Distribution was unable to coordinate the Ministries of Agriculture, Transmigration, and Labour.

During the 1950s, initiatives in community health education that intended to educate the population about the nutritive value of food were regarded as a significant public health intervention to address Indonesia's nutrition problem. Poorwo Soedarmo is widely regarded as the father of Indonesian nutrition (*bapak gizi*) for his contribution to nutrition research. He creatively redesigned health promotion messages from the US to reflect Indonesian conditions. He perceived the role of nutrition in not only preventing disease but also in terms of promoting good health. He argued that absence of disease did not by itself imply that the person was healthy.<sup>78</sup>

Poorwo Soedarmo, who was an alumnus of the London Post Graduate School of Public Health, later became a faculty member of the University of Indonesia's Medical School, Department of Nutrition. His publications on nutrition largely dwelt on the issue of kwashiorkor in Indonesia. He had observed that during the colonial period, children who were afflicted by kwashiorkor or marasmus were labelled indolent. Since then, the word indolent has been used as an epithet to describe the diseased native body.<sup>79</sup> Poorwo Soedarmo noted in his autobiography that nutrition is an important indicator of the quality of the nation.<sup>80</sup> He advocated that any food policy for Indonesia had to take into account the rate of population growth, percentage of

dependent population, and a food balance sheet for the Indonesian population which would take into account the nutritional requirements of the ‘Average Indonesian.’ He observed that in several islands of the archipelago, particularly in Java, Madura, and Bali, self-denial of food was regarded as a virtue. As a result, people were reluctant to talk about food scarcity.<sup>81</sup>

In 1951, as Director of the newly-established *Lembaga Makanan Rakjat* (the Nutrition Institute at Jakarta) that explored solutions to Indonesia’s nutritional deficiencies, Poorwo Soedarmo initiated three-week courses designed to train nutrition assistants in public health propaganda to educate Indonesian villagers about the nutritive value of food. His aim was to see population became nutrition-minded.<sup>82</sup> He thought that as the Indonesian diet was homogeneous, i.e., largely rice-based, it was deficient in vitamins, minerals and protein and as a consequence people became prone to nutritional disorders. Educating the Indonesian population to become nutrition-minded was an important step towards realising the growth of the future nation.<sup>83</sup>

In 1952, Poorwo Soedarmo creatively appropriated the US nutrition slogan, ‘eat the basic seven every day,’ coined during World War II. The slogan referred to the basic seven food groups designed to provide food security to the American population under wartime conditions. He refashioned it as *empat sehat, lima sempurna* (four basic foods such as rice, protein, vegetables, with fruit and milk added for the maintenance of good health). The slogan, which was intended to diversify the otherwise predominantly rice-based diet of Indonesian children was structured around the Sundanese staple diet that consisted of a bowl of rice with an accompanying vegetable, a piece of meat, tempe and papaya, foodstuffs that people could easily relate to.<sup>84</sup> Given that meat, a major source of animal protein, was not affordable for many Indonesians, Poorwo Soedarmo designed a new but related slogan *murah, tetapi baik* (cheap but nutritious) according to which *tempe*, a cheap but rich source of protein would substitute meat in the daily diet.<sup>85</sup>

Poorwo Soedarmo, who had a holistic understanding of the aetiology of malnutrition, attributed the high prevalence of nutritional disorders in Indonesia to faulty nutrition. He observed that in the public schools of Jakarta, nearly all of the students passed the public

examinations whereas in the regency of Gunung Kidul in mid-Java, only 5% of students managed to pass.<sup>86</sup> Learning could not be sustained by students from Gunung Kidul whose diets were exclusively based on a staple of cassava, a protein-deficient nutrition source. Like Leimena, he emphasised that Indonesia's food shortage could be ameliorated by increasing the production of food grains and cereals through close coordination of the Ministry of Health with the Ministries of Agriculture, Communications, Industry, Social Affairs and Finance.

Unlike Sastroamidjojo, Mochtar, Leimena and Poorwo Soedarmo, Soetopo's contribution to Indonesian thinking on social medicine was marginal: he did not articulate a comprehensive agenda for social medicine in Indonesia. Nevertheless, he was influential because he framed venereal diseases as social diseases. Although venereal diseases were treatable using arsenicals and penicillin, identifying the potential carriers of venereal diseases and treating them was difficult due to social stigma. He argued that venereal diseases were indicators of larger socio-economic problems such as economic insecurity, lack of adequate housing, unwholesome recreation, inadequate medical care, broken families and inadequate social support.<sup>87</sup> Therefore, he advocated addressing the social causes that were conducive to the spread of venereal diseases.

An alumnus of the NIAS medical school (1924), Soetopo worked as an assistant teacher in Central Burgerlijk Ziekenhuis (CBZ), Surabaya, in the Department of Venereal Diseases. In 1950 he officiated as the Minister of Health between January and September in Abdul Halim's cabinet. Soon after, he established the Venereal Disease Institute in Surabaya (1951) for undertaking research on venereal diseases, particularly syphilis.

The Venereal Disease Institute initiated the following measures against syphilis: (a) diagnosing and treating syphilis cases; (b) screening investigations for syphilis amongst the Indonesian armed forces, industrial workers, slum population, students and expectant mothers visiting the maternal and child health centres; (c) treatment of prostitutes with penicillin; and, (d) medical examination of unmarried couples for venereal diseases.<sup>88</sup>

In his lecture delivered at the Venereal Disease Institute commemorating World Health Day on 7 April 1953, Soetopo stated that prostitution contributed to the spread of venereal diseases. He lamented that after the Indonesian Revolution, there was a breakdown of social

norms. The youth of the day demanded unrestricted freedom, particularly with respect to the loosening of sexual mores.<sup>89</sup> He termed the prevalence of venereal diseases in independent Indonesia a ‘moral crisis’ and observed that eradication efforts would involve joint efforts of the Ministries of Health, Education and Labour.<sup>90</sup> Unlike the WHO, which advocated a purely public health approach to the control of venereal diseases such as the treatment of syphilis patients with penicillin, Soetopo attributed the prevalence of venereal diseases to prostitution and widespread moral decay.

A common denominator inherent in Indonesian physicians’ approach to social medicine was a holistic interpretation of health as not merely the absence of disease but a state of physical and mental well-being. A number of leading Indonesian physicians were able to recognise the symbolic significance of the campaign against malnutrition and venereal diseases as an effort to cultivate a strong and healthy citizenry by attempting to address the underlying social causes of disease. Leimena was the most influential Indonesian thinker on social medicine due to his position as Minister of Health, and to his statesmanship in achieving congruence between the nationalist agenda of health, i.e., in producing a strong and healthy citizenry, with the agenda of the WHO. The others, particularly Poorwo Soedarmo, creatively appropriated public health slogans from abroad and refashioned them to suit Indonesian conditions. But, they overlooked the question of poverty. In contrast to Sastroamidjojo, Mochtar, Leimena and Poorwo Soedarmo, Soetopo did not articulate a definitive position on social medicine but remained influential for his framing of the prevalence of venereal diseases in Indonesia as a social problem.

### **Social Medicine in Indonesian Politics**

During the 1950s, Indonesia was faced with the challenge of rebuilding its health system. The health infrastructure was destroyed during the Japanese occupation (1942-1945) and the Indonesian Revolution (1945-1949), leaving an acute shortage of health personnel. Of the approximately 1,200 doctors who served a population of 72 million, most were mainly concentrated in the urban areas. In the early 1950s, the Indonesian state was forced by the

Netherlands to repay the war debts incurred by the Netherlands Indies Civil Administration (NICA) during the period 1945 to 1949 and the deficit of the Dutch East Indies from 1942 and before. The resultant scarcity of funds made it difficult meeting the cost of the preventive and curative health activities which made competing demands on the post-colonial state's coffers. Nevertheless, the questions of equity, access, and availability of healthcare shaped the agenda of Indonesian social medicine of the post-independence period and were reflected in the Minutes of the *Dewan Perwakilan Rakjat* (The Indonesian House of Representatives). The *Dewan Perwakilan Rakjat* provided a political space for Indonesian politicians to articulate their criticism of public health in a country where the health system was under-resourced, medical personnel were sparse, and the state weak.

During the early 1950s, Indonesia faced a budgetary deficit of 150-200 million rupiahs (equivalent to approximately 45 million US dollars) per year. Between 1950 and 1951, the Masjumi government was torn between negotiating a favourable balance of trade and establishing a favourable exchange rate for the rupiah because the latter would increase the export of raw materials and meet the expense of the increased import of rice. Under such unfavourable financial circumstances, addressing competing health priorities ranging from initiating campaigns against malaria, tuberculosis, leprosy and yaws to increasing the supply of doctors in rural areas, orientation of health personnel to socio-economic conditions and the establishment of hospitals, proved contentious within the *Dewan Perwakilan Rakjat*. For example, the campaigns against endemic diseases such as malaria and tuberculosis were inhibited by lack of community awareness regarding hygiene.<sup>91</sup> The government could not afford to employ additional doctors or health educators due to financial constraints. Thus, physicians and paramedical personnel did not receive adequate salaries. Yet due to their sense of commitment towards the medical profession, they would discharge additional duties such as administering hospitals without the expectation of any additional remuneration.

For President Soekarno, ensuring the adequate supply of rice to the people was related to the question of ensuring the survival of the future Indonesian nation (*mengenai soal mati-hidupnya bangsa kita di kemudian hari*).<sup>92</sup> Indonesia's rice production, which was estimated at

6.45 million tonnes, was insufficient for the country's ever-growing population (estimated at 75 million in 1952).<sup>93</sup> There was a shortfall of 5.5 million tonnes of rice that had to be imported from abroad. Indonesia could solve its food scarcity through two means: (a) opening up new lands for cultivation in the Outer Islands; and (b) undertaking research in high yielding varieties of rice. For Soekarno, without addressing Indonesia's food problem, the realisation of a just and prosperous society (*masjarakat adil dan makmur*) was meaningless.<sup>94</sup>

During Wilopo's tenure as Prime Minister between April 1952 and June 1953, the Ministry of Health under Leimena's direction had formulated a number of symbolic public health initiatives including eradicating social evils particularly alcoholism and prostitution, wiping out indolence through improvement of the quality and quantity of food, eradication of endemic diseases, ensuring the availability of essential medicines to all Indonesians, and promoting research into Indonesian traditional medicine (*djamu*) with a view to reducing the country's dependence on foreign drugs.<sup>95</sup> These initiatives were guided by the notion of fostering a strong and healthy nation (*rakjat sehat, negara kuat*) that was capable of standing on its own feet (*berdiri di atas kaki sendiri*).

During Wilopo's tenure, the promotion of public health in Indonesia was associated with the utopian notions of cultivating a strong and healthy citizenry, promoting self-sufficiency in economic affairs and realising social justice for the country's citizens. The commitment to health was present but unfortunately, the successful implementation of the health initiatives could not materialise due to unfavourable economic circumstances, bureaucratic bottlenecks and corruption.

In November 1951, the preceding Sukiman cabinet had instituted BAMA (*Jajasan Bahan Makanan*, or the Food Grain Foundation), that was intended to centralise the procurement of rice and ensure its affordability to all Indonesians. In addition, middlemen (private organisations) were licensed to distribute rice procured by BAMA to the community. The Indonesian government not only fixed the price of rice but also imported it from abroad to stabilise the prices. Two *Dewan Perwakilan Rakjat* delegates R. Slamet Tirtosubroto and Sujudi were critical of the corruption that marred BAMA's procurement of rice and the speculation by middlemen

that resulted in high prices.<sup>96</sup> In the regency of Banyuwangi in East Java, widespread prevalence of *hunger oedema* (malnutrition) was conspicuous during the harvest season in 1952, despite an abundant supply of rice due to the poor purchasing power of the people.<sup>97</sup> Ensuring an adequate supply of rice for every Indonesian epitomised the realisation of the revolutionary ideal of social justice for every Indonesian. But institutional mechanisms such as the BAMA reveal that the central government was highly focused upon ensuring a steady supply of rice that did not take into account the people's purchasing capacity.<sup>98</sup>

Apart from its symbolic public health initiatives that were intended to reinforce the notion of a strong and healthy nation, the Wilopo cabinet also proposed legislation in 1952 that aimed to extend free curative care to the poor in private hospitals. This legislation came into effect in 1953. Indonesian Law 18, 1953 stated that the State would be responsible for the attainment of the highest possible standard of health for the Indonesian people by granting subsidies for the construction of private hospitals that catered for the needs of the poor and for those who could not afford curative care.<sup>99</sup> But, *Dewan Perwakilan Rakjat* members were sceptical as to whether the poor were really cared for in every private hospital subsidised under the legislation. In Makele, on the island of Sulawesi, two Christian Missionary polyclinics which served only twelve patients were subsidised under Law 18, 1953, despite the fact that Makele lacked a qualified doctor.<sup>100</sup> The missionary hospitals were not utilised by local residents in South Sulawesi owing to religious differences. The majority of the population was Muslim. One *Dewan Perwakilan Rakjat* delegate, Abul Hajat, expressed reservations, saying that the program of granting government subsidies towards the construction of private hospitals was a form of 'state intervention' and steered the nation towards communism.<sup>101</sup> Leimena, who was then Minister of Health, stated that the main motive of the government in subsidising the construction of private hospitals was to stimulate public initiatives in curative health at the village level such as building hospitals and to improve the ratio of hospital beds to the total population which stood at 8 per 10,000 people, ranking it among the lowest in the world in the 1950s.<sup>102</sup> High capital investment was needed for the establishment of hospitals and the government lacked the necessary funding as preventive public health measures, for e.g., elimination of malaria, yaws,

leprosy and trachoma, reducing maternal and infant mortality received the top priority within public health circles.

Law 18 of 1953 was the first step for the Ministry of Health to address deficiencies in curative care. However, in this law, ‘poverty’ was very narrowly defined as those who were unable to afford the minimum hospitalisation fee of 3.50 rupiahs (approximately 33 cents). Poor individuals had to be certified by the *Bupati* (regency head) before they could be treated free of cost in private hospitals subsidised by the government. Identification of the poor among the general population according to the narrow classification by income was unrealistic due to the depreciation of the rupiah and high inflation.

By 1958, the utopian vision of creating a strong and healthy Indonesian citizenry had by now turned to despair. Azis Saleh, who was the Minister of Health in the Djuanda cabinet between April 1957 and July 1959, acknowledged that the execution of pilot health projects in Indonesia, particularly in Bandung, Bekasi, Magelang and Purwokerto between 1951 and 1958, had proven unsatisfactory due to an acute shortage of doctors and other health personnel.<sup>103</sup> The Ministry of Health had initiated a training program for nutritionists, health inspectors, sanitarians, assistant nutritionists and hygiene educators to address the shortage of medical and paramedical personnel working in preventive health. The Ministry of Health delegated the funding of preventive health programs and the disbursement of the salaries of health personnel to local governments, which were completely unprepared to assume financial responsibilities.

When Indonesian politicians perceived the political capital of social medicine to reinforce the notion of a strong and self-sufficient nation that was capable of standing on its own feet, they prioritised symbolic initiatives such as increasing the per-capita availability of rice to the country’s citizens by regulating the price. Other initiatives intended to realise the revolutionary utopia of a just and prosperous society included the enactment of a law that would facilitate free treatment of the poor in private hospitals. Despite the comprehensive agenda of Indonesian social medicine that interpreted health not solely in terms of absence of disease, but also in terms of ensuring a minimum standard of living for the population, the concrete realisation of

objectives such as ensuring adequate availability of rice to the country's population could not materialise due to weak regulatory mechanisms and a shortage of funds.

### **Population Controversy**

By 1953-54, the world population was 20% larger than it was in 1930, partly attributed to improvements in public health such as smallpox vaccinations that had contributed to lowering the overall death rate.<sup>104</sup> Also, population was already growing even before the public health breakthroughs. In the post-World War II period, birth rates continued to rise, particularly in developing countries of Africa and Asia, contributing to a population problem which diminished the per capita availability of food. Winslow argued that the application of modern agricultural methods could increase the world's food production by a third.<sup>105</sup> The premise of the WHO and FAO (Food and Agricultural Organisation) that the world's population was a source of potential human capital found support within sections of Indonesian policy circles. The compilers of Indonesia's First Five Year Plan were unanimous in accepting that Indonesia's population was growing at an alarming rate; but, planners were divided on the question of using birth control to lower the rate of population growth on economic and religious grounds.

The discussions pertaining to family planning in Indonesia during the early 1950s in effect boiled down to two propositions: first, poverty and high fertility continued to kill mothers; and second, poverty could be overcome through economic planning.<sup>106</sup> These propositions had very different implications for the question of how the government could address the question of poverty. Julie Sulianti Saroso, a prominent Indonesian physician who advocated the use of family planning to prevent maternal mortality was the Technical Director of Maternal and Child Health in the early 1950s. She was awarded a WHO Fellowship to study the functioning of maternal and child health policies in Sweden. Dr. Saroso had observed the outcomes of family planning programs incorporating birth control that had been successfully implemented throughout Sweden's district health centres. In a radio program broadcast by Radio Republik Indonesia, Saroso was very outspoken about using birth control as a means of preventing

maternal mortality. Vice President Mohammad Hatta was outraged by Saroso's open advocacy of family planning, claiming that it offended the cultural and religious sensibilities of the Indonesian population.<sup>107</sup>

In the early 1950s, President Soekarno faced several pressing challenges such as forging national unity in the wake of regional uprisings, conflict between elements of the army, religious groups and the communists, and solving economic problems such as poverty and food scarcity. However, the question of addressing the problems created by Indonesia's burgeoning population did not capture the President's attention in the early 1950s. Soekarno stated that Indonesia could easily support a population of 250 million and that the pressing problem for the country was to provide housing and jobs for its people.<sup>108</sup> Foreign journalists suggested that Soekarno advocated a stance in favour of the linkage between population growth and economic development. After labelling the president 'pro-natalist,' they conceded that he was able to accept the logic of birth spacing in order to protect the health of mothers.<sup>109</sup> As the president, however, Soekarno did not want to be seen as accepting advice from foreigners on population control and advocating family planning programs that were (perceived to be) associated with immorality.<sup>110</sup>

The Indonesian First Five Year Plan (1956-61) stated that Indonesia had an unusually high rate of population growth, with nearly two-thirds of the population concentrated on the island of Java.<sup>111</sup> The Plan was, however, characterised by contradictions because it argued that:

- (a) Indonesia's surplus population would serve to harness the country's natural resources; and,
- (b) every increase in the national income would be neutralised by a rising population.<sup>112</sup>

During the 1950s, Soekarno observed that Indonesia's population was growing at the rate of one million per annum, increasing the pressure of population on land, particularly in Java. Subsistence agriculture alone was unable to fulfil the food requirements of an ever expanding population. On the tenth anniversary of the Proclamation of Indonesian independence (17 August 1955), Soekarno stated: *Ia adalah satu bangsa jang biologis-dinamis* (The Indonesians are a biologically dynamic nation).<sup>113</sup> His statement referred to the fact that the Indonesian population had grown from 50 million (around 1900) to approximately 80 million around 1955.<sup>114</sup> Soekarno saw Indonesia's growing population as the key to augmenting agricultural

productivity, particularly in the Outer Islands. In order to achieve the Javanese aphorism of *loh djinawi, subur kang sarwa tinandur* (so fertile that everything one sows, grows), Soekarno proposed the resettlement of Java's ever expanding population on the Outer Islands, e.g., on Kalimantan and Sumatra, through a program of *transmigrasi* (transmigration), and the harnessing of the productive capacity of the land via modernisation of agriculture.<sup>115</sup> He approached the population problem through a vision of transformation of Indonesia's economy from a plantation-based colonial economy based on subsistence agriculture to a self-supporting socialist economy capable of standing on its own feet (*berdiri di atas kaki sendiri*) based on industrialisation.

In 1958, two *Dewan Perwakilan Rakjat* delegates, prominent Minangkabau leader Mohammed Isa and Soejoso Abdul Wahid, observed that Indonesia was adding between 1.3 and 1.7 million to its population annually.<sup>116</sup> The nation's population registered an annual population growth of 1.7% during the 1950s. The delegates were critical of the Kasimo Plan (1947-1954) launched by the Minister of Food Affairs I.J. Kasimo, in an attempt to ensure self-sufficiency in food. The Plan did not take into account the country's rising population.<sup>117</sup> Isa and Wahid attributed food scarcity and consequent malnutrition to Indonesia's rising population. While the *Dewan Perwakilan Rakjat* planners related the issue of Indonesia's high rate of population growth in terms of reduced availability of food, they remained silent on questions related to the correlation between high fertility and maternal mortality.

In 1959, Dr. Hadji Ali Akbar published an article in *Majalah Kedokteran Indonesia* on birth control in an attempt to address any medical, political, economic and religious reservations regarding adopting birth control as a means of family planning through a Malthusian lens.<sup>118</sup> In Akbar's view, the world's population expanded at the rate of 25 per cent per decade in the 1950s, leading to a fear of 'population explosion'.<sup>119</sup> By the late 1950s, nearly two-thirds of the world's 900 million children suffered from inadequate nutrition. One of the commandments of the Quran proclaims that every person shall have a right to food and shelter. However, in Indonesia, the population growth outstripped the country's food supplies. Thus birth control was a prescriptive measure for improving the quality of life of the country's children. As most

Indonesians were convinced that life is sacred from conception, they found it hard to accept the economic rationale of birth control. Akbar, citing the *Hadis* (sayings of Prophet Mohammed), advocated that coitus interruptus as a means of family planning was permissible in the greater common interest of preventing maternal mortality.

Indonesian newspapers such as *Pos Indonesia* and English newspapers such as the *Times of Indonesia* reflected the internationalism of the Soekarno era by critically evaluating the success of the family planning programs which functioned successfully in India and Malaya (Singapore) in 1959. But, this approach was at odds with the Indonesian government's preoccupation with domestic concerns such as the waning of parliamentary institutions and the government's perception of the family planning program as an international aid intervention that impinged upon Indonesia's sovereignty. A *Pos Indonesia* article dated 5 July 1959 was headed *Bahaya Besar jang Mengantjam Asia: Kenaikan Penduduk Sangat Tinggi, Sudah Perlukan Diadakan Sistim Pemandulan* (Asia Needs Drastic Steps to Curb Population Growth). At the time, the rate of population growth in Indonesia was seven times the corresponding figure in Europe.<sup>120</sup> Thus, it comes as no surprise that the rate of population growth outstripped the nation's capacity to produce food, thereby raising fears of starvation.<sup>121</sup> In India, for example, 25% of the population was undernourished.<sup>122</sup> In the state of Madras, the then Congress government had introduced a cash-based incentive for couples to engage in family planning. Elsewhere in Southeast Asia, The People's Action Party in Singapore had introduced family planning in the late 1950s, accompanied by a comprehensive program that improved the quality of life of children through enhanced nutrition, and education. Throughout the 1950s, family planning was a controversial issue that divided Indonesian physicians. Although advocated by Indonesian newspapers such as *Pos Indonesia*, which was based in urban centres such as Surabaya, the articles that appeared in it had limited readership in the 1950s.

Apropos of the nationalist leadership, Indonesia's ever-increasing population epitomised future national greatness as a source of potential human capital. Soekarno was privately sympathetic towards the use of birth control to prevent maternal mortality.<sup>123</sup> But, as a politician, he recognised that an official endorsement of birth control as a means to reduce family size

would antagonise Indonesian religious leaders who associated birth control with moral laxity. Additionally, open advocacy of family planning that was propagated by international aid agencies in developing countries would imply a compromise of Indonesia's hard-won political sovereignty. For the same reasons, although the *Dewan Perwakilan Rakjat* delegates attributed Indonesia's food insecurity to the country's ever-growing population, they remained silent on the issue of using birth control as a means of population control.

## Conclusion

During the nineteenth century, social medicine emerged in the context of the industrial revolution to examine the influence of specific factors such as age, sex, economic circumstances, domestic environment, occupation and nutrition on the incidence and prevalence of disease. At the turn of the twentieth century, two approaches to social medicine developed, namely: (a) the narrowly biomedical approach that focused on disease control; and, (b) a broader social version that explored the socio-economic causes of illness. The Indonesians adopted the second approach, i.e., relating social medicine to nation-building. Indonesian physicians appropriated social medicine in an eclectic way. That is, they not only made public health a part of nation-building but also accepted the comprehensive vertical WHO programs such as malaria eradication. Indonesian physicians imbued by the Bandung spirit, seeking to creatively incorporate elements of public health from other countries without compromising the country's political sovereignty in health.

In this chapter, I have critically examined how Indonesian physicians during World War II and beyond appropriated social medicine (the branch of medicine that examines the influence of social factors on the prevalence of disease and is focused on preventive over curative measures) to articulate their notion of public health in a country where the health system was under-resourced and characterised by a weak state which was itself in the process of formation. The common thread uniting the Indonesian physicians' approach to social medicine was a holistic approach that contextualised health in the light of socio-economic factors such as

availability of food, diversification of diet, and affordability of food and health services. Leimena was undoubtedly the most influential Indonesian thinker on social medicine due to his astuteness in relating the nationalist vision of producing a strong and healthy citizenry to the agenda of the WHO and nation-building. Other physicians, notably Poorwo Soedarmo, Mochtar and Sastroamidjojo, articulated a definitive position on health as a state of physical and mental well-being and not merely an absence of disease that closely corresponded to the WHO definition of health. But, unlike Leimena, they overlooked the relationship between poverty and disease. Although Soetopo's contribution to Indonesian social medicine was not substantial, he was influential in terms of framing venereal disease as a social problem.

This chapter contends that Indonesian social medicine from its genesis in the 1930s to 1967 was imbued with a utopian vision of building a strong and healthy nation. Both Indonesian physicians and politicians alike recognised the symbolic significance of particular economic initiatives such as ensuring the country's self-sufficiency in rice, health initiatives such as the promotion of Indonesian traditional medicine and combating malnutrition as efforts towards the realisation of a self-sufficient nation that was capable of fulfilling the basic needs of its citizens. The ambitious agenda of Indonesian medicine conceptualised social medicine not only in terms of preventing disease, but also as promoting health through a comprehensive program that involved addressing issues such as ensuring equitable distribution of food, availability of health services, health education and broader economic development. Nevertheless, social medicine could not redress Indonesia's public health problems due to the bureaucratic labyrinths of the newly-emerging state that impeded any meaningful coordination between the Ministry of Health, the provincial health departments' and local governments' implementation of health policies.

Below: Hunger oedema is widespread in Gunung Kidul, Yogyakarta (1953). The Sultan of Yogyakarta, Sri Paku Alam VIII (front) visits hunger oedema patients.

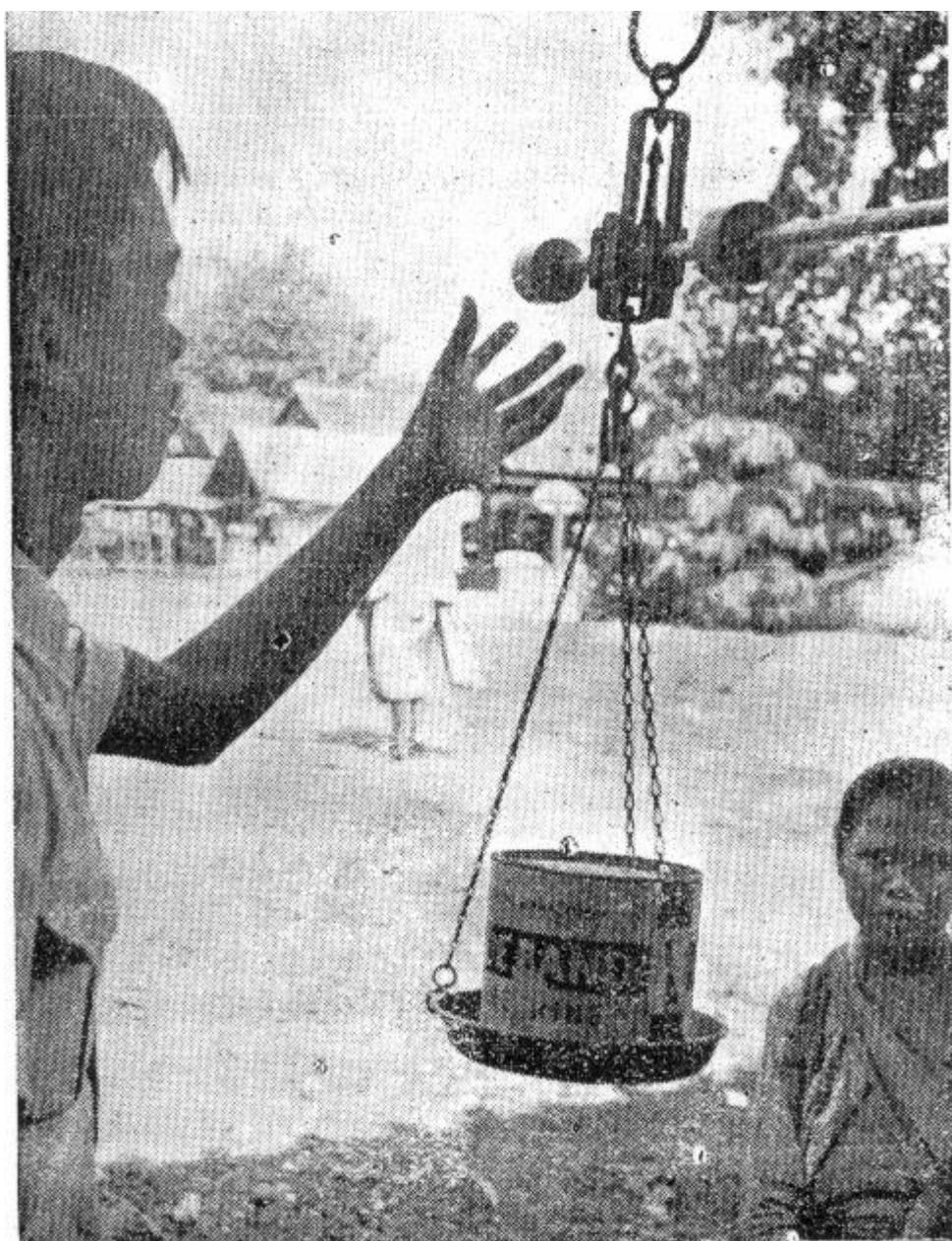


Source: *Republik Indonesia Daerah Istimewa Jogjakarta* (Jogjakarta: Kementerian Penerangan, 1953).



Above: A Hunger Oedema Patient in Gunung Kidul (1953).

Source: *Republik Indonesia Daerah Istimewa Jogjakarta* (Jogjakarta: Kementerian Penerangan, 1953).



Above: Rice distribution by the Yogyakarta regional government to a hunger oedema patient (Gunung Kidul, 1953).

Source: *Republik Indonesia Daerah Istimewa Jogjakarta* (Jogjakarta: Kementerian Penerangan, 1953).

Poorwo Soedarmo: Father of Indonesian Nutrition (1995).



Source: Poorwo Soedarmo, 'Biographic Sketches of Nutritionists in the Asia-Pacific Region,' *Asia Pacific Journal of Clinical Nutrition* 4 (1995): 394.

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- <sup>6</sup> John Duffy, *The Sanitarians: A History of American Public Health* (Chicago: University of Illinois Press, 1990), 207.
- <sup>7</sup> Porter, *Health, Civilisation and the State*, 161.
- <sup>8</sup> Martin David Dubin, ‘League of Nations Health Organisation,’ in International *Health Organisations and Movements: 1918-39*, ed. Paul Weindling (Cambridge: Cambridge University Press, 1995): 56-80, 73.
- <sup>9</sup> John Farley, *To Cast Out Disease: A History of the International Health Division of the Rockefeller Foundation, 1913-5* (New York: Oxford University Press, 2004), 5.
- <sup>10</sup> John Ettling, *The Germ of Laziness: Rockefeller Philanthropy and Public Health in the New South* (Cambridge, Massachusetts: Harvard University Press, 1981), 78-9.
- <sup>11</sup> Farley, *To Cast Out Disease*, 29.
- <sup>12</sup> Anne Immanuelle Birn and Armando Solorzano, ‘Public Health Policy Paradoxes: Science and Politics in the Rockefeller Foundation’s Hookworm Campaign in Mexico in the 1920s,’ *Social Science and Medicine* 49 (1999): 1197-1213, 1197.
- <sup>13</sup> *Ibid.*, 1197.
- <sup>14</sup> Paul Weindling, ‘Philanthropy and World Health: The Rockefeller Foundation and the League of Nations Health Organisation,’ *Minerva* 35(1997): 269-281, 270.
- <sup>15</sup> Dubin, ‘League of Nations,’ 72.
- <sup>16</sup> Socrates Litsios, ‘Selskar Gunn and China: The Rockefeller Foundation’s Other Approach to Public Health,’ *Bulletin of the History of Medicine* 79, no.2 (2005): 295-318,299.
- <sup>17</sup> League of Nations, *Report of the Intergovernmental Conference of Far Eastern Countries on Rural Hygiene Held at Bandung (Java) from August 3-13, 1937* (Geneva: League of Nations Series III Health, 1937), 42.
- <sup>18</sup> League of Nations, *Report of the Intergovernmental Conference*, 45.
- <sup>19</sup> League of Nations, *Report of the Intergovernmental Conference*, 43.
- <sup>20</sup> Peter Boomgaard, ‘The Development of Colonial Healthcare in Java: An Exploratory Introduction,’ *Bijdragen tot de Taal-, Land-en Volkenkunde* 149, no.1 (1993):77-93, 86.
- <sup>21</sup> Boomgaard, ‘The Development of Colonial Healthcare in Java: An Exploratory Introduction,’ 85. See also Hans Pols, ‘European Botanists and Physicians, Indigenous Herbal Medicine in the Dutch East Indies, and Colonial Networks of Mediation,’ *East Asian Science, Technology and Society: An International Journal* 3, no.2-3 (2009): 173 – 208.
- <sup>22</sup> Netherlands Indies Medical and Sanitation Service, *Control of Endemic Diseases in the Netherlands Indies* (Weltevreden: Landsdrukkerij, 1929).
- <sup>23</sup> Susan Abeyasekare, ‘Health as a Nationalist Issue in Colonial Indonesia,’ in *Nineteenth and Twentieth Century Indonesia: Essays in Honour of Professor J.D. Legge*, eds., David P Chandler and M.C. Ricklefs (Clayton: Monash University Press, 1986), 4.
- <sup>24</sup> I use the term ‘nationalist’ as an adjective to describe the Indonesian critique of the colonial health policy that would later serve as the health vision of the post independent Indonesian nation of the Soekarno era.

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- <sup>25</sup> *Redevoeringen van de Leden van den Volksraad de Heeren: Abdul Firman Gelar Maharadja Soangkoepoen en Abdul Rasjid Gelar Maharadja Mahkota Soangkoepoen Over het Zittingsjaar: 1936-1937* (Buitenzorg: Buitenzorgsche Drukkerij, 1938), 156-60.
- <sup>26</sup> Terence Hull, ‘Conflict and Collaboration in Public Health: The Rockefeller Foundation and the Dutch Colonial Government in Indonesia,’ in *Public Health in the Asia Pacific: Historical and Comparative Perspectives*, eds., Milton J. Lewis and Kerrie L. Macpherson (London: Routledge, 2008), 140.
- <sup>27</sup> J.L. Hydrick, *Intensive Hygiene Work in the Netherlands East Indies* (New York: Netherlands and Netherlands East Indies Councils, Institute of Pacific Relations, 1942), 14-17.
- <sup>28</sup> Poorwo Soedarmo, ‘Verloskundig Vraagstuk,’ *Het Eerste Congres van de Vereeniging van Indonesische Geneeskundigen Gehouden op 24, 25, 26 Desember 1937 te Semarang* [First Congress of Association of Indonesian Physicians held from 24-26 December 1937 at Semarang] (Batavia: Kenanga, 1938). In the regency of Cianjur, located in the province of West Java over a two year period from 1935-37, maternal mortality was estimated at 10.5% whereas the corresponding figure for the Netherlands was only 2.5%. Placental bleeding during childbirth was a leading cause of maternal mortality in the Dutch East Indies during the 1930s. In contrast to Poorwo Soedarmo, who regarded the birthing practices of the *doekoen bajis* as ‘unscientific,’ Raden Mochtar argued that women of the rural areas confided in *doekoen bajis* who were competent to render assistance during childbirth while referring complications to the midwives. ‘Debat R Mochtar, Gouvernements Indisch Arts bij de Afdeeling Medisch Arts Propaganda,’ in *Redevoeringen*.
- <sup>29</sup> Hull, ‘Conflict and Collaboration,’ 148-49.
- <sup>30</sup> *Ibid.*, 148-149.
- <sup>31</sup> Hull, ‘Conflict and Collaboration,’ 149.
- <sup>32</sup> Abeysekare, ‘Health as a Nationalist Issue,’ 10.
- <sup>33</sup> Benedict Anderson, *Java in a Time of Revolution: Occupation and Resistance, 1944-1946* (Jakarta: Equinox, 2006), 32.
- <sup>34</sup> ‘Mempertegoh Djasmani,’ *Berita Katabiban* (1944):58-59, 58.
- <sup>35</sup> *Sejarah Kesehatan Nasional Indonesia*, vol 1 (Jakarta: Departemen Kesehatan, 1978), 71.
- <sup>36</sup> Dr. T. Sato, ‘Pendirian Djawa Sehat dan ketetapan Hati Pendoedoek,’ *Pandji Poestaka* 4&5(1944): 134-35.
- <sup>37</sup> *Ibid.*, 134-35.
- <sup>38</sup> ‘Persidangan Oemoem Izi Hookoo Kai,’ *Berita Katabiban* (1944): 43-52, 46.
- <sup>39</sup> Johannes Leimena, *Brief Report on Public Health Activities* (Djakarta: Ministry of Health, 1949), 10-11.
- <sup>40</sup> ‘Surat dari Kementerian Kesehatan di Yogyakarta 6 Desember 1948, No 958/30/II, Arsip Nasional Republik Indonesia (ANRI) Kementerian Dalam Negeri (1945-49), Arsip No. 21.
- <sup>41</sup> Raden Mochtar, *Health Education and Rural Health Problems in Indonesia* (Djakarta: Ministry of Health Division of Health Hygiene and Organisation, 1953).
- <sup>42</sup> C.E.A. Winslow, *The Cost of Sickness and the Price of Health* (Geneva: WHO, 1951), 14.
- <sup>43</sup> Winslow, *The Cost of Sickness*, 31.
- <sup>44</sup> WHO, *The First Ten Years of the World Health Organization: 1948-1957* (Geneva: WHO, 1968).
- <sup>45</sup> Cicely Williams, ‘Social Medicine in Developing Countries,’ *The Lancet* 271, no.7026 (1958): 863-66, 863.
- <sup>46</sup> Soekarno, ‘Amanat Presiden Soekarno Pada Hari Ulang Tahun Proklamasi Kemerdekaan Indonesia: 17 Agustus 1955 di Djakarta,’ *Dibawah Bendera Revolusi: Djilid II* (Djakarta: Dibawah Bendera Revolusi, 1965), 196.
- <sup>47</sup> Soekarno, ‘Hari Ulang Tahun Proklamasi Kemerdekaan Indonesia: 17 Agustus 1955,’ 203.
- <sup>48</sup> I will discuss the details of *pembangunan* while assessing Soekarno’s ‘calculated’ approach to the family planning program.
- <sup>49</sup> Seno Sastroamidjojo, ‘Ilmu Kedokteran Sosial: Kesulitan Ilmu Kedokteran Sosial Khusus di Indonesia,’ *Madjalah Kedokteran Indonesia* 6, no.1 (1956): 14-32.
- <sup>50</sup> Sastroamidjojo, ‘Ilmu Kedokteran Sosial,’ 17.
- <sup>51</sup> Sastroamidjojo, ‘Ilmu Kedokteran Sosial,’ 18.
- <sup>52</sup> Raden Mochtar, *Health Education and Rural Health Problems in Indonesia* (Djakarta: Ministry of Health Division of Health Hygiene and Organization, 1953), 13-14.

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- <sup>53</sup> *Ibid.*, 16.
- <sup>54</sup> Mochtar, *Health Education*, 17.
- <sup>55</sup> Mochtar, *Health Education*, 22.
- <sup>56</sup> Raden Mochtar, ‘Perkembangan Sosial Dalam Lapangan Kesehatan,’ *Madjalah Kedokteran Indonesia* 7, no.5 (1957): 140-54,141.
- <sup>57</sup> Mochtar, ‘Perkembangan Sosial,’ 152.
- <sup>58</sup> Raden Mochtar, ‘Organisasi Masjarakat Dalam Lapangan Kesehatan,’ *Madjalah Kedokteran Indonesia* 7, no. 7(1957): 209-14, 209.
- <sup>59</sup> Raden Mochtar, ‘Pendidikan Kesehatan Kepada Rakjat,’ *Madjalah Kedokteran Indonesia* 7, no.11(1957): 341-48, 341.
- <sup>60</sup> Raden Mochtar, ‘ Pendidikan,’ 344.
- <sup>61</sup> Mochtar, ‘ Pendidikan,’ 346.
- <sup>62</sup> *Ibid.*, 346.
- <sup>63</sup> Johannes Leimena, *Public Health in Indonesia: Problems and Planning* (Djakarta: G.C.T Van Dorp & Co., 1956), 10.
- <sup>64</sup> Johannes Leimena, *Public Health in Indonesia*, 9.
- <sup>65</sup> *Ibid.*, 9.
- <sup>66</sup> Johannes Leimena, *The Upbuilding of Public Health in Indonesia* (Djakarta: Pertjetakan Negara, 1952).
- <sup>67</sup> Leimena, *The Upbuilding of Public Health in Indonesia*, 34.
- <sup>68</sup> Refer to chapter 3 for a comprehensive discussion of the implementation of Leimena’s ideas.
- <sup>69</sup> Johannes Leimena, ‘Laporan Perdjalan WHO Fellowship, 4 Oktober –Desember 24 1953,’ 30 Mei 1954, Arsip Nasional Republic Indonesia (henceforth ANRI) 657, *Kabinet Presiden*.
- <sup>70</sup> *Ibid.*
- <sup>71</sup> Leimena, ‘Laporan Perdjalan WHO Fellowship.’
- <sup>72</sup> Leimena, ‘Laporan Perdjalan WHO Fellowship.’
- <sup>73</sup> Leimena, ‘Laporan Perdjalan WHO Fellowship.’
- <sup>74</sup> Leimena, *Public Health in Indonesia*, 13.
- <sup>75</sup> Johannes Leimena, ‘Bahan Makanan Dalam Rangka Operasi Makmur,’ *Berita Kementerian Kesehatan Republik Indonesia* 8, no.1 (1959):5-12, 5.
- <sup>76</sup> Leimena, ‘Bahan Makanan,’ 6.
- <sup>77</sup> Vivekananda Leimena, interview by author, Jakarta, 17 July 2010.
- <sup>78</sup> Poorwo Soedarmo, *Perbaikan Makanan Rakjat di Indonesia* (Jakarta: Pertjetakan Negara, 1956).
- <sup>79</sup> ‘Indolensi Bangsa Indonesia,’ 3 July 1951, *Trompet Masjarakat*.
- <sup>80</sup> Poorwo Soedarmo, *Gizi dan Saya* (Jakarta: Fakultas Kedokteran Universitas Indonesia, 1995), 35.
- <sup>81</sup> Poorwo Soedarmo, ‘Food and Nutrition Policies in Indonesia,’ *Paediatrica Indonesiana* 4, no.3 (1964): 67-78.
- <sup>82</sup> ‘Indolensi Bangsa Indonesia,’ *Trompet Masjarakat*.
- <sup>83</sup> *Ibid.*
- <sup>84</sup> Poorwo Soedarmo, *Gizi dan Saya*, 91. I will be critically evaluating the implementation of the *empat sehat lima sempurna* slogan in chapter 6.
- <sup>85</sup> Poorwo Soedarmo, *Gizi dan Saya*, 94-95.
- <sup>86</sup> Poorwo Soedarmo, *Perbaikan Makanan Rakjat*, 10.
- <sup>87</sup> M. Soetopo, *A Brief Survey of the Syphilis Problem in Java* (Surabaja: [Publisher?], 1949), 16.
- <sup>88</sup> Indra Gayatri, *Prof. M. Soetopo: Hasil Karya dan Pengabdianya* ( Jakarta: Departemen Pendidikan dan Kebudayaan, 1983), 34-35.
- <sup>89</sup> M. Soetopo, *Soal Penjakit Kelamin dan Pelatjuran didalam Kota Besar: Tjeramah Pada World Health Day, 7 April 1953* (Surabaja: Venereal Disease Institute Indonesia, 1953), 15.
- <sup>90</sup> Soetopo, *Soal Penjakit Kelamin*, 15-19.
- <sup>91</sup> ‘Rapat ke 69: Babak ke-3,’ 16 Agustus 1950, *Ichtisar Parlemen*.

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<sup>92</sup> ‘Presiden Soekarno Mengupas Soal Beras: Revolusi Pembangunan dan Revolusi Diatas Lapangan Persediaan Makanan Rakjat,’ 28 April 1952, *Keng Po*.

<sup>93</sup> *Ibid.*

<sup>94</sup> *Ibid.*

<sup>95</sup> Rapat 30, 15 Mei 1952, ‘Pemandangan Umum Para Anggota Babak I Atas Keterangan Pemerintah Mengenai Program Kabinet Wilopo,’ *Risalah Perundingan Dewan Perwakilan Rakjat*.

<sup>96</sup> Rapat 33, 16 Mei 1952, *Risalah Perundingan Dewan Perwakilan Rakjat*.

<sup>97</sup> *Ibid.*

<sup>98</sup> For details pertaining to how President Soekarno conceptualized Indonesia’s food problem, see the *Keng Po* article ‘Presiden Soekarno Mengupas Soal Beras.’

<sup>99</sup> Presiden Republik Indonesia, ‘Undang Undang Republik Indonesia Nomor 18, 1953 tentang Penunjukan Rumah Sakit Rumah Sakit Partikulir yang Merawat Orang Orang Miskin dan Orang Orang yang Kurang Mampu,’ *Lembaran Negara Republik Indonesia Nomor 48*.

<sup>100</sup> Rapat 76, 22 Mei 1953, *Risalah Perundingan Dewan Perwakilan Rakjat*.

<sup>101</sup> *Ibid.*

<sup>102</sup> *Ibid.*

<sup>103</sup> Rapat 74, ‘Tahun 1958: Sidang ke-II,’ 20 Juni 1958, *Ichtilar Parlemen*.

<sup>104</sup> Between 1930 and 1954, the world population grew from approximately 2 billion to 2.4 billion. C.E.A Winslow, ‘Population Controversy: Productive Potential of Man, New Frontiers Refute Starvation Era Fears,’ *Times of Indonesia*, 8 April 1953. See also ‘Tjukuplah Makanan Untuk Dunia?’, *Kedaulatan Rakjat*, 2 July 1954.

<sup>105</sup> Winslow, ‘Population Controversy’.

<sup>106</sup> Hull and Hull, ‘From Family Planning to Reproductive Health Care,’ 4.

<sup>107</sup> Hull and Hull, ‘From Family Planning to Reproductive Health Care,’ 3.

<sup>108</sup> Hull and Hull, ‘From Family Planning to Reproductive Health Care,’ 12.

<sup>109</sup> *Ibid.*, 12.

<sup>110</sup> Hull and Hull, ‘From Family Planning to Reproductive Health Care,’ 13.

<sup>111</sup> Biro Perantjang Negara, ‘Appendix to Bill Governing the First Five Year Development Plan: 1956-60,’ in *Broad Outline of the First Five Year Development Plan*, ed. Biro Perantjang Negara (Jakarta: State Planning Bureau, n.d.).

<sup>112</sup> *Ibid.*

<sup>113</sup> Soekarno, ‘Hari Ulang Tahun Proklamasi Kemerdekaan Indonesia, 17 Agustus 1955,’ 229. See also M. Sardjito, *Bangsa Indonesia Seharusnya Dikemudian Hari Mendjadi Bangsa Jang Besar: Tjeramah Diutjapkan Para Mahasiswa Baru Pada Bulan September 1956* (Yogyakarta: Universitas Gadjah Mada, 1956). In his lecture, Sardjito asserted that five factors which contributed to national greatness (*bangsa besar*) included population, natural resources, education, a skilled workforce and adherence to *Pantjasila* principles.

<sup>114</sup> Soekarno, ‘Amanat Presiden Soekarno,’ 229.

<sup>115</sup> Adrian Vickers and Dwi Novi Djenar, e-mail message to author, 2 August 2011.

<sup>116</sup> ‘Rapat 127, Sidang 3,’ 3 September 1958, *Risalah Perundingan Dewan Perwakilan Rakjat*.

<sup>117</sup> *Ibid.*

<sup>118</sup> Dokter Hadji Ali Akbar, ‘Birth Control di Indonesia,’ *Madjalah Kedokteran Indonesia* 4, no. 9 (1959): 198-215.

<sup>119</sup> Akbar, ‘Birth Control,’ *Madjalah Kedokteran*, 201.

<sup>120</sup> *Ibid.*

<sup>121</sup> ‘Bahaja Besar Jang Mengantjam Asia,’ *Pos Indonesia*, 5 Juli 1959.

<sup>122</sup> *Ibid.*

<sup>123</sup> Hull and Hull, ‘From Family Planning to Reproductive Health Care,’ 11-13.

## **CHAPTER THREE**

### **THE BANDUNG PLAN FOR HEALTH**

In 1949, Indonesia inherited a health infrastructure that had been devastated by eight years of warfare—the Japanese occupation from 1942-45 and the Revolutionary period, 1945-49. During the Japanese occupation, the Central Office of Public Health that was established during the era of Dutch colonialism closed and for this reason public health activities lacked any form of coordination.<sup>1</sup> Warfare had disrupted the food supply, resulting in widespread malnutrition. With the return of the Dutch and two subsequent military actions against the revolutionaries (1947-48) the Indonesian Ministry of Health, which had been established in 1945, was faced with the dual challenges of rehabilitating war casualties and coping with the re-emergence of communicable diseases, such as smallpox. By 1950, the approximately 300-400 Dutch doctors who had been working in Indonesia, departed for the Netherlands.<sup>2</sup> As a result, only 1,200 doctors were left in Indonesia to serve a population of over 72 million people, roughly translating to one doctor per 60,000 people, mostly concentrated in urban areas such as Jakarta, Surabaya and Bandung.<sup>3</sup> This was indeed a dire situation. In 1950, the Ministry of Health was faced with the challenge of controlling infectious diseases: this required employing preventive and curative measures, emphasis on health education, increasing the supply of hospital beds, education of health personnel, distribution of pharmaceuticals throughout Indonesia, laboratory research to test the efficacy of vaccines, industrial hygiene, health planning for Indonesia through legislation that would ensure equitable distribution of physicians throughout the archipelago, and improving the nutritional status of the population. During the early 1950s, the Ministry of Health worked in cooperation with the WHO, FAO (The Food and Agricultural Organisation), UNICEF, and ICA (International Cooperation Administration of the US government) to achieve the realisation of its immediate working program.

The health policy of the Soekarno era bore the imprint of Johannes Leimena, who was successively Minister of Health in the cabinets of Amir Sjarifudin (3 July 1947 to 11 November 1947), Mohammad Hatta (29 January 1948 to 4 August 1949), Natsir (6 September 1950 to 20

March 1951), Soekiman (27 April 1951 to 3 April 1952) , Wilopo (3 April 1952 to 30 July 1953), and Burnahudin Harahap (12 August 1955 to 24 March 1956) during the era of parliamentary democracy in Indonesia (1947 to 1956), except during a brief interlude from 1953 to 1955 when Lie Kiat Teng served in this position.<sup>4</sup> Leimena was the architect of the ‘Bandung Plan for Health’ which incorporated the integration of preventive and curative public health measures, medical ethics, rehabilitation of the disabled, maternal and child health, raising the nutritional levels of the population, rural health development, and education of paramedical personnel.<sup>5</sup> His aim was to implement this plan across Indonesia.

Leimena’s political philosophy, which eschewed narrow regionalism based on ethnic loyalties, sought to reconcile Indonesia’s diverse religious beliefs with nation-building. His internationalist approach aimed to carve out a prominent niche for Indonesia in international health through membership of the WHO and accession to the Southeast Asia Regional Office of the WHO (headquartered in New Delhi). He sought to cement closer cooperation with India as both countries shared an antipathy towards imperialism.<sup>6</sup> Leimena’s health policy, which was closely aligned to the policy recommendations on public health of the WHO, sought to secure international funding for pilot health projects while cautiously balancing Indonesia’s hard-won political sovereignty and nationalist rhetoric that espoused the notion of *berdiri di atas kaki sendiri* (standing on one’s own feet) and viewed foreign aid as an encroachment on Indonesian sovereignty.

### **Leimena’s Political Philosophy**

Leimena’s political philosophy was influenced by a fusion of his international outlook, Christianity, and nationalist ideology: it decisively shaped his thinking on health. As an Amboinese Christian, he embodied the ideals of unity in diversity of the Indonesian archipelago and inclusive citizenship.<sup>7</sup> He argued that in nations like Indonesia—where the majority of the population was non-Christian—the Church should associate itself with the Indonesian people and familiarise itself with their primary needs i.e., health, agriculture, education and labour.<sup>8</sup> An idealist in international relations, Leimena noted that, during the second half of the twentieth

century, the world had shrunk in size due to advancements in science and technology.<sup>9</sup> He used biblical metaphors to illustrate the common challenges faced by the international community during the Cold War:

The aftermath of two world wars, the tensions incident to the present cold war and the atomic disaster have produced a profound popular yearning for peace. This desire is not limited to the great powers. It is especially characteristic of the newly independent nations. Starting late in the technological race, the young nations recognise that only if there is an extended period of world peace can they develop their internal economies so as to supply their peoples with an abundant living. They must raise the national standards of living by improving social and economic conditions. They must provide relief from hunger, poverty and preventable disease. Thus these young national Davids are pitting themselves against four Goliaths: Ignorance, poverty, disease, and unemployment. This sling-shot is effective thought and planning, the stone with which they must slay the enemy is hard work.<sup>10</sup>

Leimena viewed the role of the national leadership as battling social challenges such as ignorance, disease, poverty and unemployment, as a David facing Goliath in order to illustrate the magnitude of the social questions that remained unaddressed during the Cold War of the 1950s. As well, he expressed certain optimism that these challenges were surmountable with human ingenuity.

Leimena was a firm believer in the *Pantjasila* ideology, the *dasar negara* (philosophical foundation) of the Indonesian nation, which was promulgated in 1945 by Soekarno, Hatta and Raden Soepomo. The word *Pantjasila* is derived from the Sanskrit words *pantja* (five) and *sila* (principles). The five principles were: *kebangsaan Indonesia* (Indonesian national unity), *internationalisme* (internationalism, or humanitarianism), *demokrasi* (democracy) guided by consensus, *kesedjahteraan social* (social justice), and *ketuhanan jang Maha Esa* (the belief in one supreme God). But because Soekarno's description of the *Pantjasila* was not fully explicit, these principles were interpreted differently across Indonesia.<sup>11</sup> Within the *Pantjasila*, the principle of national unity was incompatible with internationalism, particularly in the context of anti-Chinese sentiments in Indonesian society in the 1950s. Indonesians tended to define nationalism in an exclusionary manner that alienated certain ethnic groups.<sup>12</sup> Leimena provided a holistic interpretation of the *Pantjasila* that sought to balance conflicting principles such as

nationalism and internationalism by subordinating provincial and religious interests to the greater common good. He was convinced that Indonesian nationalism should be alive in all of Indonesia's religious denominations, including the Christian.<sup>13</sup> As a doctor and Minister of Health, he opined that corruption and ignorance were the social diseases that retarded development. In the 1950s, Leimena observed that widespread poverty and illiteracy had the potential to serve as a breeding ground of communism.<sup>14</sup> He had foreseen that communism would lead to the erosion of social values. As a means of preventing the growth of the communist ideology, Leimena advocated rural development projects that ensured social security for vulnerable groups, particularly wage earners.<sup>15</sup> He was a firm believer in the Universal Declaration of Human Rights (UDHR) and believed that human rights incorporated religious freedom.<sup>16</sup> As regards fulfilling the socio-economic rights of all Indonesians, Leimena stressed that it was important to satisfy the basic needs of the population, e.g., food, education, clothing, and health.

In Leimena's thought, the development of public health in the Republic of Indonesia during the period from 1945 to 1955 was imbued with the spirit of struggle born during the revolutionary period (1945-1949) when the nation was faced with the challenge of overcoming its shortage of doctors, particularly when they were facing the Dutch armies.<sup>17</sup> During this time, control of malaria and yaws was hampered due to a shortage of drugs. Despite setbacks suffered by the republican government during the Dutch military action, the Ministry of Health instituted maternal and child health activities in Yogyakarta. With the transfer of sovereignty to the Indonesian Republic in December 1949, the government implemented an emergency program aiming to tackle the acute shortage of physicians and other medical personnel needed for implementing control measures for infectious diseases, i.e. smallpox, and endemic diseases including malaria, yaws, tuberculosis and leprosy. In addition, it strongly advocated public health education, orienting health personnel to deal with problems in the rural areas, facilitating the development of medical research in Indonesia, the expansion of maternal and child health activities throughout Indonesia, the introduction of rural health services in Bandung, Magelang, and Yogyakarta, and improving the nutritional status of the population.<sup>18</sup> Leimena thus viewed the

public health activities of the Soekarno era through a teleological narrative of progress which signified that the Indonesians showed resilience and a capability to overcome hardship under the banner of the Red-White flag.

As a statesman, Leimena had a strong awareness of the necessity to compensate for Indonesia's inability to fulfil the needs of its ever-growing population by enlisting the technical assistance of the United Nations' specialised agencies in the forms of medical supplies and equipment, overseas study fellowships for Indonesian physicians, and health surveys. Such assistance was, however, minuscule in contrast to the ever growing size of the Indonesian population. Leimena was also aware that international developmental aid administered by developed countries, with its underlying terms and conditions, would compromise the hard-won independence of newly-decolonised nations of Asia including Indonesia.<sup>19</sup> He accordingly recommended that the developed countries allocate overseas aid to newly-independent nations on an unconditional basis. His appeal was to the strong sense of social responsibility between nations that characterised the post-World War II international order:

In this ever shrinking world, one diseased spot can contaminate the whole body. Unrest in a single locality may be exploited to disturb the peace of the world. In the field of health, we as nations cannot stand alone. Mosquitos and bacteria are not respecters of national boundaries. National legislation and international reactions affect each other. We in South-east Asia thus welcome international collaboration and cooperation through United Nations specialised agencies.<sup>20</sup>

Foreign aid was a sensitive issue in Indonesian politics. This may be why Soekarno advocated the ideal of self-sufficiency in Indonesian economic matters with the proclamation of *berdiri di atas kaki sendiri* (standing on one's own feet in economic affairs). International developmental aid projects were used by the Indonesians to meet their own political and technological agendas, although they were sometimes at odds with those of the US.<sup>21</sup>

In his welcoming address to the delegates of the Eighth Annual Session of the SEARO convened in Bandung in 1955, Leimena expressed his optimism that international peace was achievable through joint collaboration between the various national governments and UN

agencies. He suggested that the technological developments of the twentieth century had provided a favourable opportunity to humankind to better human conditions:

We live in a world full of paradoxes. One seeks to unify the world; the other seeks to divide them. Science has, on one hand, provided him with instruments conducive to prosperity and the improvement of life. On one hand, mankind lives amidst fear and fury, facing possibilities of progress and prosperity on the other. These paradoxes may carry a higher dialectic, that is any difficulty being faced or to be faced constitutes a “challenge” to man to achieve their goal as God’s creatures.<sup>22</sup>

Leimena compared solving public health problems to scaling the summit of Mount Everest.<sup>23</sup> The Eighth Annual Session of the SEARO coincided with the Asia-Africa Conference in Bandung. Realising that the socio-economic and political freedom of the citizens of the newly-decolonised nations of Africa and Asia was a major theme of this conference, Leimena alluded to it in his welcoming speech.

Leimena stated that the ecological concept of disease influenced public health ideas.<sup>24</sup> Disease resulted from the interaction of a triad consisting of man as a primary concern, an agent of the disease, and the interaction between environmental, physical, social, and environmental factors. According to his analysis, the main problems associated with rural health in Southeast Asia included environmental sanitation, public health education, and the adequate training of public health personnel.<sup>25</sup> Leimena perceived a correlation between health, happiness, and prosperity with health forming the base of the triangle.<sup>26</sup>

Leimena creatively appropriated international ideas of public health into his health philosophy which were crystallised in his Bandung Plan in 1951. This plan was extended throughout Indonesia in 1954 and renamed the ‘Leimena Plan,’ although it continued to be referred to in WHO publications by its original name. He thought that disease and poverty constituted a vicious circle.<sup>27</sup> A sick person became poor; then, poverty contributed to the worsening of disease which in turn entailed further poverty. Health activities were a means to improve the population’s socio-economic conditions. Leimena was influenced by C.E.A. Winslow (a WHO consultant and one of the leading figures in international public health) who

argued that public health programs could not be planned in a vacuum but should form a vital part of a broader program of social and economic development.<sup>28</sup>

Leimena's personal political philosophy reconciled his Ambonese Christian identity with Indonesian nationalism. His focus was upon carving out a significant niche for Indonesia in international health. As a pragmatist, Leimena observed the shortcomings of the Indonesian state's attempts to meet the health needs of the population. In response, he sought to enlist the cooperation of several UN agencies and the ICA to compensate for these shortcomings. The influx of foreign aid to fund Indonesian health projects was viewed with scepticism within Indonesian policy circles, in particular by Soekarno, as compromising Indonesia's hard won political sovereignty and reinforcing the international aid agencies' agendas.

### **The Leimena Plan**

In 1951, Leimena envisioned a health system that would increase the supply of skilled medical personnel and correct the inequitable distribution of physicians which favoured the country's urban centres such as Jakarta, Surabaya and Bandung. His aim was for future health services to integrate preventive and curative health efforts. But, such a strategy required addressing the non-medical determinants of health including public health education and sanitation. Leimena inferred that successes in public health were contingent to raising the standard of living. His Bandung Plan, a pilot project initiated by the Ministry of Health in 1951 in the regency of Bandung which already had a well-functioning health system prior to World War II.<sup>29</sup> A central principle of the Plan was community participation in preventive health measures centred on the *desa* (village). The Plan was based on two further principles: the integration of preventive and curative public health, and establishing a balance between rural and urban health facilities.

The Bandung Plan, which established a referral system for the provision of curative care beginning at the sub-district level, envisioned the establishment of auxiliary hospitals at the *kewedanaan* (under the jurisdiction of regency)<sup>30</sup> level and dispensaries at the *kecamatan* (sub-district) level. The regency hospital would serve as the apex of the referral system and complex

cases from the dispensaries and auxiliary hospitals would be referred to the regency hospitals located in the headquarters of the regency. The Bandung Plan devolved the administration of preventive health measures to the village. The *djuru hygiene* (the hygiene assistant) would work in close cooperation with the village officials during the implementation of health education, and the sanitation of houses and markets.<sup>31</sup> As the lowest self-governing unit of administration in Indonesia is the *desa*, Leimena envisioned mobilising the population on the basis of *gotong rojong* (mutual cooperation) to facilitate the operation of a *desa* hygiene service. The staff would be chosen by the villagers themselves. The *desa* hygiene nurse was the head and would undertake intensive hygiene education of the villagers. The curative care in a *desa* would be administered by a *desa* polyclinic. The *dokter kabupaten* (regency doctor) was in charge of curative and preventive health measures undertaken within the various *desas* and *kecamatan*s of the regency.

Leimena incorporated the ‘health protection to local areas’ methodology discussed at the Fifth World Health Assembly (1952) into the Bandung Plan.<sup>32</sup> The WHO viewed ‘health protection’ as the wellspring of all activities for the promotion of health, happiness, and the well-being of the people.<sup>33</sup> The World Health Assembly noted that several member states of the WHO saw the need to integrate both the preventive and the curative elements of a health program, but that such emphasis would vary according to the level of development of the local area. In defining the scope of rural health services, the WHO recommended that such services should incorporate the needs of the individual at different stages of development, beginning with pre-natal care, maternal and child health, school health, industrial health, sanitation, and health education. Leimena’s publication *Some Aspects of Health Protection to Local Areas in Indonesia* (1953) recommended that the implementation of ‘health protection’ in an Indonesian context would have to consider the large variations in the socio-economic conditions of the population across the various islands constituting the archipelago.<sup>34</sup> Therefore designing a one-fits-all plan of health for the rural and urban areas of Indonesia was neither feasible nor practicable.

During the period of extending the scope of the original Bandung Plan (Leimena Plan) throughout Indonesia in 1954, the Ministry of Health established health demonstration projects

in each of the ten provinces: namely, South Sumatra, West Sumatra, North Sumatra, Kalimantan, Sulawesi, Maluku, Nusa Tenggara, East Java, Central Java and Jakarta.<sup>35</sup> The criteria for the selection of the model regencies where the health demonstration projects were to be initiated were based both on the financial stability of the regency and the degree of participation of the community in public health activities. In each of these demonstration projects, preventive and curative healthcare were integrated in the interests of minimising operational costs.

The Leimena Plan proved somewhat overambitious in its vision of extending the scope of the original Bandung Plan throughout Indonesia as it accorded greater autonomy to the regencies in executing health plans for the villages and sub-districts under its jurisdiction. Financing the Plan proved a thorny issue between the central, provincial, district, and village administrations as not all regencies were financially able to support the integration of preventive and curative health activities.

### **Implementation of Leimena's Plans**

Leimena's ideas regarding health were implemented at a time when Indonesia was faced with the challenge of rehabilitating its fledgling economy after the Japanese occupation and its armed struggle against the Dutch. In 1950, the government recorded a budgetary deficit of approximately 1.7 billion rupiahs (approximately US\$400 million: the official exchange rate was fixed at 3.8 rupiahs to one dollar in the early 1950s).<sup>36</sup> In 1950, the Natsir cabinet, after consultation with Leimena, conceptualised an Eleven Point Program, a precursor to the Bandung Plan and a stopgap measure that intended to increase the supply of skilled medical personnel, construction of rural health units and public health education. As Minister of Health, Leimena was attentive to: first, ensure an equitable distribution of physicians—throughout the various islands that constituted the Indonesian archipelago—as most of them were concentrated in the urban areas of the country; and second, regulate private medical practice.

After being successfully implemented in the headquarters of the Bandung regency, viz. the city of Bandung, the Bandung Plan halved the prevalence of the city's infant mortality rate

during the period from 1951 to 1956. This came as no surprise as the city had an excellent health infrastructure dating back to the late colonial era, that is, to the 1930s. In sharp contrast, infant mortality figures for the Bandung regency did not show any decline due to the lack of doctors, most of whom were concentrated in the urban areas and were unavailable to attend medical emergencies in the countryside. Leimena sought to correct the disequilibrium in the Indonesian health system by introducing laws regulating the rational distribution of doctors, and licensing private practice. But, legislative measures did not address the poor graduation rate from Indonesia's medical schools, estimated at twenty-eight or thirty out of a few thousand from the faculties of medicine at Jakarta, Surabaya, and Yogyakarta, and none from the recently established medical faculties on the Outer Islands, e.g., Bukittinggi or Medan. These low graduation rates did not even succeed in keeping pace with the nation's growing population, estimated at 1.7 per cent per annum in the 1950s.

Faith in a brighter future, together with a nationalist zeal to ameliorate the poor health conditions of the masses, inspired some among the country's youth to pursue a medical profession in the early 1950s.<sup>37</sup> To quote one nursing student from Central Java who was interviewed by the *Dewan Perwakilan Rakjat Committee on Health* (1951): 'Sir, I am indeed greatly privileged that I will become a nurse soon so that I may use my abilities in the service of the Indonesian nation'.<sup>38</sup> However, the nationalist aspirations of several young nursing graduates after four years of medical training amounted to little more than an incomplete dream as monthly remunerations were not commensurate with professional responsibilities. This discrepancy ultimately dampened their enthusiasm to work in public health in the rural areas. Smallpox vaccinators, for example, received a monthly salary of 15 rupiahs, which barely covered meals for three days.<sup>39</sup> In Central and Western Java, several regencies were bereft of regency physicians. Many auxiliary hospitals at the regency level, which lacked the support of a regency physician, were occasionally led by the *mantri* who often went beyond the call of duty. Midwives who had a private practice earned approximately 75 rupiahs per delivery whereas those employed by the BKIA (*Balai Kesedjahteraan Ibu dan Anak*) earned approximately 90

rupiahs per month.<sup>40</sup> Thus, private medical practice in the cities was in fact far more lucrative for medical professionals in Indonesia during the 1950s.

*Dewan Perwakilan Rakjat* delegates from various Indonesian provinces were instrumental in sensitising the Ministry of Health vis-a-vis the disequilibrium of public health resulting from the acute shortage of skilled medical personnel and the need to formulate a law related to regulating private medical practice. The inequitable distribution of medical personnel across the archipelago had occurred within disparate socio-political and historical contexts. The province of Kalimantan recorded the highest maternal and infant mortality rate in the Indonesian archipelago in 1950. Out of ten or fifteen children born to a couple, only two or three would survive.<sup>41</sup> At the time, Kalimantan's health centres were poorly utilised, with fewer than twenty patient visits recorded per day.<sup>42</sup> The distances between villages, the sub-district and the regency/provincial headquarters were huge. In 1951, the Indonesian government formulated laws stipulating that newly-graduated doctors had to serve outside the large urban centres in order to achieve an equitable distribution of physicians throughout the archipelago. In practice, people in the rural areas had never seen a doctor since the Japanese occupation (1942), especially in Sumatra as many of the Dutch plantation physicians left for the Netherlands during the Dutch military action. In the residency of Bengkulu, which had a population of 300,000, two doctors served an area of approximately 500 square kilometres.<sup>43</sup> Likewise, people living in the rural areas of South Sulawesi were rarely seen by a doctor. Under Indonesian Law 22 of 1948, which granted provincial autonomy, the organisation of public health and the payment of staff salaries were devolved to the provinces. In South Sulawesi, smallpox vaccinators were paid a pittance of 0.50 rupiahs per month.<sup>44</sup> It was ultimately due to the low salaries paid to public health personnel that Leimena's vision of integrating preventive with curative health could not be realised in South Sulawesi. The rugged topography of the area, along with inadequate transportation, prevented doctors from delivering healthcare to remote communities. Emergency hospitals in the regencies of Jeneponto, Pangkajene and Pare Pare, which were managed by the local government, lacked financial backing from the Ministry of Health.<sup>45</sup> The sick were regularly pushed out of overcrowded hospitals. Apart from an acute shortage of doctors during

the 1950s, Indonesia lacked a strong supply system that would ensure timely and adequate supply of drugs needed for the control of endemic diseases. In Java, bottlenecks existed in the timely supply of medicines to dispensaries. In Kalimantan, health centres received expired drugs. The streptomycin required for the treatment of tuberculosis was not available in many health centres, particularly in Java and Kalimantan, and out of pocket payments for treatment were reported.<sup>46</sup>

In 1951, the *Dewan Perwakilan Rakjat*, supported by initiative from the Sukiman cabinet, enacted three laws related to health that would be hotly contested:<sup>47</sup>

- a) *Undang Undang Nomor 8, Tahun 1951, Tentang Penangguhan Pemberian Surat Idzin Kepada Dokter dan Dokter Gigi* (Law No 8, 1951, Relating to Licensing of Doctors and Dentists)
- b) *Undang Undang Nomor 9, Tahun 1951, Tentang Pembagian Tenaga Dokter, Dokter Gigi dan Bidan Secara Rasionil* (Law No 9, 1951, Relating to Rational Distribution of Doctors, Dentists, and Midwives)
- c) *Undang Undang Nomor 10, Tahun 1951, Tentang Mengatur Tenaga Dokter Partekulir dalam Keadaan Genting* (Law 10, 1951, Relating to the Establishment of Private Practice).

These laws stipulated that after graduation, both Indonesian and foreign doctors and dentists intending to establish private practice in Indonesia had to work in public service for at least three years before they would be granted a *surat idzin* (licence to practice).<sup>48</sup> The newly-graduated doctors, dentists and midwives could not practice in areas which had a surplus of doctors; such areas were declared by the Ministry of Health to be closed for medical practice.<sup>49</sup> However, the government was empowered to enlist private practitioners in the public service during an epidemic.

The proposals to enact these laws were met with stiff resistance from medical students at Universitas Indonesia as the legislation regulating the rational distribution of doctors, dentists, and midwives fell squarely on the shoulders of doctors, dentists, and midwives.<sup>50</sup> It failed to

address the question of maximising the output of the nation's three medical schools at Jakarta, Surabaya, and Yogyakarta.<sup>51</sup> Within the *Dewan Perwakilan Rakjat*, delegates who were also members of the *Ikatan Dokter Indonesia* (Indonesian Medical Association, henceforth IDI), in particular Dr. Ateng Kartanahardja, were opposed to drastic measures such as regulating the rational distribution of health personnel through legislation and sensitising the Ministry of Health towards the poor remuneration of government doctors.<sup>52</sup> Leimena defended the three laws mentioned above by stressing the difference between *bekwaamheid* (ability) and *bevoegheid* (authority).<sup>53</sup> Qualified medical practitioners, who were administered the professional oath, had demonstrated the ability to fulfil their responsibility as a doctor. But the authority—a legal recognition for discharging responsibilities of a doctor—came in the form of a licence granted by the Ministry of Law. Leimena had observed that in the *zaman pembangunan* (the period of national development, coinciding with the early 1950s), the laws regulating private practice and rational distribution of physicians were in accordance with the *Pantjasila* principle of *keadilan* (social justice) for all Indonesians. He reminded the *Dewan Perwakilan Rakjat* delegates that the doctor had a duty to alleviate suffering.<sup>54</sup> These laws reflected Leimena's nationalist aspirations to develop a professional cadre of doctors imbued with a mentality that was strong, healthy and creative, and adhered to ethical principles. However, the government was unable to enforce the laws related to regulating private practice and achieving an equitable distribution of doctors throughout the archipelago due to the low output of graduates from Indonesia's medical schools and the poorly remunerated doctors serving in the rural areas.

In similar vein, the Leimena Plan failed to achieve fruition in the 1950s as it devolved financial responsibility to the regencies for the implementation of preventive and curative health. Not all of the regencies of Indonesia were financially self-sufficient. The Leimena Plan thus yielded variable results largely contingent to the district administration and to individual factors such as leadership of the *dokter kabupaten*. In the pilot area of Bandung, the Plan registered conspicuous success by almost halving the maternal mortality rate from 6,500 per 100,000 in 1951 to 3,740 per 100,000 in 1956.<sup>55</sup> However, the public health successes of the pilot area of Bandung glossed over disparities in health indicators between various *ketjamatans* of Bandung

and Bandung city. Most of the noticeable public health improvements recorded in the official statistics occurred in Bandung city (the regency headquarters), not in the regency of Bandung.<sup>56</sup> Infant mortality in the poorer sub-districts of Bandung regency, e.g., Majalengka, had not declined owing to the lack of paediatricians qualified to deal with postpartum complications and the failure of the regency administration to integrate child health within the framework of the rural health services. The doctors working in the pilot area, who were largely based in Bandung city, opted not to work among the rural communities as they were reluctant to abandon their lucrative practices and not attuned to addressing the everyday health problems peculiar to people of rural areas. They lacked training in preventive medicine which, in the mid-1950s, was yet to be introduced as an academic discipline in the faculties of medicine at Jakarta, Surabaya, Yogyakarta, Medan, and Bukittinggi in the mid-1950s.<sup>57</sup>

The Leimena Plan was implemented in the province of Central Java albeit limited success. In 1959, of the annual provincial health budget (approximately 44 million rupiahs) awarded by the central government for the Bandung Plan, nearly two-thirds was spent on staff salaries and the transportation of medical personnel.<sup>58</sup> Less than a third of the provincial budget was allocated to public health. From 1956-59, the provincial government built hospitals at Brebes, Boyolali and Cilacap; but, the development of curative health was inhibited by the lack of pharmaceuticals in hospitals. Medical students from Gadjah Mada University were involved in teaching maternal and child health in the urban and rural areas of Central Java. In Central Java, the implementation of the Leimena Plan was constrained by overhead costs and shortages of essential drugs.

In North Sumatra, attempts by the provincial government to integrate preventive and curative public health were frustrated by a shortage of *dokter kabupaten*, who provided public health initiatives.<sup>59</sup> The Ministry of Health provided a subsidy of 177,000 rupiahs to the North Sumatra provincial health department under Law 18, 1953, which stated that the government would grant subsidies to private organisations to construct hospitals that would treat poor patients for free.<sup>60</sup> Under the provisions of this law, the provincial government disbursed the health ministry funds to charitable organisations. However, it is doubtful if the charitable

hospitals were widely used in North Sumatra owing to the acute shortage of doctors.

Tuberculosis control was one major preventive health measure in North Sumatra that reflected Leimena's vision of integrating preventive and curative health. However, the implementation of the tuberculosis control program in the regencies of North Sumatra failed to materialise due to administrative and technical bottlenecks.<sup>61</sup> As a precautionary public health measure, the provincial health department of North Sumatra attempted to educate the public on hygienic habits to prevent the spread of the highly infectious diseases. Treatment at the time consisted of rendering the tuberculosis patient non-infectious through the administration of streptomycin.

Tuberculosis treatment was severely constrained in North Sumatra due to a general lack of finances at the provincial and regency levels.<sup>62</sup> The anti-yaws campaign introduced in North Sumatra was not as effective as the campaign in Central Java.<sup>63</sup> The dispersed nature of the population and inadequate transportation proved to be major hurdles in yaws prevention and treatment.<sup>64</sup>

During the 1950s, the Indonesian government, particularly the cabinets of Natsir, Sukiman and Wilopo, were faced with the challenge of addressing pressing financial issues such as repayment of debts owed to the former Netherlands colonial administration and war reparation owed to the Dutch. Indonesia was, therefore, compelled to increase the volume of its commodity exports and to negotiate a favourable export price. The outbreak of the Korean War in the early 1950s provided a much needed stimulus to Indonesia's exports; but, Indonesia's gains in foreign exchange were nullified by repayment of debts carried over from the colonial legacy, a consequence that ultimately led to an unfavourable balance of trade. The integration of preventive and curative public health under the umbrella of the Bandung Plan was a cost-effective public health measure adopted by Leimena from the WHO to address pressing public health problems amidst widespread economic difficulty. While the Bandung Plan reflected Leimena's pragmatic thinking on health, it failed to materialise in the 1950s as it had to overcome the administrative and financial bottlenecks created by the central, provincial and regency governments in executing practical aspects of the Plan, such as funding the

establishment of health centres and executing specific aspects of the mass campaign against tuberculosis.<sup>65</sup>

### **Public Health Education**

Leimena had intended to use public health education to awaken the sanitary conscience of the people and to mobilise them into identifying their own health needs. During the implementation of the Bandung Plan from 1951 to 1956, health education was implemented by various departments within the Ministry of Health such as maternal and child health, nutrition, tuberculosis, and the yaws eradication program in a piecemeal manner. Leimena recommended the establishment of a separate department that would oversee the activities of health education within the Ministry of Health. However, his recommendations were only vaguely defined and did not specify how health education would be implemented at the regency and sub-district levels. The implementation of health education in Indonesia suffered major shortcomings, most notably the confusion of health education with the training of public health personnel, and the inability of health education policy-makers to perceive the interrelationship between poverty and ill health.

Raden Mochtar, a leading Indonesian advocate of social medicine who envisioned hygiene work as the means to awaken a sanitary conscience in individuals and groups, observed that public health was interwoven with Indonesian politics.<sup>66</sup> According to Mochtar, during the revolutionary period (1945-49), freedom had infused the Indonesian peoples with a new vitality to work for the wellbeing of their communities.<sup>67</sup> The revolutionary government's Division of Hygiene established village health services in the village of Patik Raja, Banyumas and a health demonstration centre at Magelang. Beginning in 1950, the demonstration centre at Magelang, under the leadership of the Ministry of Health, endeavoured to mobilise the villagers around the principle of *gotong rojong* to construct village water supplies. This was simply the revitalisation of the training and demonstration centre established in the 1930s and documented in Hydrick's booklet 'Intensive Hygiene Work in the Netherlands Indies.' Achmad Dipodilogo—Director of

Maternal and Child Health in 1969—was from Banyumas and in his old age talked of having been a child in school when Hydrick's program was implemented.

Hygiene work in the village was compartmentalised into personal hygiene, the domain of the maternal and child health home visitor, and rural sanitation, which was undertaken by the *pengamat hygiene*. Raden Mochtar's vision of health education, which accorded a dominant role to the elementary hygiene educator, met with opposition from the maternal and child health leadership, particularly from Julie Sulianti Saroso, who stated that the elementary hygiene educator had only received elementary education and therefore had a limited view of sanitation. She advocated that public health education programs should involve the contributions of doctors, nurses, midwives, and the school health worker.<sup>68</sup> Within the Ministry of Health, the Division of Environmental Sanitation, that was concerned mainly with sanitary engineering emphasised community sanitation in all of its programs: home improvements, latrine construction, and a campaign against fleas.<sup>69</sup> The Ministry's maternal and child health program introduced the training of *dukuns* in scientific birthing practices and encouraged home visits by dieticians to educate mothers about the nutritive value of foods. But, the programs were not implemented beyond pilot health demonstration areas such as Bandung and did not represent an overall community approach to health education.

Elementary hygiene educators (*pengamat hygiene*), i.e., male graduates with two years of training at the Bandung Health Educator's School, were pivotal to the health education programs in the rural areas. During their second year of instruction, they were trained to communicate with the villagers regarding the construction of latrines, cleaning houses, and the disinfection of wells. Due to people's resistance to using latrines, the program designed to educate villagers was abandoned. Sardjito, the President of Universitas Gadjah Mada, was pessimistic: he felt that scientific knowledge alone was insufficient to overcome people's resistance i.e., giving up their unhygienic habit of defecating in the river, for example.<sup>70</sup> Sardjito claimed that:

The people in many villages had latrines, but they do not use them. Instead they use the stream, the river, the canal. Perhaps it is too difficult a thing to change these habits of the people, particularly of older people. I wonder if scientists can find other ways of combating the diseases caused by contamination of the water and soil?<sup>71</sup>

Sardjito's critique highlighted the shortcomings of using health education as a means to bring about improvement in health conditions, especially in rural areas.

Health education in Indonesia during the Soekarno era glossed over the socio-economic questions associated with disease. The assumption was that individual self-awareness and diligence could overcome disease, regardless of socioeconomic conditions.<sup>72</sup> Pramoedya Ananta Toer's short story 'My Kampung' which paints a stark picture of the Jakarta poor in the 1950s, brings home to the reader how the health education implemented in Indonesia was limited by lack of focus upon socio-economic problems. To quote Pramoedya Toer's narrative:

Friend, you've heard of my *kampung*, haven't you? Kebun Djahe Kober, five hundred metres in a straight line from the palace. And you also know, don't you? Its gutters are covered in shit of the *kampung* residents. To be sure, yesterday, the headman issued an order: 'No more shitting in the gutters.' And what was the first reaction? A neighbor of mine helped his child to shit in someone else's gutter, not his own. And at night, the same was true of the adults.

This is not a story that ought to be admired or condemned. I've lived in this *kampung* for two years. Much have I seen of events in this *kampung*. And it seems to me that I too have become a small part of this *kampung*. Friend, this *kampung* is not that large. More or less two hundred metres in width and the same in length. So, an area of more or less 40,000 square metres, crisscrossed by seven alleys. The population of this *kampung* cannot be less than nine hundred people.

Friend, I want to tell you about the condition of my alley—one among the seven. Do you know when I first came to the *kampung*? One gleaming bright morning. But I did not see signs of morning, so many trees had consumed the breathing-space of the residents.

However, the residents of my *kampung* were used to using all of these trees, which were of no guaranteed use for their stoves. And since I've lived there, I've felt a longing for morning sunshine. What's more, houses are so close together that fresh air is unable to flush out the stale air heavy with shit and gutter gases. This gutter water, friend, can't flow unless municipal laborers push it along, since every resident throws his trash into it. This has become common practice, since they know no one is likely to prohibit their actions.<sup>73</sup>

Public health education in the *kampungs* of Jakarta was greeted with scepticism. Orders banning open defecation in gutters issued by the *kampung* heads were greeted with defiance by the residents as such orders lacked the force of law and did not address problems such as poverty. The residents of the *kampungs* of Jakarta had a high prevalence of venereal diseases and

tuberculosis. Infected individuals preferred death to living in urban squalor. Toer's *Kampung* sheds light on how the urban poor were either resistant or indifferent to any form of health education that inculcated hygienic practices due to poverty.

In the 1950s, health education in Indonesia was inextricably linked with sanitation.<sup>74</sup> Those in charge of sanitation, for example *pengamat hygiene*, *pendidik hygiene* (hygiene educator), and *djuru hygiene* (hygiene nurse) were responsible for implementing health education at the village and sub-district level. At the provincial level, the *kontrolir kesehatan* (sanitary inspector), who had three years of training in disease control with the Ministry of Health, was assigned the additional responsibility of health education. But, sanitary inspectors could not devote adequate time to health education. While Indonesia was a major recipient of international developmental aid during the 1950s, funding agencies such as the ICA restricted their assistance to agriculture and home economics, conditions related to family welfare. As a consequence, health education developed in piecemeal manner. The Ford Foundation, on the other hand, emphasised teacher training, which included health education. And, because each funding agency operating in Indonesia had a very specific idea of what constituted health education and restricted funding to priority areas,<sup>75</sup> health education failed to develop in a coordinated manner during the Soekarno era. The Ministry of Health, under the leadership of Leimena, astutely related Indonesia's health problems to the priority areas of the WHO in order to secure international funding for public health in Indonesia.

The SEARO program of assistance to member countries in the first session (1948) were identical to the priorities accorded by the WHO headquarters, Geneva, to the so called 'Big Six' issues, viz. malaria, tuberculosis, venereal diseases, maternal and child health, nutrition and environment health.<sup>76</sup> By including maternal and child health on its agenda for technical assistance, the SEARO policy closely synchronised with the Indonesian nationalist aspirations for securing respectability for Indonesia in the sphere of international health. Indonesia fared poorly in maternal health.<sup>77</sup> As a consequence of the country's high rate of maternal mortality, which was considered as a national shame, the political leadership began to perceive the health of the Indonesian mother and child as the *nasib* (hope) of the nation's future. The Indonesian

leadership appealed to the spirit of humanitarianism and urged joint efforts of the Indonesian citizens and the international community in reducing the high prevalence of maternal mortality.

The SEARO was instrumental in designing short-term demonstration projects in member states that aimed to develop problem solving strategies amongst national health personnel working in the field. Maternal and child health absorbed much of the attention of the Indonesian leaders and the WHO consultants alike, owing to the high rates of maternal mortality which Indonesian physicians and leaders attributed to the *dukun bayi*'s 'primitive' birthing practices that constituted a national embarrassment.<sup>78</sup> Beginning the early 1950s, the Indonesian health policy managed—albeit with limited success—to train *dukun bayis* in scientific birthing practices to overcome the shortage of skilled midwives. By 1960, of the 13,541 *dukuns* trained by qualified midwives, less than 25% managed to graduate.<sup>79</sup>

In the early 1950s, the Ministry of Health initiated a hygiene demonstration project in the urban areas of Jakarta (Pasar Senen and Salemba Raya) to foster community participation in improving health indicators. The Ministry of Health, which attributed the high infant mortality rate in Jakarta (30 per 1000 in 1952) to faulty feeding practices, initiated special programs to educate mothers about the nutritive value of food, hygiene and care of infants, and to train *dukuns* in scientific birthing practices.<sup>80</sup> J.H. de Haas (WHO Consultant to Indonesia from 1954–March 1955) had observed in his report that health education in maternal and child health was intended to educate mothers about the nutritive value of certain foods. But de Haas, expressing measured pessimism, also observed that bringing about a change in the feeding habits of infants would take at least a decade or longer as ushering in such a change was contingent to the improvement of socio-economic conditions.<sup>81</sup>

Maternal and child health was a major component of the Bandung Plan. It involved not only the prevention of malnutrition, maternal and infant mortality, but also raising the health standards of mothers and children. Leimena contended that the high prevalence of maternal and infant mortality in the country was not only an economic loss but a social loss as well.<sup>82</sup> He equated the campaign to reduce maternal and infant mortality with the nationalist rhetoric that emphasised the emancipation of Indonesia against the three social evils, i.e. disease, ignorance

and poverty. With a view to achieving a drastic reduction of maternal and infant mortality at the lowest possible cost, Leimena advocated (a) the improvement of the people's economic conditions; and, (b) educating mothers about nutrition and the prevention of disease. In 1952, the Indonesian Ministry of Health established Maternal and Child Health Bureaus to synchronise the following activities of maternal and child health: (a) prenatal examination of infants, maternity assistance outside of hospitals, examination of the health of lactating mothers; (b) examination of new-born babies, immunisation of children against diseases such as smallpox and tuberculosis and promoting the consumption of milk; (c) educating mothers about the care of infants through home visits, training courses; and, (d) training paramedical personnel in maternal and child health. In order to maximise the delivery of results in maternal and child health—and considering difficult economic circumstances of the 1950s, a point which I stressed earlier—Leimena envisioned the synchronisation of activities of the Maternal and Child Health Bureaus with the functioning of the Bandung Plan. Synchronisation was attempted by devolving the financial and administrative responsibilities of the Maternal and Child Health Bureaus to the regency governments.

Julie Sulianti Saroso, who at the time was Technical Director of Maternal and Child Health, was not directly involved in the implementation of the Bandung Plan. Nevertheless, her work is of particular note as she was active in advocating coordination of the various departments within the Department of Health to initiate preventive measures against maternal mortality. Awarded a UNICEF fellowship for studying the public health systems of Scandinavian countries, England, US and Malaya in 1951, she conceptualised a comprehensive 'team approach' to the improvement of rural health throughout Indonesia. Saroso advocated the prevention of disease through the eradication of epidemic and endemic diseases. This would involve coordination of the Departments of Health at the provincial and district levels in reducing the high prevalence of maternal and infant mortality, educating the public regarding healthy living, and educating mothers about childcare and nutrition through house visits. As well, it would require improvement of community nutrition through health education and encouraging schools to develop *kebun sekolah* (school gardens) that would give students better access to

locally available fruits and reduce vitamin deficiencies.<sup>83</sup> Saroso's school health program thus consisted of integrating preventive and curative health, i.e., educating children about hygiene and nutrition, vaccinating them against tuberculosis, and smallpox, and administration of first aid to sick children. She conceptualised integrating maternal and child health within the broader framework of rural health (*Kesehatan Masyarakat Desa*) through house visits. But, her efforts to achieve coordination failed due to the persistent shortage of health personnel.<sup>84</sup> As the technical director of maternal and child health, Saroso was instrumental in initiating dental health education of expectant mothers by educating them about the nutritive value of mineral rich foods, systematic examination of dental caries among primary schoolchildren, and spreading awareness of dental hygiene amongst the general public through the use of posters, and visual aids.<sup>85</sup> However, the practical implementation of the dental hygiene program was constrained by the lack of coordination between the Division of Dental Health within the Ministry of Health, and Maternal and Child Health. Doctors, nurses, and other health personnel were unable to recognise the correlation between preventive dental hygiene and maternal and child health.

In 1956, Saroso was instrumental in establishing a rural health unit in Bekasi, West Java province, in accordance with the WHO prescription that it would serve as a demonstration centre for public health education.<sup>86</sup> The Bekasi project was primarily intended to evolve a practical strategy of health education at the village, sub-district, and regency levels and to determine practical ways of coordinating the responsibilities of health personnel in implementing a meaningful program of health education. But, from the outset, the Bekasi project was beset with technical and financial problems.<sup>87</sup> Funding for establishing the rural health centre competed with the local malaria eradication program.<sup>88</sup> The staff training centre at Lemah Abang, Bekasi regency, did not consider training in rural health as a part of extant public health problems of Indonesia. For example, sanitarians were taught about chagas disease, which did not have any practical relevance to Indonesia.<sup>89</sup> Owing to financial constraints, the practical training of sanitarians in health education was discontinued in 1963. Trainees were transferred to Jakarta to assist the Ministry of Health in smallpox vaccination programs.<sup>90</sup> The sanitarians in the demonstration area were successful in conducting a survey of water sources following an

outbreak of food poisoning which revealed that the villagers used contaminated sources for domestic purposes and defecation. UNICEF and USAID (United States Agency for International Development) had provided funding for the construction of latrines and hand pumps.

Unfortunately, the sanitarians failed to prevent the villagers from defecating in the local Citarum River and to convince them from using hand pumps to source clean drinking water. The overall problem was that the inhabitants of those areas lacked orientation to health conditions.<sup>91</sup>

Beginning in 1962 in the Outer Islands (esp. Kalimantan), the Indonesian government, in conjunction with UNICEF and the WHO, initiated programs to strengthen the rural health services and orient health personnel to existing health problems.<sup>92</sup> The main aim of the WHO and the Indonesian government was to use existing health services as a strong base for introducing malaria eradication. The Indonesian Ministry of Health planned to integrate preventive and curative health services with the malaria eradication program, and operate them through the health centre and sub-centres. At each sub-centre, junior health workers were trained in basic epidemiology of communicable diseases, reporting outbreaks of disease, basic first aid, personal hygiene, nutrition, and the principles of vaccination. The WHO would assist provincial health inspectors of Kalimantan to develop training modules for health workers. Soon after the WHO and the Indonesian government signed the agreement for strengthening Indonesia's health services in late 1962, the Ministry of Health developed rural health services in Kalimantan to provide favourable conditions for the execution of the malaria eradication program.<sup>93</sup> The program for strengthening basic health services was, however, contingent to international aid. The WHO and the Indonesian government had proposed using unused UNICEF funding from the maternal and child health program for the malaria eradication program in Kalimantan. But, the proposal was rejected by the UNICEF headquarters in New York. The Indonesian government's proposal to commence malaria eradication in the Outer Islands within the framework of basic health services was not clearly defined with respect to how malaria eradication would strengthen basic health services. Public health education in Outer Islands such as Kalimantan did not draw firm lines of distinction between the training of health personnel and educating the population about preventative health measures, e.g., vaccination. Consequently, the

health personnel were unable to communicate effectively with the rural dwellers regarding the rationale for specific public health measures.<sup>94</sup>

Towards the end of the Soekarno era (1966-67), planners within the Indonesian Ministry and Department of Health (including Dr. Achmad Dipodilogo, the Director of Maternal and Child Health in 1969 during the New Order) advocated that for effective execution of public health in Indonesia, the nation needed to employ a synthesis of Leimena's 'social approach'—that addressed the socio-economic causes of ill health—and Saroso's 'team approach' that would involve coordination between various government departments such as agriculture, veterinary science, and education with public health.<sup>95</sup> Dipodilogo's ad-hoc plan envisioned the fusion of maternal and child health of the BKIA and curative care administered at the polyclinics within the overarching framework of the 'health centre.' The community within the jurisdiction of the health centre would be collectively responsible for its functioning. Dipodilogo's ad-hoc plan intended to integrate public health within the broader framework of social welfare.<sup>96</sup> The health centre would integrate the health-related activities of the Rural Health Department, the Department of Community Education, the Department of Religion, and the Department of Agriculture.

Public health education during the Soekarno era was intended not only to convey information to the rural public about how to maintain health but also to instil healthy habits. Despite the significant inflow of overseas developmental aid for facilitating implementation of rural hygiene and health education, particularly the construction of latrines, these projects remained unutilised. Health education was implemented piecemeal by various departments and agencies within the Ministry of Health such as the Directorate for Communicable Disease Control, Jakarta, the Maternal and Child Health Department and the Department for Communicable Disease Control. Consequently, the implementation of an integrated program of health education of the public that would incorporate maternal and child health, nutrition, prevention of epidemic and endemic diseases, sanitation, and personal hygiene did not materialise during the Soekarno era. The doctors and paramedical personnel undergoing training in health education could not clearly comprehend the interdisciplinary nature of public health

problems including poor personal hygiene and a high prevalence of dental caries. Throughout the Soekarno era, disease eradication programs such as the anti-yaws campaign and the malaria eradication program competed for scarce medical personnel who would otherwise have been deputed to undertake health education of the public.

## Conclusions

As a physician, Leimena understood the implications of the Cold War for Indonesia correctly. He used medical metaphors such as ‘the sharp needles of the cold war have penetrated into the body of the United Nations at present’<sup>97</sup> to highlight the looming danger of the Cold War to world peace and the danger of the newly-independent nations compromising their hard-won sovereignty by aligning themselves either with the US or the USSR. His advocacy for international peace was shaped by his Christian convictions. An astute statesman, he sought to reconcile his Christian Ambonese ethnic identity with an Indonesian nationalism that sought to build Indonesia’s credibility within the UN as a leader of the developing world by voicing its aspirations to freedom, democracy, food security (rice), and education.<sup>98</sup>

Leimena was the architect of the Indonesian health policy of the Soekarno era. Ever the pragmatist, he had critically appropriated public health thinking prominent in WHO circles and applied them to Indonesian conditions. The nucleus of his health philosophy, i.e., the Bandung Plan—a pioneering effort in post-World War II Indonesia designed to integrate preventive and curative public health activities centred on the notion of community participation—was implemented through pilot health demonstration projects, e.g. in the Bandung regency. The implementation of the Bandung Plan throughout Indonesia (now renamed as the Leimena Plan) in 1954 was somewhat untimely as the Ministry of Health lacked financial resources to support such a gigantic endeavour. Financing the pilot health projects proved a thorny issue between the central, provincial, and local governments in Indonesia.

During his tenure as Minister of Health in the Sukiman cabinet in 1951, Leimena fully appreciated the fact that Indonesia’s health problems were exacerbated by an acute shortage of doctors, who at the time numbered approximately 1,200 and mostly gravitated towards the urban

areas. In an attempt to correct this disequilibrium in the health system, Leimena supported three hotly contested pieces of legislation that sought to regulate private practice, achieve an equitable distribution of physicians throughout the Indonesian archipelago, and enlist the assistance of the country's private practitioners for undertaking emergency measures during epidemics.

Legislative measures relating to the practice of medicine in the Soekarno era had strong nationalist underpinnings based on the *Pantjasila* ideal of social justice. Unfortunately, they failed to address the question of a low graduation rate of doctors from the country's medical schools and the poor remuneration received by government doctors.

During the 1950s, Indonesia was a significant recipient of international aid for health from international agencies including USAID, UNICEF, and the WHO. Foreign aid was a politically delicate issue for Indonesia. As Health Minister, Leimena was fully cognisant of the need to balance Indonesia's hard won political sovereignty in the political sphere with international assistance in health to compensate for the shortfall in the government spending on health. Foreign assistance to public health was evident in the pilot health education and demonstration projects initiated in Indonesia such as Bekasi. Some international aid agencies (USAID, for example) restricted health funding for malaria eradication. UNICEF emphasised support for maternal and child health care. The post-colonial Indonesian state of the 1950s and 1960s closely aligned its health objectives with the prescriptions of international agencies. Indonesia's high prevalence of maternal and infant mortality, which attracted the attention of health planners and international agencies alike, was termed a disgrace by external aid agencies.

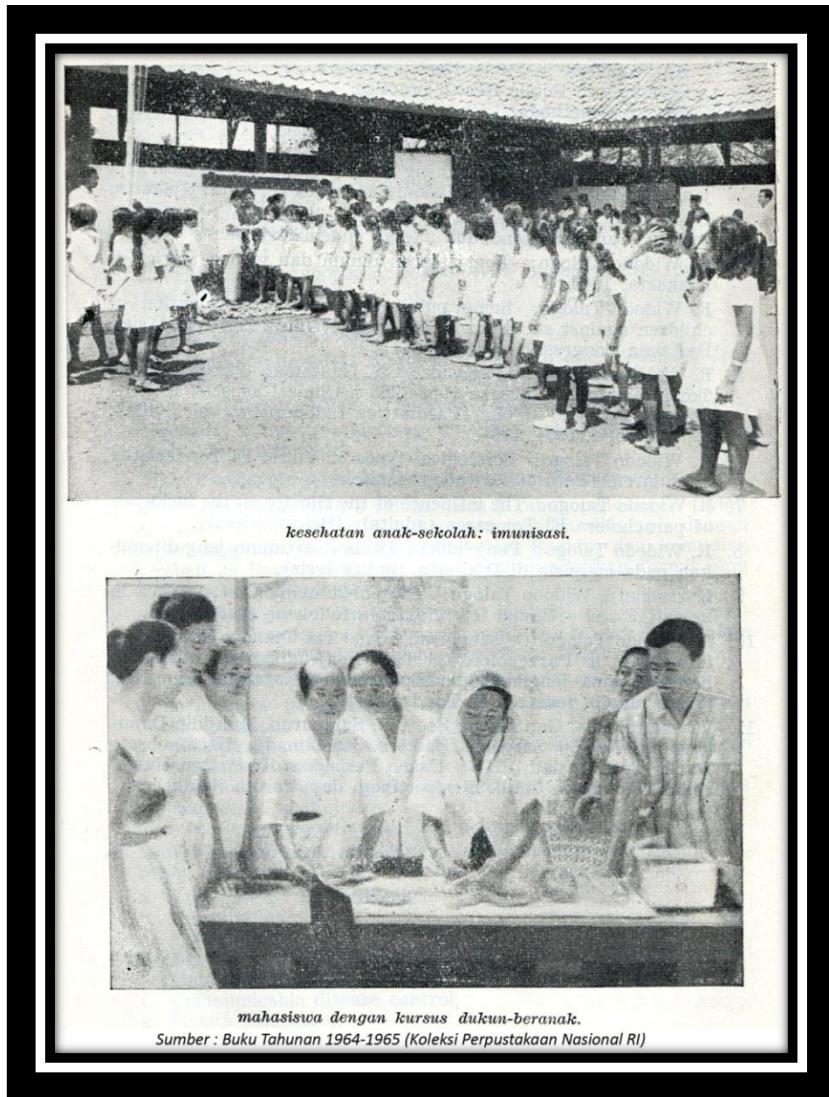
The various aid agencies funding health programs in Indonesia had very concrete ideas of what was considered appropriate as health policy for Indonesia. Malaria eradication, for example, received top priority in USAID circles owing to its conspicuous association with maximising the economic productivity of the workforce. With the expansion of the malaria eradication program to the entire archipelago in 1959, paramedical workers who would otherwise have been involved in health education were diverted to the malaria eradication program. Health education in Indonesia during the Soekarno era lacked synchronisation with the Bandung Plan in terms of integrating preventive and curative health. The various departments

within the Ministry of Health independently implemented their own staff training programs, which were so loosely related to the theme of public health education that doctors and other medical personnel were unable to comprehend the interrelatedness of the various components of public health such as nutrition, sanitation, and infectious disease prevention. Julie Sulianti Saroso, Director of Maternal and Child Health, initiated a program of caries prevention among schoolchildren and enlisted the support of the School Health Service and the maternal and child health and stressed the combination of teamwork among health personnel—which was found lacking during the implementation of the Leimena Plan—and a socio-behavioural approach to public health. However, her initiatives failed to materialise owing to the acute shortage of paramedical personnel and doctors.

The Leimena Plan for Health, which advocated a social approach to public health, and Saroso's notion of team approach, which envisioned the coordination of health and health-related educational activities of the various departments functioning under the umbrella of, or related to, the Ministry of Health, neatly complemented each other. But, they could not be executed in conjunction with each other during the early 1960s owing to financial difficulties and the political uncertainty that destabilised the period. Both approaches were forerunners to the concept of the health centre which was born during the New Order era. Finally, in the late 1960s, the country's health centres integrated the activities of maternal and child health, immunisation, treatment for common health problems, and health education under the leadership of the *dokabu* (dokter kabupaten, regency physician) and administered by the community.



Johannes Leimena: Indonesia's Minister of Health (1950). Source: KITLV Digital Image Library Image Code 41408.



School Health (above, c.a. 1965) and the training of *doekoens* (below) in scientific birthing practices.

Source: Fakultas Kedokteran Universitas Indonesia, *Buku Tahunan 1964-1965* (Jakarta: Fakultas Kedokteran Universitas Indonesia, 1965).



Indonesia, Sanitation (1950-1959): Women wash clothes in a Jakarta canal. Further on, people will draw their drinking water from the same source.

Source: Image WHO\_A\_000459 (WHO Photo Archives, Geneva).

## References

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- <sup>2</sup> Departemen Kesehatan, *Sejarah Kesehatan Nasional Indonesia* vol 2 (Jakarta: Departemen Kesehatan, 1978).
- <sup>3</sup> Johannes Leimena, *Public Health in Indonesia: Problems and Planning* (Djakarta: Van Dorp, 1956), 11.
- <sup>4</sup> ‘Ilmu Pengetahuan,’ *Majalah Kesehatan* 112(1985), 16.
- <sup>5</sup> ‘Ilmu Pengetahuan,’ 17.
- <sup>6</sup> Letter, ‘Ministry of Health, The Republic of the United States of Indonesia (Johannes Leimena) to Minister of Health, Republic of India (Rajkumari Amrit Kaur),’ 9 March 1950, *WHO First Generation Files* (WHO.1,1945-1950), Archives of the World Health Organization, Geneva (WHOA).
- <sup>7</sup> ‘Nasehat Dr. Leimena,’ *Trompet Masjarakat*, 11 November 1950.
- <sup>8</sup> Johannes Leimena, ‘World Health and World Community,’ *The Ecumenical Review* 4 (1956): 407-9.
- <sup>9</sup> *Ibid.*
- <sup>10</sup> Leimena, ‘World Health,’ 408.
- <sup>11</sup> Justus M. Van Der Kroef, ‘Pantjasila: The National Ideology of the New Indonesia,’ *Philosophy East and West* 4, no.3 (1954): 225-43.
- <sup>12</sup> Seung Won Song, ‘Back to Basics in Indonesia? Reassessing the Pancasila and Pancasila State and Society’ (PhD thesis, Ohio University, 2007).
- <sup>13</sup> Vivekananda Leimena, interview with author, Jakarta, 17 July 2010.
- <sup>14</sup> Johannes Leimena, *Kewarganegaraan Yang Bertanggung Jawab: Mengenang Dr. J. Leimena* (Jakarta: BPK Gunung Mulia, 1980), 72-73.
- <sup>15</sup> Leimena, *Kewarganegaraan*, 73.
- <sup>16</sup> Leimena, *Kewarganegaraan*, 308.
- <sup>17</sup> Leimena, ‘Ten Years Activities,’ 7.
- <sup>18</sup> Leimena, ‘Ten Year Activities of the Ministry of Health, August 1945-August 1955,’ *Berita Kementerian Kesehatan* 5, no 2(1956):5-13, 8.
- <sup>19</sup> Leimena, ‘World Health,’ 408.
- <sup>20</sup> Leimena, ‘World Health,’ 409.
- <sup>21</sup> Suzanne Moon, ‘Takeoff or Self-Sufficiency? Ideologies of Development in Indonesia, 1957-1961,’ *Technology and Culture* 39, no.2 (1998): 187-212, 215-16.
- <sup>22</sup> ‘Text of Address of Welcome by Dr. Johannes Leimena, Minister of Health Republic of Indonesia,’ *Regional Committee Eighth Session, Bandung*, 5-10 September 1955, Doc. SEA/RC8/Min.1/Rev.1, WHO Library and Historical Collections, Geneva (WHOL).
- <sup>23</sup> *Ibid.*
- <sup>24</sup> *Ibid.*
- <sup>25</sup> *Ibid.*
- <sup>26</sup> *Ibid.*
- <sup>27</sup> Leimena, *Public Health in Indonesia*, 13.
- <sup>28</sup> C.E.A. Winslow, *The Cost of Sickness and the Price of Health* (Geneva: WHO, 1951), 80.
- <sup>29</sup> Leimena, *Kewarganegaraan*, 61. Leimena had observed that even before World War II, Bandung had well developed curative health facilities centered on missionary hospitals, for e.g., Immanuel, where Leimena worked as a doctor for ten years in the 1930s. However, during his service at the Immanuel hospital in Bandung, Leimena had observed that the local Sundanese population around Bandung was hesitant to use Immanuel hospital’s facilities as they were fearful of conversion to Christianity. To overcome this problem, Immanuel Hospital, under the leadership of Leimena initiated the establishment of a referral system consisting of polyclinics under the leadership of *mantris* (male nurses) and *djuru rawats* (female nurses) in the villages around Bandung to coordinate preventive health measures, for e.g., health education of the population with the provision of curative care.

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<sup>30</sup> *Kewedanaan*, was an intermediate unit of administration in the Soekarno era, came under the jurisdiction of the regency but was higher than the *kecamatan* (sub-district).

<sup>31</sup> Silas L. Leimena, ‘Dari Bandung Plan ke Rencana Leimena,’ in Dr. Johannes Leimena: *Negarawan Sejati dan Politisi Berhati Nurani*, eds., Victor Silaen et al. (Jakarta: BPK Gunung Mulia, 2007): 93-98, 94-95.

<sup>32</sup> The World Health Assembly is the supreme decision making body of the WHO, and is represented by delegates from the member states of the WHO.

<sup>33</sup> ‘Function and Scope of Local Health Services,’ *Fifth World Health Assembly*, May 1952, Doc. A5/Technical Discussions/28(Geneva: WHO, 1952), WHOL.

<sup>34</sup> J. Leimena, *Some Aspects of Health Protection to Local Areas in Indonesia* (Djakarta: Pertjetakan Negara, 1953).

<sup>35</sup> Leimena, *Kewarganegaraan*, 63.

<sup>36</sup> Thee Kian Wie, ‘Introduction,’ in *Recollections: The Indonesian Economy, 1950s-1990s*, ed. Thee Kian Wie (Singapore: ISEAS, 2003), 4.

<sup>37</sup> Eric Stein, ‘Vital Times: Power, Public Health and Memory in Rural Java,’ PhD Dissertation (Ann Arbor: University of Michigan, 2005, Unpublished), 209.

<sup>38</sup> Rapat 66, ‘Laporan Seksi Kesehatan,’ *Risalah Perundingan Dewan Perwakilan Rakyat*, 25 January 1951. The original Bahasa Indonesia text reads as, ‘Saja pak, berhasrat besar sekali akan mendjadi menteri djururawat guna kepentingan nusa dan bangsa.’

<sup>39</sup> *Ibid.*

<sup>40</sup> *Ibid.*

<sup>41</sup> Rapat 19, *Risalah Perundingan Dewan Perwakilan Rakyat*, 29 September 1950.

<sup>42</sup> *Ibid.*

<sup>43</sup> *Ibid.*

<sup>44</sup> Rapat 38, *Risalah Perundingan Dewan Perwakilan Rakyat*, 26 May 1952.

<sup>45</sup> *Ibid.*

<sup>46</sup> Rapat 66, ‘Laporan Seksi Kesehatan.’

<sup>47</sup> Rapat 88, ‘Landjutan Pembitjaraan Rantjangan Undang Undangan Tentang Kesehatan,’ *Risalah Perundingan Dewan Perwakilan Rakyat*, 20 June 1951.

<sup>48</sup> *Undang Undang Republik Indonesia Nomor 8, Tahun 1951, Tentang Penangguhan Pemberian Surat Idzin Kepada Dokter dan Dokter Gigi*, Dewan Perwakilan Rakyat, <http://www.dpr.go.id/uu-dan-ruu/undang-undang/1951>, accessed 12 March 2012.

<sup>49</sup> ‘Pembitjaraan Undang Undang Tentang Kesehatan,’ *Ichtisar Parlemen Republik Indonesia* 278, 16 July 1951.

<sup>50</sup> ‘Dewan Perwakilan Mahasiswa: Fakultas Kedokteran, Djakarta,’ 17 April 1951, ANRI 633, *Kabinet Presiden Republik Indonesia*.

<sup>51</sup> *Ibid.*

<sup>52</sup> Rapat 88, ‘Undang Undangan tentang Kesehatan.’

<sup>53</sup> *Ibid.*

<sup>54</sup> *Ibid.* See also Johannes Leimena, *Dokter dan Moraal: Etika Kedokteran* (Djakarta: Noordhoff Kolff, 1951), 7.

<sup>55</sup> *Tahun ke 9, Ichtisar Parlemen Republik Indonesia* 1, 15 July 1958.

<sup>56</sup> *Ibid.*

<sup>57</sup> Rapat 74, *Risalah Perundingan Dewan Perwakilan Rakyat*, 20 June 1958.

<sup>58</sup> *Laporan Dinas Kesehatan Rakyat Tingkat I: Djawa Tengah* (n.p.: Medan, 1960).

<sup>59</sup> *Laporan Dinas Kesehatan Rakyat Tingkat I: Sumatera Utara* (n.p.: Medan, 1960).

<sup>60</sup> *Laporan Sumatera Utara*. Refer ‘Undang Undang Republik Indonesia Nomor 18, 1953 tentang Penunjukan Rumah Sakit Rumah Sakit Partikulir yang Merawat Orang Orang Miskin dan Orang Orang yang Kurang Mampu,’ *Lembaran Negara Republik Indonesia* Nomor 48.

<sup>61</sup> See also my discussion on tuberculosis in Chapter 5 which explores the bureaucratic complexities of Indonesia that impeded the execution of tuberculosis control.

<sup>62</sup> The Leimena Plan devolved the financing of disease control campaigns to the provincial and regency administrations whereas specific control strategies were conceptualized in Jakarta. The question of financing mass

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campaigns against communicable and infectious diseases was a major bone of contention between the central, provincial, and local governments.

<sup>63</sup> Chapter 4, section on yaws.

<sup>64</sup> *Ibid.*

<sup>65</sup> See also Chapter 4, section on tuberculosis.

<sup>66</sup> Raden Mochtar, *Health Education and Rural Health Problems in Indonesia* (Djakarta: Ministry of Health Division of Health Hygiene and Organization, 1953), 15. The Rockefeller Foundation had commissioned J.L. Hydrick to undertake intensive hygiene work in Banyumas, Java from 1924-1939. Although Hydrick's idea of establishing a 'village hygiene service' coincided with administrative decentralization of the Dutch East Indies government, his idea was not accepted by the Banyumas villagers as the establishment of a village hygiene service was seen as an initiative of the colonial state.

<sup>67</sup> *Ibid.*

<sup>68</sup> *Ibid.*

<sup>69</sup> 'Report on Health Education in Indonesia with Some Recommendations,' Doc. SEA/HEP/5 (Health Education of the Public), Folder Indonesia 27, *Project Files*, WHOA.

<sup>70</sup> Vivian Drenckhahn (WHO Regional Advisor to Health Education for Southeast Asia), 'Report on Visit to Indonesia,' Doc. 'Health Education of the Public,' 15 December 1955, New Delhi, Folder Indonesia 27, *Project Files*, WHOA.

<sup>71</sup> *Ibid.*

<sup>72</sup> Eric Andrew Stein, 'Hygiene and Decolonization: The Rockefeller Foundation and Indonesian Nationalism, 1933-1958,' in *Science, Public Health and the State in Modern Asia*, eds., Liping Bu, Darwin Stapleton and Ka-che Yip (London: Routledge, 2012), 51-70, 65.

<sup>73</sup> Pramoeda Ananta Toer, 'My Kampung,' in *Tales from Djakarta: Caricatures of Circumstances and their Human Beings*, ed. Pramoeda Ananta Toer, trans. Sumit Mandal (Ithaca: Southeast Asia Program Publications Cornell University, 1999), 54.

<sup>74</sup> *Ibid.*

<sup>75</sup> 'Strengthening Health Services: Health Education,' Folder Indonesia 27, *Project Files*, WHOA.

<sup>76</sup> *Sixty Years of WHO in Southeast Asia: Highlights, 1948-2008* (New Delhi: SEARO, 2008), 75.

<sup>77</sup> 'Kursus Ibu,' *Berita Hygiene* 1(1953): n.p. Leimena pointed out that Indonesia fared badly in international health indicators as compared to European nations in curbing maternal mortality. In 1950, Indonesia's maternal mortality rate of 12 per 1000 was comparable to other developing nations like India but ten times higher than the corresponding figure in Europe and North America.

<sup>78</sup> Stein, 'Vital Times,' 206.

<sup>79</sup> *Sejarah Kesehatan* vol. 2.

<sup>80</sup> 'Organisasi Masjarakat dan Kesehatan,' *Berita Hygiene* 12(1952).

<sup>81</sup> J.H. de Haas, 'Maternal and Child Health Survey in Indonesia: Java, Bali, and Sumatra,' December 5, 1954-March 2, 1955(n.p; n.p, 1955).

<sup>82</sup> Leimena, *Public Health in Indonesia*, 70.

<sup>83</sup> Julie Sulianti Saroso, 'Pendjelasan Singkat tentang Program Kesehatan Masjarakat Desa,' *Pedoman dan Berita Departemen Kesehatan* 4 (1969): 37-43.

<sup>84</sup> Saroso, 'Kesehatan Masjarakat Desa,' 40.

<sup>85</sup> 'Hasil Pembitjaraan dalam Panel Discussion jang Diadakan Pada Tanggal 20 Juli 1957,' *Seminar Pendidikan Kesehatan Rakjat di Bandung, Djuli 14-24, 1957: Laporan Lengkap* (Djakarta: Bagian Pendidikan Kesehatan Rakjat, 1957), 57. See also Julie Sulianti Saroso, 'Soal Integrasi dalam Penjelenggaraan Program Kesehatan Masjarakat,' *Pedoman dan Berita Departemen Kesehatan* 4 (1969): 34-36.

<sup>86</sup> 'Health Education in Indonesia with Some Recommendations.'

<sup>87</sup> D. Penman and Wirjawati Djojosugito, 'The Bekasi Project: Strengthening of Health Services, Indonesia Third Quarter 1962,' Folder Indonesia 55, September 24, 1962, *Project Files*, WHOA.

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<sup>88</sup> *Ibid.* The budget for malaria eradication in the Bekasi regency was 450 million rupiahs whereas only 9 million rupiahs were allocated for the health education and demonstration project in Bekasi.

<sup>89</sup> H.J.L. Russell (Regional Advisor to Public Health, WHO), ‘Tour Notes on Visit to Indonesia,’ November 14, 1962 to December 2, 1962, Folder Indonesia 55, *Project Files*, WHOA.

<sup>90</sup> D.S. Bekersley (WHO Sanitarian) and Mohammed Roesjid (Indonesian Counterpart), ‘Second Quarterly Field Report, 1963: Strengthening of Health Services, Bekasi (Indonesia),’ Folder Indonesia 55, *Project Files*, WHOA.

<sup>91</sup> *Ibid.*

<sup>92</sup> ‘Draft: Development of Health Services, Indonesia,’ Folder WHO Indonesia 55, *Project Files*, WHOA.

<sup>93</sup> ‘Correspondence between Regional Director, SEARO (C. Mani) and WHO Representative to Indonesia: Strengthening of Health Services,’ June 4, 1963, Folder Indonesia 55, *Project Files*, WHOA.

<sup>94</sup> See my discussion of the malaria eradication program, chapter 5 for further details.

<sup>95</sup> Achmad Dipodilogo, ‘Program Pelaksanaan Usaha Kesehatan Masjarakat di Indonesia,’ *Pedoman dan Berita Departemen Kesehatan* 4 (1969):57- 65, 58.

<sup>96</sup> ‘Dasar Dasar Landasan Kerdja Sama Setjara Strukturil dan Infrastruktril Sebagai Alat Pelaksana Program Kesehatan dari Pusat Sampai ke Daerah- Daerah,’ *Pedoman dan Berita Kementerian Kesehatan* 4(1969): 95-108.

<sup>97</sup> J. Leimena, *Commemoration Address on United Nations Day, 24 October 1960* (Djakarta: Ministry of Information, Republic of Indonesia, 1960), 8.

<sup>98</sup> Leimena, *Commemoration Address*, 10.

## CHAPTER FOUR

### THE CAMPAIGN AGAINST THE BIG FOUR ENDEMIC DISEASES

Since the 1950s, Indonesia has been actively interested in receiving international health and developmental assistance—particularly in the field of disease eradication—through agencies of the United Nations such as the WHO (World Health Organisation), UNICEF (United Nations Children’s Emergency Fund), and the WHO Regional Office for Southeast Asia (SEARO). Disease eradication programs in the post-World War II period in newly-decolonised nations of Africa and Asia were seen as demonstrating the ability of Western science to modernise the underdeveloped world. Within US policy circles, disease eradication (particularly malaria eradication) was viewed as a weapon to contain the spread of communism in Africa and Asia and as a means to foster political allegiance of the leaders of those countries. While there is a burgeoning scholarship documenting post-World War II disease eradication programs in Latin America, Africa, and India, the Indonesian chapter of disease eradication seems to have escaped the attention of the history of medicine.<sup>1</sup> Sunil Amrith’s influential monograph *Decolonising International Health* argues that India played a pivotal role in shaping the WHO activities in Southeast Asia because of its uniquely complex disease environment. Indians played a greater role in shaping approaches to Asia’s health than either the Indonesians or the Burmese.<sup>2</sup> However, this argument does not do full justice to the Indonesian imprint on the disease eradication campaigns of the 1950s in Southeast Asia. The unique epidemiological strategy developed by Dr. Raden Kodijat and Soetopo, for example, aimed to eradicate yaws in a resource-poor environment was emulated by other decolonising nations such as Malaya. The multidirectional flow of epidemiological ideas between the SEARO member states and Geneva was instrumental in shaping the practice of international health in the 1950s.

Indonesian leaders were convinced of the necessity to promote the health of the country’s population and address the many diseases that were plaguing the citizenry. In 1950, Abdul Halim’s cabinet identified malaria, tuberculosis, yaws, and leprosy as *Penjakit Rakjat* (the big

four endemic diseases), which adversely affected the overall vitality of the Indonesians. Mobilisation of the nation around the eradication of these big four diseases involved raising the standard of living of average Indonesians and presenting an image of the New Indonesian as free of disease in accordance with the *pembangunan* (nation-building) ideology. Indonesian physicians presented issues related to health and disease as essential elements of nation-building. The 1950s witnessed interplay of national and international ideas and initiatives in Indonesian public health. There were several sets of ideas on how to combat diseases internationally. In this chapter, I will focus on the way in which Indonesians received these ideas and fashioned them to suit their own purposes.

The ways in which Indonesia received and refashioned international ideas on health and international aid projects were determined by the desire for self-sufficiency and the country's ideology. Indonesia was not a passive recipient of international aid: it contributed to international campaigns as well. During the Cold War, disease eradication campaigns and international aid provided by the superpowers were a way to buy political allegiance, which made participation in these projects an essentially political act. Indonesia favoured the Bandung approach; that is: economic self-sufficiency, non-alignment and emphasis on solidarity with the newly-independent nations in a similar position to itself rather than reliance upon superpowers. The disease eradication campaigns formulated during the 1950s reveal the tension between Indonesia's ambitions to retain control over its health policy versus its increased openness to international aid.

For Indonesians, health was a part of nation-building. The discourse adopted by Soekarno and other nationalists around the struggle for Indonesian independence was appropriated by Indonesia's physicians who metaphorically referred to disease eradication campaigns as battles that would lead to further victories of the nation against poverty, illiteracy and disease and cultivate a strong and healthy population. Critical to the securing of international financial support for Indonesia's disease eradication program was the continued alignment of the Indonesian framing of disease eradication—that envisioned the creation of a strong and healthy population—with the agenda of international agencies that narrowly equated disease eradication

with maximising economic productivity was critical. Unlike the international agencies that correlated the prevalence of disease with poverty, Indonesian physicians adopted a holistic approach. They argued that diseases were not caused by poverty alone but were rooted in socio-economic conditions, political structures and the environment.

### **Disease Eradication and International Politics**

During the Cold War, the US became alarmed about the rapid spread of communism to developing countries. In an attempt to contain the spread of communist ideology among the developing countries, the US followed a policy of alleviating poverty in the underdeveloped nations of Asia, Africa and Latin America. The US contended that (a) disease caused poverty; and, (b) poverty was a breeding ground of communism. Therefore, the eradication of disease would arrest the growth of communist ideology. For the US, campaigns against disease also signified the enhancement of economic productivity in developing countries. It saw the political significance of funding disease eradication campaigns in developing countries as a means of gaining their political loyalties. The government of Indonesia, instead, sought to pursue its own path to health policy—the Bandung approach, independent of superpower intervention—and sought to cautiously balance Indonesia's sovereignty with increased openness to international cooperation in health. Unlike the US, which narrowly correlated the promotion of public health programs (especially disease eradication campaigns) with the maximisation of economic productivity and the containment of communism, Indonesia adopted a holistic approach that sought to use public health to achieve social and economic development, particularly in the rural areas. Indonesia did not aim to diffuse Cold War tensions.

World War II not only marked a major watershed in the campaign against infectious diseases but also brought to fruition the idea that eradication of disease vectors was possible with the application of suitable technological interventions. For example, DDT trials against malarial mosquitoes conducted by the Allied Forces in the Mediterranean and in Southeast Asia in 1944 could be universally applied to control malaria. The apparent success of DDT against malaria

inspired faith in the ability of medical technology to achieve human victory over nature.<sup>3</sup> The governments of India, Thailand and the Philippines had undertaken malaria eradication campaigns in the 1950s to generate a sense of social progress.<sup>4</sup> The eradication of malaria reinforced the belief that narrowly-directed technocratic solutions such as using DDT would solve the health problems of the underdeveloped countries.<sup>5</sup>

From 1945 onwards, the WHO and UN agencies such as the Food and Agricultural Organisation (FAO) and UNICEF shaped the thinking on public health of the newly-decolonising nations of Africa and Asia. The above agencies emphasised the effect of disease on labour productivity by quantifying the economic losses caused by disease. They argued that disease created lethargy, robbed people of their vitality, and resulted in underdevelopment. In this view, medical advances such as penicillin injections against yaws were catalysts of social change by curing the infections and increasing economic productivity.<sup>6</sup> These ideas were based on the notion that international development could be redefined in terms of disease eradication. This proposition quantified the social benefit that accrued from disease eradication in purely economic terms, such as maximising the productivity of labour of the newly-decolonised nations. This would then increase the extraction of raw materials and open markets, which in turn would benefit the industrialised nations, who often were the erstwhile colonial powers.<sup>7</sup> The economic rationale of disease eradication was criticised by Boentaran Martoatmodjo (Indonesia's first Minister of Health from 19 August 1945 to 14 November 1945), who argued that poverty was not caused by disease alone but by prevailing political structures, socio-economic conditions and the environment.<sup>8</sup> According to a number of Indonesian physicians, equating health with economic development was too simple because many other factors had their roles to play.

In the post-World War II world order—which was characterised by the Cold War rivalry between the US and the USSR—the US could not maintain its security after the emergence of communism in the developing countries. In a bid to contain communism, the US adopted a policy of economic development of the underdeveloped nations of Africa, Asia and Latin America, often in the form of humanitarian intervention. Integrated planning addressed the question of the health of their populations with a view to raising economic productivity.<sup>9</sup> The

rationale for this was straightforward: poverty was the breeding ground of communism, and since disease caused poverty, eradicating disease would prevent the spread of communism among the developing countries. The post-World War II definition of development coincided with US national interests that sought to increase the flow of raw materials from the developing nations to the industrial centres and provide overseas markets for US manufactured goods.<sup>10</sup>

From 1945 to the late 1960s, the US played a pivotal role (through the UN and its specialised agencies such as the UNICEF and the WHO) in implementing international assistance to underdeveloped countries. The US took part in international development in order to enhance its standing in international affairs as a champion of humanitarian causes. It sought to use UN agencies and technical experts as a conduit for executing international developmental projects aligned with US foreign policy such as the modernisation of agriculture and malaria eradication in developing countries. But, the developing nations did not always react positively to these initiatives. In the 1950s, the developing countries jealously guarded their hard-earned independence. They did not want to get entangled in the Cold War rivalry between the USSR and the US. As a result, they viewed aid from either USSR or the US with a certain degree of scepticism, preferring to receive aid from multilateral agencies such as the UN.<sup>11</sup> But, the UN was close to the US. US financial support to the developing countries administered through UN agencies in the 1950s envisioned a process of modernisation that involved efficient use of the world's financial resources to achieve overall improvements in health, education, and nutrition without accompanying social change.<sup>12</sup> Accelerating the development of the newly-decolonised countries of Asia and Africa through the diffusion of modern science and technology was considered the key to reducing the disparities between these countries and the more developed nations of Europe and North America.

In the late 1940s and early 1950s, the WHO was faced with the challenge of establishing its identity within the UN as a specialised agency in the context of the Cold War. To this end, it deliberately ironed over controversies such as socialized medicine, instead diverting its attention to narrowly directed public health interventions such as disease eradication.<sup>13</sup> In the 1950s, the WHO approach to public health in Southeast Asia was to develop short term demonstration

projects such as malaria, tuberculosis, yaws, venereal diseases, and maternal and child health.<sup>14</sup> During this period, throughout postcolonial Southeast Asia, the campaign against disease reflected the rising expectations of the population for a healthier future. These campaigns were approached through two competing public health strategies—i.e., the horizontal approach which addressed health problems through the establishment of health services, and the vertical approach that resolved particular diseases.<sup>15</sup> On occasion, these approaches coordinated with each other, the prime example of horizontal approach being the integration of BCG (Bacillus Calmette–Guérin) vaccination with maternal and child health in Indonesia. On other occasions, disease control initiatives, namely smallpox eradication and malaria eradication, competed against each other for scarce financial resources.

The WHO, which established its first regional office in South East Asia (SEARO) in New Delhi in 1948, believed that Southeast Asia, comprising India, Sri Lanka, Burma, Thailand, Indonesia, Afghanistan, and Nepal, had a certain unity shaped by tropical environment, shared poverty and pathogenic conditions.<sup>16</sup> However, the geopolitics of the Cold War and decolonisation dictated membership of the SEARO. Owing to the partition of British India and the subsequent conflict over Kashmir, Pakistan joined the East Mediterranean Regional Organisation which had its headquarters in Alexandria whereas Malaysia, then engaged in conflict with Indonesia, joined the West Pacific Regional Organisation (WPRO), with its headquarters in Manila.

The SEARO assisted member states through the assignment of short-term project consultants for malaria, tuberculosis, and maternal and child health, as well as financial support for disease eradication campaigns. The SEARO identified malaria as the ‘number one’ public health problem in Southeast Asia in 1953 which impeded the socio-economic development of the region.<sup>17</sup> To this end, it recommended malaria control on an inter-country basis with financial support from UNICEF and the Point-Four Program of the US under President Harry S. Truman (implemented in 1950 as a Cold War strategy to contain communism). The Point-Four Program stipulated that US technical assistance to developing countries could be provided in the fields of health, education, and agriculture. The application of such assistance could contribute to raising

the standards of living of the peoples and create new sources of wealth, thereby containing subversion of the population to communist ideology.<sup>18</sup> Recipient nations also had a strong interest in health, albeit for different reasons. The 1950s were characterised by a sense of optimism in the newly-independent states of Southeast Asia, which persuaded the people to believe that science offered opportunities for economic betterment and social change. For example, public health found mention in the First Five Year plans of India, Indonesia and Burma as a means of promoting socio-economic development.

The most significant political event influencing the course of disease eradication campaigns in the Southeast Asian region in the 1950s was the Bandung Conference of African and Asian nations, held in 1955. Apart from discussing socio-political issues, health was an important part of the program. Delegates, including Raden Mochtar, expressed a belief in the international circulation of technologies that bolstered the legitimacy of the post-colonial state's developmental programs and identification of the shared struggles of different groups against colonialism in the newly-decolonised nations of Asia and Africa.<sup>19</sup> The Eighth SEARO session at Bandung coincided with the Bandung Conference. At this session, Indonesians expressed optimism that rural development through the development of public health could serve as a medium to diffuse Cold War tensions worldwide. In his opening address, Raden Mochtar, Acting Chairman of the Eighth SEARO session, stated:

The WHO has become a symbol of hope for the peoples on the earth, although the work is still at the beginning of a very long endeavour. Whether its promise can be fulfilled depends upon many factors essential to the success of the Organization, among which are the participation of the nations in the work of the WHO. Health can be won only through the concerted efforts of all in fighting against illness. In this respect it is the same with peace and security, which are inconceivable without such efforts.

There is one thing to regret, namely that WHO as a non-political body cannot be entirely free from the frustrating effects of a politically and psychologically divided world community. Every nation should realise that the birth of this Organization emanated from the principle of universal solidarity and that the sole purpose of the WHO is to render the peoples of all countries physically and mentally healthier and stronger. Hence there is no excuse for any nation to stand aside from this international effort.<sup>20</sup>

In his address, Mochtar stressed that any attempt to raise the standard of health of the world population required the establishing of closer political cooperation between WHO member states and subordinating narrowly-defined national interests, e.g., the quarantining of communicable diseases across international borders to ensure the greater international good.

Soekarno's internationalism was reflected in Indonesia's membership of the SEARO and commitment to disease eradication. In 1960, Indonesia hosted the Thirteenth Regional Conference of the SEARO in Bandung. In his speech to the SEARO delegates at Bogor Palace, Soekarno emphasised that the Indonesian republic was a people's republic.<sup>21</sup> Indonesia's health program was implemented on behalf of the people and with the people. Soekarno stated that Indonesia was collaborating with other nations in the spirit of internationalism to eradicate disease. And, while it welcomed foreign aid, he emphasised that Indonesia was capable of implementing its targets of eradicating malaria, yaws and tuberculosis independently.<sup>22</sup> By 1960, after 'fifteen years of freedom,' Indonesia had indeed achieved modest accomplishments in health concomitant with people becoming 'health minded.'<sup>23</sup> In Soekarno's address to the SEARO delegates, he used the word 'free' four times, indicating a sense of Indonesia's commitment to international cooperation in health and a sense of possibility that Indonesia could eradicate tuberculosis and malaria with the cooperation of the people.<sup>24</sup>

During the Cold War, the US viewed the campaign against disease as an instrument to gain the political allegiance of the developing nations. Unlike the WHO and the other UN agencies which narrowly equated disease with underdevelopment, Indonesian physicians adopted a holistic perspective that contextualised disease in the light of socio-political factors, the prevailing political conditions and the environment.

### **Framing Disease Eradication in the Soekarno Era**

This section investigates the presentation of disease and health issues in Indonesia's nationalistic rhetoric of the 1950s. More specifically, it investigates how the discourse adopted by Soekarno around the revolutionary struggle was appropriated by Indonesian physicians who

metaphorically depicted disease eradication initiatives as battles which would lead to further victories of the nation against poverty, thus cultivating a strong and healthy population. The continued congruence of the nationalist imageries of disease—that depicted disease as debilitating the nation’s demographic and economic potential—with the agenda of international organisations that narrowly quantified economic losses sustained as a result of disease, was a crucial factor determining international support for Indonesia’s public health projects.

Between 1949 and 1967, disease eradication in Indonesia was presented within President Soekarno’s *pembangunan* ideology, which used military metaphors such as *musuh* (enemy) to associate malaria with the weakening of the masses because it drained them of their vitality. Such a metaphorical depiction of disease served to articulate a very specific reading of the nation’s health in which international health ideas were reinterpreted in an Indonesian context. According to Indonesian physicians, *pembangunan* contained multiple initiatives such as eradicating illiteracy, increasing the food supply, and achieving a higher standard of living. For example, eradicating malaria could be presented as central to progress and development because it was seen as the key to increasing labour efficiency and developing areas wherein the disease was endemic, such as Kalimantan.

President Soekarno conceptualised *pembangunan* to articulate Indonesia’s vision of development and its aspirations for a brighter future after three-and-a-half centuries of Dutch colonialism. It embodied national reconstruction with a view to transforming Indonesia into a just and prosperous society and recreating an international society (*masjarakat dunia*) based on security for every person.<sup>25</sup> For Soekarno, the meaning of *merdeka* (freedom) reflected the aspiration of Indonesians to have their basic needs such as food, clothing and education fulfilled, as reflected in the Javanese expression *subur kang sarwa tinandur, murah kang sarwa tinuku* (prosperity in which everyone was ensured satisfaction of basic needs). Thus, Soekarno’s view of *pembangunan* embraced advancements in public health, communications, the construction of monuments, and the development of a strong military that expressed Indonesia’s newly-won self-confidence<sup>26</sup> In the context of nations, Soekarno envisioned the percolation of the fruits of scientific knowledge to Indonesian society in which the rumbling of the tractor was symbolic of

addressing the problem of increasing food supply to feed the country's ever growing population.<sup>27</sup>

The discourse developed by Soekarno and other nationalists around the struggle for Indonesian independence and the identity of the Indonesian nation was adopted by Indonesian physicians to frame health initiatives as battles which would lead to further victories of the nation. At the time of Indonesian independence (1949) Indonesian nationalists argued that infectious diseases such as malaria, fever, and diseases of the gastrointestinal tract were responsible for diminishing the working capacity of the nation's workforce resulting in lowered agricultural productivity and starvation.<sup>28</sup> In other words, a strong and healthy population was a vital ingredient in ensuring the prosperity of the Indonesian nation.<sup>29</sup> Disease aetiologies constructed by Indonesian nationalists sought to rationalise the relationship between poverty, disease and national priorities of the archipelagic state at the time of independence. Within the framework of mass disease, malaria was cast as a *hantu* (ghost) which haunted the coastal areas and the hinterland causing malnutrition among children and infant mortality. It was considered the *musuh nomor pertama* (enemy number one) of the newly-independent nation.<sup>30</sup> On the tenth anniversary of the WHO in 1958, the Minister of Health, Dr Azis Saleh reflected on the state of Indonesia's health since independence, by using the word *kemadjuan* to indicate the progress made by the Indonesian nation in public health during the 1950s, despite the challenges posed by an acute shortage of physicians, and health centres.<sup>31</sup> In his speech, Dr Saleh indicated that the Indonesian government would work jointly with the people (*kita bersama usaha*) to address the problem of ill health in the homeland (*tanah air kita*) through mass mobilisation of schoolchildren and teachers to spread awareness of preventive health.<sup>32</sup>

In 1959, President Soekarno inaugurated the Indonesian chapter of the malaria eradication program in collaboration with the ICA and the WHO. In his speech, he used military metaphors to associate malaria with the loss of the nation's economic potential.<sup>33</sup> He substituted the word malaria with mal-mosquito to demonstrate that malaria was not caused by climate but by mosquito bites that paralysed the nation's economic potential. Eradicating malaria, in Soekarno's vision, would result in the creation of a physically and mentally healthy Indonesian

population.<sup>34</sup> The Indonesian malaria eradication program was the second largest in the world after India; but, the sheer size of the archipelago had forced the Indonesian government to adopt a militarised approach to eradication, noted by the *Times of Indonesia*, dated 13 August 1959:

Indonesia with her 3,000 islands, 85 million population and approximately 18 million houses is divided in 58 battle zones, each consisting of some 300,000 houses. Each battle zone requires: 620 tonnes of DDT, 30 motorized vehicles, 60 spraying instruments, 60 overseers, 10 mobile teams, 23 microscopist [sic], 50 malaria officers, 60 workers, and buildings, storehouses and staff-quarters in the regions. In ten years every inch of walls of houses in villages, mountains, hills, fields, swamps and rivers should be entirely sprayed with DDT. The walls of houses have become the main object because malaria mosquitoes after sucking blood used to take rest on walls of houses.<sup>35</sup>

The Indonesian government's official launch of the malaria eradication campaign in 1959 was an attempt to align the nationalist imagery of a strong and healthy citizenry free of disease with the agenda of international agencies such as the ICA and the SEARO. These agencies emphasized the economic aspects of the disease and quantified the economic losses sustained internationally due to malaria. As a consequence of balancing the nationalist imagery of disease eradication with the agenda of international agencies, the Ministry of Health sought to secure moral and financial support for malaria eradication.

Indonesian physicians appropriated the revolutionary discourse conceptualised by Soekarno and other nationalists to represent disease eradication initiatives as victorious battles that would augment the nation's economic productivity. During the 1950s, the continued alignment of the nationalist imagination of disease (that perceived the symbolic value of disease eradication campaigns in constructing a strong and healthy population) with the international agencies' agenda that equated disease eradication with development, was critical to ensure sustained international support for Indonesia's public health programs.

### **Malaria: From Control to Eradication**

The common denominator uniting the ideas surrounding malaria control of the WHO, the Indonesian Ministry of Health, and the US was the belief that malaria eradication would lead to

increased economic productivity. The continued alignment of nationalist rhetoric and health initiatives that envisioned disease eradication as an important step in the creation of a strong and healthy citizenry with the agenda of international agencies that equated the campaign against disease with enhanced economic productivity, was crucial for continued international support for Indonesia's malaria eradication program. Between 1951 and 1956, the Indonesian government implemented pilot malaria control projects with international support that sought to minimise the incidence of malaria using DDT. Unfortunately, these malaria control operations were impeded due to mosquitoes developing resistance to DDT. By 1958, the Indonesian Ministry of Health had launched a malaria eradication program on a nationwide basis which faced shortcomings not because of insecticidal resistance of mosquitoes but due to bureaucratic delays that affected the effective implementation of the anti-malarial campaign. Unfortunately, the Indonesian Ministry of Health had learnt no lessons from the resistance of mosquitoes to DDT.

The term 'magic bullet' refers to specific treatments targeting and destroying microorganisms causing the disease.<sup>36</sup> For example, DDT could eliminate malaria from tropical areas by killing all mosquito vectors, in the process avoiding the enormous expenditure incurred by draining marshes and swamps that would have prevented the breeding of the *anopheles*. The Indonesian government initially introduced malaria control with DDT as pilot demonstration projects in Java in the villages of Cilacap and Semarang in Central Java between 1951 and 1956. Prior to formally commencing the eradication program in 1959, assistance was provided by the WHO. These projects revealed the shortcomings of the magic bullet approach as the *anopheles sundaicus* developed resistance to DDT. Subsequent demonstration projects used DDT in malaria control in conjunction with endrin, aldrin and dieldrin (pesticides used in paddy fields) beginning in 1956.

Malaria control is the reduction of the prevalence and morbidity of the disease to acceptable levels.<sup>37</sup> During the early 1950s, Indonesia implemented malaria control measures through a combination of insecticide spraying (DDT), quininisation of the affected population and the draining of swamps.<sup>38</sup> Although the initiatives seemed promising, malaria control measures proved unworkable due to the enormous capital expenditure. Thus, by the mid-1950s,

the Indonesian Ministry of Health opted for the large-scale spraying of DDT as a cost-effective measure of malaria control. Apart from the ineffectiveness of DDT under hot and humid weather conditions and the development of anopheline resistance to the insecticide, malaria control was further impeded by unscientific spraying attributed to the selective spraying of malarious locations based on political criteria.

In 1950, the Malaria Section of the Ministry of Health designed field experiments to study the impact of DDT house spraying of *anopheles punctulatus* and *anopheles sundaicus* in Marunda village near Tanjung Priok harbour of Jakarta.<sup>39</sup> The spraying activities resulted in a decrease in the incidence of malaria among schoolchildren.<sup>40</sup> However, this experiment was only an isolated example of the success of the magic bullet approach. In the early 1950s, Indonesia's malaria control programs relied on a combination of household spraying of DDT, quininisation of the affected population, and sanitary works such as the draining of swamps. But, mass quininisation and the draining of swamps proved unworkable due to the huge capital expenditure required. Eradication campaigns ultimately came to rely exclusively on DDT.

The malaria control plan for the province of Central Java was implemented by the doctors of each residency of that province. C.A. Ferullo, WHO sanitary engineer at Cilacap, described the mechanics of the spraying operations as follows:

The recommended dose was two grams of technical DDT per square meter. The spraymen were trained to cover a standard wall of twelve m<sup>2</sup> in one minute to obtain the required deposit. It was satisfactory to note that within three days all trainees, with few exceptions, were in a position to spray at the recommended speed. With a view to obtaining a constant rate of discharge from the Hudson sprayers, a particular technique was elaborated, based on uniform intervals among the charges and a fixed number of strokes.<sup>41</sup>

In line with enhanced spraying, the average sprayed area per house in Cilacap increased. Spraying operations were not carried out in a timely manner. This was often associated with political reasons such as the containment of banditry in the western part of Cilacap regency where the military had recommended malaria control.<sup>42</sup> Spraying DDT was done in association with military action in order to curb banditry.

The malaria control projects in Cilacap and Semarang used malariometric methods that involved blood and spleen surveys and entomologic surveys that included testing anopheles species for susceptibility to insecticides.<sup>43</sup> The surveys revealed that the parasite levels in blood were fairly high in individuals living in the coastal belt, and high in individuals living in fertile agricultural areas.<sup>44</sup> Experiments with household spraying of DDT to control the *anopheles sundaicus* vector in the coastal areas of Banyumas revealed that the vector had developed DDT resistance due to the progressive deterioration of DDT coating on the walls of houses, rendering the insecticidal properties of DDT ineffective.<sup>45</sup> Moreover, *anopheles sundaicus* avoided the walls of the houses once they were sprayed with DDT. Anopheline resistance to DDT was also recorded in parts of eastern Java in the early 1960s where DDT and dieldrin were used in combination with other insecticides such as endrin and aldrin to control pests in rice paddies and were added to fishing bait in the lagoons.<sup>46</sup> The *anopheles sundaicus* species had thus demonstrated cross-insecticidal resistance to DDT as it had developed an earlier immunity to endrin and aldrin. Concomitant with increased insecticidal immunity, the density of *anopheles sundaicus* in East Java increased. The pilot project was, therefore, entirely unsuccessful as mosquitoes developed resistance to DDT due to its deterioration in a hot and humid climate.

In the period that followed, due to a shortage of spraying personnel and a lack of spraying directions, DDT spraying was carried out haphazardly. Prior to commencing the National Malaria Eradication Program in 1959, spraying with insecticides in provinces such as East Java was carried out in selected areas only, leaving the surrounding zones highly susceptible to malaria. The toxic effects of dieldrin became evident when eight to ten spraymen at one time succumbed to headaches and convulsions, which were caused by the short term effects of dieldrin exposure.<sup>47</sup> There were reports of chickens, goats and ducks dying in villages of East Java due to house spraying with dieldrin.<sup>48</sup> Eventually, people refused to cooperate with the spraying squads owing to economic losses incurred as a result of the spraying operations.

During its initial stages from 1951 to 1956, the malaria control program was highly centralised. The control program for the province of Central Java was prepared by the Malaria Institute at Jakarta for the whole province without consideration for geographic or climatic factors. The Indonesian government's malaria control manual, published in 1956, described the complex chain of command style of functioning of the malaria control program as follows:

Reports and records are essential to an efficient malaria control program. The Malaria control program for the Republic of Indonesia is a nation-wide one and complete, accurate and regular reports are necessary to those who do the overall planning and directing. Although the individual Provincial Control Operations are under the direction of the Inspectors of Health, the insecticides, vehicles, sprayers and a large part of the finances are furnished by the Central Government. Much of the training of personnel is carried on by the Malaria Institute. The Budget of the Ministry of Health must be made up for a year in advance. The Government must request insecticides, vehicles, sprayers and laboratory equipment from the International Co-operation Administration of the United States of America one year in advance. Much of this planning is based on records, which are in turn based on reports sent in from personnel actually engaged in spraying operations and other phases of malaria control.

Standardization of Reports cannot be overemphasized. Reports coming in from Supervisors to the offices of the Inspectors of Health must be consolidated. Just as the Mandur [Associated with supervision of spraying DDT] makes his report from the individual reports of his spraymen, the Sub-supervisor makes his from those of his Mandurs, and so on up, the Ministry of Health must make a report for the nation.<sup>49</sup>

Lines of responsibility in organizing the malaria control program remained undefined from the very beginning. The provincial health inspectors had enormous control over implementing malaria control activities in territories under their jurisdiction. But for all practical purposes, they were dependent upon the Ministry of Health at Jakarta for the disbursement of funds which were often delayed.

Malaria eradication is the permanent elimination of the disease even in the absence of control measures. Between 1958 and 1965, Indonesia implemented malaria eradication that consisted of the following strategies: (a) mapping out the prevalence of the disease through surveys; (b) determining the resistance of the anopheline species to DDT; (c) treating all suspected malaria cases discovered during surveys with chloroquine; and, (d) spraying the infected household with DDT to contain the transmission of malaria. The course of the malaria

eradication program in Indonesia started to look promising with the sharp decline of the parasitic index in children with the commencement of spraying operations and the temporary elimination of malaria from the major urban areas such as Jakarta and Surabaya. But, the sustained implementation of the eradication activities was contingent upon international funding. Indonesia's leaders astutely related the nationalist vision of malaria eradication of cultivating a strong and healthy citizenry to the agenda of the WHO that equated malaria eradication with the improvement of economic productivity with a view to securing international support for the program. However, political uncertainties within Indonesia such as Soekarno's suspension of parliamentary institutions and the establishment of closer ties with the USSR resulted in decreased American support for the malaria eradication program. Additionally, there was a cessation of spraying operations between 1965 and 1967 due to political disturbances and the movement of peoples between the Outer Islands (which were still malaria endemic) and Java's urban centres that had temporarily eliminated malaria by the mid-1960s, importation of malaria into Java's urban centres recurred in 1967.

On 29 October 1954 and 27 February 1958, the Indonesian government entered into separate agreements with the ICA and the WHO for eradicating malaria using the following methods: (a) use of residual insecticides such as DDT (that had a long-lasting effect in malaria control except under tropical conditions); (b) detection of individual malaria cases through blood tests; (c) case finding operations; (d) the administration of anti-malarial drugs to the population; (e) depletion of the plasmodium (malarial parasite in the human blood) reservoir; and, (f) integrating malaria eradication into public health services.<sup>50</sup> The Ministry of Health sought to secure international support for the malaria eradication program by framing it in terms of maximising national productivity and extending the eradication campaign to Indonesia's international borders. Malaria eradication served as a platform for Indonesia to express its commitment to the international community, particularly by interrupting transmission of the disease in Kalimantan (then malaria endemic), which shared a land border with Malaya. The WHO proposed sponsoring the visit of the then Minister of Health Azis Saleh to Mexico in 1958, so that the Indonesians could learn from the Mexican campaign about scientific spraying and

administrative organisation of the malaria eradication program. But, the proposal could not materialise due to political uncertainties within Indonesia soon after Soekarno's suspension of parliamentary institutions in 1957.<sup>51</sup>

In 1958, Azis Saleh quantified the economic losses resulting from malaria, labelled as the single most important cause of economic drain for Indonesia. Approximately 30 million Indonesians were affected, of whom 40% were wage earners and 60% were children resulting in a productivity loss of 360 million rupiahs per annum.<sup>52</sup> In Saleh's discussions with Prime Minister Djuanda in 1958, the narrow quantification of economic losses caused by malaria justified the execution of the malaria eradication program throughout the Indonesian archipelago and synchronised well with the *pembangunan* ideology. In addition, the ready availability of DDT as a cost-effective technological intervention in post-World II Indonesia meant that it could be extended to remote communities of the archipelago. In other words, Saleh's program was feasible.

The 1959 Indonesian malaria eradication campaign coincided with Soekarno's proclamation of his *Manifesto Politik*, which envisioned the need to retool the Indonesian people towards a just and prosperous society based on 'developing the power potential of the Indonesian masses,' expressed through mass mobilization of the population against illiteracy and disease.<sup>53</sup> Within the *Manifesto Politik* framework, malaria was constructed as a *musuh* (enemy) which affected the physical and mental wellbeing of the Indonesians. In 1959, the Malaria Eradication Service within the Ministry of Health was invested with quasi-independent authority to implement DDT spraying, surveillance of malaria cases and treatment, and entomological investigation of anopheles. In 1963, the Ministry of Health created KOPEM (*Komando Operasi Penjakit Malaria*) as a special taskforce to eradicate malaria in Java and Bali, a continuation of the nationalist rhetoric on health.<sup>54</sup> The DDT spraying operations had reduced the incidence of parasitic index in children from 22.5% prior to 1963 to 0.2% soon after the spraying operations had commenced.<sup>55</sup> The beginning looked good.

From its inception, the malaria eradication program faced organisational setbacks such as poor remuneration for the spraying squads and confusion between health education and training of public health personnel. Indonesian medical professionals did not view the malaria eradication program as promising as they were recruited against their will. Malaria eradication officers were forcibly drafted from the Chinese community based on an obsolete law, which caused resentment.<sup>56</sup> The malaria eradication program was impeded not so much by the deterioration of DDT but by bureaucratic hurdles within Indonesia resulting from the centralised nature of the campaign which overlooked the geographic, epidemiological and demographic diversity across the archipelagic nation. While health education in Indonesia inculcated healthy habits among the population, it did not educate them on the significance of indoor spraying. Therefore, the population did not cooperate with the spraying squads. The malaria eradication personnel were unable to interpret spraying instructions from the KOPEM headquarters as the instructions were highly centralised. The spraying operations were not supervised, the sprayers failed to achieve expected targets and bottlenecks existed in the complex chain of command. For example, each head of the malaria eradication zone at the residency level received instructions based on the lunar month but was expected to present results according to the calendar month.<sup>57</sup>

The malaria eradication staff had to negotiate the bureaucratic maze of rules and regulations at the local, provincial and central government levels when requesting accessories such as sprayer parts, and spare parts for transport such as tyres and batteries. This impeded the complete coverage of the malaria endemic zones. For example, worn tyres of vehicles used in the malaria eradication program in the Yogyakarta area had to be brought in from Semarang, the provincial capital of Central Java, and issued a certificate of unworthiness by the police before the malaria service could file an application to the Malaria Eradication Program, Jakarta, for new tyres.<sup>58</sup> The administrative procedure for replacement of spare equipment used in the program took two months.<sup>59</sup> As a result of procedural delays, the eradication program made slow progress during its first year, from 1959 to 1960. Instead of supervising eradication operations, the WHO officers in Indonesia were burdened with the administrative responsibility of clearing customs duties on imported spare parts for WHO

vehicles used in the eradication campaign, imposed by the Indonesian government. In the residency of Cilacap, there was an abnormal increase in the numbers of malaria cases in February 1960.<sup>60</sup> In the provinces of Sumatra, except for malarial surveys that determined parasite levels in the blood, the eradication program demonstrated slow progress in 1960 owing to difficulties surrounding the procuring of spare parts for vehicles from Jakarta.<sup>61</sup>

Owing to the slow progress of malaria eradication in the first year, the ICA proposed to halve the funding for the program from \$10 million to \$5 million.<sup>62</sup> The ICA was disappointed that the Indonesian government failed to accord autonomous status to the National Malaria Eradication Service. Vehicles used by the malaria eradication campaign were purchased using ICA funds; but, they were misallocated to doctors who did not participate in the eradication program.<sup>63</sup> The ICA made a direct appeal to Djuanda to slow down the malaria eradication program in Indonesia. But, the Minister of Health, Satrio, was fighting to expand it.<sup>64</sup> The SEARO Director General, C. Mani (1948-1968) had the unenviable task of performing a delicate balancing act, ensuring the compliance of the Indonesian Ministry of Health with ICA directives granting greater autonomy to the National Malaria Eradication Program in line with Satrio's vision of expanding the coverage of malaria eradication.

The year 1959 was politically difficult for the malaria eradication program, owing to Soekarno's reversion to the 1945 Constitution, suspension of parliamentary institutions, and the strengthening of military ties with the Soviet Union, all of which led to a reduction of US aid. Indonesian discontent with international aid was evident in Minister of Health Satrio's address to the Thirteenth Annual Meeting of the SEARO, Bandung (1960). Satrio stressed that the modern public health needs of Indonesia could not be met solely by funding from the WHO or ICA but required greater spending by the Indonesian government. If the government was unable to allocate a greater share of the national income to public health, people would be discontented about the program of overseas assistance.<sup>65</sup> Satrio further perceived that unconditional acceptance of international aid in health would compromise Indonesia's political sovereignty.

Despite a series of organisational and political setbacks, Indonesia introduced the malaria eradication program starting with pre-eradication strategies such as mapping out the exact geographical distribution of malaria and determining the anopheline species' resistance to DDT. Once the exact prevalence of malaria in a given area was determined, all adjacent areas with suspected malaria transmission were selected for spraying. After treating the endemic areas with DDT, part-time malaria assistants commenced detecting fevers. When malaria was suspected in families or villages, the suspected malaria patient and all detected fever cases were treated with anti-malarial drugs; and, village houses were sprayed with DDT as a precautionary measure.

Eradication initiatives were also undertaken in the Outer Islands. The WHO recommended that KOPEM use mass chemotherapy (using chloroquine) for treating suspected malaria cases there as surveillance operations could only be accomplished with great difficulty owing to transportation problems. However, the recommendation was not carried out due to a shortage of chloroquine; instead, surveillance operations were carried out. Surveillance operations consisted of epidemiological investigation of malaria cases through surveys and voluntary examination of spleen rates among vulnerable groups such as schoolchildren and women.

South Kalimantan was given first priority for eradication in 1961 as the Ministry of Health conceptualised malaria eradication in the province as the nucleus around which basic health services would develop. Through the KOPEM, the Ministry of Health was able to obtain not only epidemiological data pertaining to malaria but also valuable information regarding location of health centres.<sup>66</sup> The general polyclinics at the sub-district level detected symptoms of malaria using printed cards issued by the KOPEM.<sup>67</sup> Pre-eradication strategies in the province consisted of detecting the spleen rates of primary schoolchildren and voluntary examination of the spleen rates of villagers. But the village women in South Kalimantan were unwilling to be subjected to spleen examination. In Bali, the malaria eradication program commenced spraying operations in 1962 with the application of DDT and dieldrin in six and eight monthly cycles respectively.<sup>68</sup> Spraying operations were temporarily suspended in February 1963 following the eruption of Gunung Agung volcano. Surveillance operations consisted of epidemiological

investigation of suspected malaria cases: house cards were used to detect malaria at the household level.<sup>69</sup> Upon the discovery of fever, the suspected case would be treated with chloroquine and the entire house would be sprayed with DDT to break the link of transmission.

However, malaria eradication operations could not be implemented uniformly across Indonesia. Progress in Indonesia from 1960 to 1965 was influenced by uncertain economic conditions and international politics. The fall in the value of the Indonesian rupiah in 1964 meant that malaria eradication staff had to take part-time jobs to support their meagre income.<sup>70</sup> And, due to the deteriorating relations between the US government and Indonesia, the former withdrew its aid to the malaria eradication program. According to Soebandrio, Minister for Foreign Economic Relations, Indonesia was already intending to sever USAID to malaria eradication and replace it with some other form of assistance.<sup>71</sup> In 1964, malaria eradication in Java was discontinued due to lack of funds. In 1965, the government allocated approximately 5.2 billion rupiahs from its regular budget for malaria eradication. But, as a consequence of rampant inflation, estimated at 600% in 1965, and the depreciation of the international exchange value of the rupiah by almost 66% from 1959 to 1965, the Indonesian budgetary allocations for malaria eradication and the remuneration of field personnel proved grossly inadequate.<sup>72</sup> Spraying operations were delayed in most residencies of East Java in 1965 owing to inadequate transportation and supervision. In Bali, surveillance activities continued on a fortnightly basis up to the second quarter of 1965. Despite active detection and follow-up of malarial cases, treatment remained ineffective owing to a shortage of medicines.<sup>73</sup> Despite financial difficulties and the drying up of international assistance, the malaria eradication program in Indonesia continued until September 1965, when eradication operations were suspended indefinitely following the September 30 coup by Indonesian armed forces that were in the process of liquidating the Indonesian Communist Party (PKI).

The failure of the campaign was predictable considering its slow start and lack of definite accomplishments from its inception until 1965. Administrative bottlenecks such as clearing customs duties for imported WHO vehicles used in the campaign, or replacing worn spare parts of vehicles meant that on occasion, WHO field staff in Indonesia had to circumvent the rules to

get the job done. For example, some had to carry out purchases of gasoline out of their own pocket while on their official duties. The campaign commenced its operations in Java, South Sumatra, and Bali by 1959 and had extended its activities to the entire archipelago by 1963. Consequently, cities on the island of Java, for e.g., Jakarta and Surabaya had temporarily eliminated malaria by early 1965. However, owing to the termination of US assistance to the program in 1964, the lack of availability of DDT, the deterioration of the existing DDT stock, the acute shortage of malaria surveillance staff, and the political unrest in the country from 1965 to 1967, the eradication program was suspended for an indefinite period in the second half of 1965. The 1950s onwards saw the continuation of the *transmigrasi* (transmigration) program—which had been initiated by the Dutch colonial government to facilitate the transfer of population from areas of high density such as Java to the Outer Islands. However, this continued movement of the population to the Outer Islands—that were malaria endemic—and to parts of Java that had temporarily been malaria-free, ensured the spread of the disease. In line with the above, the number of malaria outbreaks increased between 1967 and 1968.<sup>74</sup>

By 1969-70, nationalist physicians particularly Martoatmodjo had observed that the campaigns against endemic diseases such as malaria, tuberculosis, yaws, and leprosy, which had been initiated in the early 1950s, had favoured narrow technocratic solutions (such as the use of DDT to control malaria, or penicillin shots to cure yaws).<sup>75</sup> But, such measures did not address the perceived cause of disease, namely poverty and indentured labour. Martoatmodjo observed that from 1950 until about 1970, high prevalence of malnutrition continued as during the era of Dutch colonialism.<sup>76</sup> Deaths from malnutrition were either treated in hospitals, or misreported as malaria deaths due to identical symptoms manifested by patients such as enlarged spleens. Martoatmodjo claimed that the malaria eradication campaign in Indonesia addressed the clinical symptoms but not the causes (for example, rural indebtedness, and poverty) of the disease.<sup>77</sup> He further recommended that for the successful conclusion of the campaign against endemic diseases, Indonesia needed to address the socio-economic factors leading to poverty and disease such as rural indebtedness, or inequitable distribution of food. Martoatmodjo's comments

highlighted the limitations of narrowly equating malaria eradication with development; the relationship between disease and economic development was far more complex.

Indonesia's malaria eradication program was the second largest in the world after India.<sup>78</sup> The WHO had allocated more staff to the former's malaria eradication program than to any other country in Southeast Asia. But, unfortunately, the performance of the program was below that anticipated by the WHO.<sup>79</sup> While epidemiological studies in Indonesia were thorough, the implementation of specific aspects of the program was ineffective compared to other WHO member states such as Mexico.

Both malaria control operations implemented between 1951 and 1956, and the eradication program, implemented between 1958 and 1965, failed as a result of three factors: (a) the Byzantine maze that was the Indonesian bureaucracy; (b) the toxicity of DDT resulting in popular resistance to spraying operations; and, (c) the resistance of the anopheline species to DDT. Of the three factors—negotiating the byzantine maze of the Indonesian bureaucracy was the most predictable factor accounting for the delay or suspension of the malaria eradication activities. The development of the anopheline species' resistance to DDT was an unpredictable factor that frustrated the course of the eradication program.

### **Tuberculosis Control**

Tuberculosis in post-World War II Indonesia was framed both as a socio-hygienic and a socio-medical problem. Each of these frames had very specific implications for tuberculosis control. As a socio-medical problem, Indonesian physicians viewed tuberculosis was a problem peculiar to individual patients that could be cured with a single-drug treatment. In contrast, conceptualising tuberculosis as a socio-hygienic problem involved educating patients and families about the infectious nature of the disease (for example, by fostering hygienic habits such as the prevention of spitting) and the rational administration of prescribed medications, and of BCG vaccinations for infants. As hospital beds were in short supply and tuberculosis treatment was expensive, the SEARO recommended a combination of socio-hygienic and socio-medical

approaches for tuberculosis control. This involved home visits, educating patients and their families about the contagiousness of the disease, and ensuring the former's compliance during the duration of their treatment.

Prior to 1949, apart from a few clinical trials, very little was known about the efficacy of anti-tuberculosis drugs in a tropical environment. Equally little was known of the implications of combining preventative measures such as BCG vaccinations and health education when treating individual patients in a family. In the 1950s, the WHO launched pilot studies in Madras and Bangalore in South India to investigate the effects of drug treatment provided under domiciliary conditions in a sanatorium.<sup>80</sup> Around the same time (1952), the WHO, in conjunction with UNICEF and the Ministry of Health (Indonesia), undertook a pilot ambulatory project in Bandung, within the scope of Johannes Leimena's Bandung Plan. The aim was to investigate the effect of large scale drug treatment in patients and its effect in diminishing the burden of tuberculosis in the community. Such pilot studies undertaken by the WHO contributed to insights into tuberculosis and its treatment for third world countries. Tuberculosis control in the 1950s closely corresponded with the Indonesian nationalist contention that the Indonesian nation had been enfeebled by three and a half centuries of Dutch colonialism. Tuberculosis, a consequence of this enfeeblement, had impeded the progress of Indonesia by three-and-a-half centuries.<sup>81</sup>

In post-World War II Indonesia, a person died from tuberculosis every two minutes.<sup>82</sup> Malnutrition-induced tuberculosis was a leading cause of death. During the Japanese occupation, tuberculosis began to assume epidemic proportions owing to the impoverished state of the people. Indonesians were ill-prepared to control tuberculosis at the dawn of independence: there were only fifteen sanatoriums with 1,537 beds in the entire country.<sup>83</sup> The per capita expenditure incurred when curing a tuberculosis patient in the early 1950s was approximately 4,000 rupiah, which translated into a gross expenditure of 8,000 million rupiah per annum for treating the nearly one million Indonesian tuberculosis patients.<sup>84</sup> In contrast, the per capita expenditure incurred when administering the BCG vaccine to prevent tuberculosis amounted to a mere 50 sen per person.<sup>85</sup> Between September 1952 and mid-1957, the Ministry of Health operated a Tuberculosis Control and Demonstration project in Bandung, West Java, in collaboration with

the SEARO. The Ministry planned to investigate the prevalence of tuberculosis, and to suggest preventative measures. The SEARO report revealed that malaria, nutritional disorders, and pneumonia had a hidden influence on the prevalence of tuberculosis.<sup>86</sup> Overcrowding and insanitary housing, spitting, lack of general hygiene, and a low intake of animal protein were some of the social factors leading to tuberculosis. Interestingly, a statistical investigation of tuberculosis distribution according to profession revealed that food handlers and manual labourers were most vulnerable to the disease.<sup>87</sup>

In 1952, when the tuberculosis project was implemented, Bandung was facing an acute shortage of hospital beds. The only viable measure was ambulatory chemoprophylaxis, i.e., visiting patients' homes, educating families on tuberculosis, administering drugs such as isoniazid and streptomycin, isolating the infected patients, and ensuring that the patient followed up on medications.<sup>88</sup> The SEARO advocated a long-term solution to tackling tuberculosis: It has been found that local doctors need very little, if any, instruction in the clinical aspects of tuberculosis; they are rather well informed. But the public health attitude—that the work is aimed at the healthy people to decrease the risk of contracting tuberculosis, more than to assist patients in getting rid of it has proved to be a subject on which the WHO can bring and has brought new knowledge to combat the expressed negative approach of some national doctors.<sup>89</sup>

As well, SEARO advocated ambulatory chemoprophylaxis as a strategy for tuberculosis control (similar to the Bandung project) for other countries in Southeast Asia where hospital beds for treatment were also in short supply.

*Mantris* (male nurses) and home visitors formed an important link between the pilot project and the general population of Bandung. They visited the homes of infected patients, examined family members for tuberculosis, and taught them about the scientific disposal of sputum. The activities of the pilot tuberculosis control and demonstration project were coordinated by a tuberculosis centre in Bandung city, which examined nearly 40,000 patients annually. The staff treated the diagnosed tuberculosis patients on an ambulatory basis, using drugs such as streptomycin.<sup>90</sup>

The SEARO played an advisory role in the project, training home visitors and *mantris*. But, many of the home visitors recruited for the project were inexperienced and required

constant supervision by a WHO nurse.<sup>91</sup> Although the Bandung tuberculosis centre was enthusiastic about training medical students in tuberculosis control, in practice, tuberculosis training was not very remunerative. Bandung lacked a medical faculty in 1952; and, the existing medical schools in Jakarta, Surabaya, Yogyakarta and Medan lacked contact with the tuberculosis project. Financing the project remained a thorny issue from the very beginning. The project was directly administered by the Tuberculosis Section of the Ministry of Health. But, control was transferred to the Inspectorate of Health, West Java in 1954. The Bandung municipal health service was not involved in the execution of the project as it lacked sufficient finances.<sup>92</sup> The then Minister of Health, Johannes Leimena, sought to integrate tuberculosis control within the framework of basic health services. However, integration failed in the 1950s due to lack of finances and an acute shortage of skilled medical personnel. But, the project succeeded in spreading awareness regarding the prevention of tuberculosis through health education.<sup>93</sup> Not unexpectedly, the actual implementation project suffered from several organisational bottlenecks that inhibited the effective treatment of tuberculosis cases and ensuring compliance with treatment.

From 1952 onwards, Indonesia addressed tuberculosis vaccination through a pilot program of mass vaccination (BCG) involving new-born infants in the city of Bandung. This project was established in close connection with the WHO Tuberculosis Training and Training Centre. However, within a few months, complications arising from the low take rate of the vaccine caused fevers among new-born infants. This prompted Leimena to reassess the long-term benefit of using BCG vaccination as a prophylactic measure against tuberculosis.<sup>94</sup>

Administrative factors were no less instrumental in determining the progress of the BCG campaign. The headquarters of the BCG campaign, which was located in Bandung, was responsible to the Tuberculosis Division of the Ministry of Health located in Yogyakarta. The Ministry of Health, on the other hand, was located in Jakarta. This implied that the BCG personnel at Bandung had to refer problems related to the execution of the campaign to Yogyakarta, then to Jakarta, and back to Bandung.<sup>95</sup> Therefore, it was not possible for the headquarters of the BCG campaign and the Ministry of Health to effectively supervise the

execution of the campaign at the provincial level. In principle, the WHO was planning to entrust the execution of the campaign at the regency level to the doctor in charge. But, as not more than thirty doctors were specialised in tuberculosis control, the overall planning and execution of the campaign was undertaken by the *mantris*. The working hours in Indonesia were inflexible and interfered with the vaccination schedules. While the weekday work hours were from 7a.m. to 2p.m. from Monday to Friday, in practice, health personnel were late to commence vaccinations. The *mantris* were paid paltry monthly salaries by the provincial governments and for this reason lacked the enthusiasm to undertake public health education, a pivotal pillar critical to the success of the tuberculosis control program in Indonesia. In addition, the local population was not well informed about the need to register for the tuberculin test, which would ascertain the susceptibility of confirmed non-reactors (those who did not have a tubercular history) for tuberculosis and whether subsequent vaccinations were required.

In addition, BCG campaign also encountered technical difficulties. The *mantris* were unable to determine the immunity levels against tuberculosis; thus they vaccinated only those, who in reality demonstrated a non-reactor reading, who rarely turned up for their BCG vaccinations.<sup>96</sup> The most frequently used excuse was that the Consultancy Bureau was located far from the homes of patients. In the Rancakek sub-district of Bandung, the original site of the BCG demonstration project, the organisation of the mass campaign was far from satisfactory. Children under the age of fourteen were not taken to the Consultancy Bureau for tuberculin testing as the vaccine was administered irrespective of whether the patient was undergoing medical treatment or was infected. People who had turned up for the tuberculin test were administered the BCG, irrespective of whether or not they had a previous history of tuberculosis.

At Bandung, the BCG team frequently encountered passive resistance from the Chinese population which opposed administration of the BCG vaccine.<sup>97</sup> Episodes of resistance occurred between 1953 and 1956 owing to a multiplicity of factors, at times due to disagreements related to the framing of tuberculosis between the Western educated physicians, WHO consultants, and the diverse ethnic groups inhabiting the city. At other times, particular groups of people opted

not to get vaccinated certain times of the year such as the holy month of Ramadan, owing to the popular Islamic belief that vaccination in the holy month would annul their fasting.<sup>98</sup>

The BCG campaign, which was extended to the entire archipelago in 1956, staffed by 32 teams, 62 *mantris*, 143 lay vaccinators, and 19 doctors.<sup>99</sup> The campaign's performance in the Outer Islands was variable and contingent to three factors: (a) geographic, for example the impact of a tropical climate on the potency of the vaccine; (b) technical (the potency of the vaccine); and, (c) human factor, e.g., ensuring the willingness of the people to have the vaccinations. Human factors were most influential in the execution of the campaigns. In Medan, North Sumatra, tuberculin testing and the BCG campaign were among the best organised in Indonesia. Approximately, 90-95% of the population was tested for tuberculosis.<sup>100</sup> The tuberculin surveys in North Sumatra revealed a slightly higher incidence of tuberculosis in males than in females in all age groups, possibly because women were less likely to notify health centres if they suspected tuberculosis due to stigma.<sup>101</sup> Tuberculosis was a major problem in the rural areas, particularly in regencies such as Simalungun, which had a high proportion of the workforce employed in its plantations. In Makassar, South Sulawesi, secondary infections such as abscesses were reported in people soon after the tuberculin tests were undertaken.<sup>102</sup> Thus, these infections coincided with a smallpox outbreak.<sup>103</sup> Thus, the local population were unwilling to get vaccinated, fearing that vaccination would cause abscesses. For this and other reasons, the locals campaigned actively to stop the BCG campaign. Nevertheless, tuberculin testing and BCG vaccinations continued uninterrupted in Makassar. Unlike Sumatra and Sulawesi, human factors were less decisive in determining the progress of the BCG campaign in Maluku. The difficulties encountered there while executing tuberculosis surveys and mass vaccinations were largely related to accessibility. The population was scattered across islands and could only be reached by boat. The wet BCG vaccine used in Bandung was unsuitable for vaccinations in the Maluku group of islands as it lost its potency in the tropical heat and refrigeration facilities for storing the vaccine were not well developed there.

The WHO and the *Ikatan Dokter Indonesia* (IDI, The Indonesian Medical Association) attributed the high incidence of tuberculosis in Indonesia during the 1950s (10% among toddlers

for instance) to chronic malnutrition.<sup>104</sup> In situations where tuberculosis was transmitted from mothers to children, the isolation of patients in sanatoriums and treatment with streptomycin was not a pragmatic option. Fewer than thirty doctors specialised in tuberculosis control in Indonesia during the 1950s. The implementation of the social-medical approach of tuberculosis control was thus constrained by an acute shortage of physicians. As a cost-effective prophylactic measure, IDI recommended sanitary improvement of the *kampongs*, improvement of community nutrition and inculcating hygienic habits among the general population as a means of preventing the spread of tuberculosis.

One non-governmental organisation that viewed tuberculosis as a socio-hygienic issue emphasised the prevention of tuberculosis in the community through health education of the patient. *Ngrukti Nirmala* was an NGO, established in Blitar (East Java) in 1954 with financial assistance from the Indonesian Red Cross.<sup>105</sup> Those types of educational measures undertaken by non-governmental organisations were intended to supplement the curative care administered by the Consultancy Bureaus in the rural areas, where there was an acute shortage of physicians. Patients with positive sputum would be instructed by the staff of *Ngrukti Nirmala* regarding the rational use of medication, nutritious foods, and the infectiousness of spitting. *Ngrukti Nirmala* was operational in the regencies of Kediri and Blitar, where regency doctors demonstrated initiatives in coordinating the curative activities of the Consultancy Bureaus with hygiene education. The depiction of tuberculosis as a socio-hygienic question established a correlation between the social determinants of health such as nutrition, education and housing, and the prevalence of tuberculosis and pathologised unhealthy habits within the community such as spitting that would lead to contagion. However, the implementation of these non-governmental initiatives was contingent to the initiatives of the regency doctors and support from the local administration, which was lacking in other parts of Indonesia.

Addressing tuberculosis defined as a socio-medical problem involved tracing the source of infection through surveillance, administering medications such as streptomycin, and rehabilitating patients. Such a strategy was visualized by J.C. Kapitan (who graduated from the GH in 1931), and Professor at the Faculty of Medicine at Airlangga University.<sup>106</sup> The socio-

medical frame perceived tuberculosis as a problem of individual patients who could be rendered non-infectious through treatment. In Surabaya, following a single drug treatment, approximately 81% of patients showed signs of recovery whereas with rontgenologis (a particular form of x-ray treatment) only 40% of patients were cured.<sup>107</sup> In the final analysis, the socio-medical solution to tuberculosis control showed signs of weakness from the very beginning as the bacterium developed resistance to isoniazid and streptomycin. Part of the problem was that medications were dispensed irrationally.<sup>108</sup>

The Indonesian experience of tuberculosis control informed the WHO that an ambulatory approach to treating patients, especially the administration of isoniazid and streptomycin at the patient's home and education of patients and their families regarding hygienic disposal of sputum, was a cost-effective measure for other resource-poor countries where the per capita availability of hospital beds was minimal. Socio-hygienic measures, especially prevention of spitting, educating families about nutrition, and the rational use of anti-tuberculosis drugs were a response to the acute shortage of specialists. Such measures registered conspicuous success in the regencies of East Java—regarded as a Soekarno stronghold prior to the mid-1960s—where support from local administration was forthcoming. But, socio-hygienic measures could not be replicated throughout the archipelago as their implementation was contingent upon health education, which was far from remunerative for doctors and other health personnel such as *mantris*. The execution of the BCG vaccination campaign revealed technical failures with respect to the preservation of the vaccine in a tropical climate and the training of vaccinators. The anti-tuberculosis campaign also failed both to address the popular misconceptions of the people regarding vaccination and to enlist their cooperation.

The Ministry of Health accepted the SEARO recommendations on tuberculosis. Indonesia faced an acute shortage of hospital beds and prescribed medications; as well, there was expenditure involved in curing individual patients. With these factors in mind, the Ministry of Health adopted a combination of socio-medical and socio-hygienic approaches to address the problems. The performance of tuberculosis control in Indonesia was determined by four factors: (a) human factors, securing the cooperation of the population in the implementation of BCG

vaccinations; (b) technical factors such as the potency of the vaccine and development of microbial resistance to anti-tuberculosis drugs; (c) environmental factors such as the deterioration of the BCG vaccine in a tropical climate; and, (d) administrative factors, particularly the differences between the Ministry of Health, the headquarters of the BCG Campaign, and the local governments regarding the financing of tuberculosis control activities. Tuberculosis control in Indonesia was impeded not so much by the inefficacy of the BCG vaccine or the resistance of the local population to BCG vaccinations but by bureaucratic labyrinths. There was a marked lack of synchronisation between the activities of the Ministry of Health, the Tuberculosis Institute, and the headquarters of the BCG campaign.

### **Where the Road Ends, Yaws Begins**

Like syphilis, bijel and pinta, yaws originates from the treponemal family of bacteria and limits the employability of individuals due to disfigurement. It is metaphorically referred to as ‘a disease at the end of the road’—the road being the symbol of socio-economic development—and is deemed to be caused by inadequate hygiene. Yaws can be successfully suppressed using penicillin: the results of treatment are evident within a few days. Villagers uncritically accepted penicillin injections as a panacea against the disease; but in the process overlooked long-lasting preventive measures such as community hygiene. As a result, the anti-yaws campaigns in Indonesia encouraged a confidence in Western medicine that was unwarranted. Yaws eradication, an Indonesian initiative, emerged under the leadership of retired regency physician Raden Kodijat, who was successful in reducing the prevalence of yaws twentyfold between 1951 and 1956. As a consequence, neighbouring Malaya—which was yaws endemic in 1956—adopted the epidemiological strategies designed by him. Although the Indonesian anti-yaws campaign was the world’s largest and won international acclaim in drastically reducing the prevalence of the disease, it was far from perfect. Due to the demographic and geographic variations across the Indonesian archipelago, the prevalence of yaws across the islands was patchy. For these reasons, the anti-yaws campaign had to be modified into a two-pronged

strategy: (a) the Kodijat method of yaws control, which involved detection and treatment of patients with active yaws lesions and their contacts, implemented in densely populated Java; and (b) Total Mass Treatment which involved treatment of whole village populations with penicillin, irrespective of whether or not individuals were registered as yaws patients, on the Outer Islands where the population was sparse.

Yaws is caused by a spirochete known as *treponema pertenue*, which is closely related to the bacterium that causes syphilis and is transmitted by direct contact with skin sores of the infected person.<sup>109</sup> Within two to four weeks after infection, individuals develop mother-yaws or raspberry-like sores on the infected skin where the microbe entered the body. Soon, the sores disappear. Later, skin lesions appear all over the body. Other symptoms include bone pain and scarring of the skin. If yaws is not treated within five years of the initial infection, the nose and bones become disfigured. In addition, the thickening of the soles of the feet makes it difficult for patients to walk. Yaws has long been endemic in Java. The character of Nolo Gareng of the Javanese *wayang kulit*, was a sufferer.<sup>110</sup>

From 1950 until the mid-1960s, Indonesia led the global treponematoses control project under the leadership of Raden Kodijat and Soetopo, who officiated as the Minister of Health from January 1950 to September 1950. The Indonesian chapter of the global treponematoses project (other countries that participated in the project sponsored by the WHO and the UNICEF between 1952 and 1964 included Malaya, Thailand, Haiti, Jamaica and Nigeria) was engineered by Raden Kodijat based on his experience as a regency medical officer at Kediri, East Java in the 1930s.

Raden Kodijat, a product of the Dutch educational system, graduated from the STOVIA medical school in 1914 and later earned a doctorate in Medicine from the Faculty of Medicine, Amsterdam in 1925. He returned to the Dutch East Indies to pursue a career as a regency doctor in Kediri, East Java, from 1930 to 1942. The Kodijat Method, which was born in 1934 during his tenure as a regency doctor, aimed to prevent the recurrence of future infections. A program designed to detect yaws in the entire population by selecting individual patients based on symptoms and treating them with neosalvarsan or arsenicals until their symptoms disappeared.

Identified patients were administered neosalvarsan on a weekly basis. This was supplemented with the re-examination of the entire village population at intervals of six months.<sup>111</sup> The Kodijat Method was successful in reducing the overall prevalence of yaws in the Kediri population from 10.1% in 1934 to 1.7% in 1936.<sup>112</sup> Interestingly, the villagers believed that neosalvarsan was a panacea for every disease and began to approach polyclinics in large numbers for treatment. As a result, the doctors/*mantris* were unable to devote adequate time to examine individual cases of yaws. With one salvarsan injection, yaws symptoms were brought down dramatically. For this reason, many patients did not follow up on treatment. As a consequence, relapses occurred. During World War II, the Kodijat Method could not be implemented due to a shortage of salvarsan.

In 1949, 15% of the Indonesian population was affected by yaws; with approximately three quarters of patients under the age of eighteen.<sup>113</sup> Regency medical officers were entrusted to treat yaws patients with arsenicals in rural polyclinics. Patients submitted themselves for yaws examination voluntarily. In 1950, Indonesia implemented the Treponematoses Control Project (TCP), which was based on the Kodijat Method and focused on yaws control and the treatment of congenital syphilis. The campaign was conducted by teams of trained *mantris* under the supervision of trained medical officers. Civil administration officials took a census of each village and supplied the team leader (either the doctor or the *mantri*) with the names of the village inhabitants. The latter would then be voluntarily examined by regency doctors in the polyclinics.

In April 1950, Leimena enlisted the financial support from UNICEF to implement the TCP.<sup>114</sup> It was initially implemented in Jakarta and Yogyakarta. Treponemal infections were treated with procaine penicillin G (particle size in oil) with 2% aluminium monostearite (PAM), a one shot treatment schedule.<sup>115</sup> With the availability of a one shot treatment schedule, the per capita cost of yaws treatment declined.<sup>116</sup> The Indonesian government, under Soetopo's directive, followed a policy of administering penicillin injections to the entire population, irrespective of whether individuals were infected with yaws or not. The main objective was to prevent reinfections. Kodijat was opposed to the wasteful expenditure of UNICEF funds and

advocated that only patients with active yaws lesions be administered injections. He was also aware that the injections sometimes had side effects.<sup>117</sup>

The Kodijat Method was a unique epidemiological strategy of yaws control based on the detection and registration of yaws patients, and the treatment of infectious cases and their contacts. Initially, Soetopo questioned the feasibility of the Kodijat Method in achieving yaws control throughout the Indonesian archipelago as Indonesia suffered from an acute scarcity of doctors and nurses who were needed to execute the anti-yaws campaign. Additionally, according to the method, only patients with active yaws lesions would be administered penicillin injections. Thus, latent cases would escape treatment. In response, Soetopo developed a modified version of the Kodijat Method (Treponematoses Control Program Simplified, or TCPS) which aimed to overcome the shortage of skilled medical personnel. He appointed *djuru pateks* (yaws scouts with basic elementary school training) to detect yaws cases and administer treatment, conduct periodic resurveys of the population, and to follow up on treated patients. The TCPS used a two pronged strategy of yaws control: (a) the Kodijat Method of yaws control for Java; and, (b) the total mass treatment of yaws patients using penicillin for the Outer Islands, where the population was scattered and distances covered by the TCPS teams were huge. Unfortunately, however, the Kodijat Method missed out on latent yaws cases that constituted a potential reservoir for the transmission of future infections.

The TCPS aimed to examine entire village populations for treponemal infections and treatment would be administered only to active cases of yaws. The TCPS was designed to fit into the existing health services, the focal point being the polyclinics at the *ketjamatan* (sub-district) level. The regency medical officers' task was to initiate the treponematoses control program at the sub-district level with overall control by the *Dewan Pemerintah Daerah* (the regency administration) which would finance the campaign from their annual budgets. The TCP headquarters at Yogyakarta would provide technical assistance. Subsequent to the initiation of the TCPS program in the district, the regency medical officer would meet with the sub-district (*tjamat*) and village heads (*lurah*) to educate them on treponematoses control and enlist their cooperation. *Mantris* would supervise the programs in districts which were either populous or

had a wide geographical spread. The *lurah* would assist the TCPS by drawing up the census list of the village population. The polyclinic *mantri* and the *djuru pateks* would receive a copy of the census list before implementing the program. In a normal working week, the TCPS operations would begin on Monday morning. Villagers would assemble in the village headman's house before the *djuru patek* arrived. Soon after the latter's arrival, which was signalled by the striking of a wooden gong (*kenthongan*, in Javanese), the village secretary, drawing from the census list, would call out all the names of all families present and mark their attendance (present or absent).

The *djuru pateks* would then examine the hands and legs of villagers for symptoms of treponemal infection. He would record, on the patient's card, the names of any individuals he suspected of having yaws. He would then prepare, in duplicate, the list of all patients who had yaws. They would be called together when the *mantri* arrived to administer PAM injections. The *mantri* would confirm the diagnosis of suspected yaws cases before the injections were administered. The *djuru patek* and the *mantri* could cover the entire sub-district in approximately eight months, detecting yaws cases and administering penicillin. Soon after the yaws prevalence was determined, resurveys would be undertaken to check the prevalence of the disease in the given sub-district in question and to determine the effectiveness of treatment.

The TCPS was tailored to reflect the Indonesian archipelago's demographic and geographic diversity. The Kodijat method, which consisted of a systematic examination of the entire village population for yaws and treatment of yaws patients with active lesions only, was personnel-intensive. It depended upon the recruitment of a cadre of *djuru pateks* to undertake surveys, and of *mantris* for administering penicillin injections. Unlike the densely populated Javanese villages, where it was easy to assemble villagers for medical examination, the Outer Islands were sparsely populated and distances between settlements were huge. Thus, Total Mass Treatment, which consisted of administering full-penicillin doses to villagers with active lesions and half-doses to uninfected villagers, latent yaws cases and contacts, was implemented in the Outer Islands. As the Outer Islands experienced a severe shortage of *mantris* and paramedical personnel, the *djuru pateks* were trained not only to diagnose yaws lesions, but also to administer

penicillin injections. Contact Treatment was implemented on an experimental basis to contain the transmission of yaws among family members.

In East Java, Contact Treatment was used in the TCPS on an experimental basis to treat family contacts of yaws patients. Contacts were administered half doses of PAM. However, the Contact Treatment failed to contain yaws as most of the children contacted the disease outside of the family.<sup>118</sup> In cases where the prevalence of infectious yaws in a sub-district was less than 0.5%, and non-infectious yaws below 1.5%, the sub-district would move to the Consolidation Phase of the TCPS. The *djuru patek* would undertake six-monthly examinations of schoolchildren, and report on yaws treatment at polyclinics on a monthly basis before undertaking a resurvey of the sub-district population.

Educating the villagers, the village headmen, and the civil officials about the importance of yaws detection and treatment of diagnosed cases was pivotal to the smooth execution of the TCPS campaign. Just as the terms ‘contagion’ or ‘dirt’ were sufficient to evoke fear of the importation of infectious diseases and the imposition of *cordon sanitaires* in nineteenth and twentieth century international health, the TCPS program used the language of crisis. The message was that every single case of *patek* (yaws) not yet discovered or treated would make the village suffer further.<sup>119</sup> Yaws-infected villagers were persuaded to register themselves for treatment in the spirit of *gotong rojong* (mutual cooperation). The *djuru patek*, who spearheaded the TCPS campaign, would communicate with the villagers in language they could understand about the importance of yaws detection and the appropriate treatment.

The mobility of health personnel to remote areas of the Indonesian archipelago and the timeliness of undertaking treponematoses surveys and treatments was at the heart of the TCPS. The TCPS program stated:

At the crux of the campaign will be mobility and speed for getting to and from location to location, and as areas covered are wide, with a dispersed population who have little transport facilities themselves, it is imperative that for the success of the campaign that adequate transport facilities will be provided. In addition to motor vehicles the use of cycles will also be required. The rural roads are far from satisfactory and once off the main roads, public health personnel may require the aid of cycles to get from village to village collecting points to others.<sup>120</sup>

The Indonesian government pledged 4.2 billion rupiahs to the TCPS and one-third of the expected penicillin requirements.<sup>121</sup> But UNICEF faced operational difficulties in procuring penicillin supplies. As well, it faced difficulty giving Kodijat the authority to authorise the appointment of personnel to work in the TCPS as it lacked the support of the Ministry of Finance. The Ministry of Health had to eliminate the administrative bottlenecks operating at various levels of the Indonesian government by directly authorising Kodijat to withdraw funds for expediting the TCPS.

In October 1951, the TCPS was put into practice for the first time in the sub-district of Driyo (the villages of Banjaran and Karangandong), which was located 25 km from Surabaya. A total of 16,659 persons were examined during the initial survey,<sup>122</sup> which, together with the re-survey, was conducted within an interval of five months. The overall prevalence of yaws in the sub-district was approximately 10%. The diagnoses made by the *djuru patek* in the initial yaws survey were accurate and PAM injections were administered to active yaws patients who showed symptoms, e.g., lesions on their feet. However, latent yaws cases were not treated in the initial survey and new cases were evident during the resurveys. Soetopo's pilot study in Driyo revealed that the highest percentage of infectious yaws occurred in the 3 to 10 year age group.<sup>123</sup> Boys were more prone to treponemal infection than girls in this age group owing to injuries sustained during sporting activities and walking with exposed wounds. House-to-house examinations for yaws were not usually undertaken in East Java for the customary cultural reasons—when the male member of the household had left for work—but they were undertaken in the pilot project area as civil service officials from the two sub-districts oversaw the examinations. The yaws surveys and resurveys revealed a patchy distribution of yaws prevalence in the sub-district of Driyo, with a varying proportion of the population affected by yaws.<sup>124</sup> In Driyo sub-district, for example, a village with a yaws prevalence of 15% was found adjacent to a village with a prevalence of 7%.<sup>125</sup>

The TCPS was implemented as an experimental project in Surabaya in the sub-district of Cerme in 1952. The Cerme TCPS experiment combined malaria eradication and yaws control

with the overall aim of raising the standard of living of the people through a rural development program that initiated horticulture and pisciculture. The overall prevalence of yaws declined in Cerme from 12.8% in 1952 to 0.57% in 1958 owing to improvement in general health conditions.<sup>126</sup> In 1954, Soetopo initiated the Small Island Project, a pilot demonstration project, supported by the provincial government of East Java in the regency of Sumenep and Madura. The project aimed to reduce the prevalence of chronic diseases such as hookworm, trachoma and yaws.<sup>127</sup> The overall prevalence of yaws in Sumenep declined sharply from 17.4 to 0.26%.<sup>128</sup> However, yaws control within the overall framework of basic health services was contingent to the individual agency of the regency doctors and financial support from the provincial governments. This saw the implementation of the TCPS decentralised to the regency governments in 1959.

Between 1951 and 1956, the TCPS campaign covered approximately 85% of the Indonesian population. The overall prevalence of yaws at the end of the five year period declined from 20% in 1951 to 1% in 1956 as a result of improved detection of cases, treatment of suspected yaws patients, and resurveys to determine relapsed cases.<sup>129</sup> From 1959 onwards, the execution of the TCPS program at the sub-district and village levels was devolved to regency administration, the plan being that TCPS would cover the whole archipelago by 1961. TCPS was adapted to the unique geographical and epidemiological conditions of the Indonesian archipelago. In the Outer Islands, for example, where the prevalence of yaws was high and population was sparse, Total Mass Treatment—involving the administration of a full penicillin dose to yaws patients and half dose to the uninfected individuals in the village and latent yaws patients—was the epidemiological strategy. The *djuru pateks* working in the Outer Islands were not only trained to diagnose yaws lesions, but also in administering penicillin injections as *mantris* were in short supply. In 1961, the WHO provided a motor vessel, the PAM (named after the penicillin used in the TCPS) to undertake inter-island yaws control and to prevent the transmission of treponemal infections across the islands.<sup>130</sup> The PAM took the form of a mobile yaws clinic; it operated between the islands of Kalimantan, Nusa Tenggara, Sulawesi, and the northern and central parts of Sumatra. But its role in stopping the chain of yaws transmission

across the Outer Islands was largely symbolic. In effect, it was unable to prevent the transmission of infection across the islands owing to unsettled political conditions and widespread coastal traffic and population movements that hindered effective detection of treponemal infections.

In 1951, when the TCPS program was conceived, Indonesia was the world's second largest reservoir of yaws after Nigeria. The Indonesian TCPS gained worldwide attention as it was not only the world's largest campaign against treponemal infections, but it had succeeded in reducing the prevalence of yaws twentyfold between 1951 and 1956. The Kodijat Method was accordingly adapted into anti-yaws programs elsewhere in Asia. In the early 1950s, Malaya had a high prevalence of yaws, particularly in the province of Kelantan. Owing to the acute shortage of nurses, the Malayan anti-yaws program deployed field workers (akin to the *djuru pateks* used in the Indonesian TCPS) to detect yaws in remote villages.<sup>131</sup> The yaws control program in Malaya initially used punch cards to determine the prevalence of yaws at the household level; but the method had to be abandoned as it was too time consuming. The Kodijat Method was favoured for its use of census forms which listed the names of individuals and systematic classification of yaws lesions.<sup>132</sup> However, nurses working in the Malayan yaws eradication campaign failed to educate villagers about the significance of treatment of infectious cases with penicillin. Therefore, any kind of propaganda that encouraged yaws-infected villagers to attend polyclinics and be treated with penicillin was greeted with scepticism.

The Indonesian TCPS was critiqued internationally at the First International Conference on Yaws Control, held in Bangkok in 1952, and at the Second International Conference on Yaws Control, held at Enugu in Nigeria in 1955. The Indonesian delegation, which was led by Soetopo, Kodijat and Wasito, presented their research findings based on the operation of the TCPS at the field level. At the first conference, the WHO observed that regarding the Indonesian TCPS, only patients with identifiable yaws symptoms were treated. Latent yaws cases were left untreated. In response, the WHO recommended that the anti-yaws campaign should treat all children below the age of eighteen and patients with identifiable symptoms.<sup>133</sup> The use of field workers (*djuru pateks*) proved problematic for accurate diagnosis owing to discrepancies

between the serological diagnosis made by doctors and diagnosis made on the basis of clinical observations.<sup>134</sup> The Kodijat Method was also critiqued by Indonesian TCPS staff at the field level, e.g., by *mantris*, who claimed that only active cases of yaws and their contacts were treated with PAM.<sup>135</sup> The definitions of contacts was vague: they could vary from immediate family members of the yaws patients to more distant contacts such as the village population. Latent cases of yaws and their contacts were overlooked during treatment. The Kodijat Method excluded the examination of non-contacts of yaws patients for ascertaining the presence of yaws. Therefore yaws field workers detected new infections during resurveys. Ultimately, the limitation of TCPS treatment to active yaws patients and their contacts did little to reduce the prevalence of yaws.<sup>136</sup> During the TCPS surveys and resurveys, patients showing hyperkeratosis (non-infectious lesions) were over-diagnosed and were accordingly administered PAM treatments, resulting in a high treatment failure of approximately 20%.<sup>137</sup>

The *First National Symposium on Yaws Control* (1956) organised by the Ministry of Health at Lawang, East Java, concluded that the TCPS program had entered the consolidation phase. The overall prevalence of yaws on the Indonesian archipelago had registered a twentyfold decline from corresponding levels in 1951. However, delegates, especially Soetopo, warned that the program needed to achieve 100% geographical coverage as the islands not within the reach of the TCPS constituted a potential reservoir of future infections.<sup>138</sup> The symposium delegates unanimously resolved to expand the TCPS program throughout Indonesia with utmost urgency. In addition, they proposed that the campaign would be executed with funding from the local government, and would involve teachers, civil servants, and schoolchildren in the periodic follow-up of the treatment of yaws patients in the polyclinics. The Ministry of Finance at Jakarta agreed to financially support the implementation of the TCPS campaign in regencies that lacked adequate financial resources. The following paragraphs deal with the reception of the anti-yaws campaign in Indonesia in general.

The anti-yaws campaign was generally well received in Indonesia. Because its effects were immediate, the villagers showed enthusiasm for the treatment. Indonesian novelist Pramoedya Ananta Toer, commenting on yaws, considered it a disabling childhood disease.

Salvarsan treatment, administered to schoolchildren during the late colonial and early post-independence period, furthered the widespread acceptance of scientific medicine as a proven fact. Yaws-affected children were cured within a few days.<sup>139</sup> Toer's recollections illustrate that salvarsan treatment against yaws came to be widely accepted in Javanese villages during the late-colonial period because the effects of the treatment were visible to the people.

For the UNICEF Asia Regional Office Director S.M. Keeny, yaws was a disease associated with poverty. The increased use of footwear and soap had reduced its prevalence among the population.<sup>140</sup> When Keeny asked the villagers of East Java in 1964 what they thought about the TCPS program, there was a general denial. Villagers proudly claimed that there were no yaws in their family. However, one elderly woman named Ruchati broke the silence and narrated her painful experience with yaws during the colonial period. The infection had delayed her marriage: she was administered five arsenical shots that had cured her. But, for Ruchati, conditions were not much better in the 1960s than when she was a girl. Yaws had almost disappeared by the mid-1960s; but, 'what about prices.'<sup>141</sup> The elderly villagers whom Keeny interviewed were glad—not so much for themselves, that yaws was curable and reduced to negligible proportions, as their days were numbered—but for their children who could look forward to a brighter future where they could work without pain. Although the Indonesian anti-yaws campaign was successful in reducing the prevalence of the disease, its implementation was far from perfect inasmuch as it papered over long-term sustainable solutions to the disease such as addressing poverty. The success of the anti-yaws campaign was apparent. Whereas statistical figures revealed the absolute decline in yaws prevalence throughout Indonesia, latent cases were missed out.

The TCPS was a public health achievement for Indonesia in terms of reducing yaws prevalence from 20% in 1951 to approximately 0.58% in 1960. Kodijat was of the opinion that the most significant factor of the fortyfold decline in Indonesia from 1951-1960 was the cooperation of the civil administration with the villagers that ensured a high coverage of approximately 85%. In recognition of his skilful direction of the anti-yaws campaign, Kodijat was nominated for the Ramon Magsaysay Award, 1961. The Magsaysay Committee noted:

It is a measure of Dr. Kodijat's grasp of the problem and determination that he developed a campaign which is overcoming Indonesia's shortage of doctors and reaching patients living on some 3000 islands extending over a 3,000 mile area of the moist tropics where this disease is most prevalent.

The foundation said that although Kodijat had reached a normal retirement age in 1950, he accepted unhesitatingly the call to organize and direct a national yaws control program in Indonesia that since has become larger than the total of all such efforts in the world.

Now 71-years old, he continues quietly but firmly to steer the yaws programme in Indonesia. Holding concern for the health of his people above his own, even an attack of pneumonia in 1959 did not deter this devoted doctor from managing a campaign of far reaching humanitarian and economic consequences throughout its crucial years.<sup>142</sup>

By 1969, although the overall prevalence of yaws in Indonesia had declined to 0.44%, there were sharp variations across the country's provinces. Java and Madura had recorded an overall prevalence rate of 0.23% whereas in parts of West Irian province, approximately 18.33% of the population was infected by yaws, constituting a potential reservoir for transmission.<sup>143</sup> The sub-district of Losari in East Java was representative of the declining prevalence of yaws in Indonesia. When the TCPS was introduced in Losari in 1958, overall prevalence was 19.5%. By 1963, the figure for Losari had declined to 0.77%.<sup>144</sup> However, by 1965, following the suspension of UNICEF financial assistance to the program, the detection and treatment of yaws cases was suspended throughout Indonesia. In 1968, the year Kodijat died, a flare-up of the disease was reported in Losari.<sup>145</sup> Of the 243 new cases detected there, 155 were infectious. The prevalence of yaws in the sub-district of Losari was over 2%, with 86% of cases occurring in children below the age of fourteen. A major factor contributing to the outbreak of yaws in Losari was the inability of the TCPS staff to contain the importation of infection from outside.<sup>146</sup> Latent cases of yaws—even when detected—were not promptly treated according to the Kodijat Method. PAM injections administered without adequate supervision, contributed to relapses of yaws infections.

Yaws eradication in Indonesia was internationally well-recognised, albeit it was far from perfect. The Kodijat Method that involved the detection of yaws cases and the treatment of only

infectious (active) cases using PAM. Re-examination of the entire village population at regular intervals for relapses and the effectiveness of treatment were cost-effective public health measures that optimised the utilisation of scarce supplies of penicillin in the 1950s. The successful execution of the campaign relied upon the *djuru pateks*, who were recruited from amongst the villagers themselves. The efficacy of yaws treatment was self-evident with the administration of PAM treatment; and, the villagers regularly for follow-up. The chief shortcomings of the Kodijat Method were: (a) its inability to contain the transmission of latent yaws; and, (b) its restriction to the densely populated island of Java. In the sparsely populated Outer Islands which suffered from an acute shortage of medical and paramedical personnel, timely detection of yaws cases could not be carried out. As a result, international agencies, in conjunction with the Indonesian Ministry of Health, adopted the Total Mass Treatment strategy to treat entire populations of yaws-affected villages with penicillin. The Total Mass Treatment of yaws was based on two principles: (a) treatment of the entire village population using penicillin; and, (b) breaking the chain of transmission of yaws through effective surveillance. But, surveillance was a weak arm of the TCPS program in Indonesia, particularly in the Outer Islands. Due to the unsettled political conditions in the Outer Islands during the Soekarno era, and the suspension of international aid during the mid-1960s, effective surveillance and Total Mass Treatment of the population using penicillin could not be fully implemented.

## **Leprosy**

Unlike the other three endemic diseases, that is, malaria, tuberculosis, and, to a lesser extent yaws—the prevalence of which was directly correlated with the loss of economic productivity—the economic loss caused by leprosy was negligible. However, leprosy patients were stigmatised in Indonesia due to popular superstition.<sup>147</sup> The Bahasa Indonesia word for leprosy is *kusta*, derived from the Sanskrit term *kusnati* (eating away), associated with the disfigurement of patients' bodies. Indonesian leprosy patients often refer to their broken bodies, alluding to the permanent impairment of their bodily functions and social isolation.<sup>148</sup> Many leprosy patients in

Indonesia attribute the disease to God's will, or the result of sinful deeds in one's life. The images of leprosy internalised in society, or the notion that leprosy is a highly contagious disease give rise to fear. For the Indonesian Ministry of Health, overcoming superstitions associated with leprosy, and rehabilitating former patients was invested with symbolic significance in terms of transforming Indonesia into a modern society based on the foundations of science.

As the prevalence of leprosy across Indonesia was patchy—with some villages registering a significantly higher prevalence than others—epidemiological strategies for executing leprosy control varied considerably. Prior to 1956, leprosy patients were isolated in leprosaria and treated with chaulmoogra oil to minimise the transmission of infection. However, as leprosaria beds were in short supply, Indonesian physicians designed a two-pronged approach to leprosy control which they adapted to varying population densities across the archipelago namely: (a) detection of leprosy cases; and, (b) breaking the chain of transmission of infection through the treatment of patients with Diamine Diphenyl Sulphone (DDS). In densely populated regencies, leprosy cases were detected by paramedical personnel. They were generally treated using DDS tablets; but, in regencies where the populations were scattered, the disease would be detected at polyclinics and treated with DDS injections.

Leprosy research post-World War II was conducted at the *Lembaga Kusta* (Leprosy Institute), Jakarta, by Indonesian leprologists including R. Boenjamin, who conducted research on *mycobacterium leprae* in buffaloes and rats, determined the level of vitamins in the blood of patients, and investigated the role of contacts in the spread of the disease. In the early 1950s, Indonesia had approximately 80,000 leprosy patients, only about an eighth of whom were receiving any form of treatment in leprosaria and polyclinics. Isolation of infectious patients in leprosaria was impracticable due to the acute shortage of beds. In Indonesia, a combination of ambulatory treatment, which facilitated the treatment of infected individuals in the family using DDS, and an approach that focused on the detection of infectious cases and isolating them in leprosaria was carried out in pilot leprosy control projects initiated by the Indonesian government, with technical advice from the WHO. These programs were introduced in Blora (Central Java), Menganti (East Java), and Bekasi in 1956.

Leprosy control at this time was strongly influenced by nationalist rhetoric, which expressed optimism that the introduction of modern treatment methods, for example, sulphone drugs, would contribute to surmounting leprosy which contaminated all layers of society.<sup>149</sup> The nationalist narrative on leprosy stated that scientific research related to leprosy had been conducted by Sardjito, Achmad Mochtar, Soetopo, J. Sitanala and R. Boenjamin in the spirit of the Indonesian revolution. Indonesia was on the threshold of solving the leprosy problem; but, the implementation of this solution was constrained by conservative ideas and popular superstitions which had to be uprooted by modern science.<sup>150</sup> Leprosy control in Indonesia was thus framed not only as a purely medical problem, but as a national undertaking which focused on transforming Indonesia into a modern society based on scientific knowledge. Pramoedya Ananta Toer recounts to his son Yudi, in *The Mute's Soliloquy*, that leprosy was contracted in Javanese prayer houses due to the close proximity of infected patients with others. The more religious *Santri* Javanese regarded contracting *bodok* (the initial stages of leprosy) as evidence of true faith.<sup>151</sup> Devotees would get treated in hospitals only when instructed by their superiors. In these ways, superstition led to the enslavement of people by fear, ignorance, and illness and stymied them of their individual initiative.

In the early 1950s, leprosy control program in Indonesia was influenced by the thinking of leprologist Jacob Bernadus Sitanala (who graduated from the STOVIA in 1912 and later earned his doctorate in Leprology from the *Tropen Instituut* in Leiden in 1927) and R. Boenjamin, who graduated from the NIAS in 1926 and was director of the Leprosy Institute from 1945 to 1959. In 1949, Boenjamin discovered that leprosy was most commonly transmitted in Indonesia through bedside contact between leprous and non-leprous individuals. Therefore, Sitanala's method, which consisted of treating leprosy patients with chaulmoogra oil and containing the spread of infection by isolating the more infectious cases in leprosaria, was practiced until 1956. Boenjamin estimated that, in the early 1950s, Indonesia had approximately 80,000 leprosy patients, 22,000 of whom were registered. Of those, only 10,000 were receiving any form of treatment, either in leprosaria or polyclinics.<sup>152</sup> Therefore, institutional treatment of patients in leprosaria was impractical. Boenjamin, who framed leprosy as a social disease,

argued that apart from preventing the transmission of the disease from infected to healthy individuals, leprosy patients needed to be rehabilitated into mainstream society after they were rendered non-infectious through a program of work therapy.<sup>153</sup> As children under the age of fifteen were highly susceptible to contracting leprosy from infected parents, Boenjamin recommended isolating parents in leprosaria and administered BCG vaccines as a prophylactic measure to children who demonstrated a negative reading on the lepromin test (indicating no prior history of leprosy). This, he suggested, should break the chain of infection.<sup>154</sup>

At the time, the Leprosy Institute in Jakarta was one of the best in Southeast Asia.<sup>155</sup> Boenjamin became a member of the WHO Expert Panel on Leprosy in 1952 and communicated the research findings of the Institute to an international audience through scholarly articles in the *International Journal of Leprosy*.<sup>156</sup> The Leprosy Institute, which comprised the Institute of Leprology, a large polyclinic, laboratories, a fifty-bed clinic, lecture halls, administrative offices, a pharmacy for drug distribution, and a model leprosarium in Tangerang, housed 300 patients. It conducted epidemiological studies in Tanah Abang (Jakarta) and Bekasi. The principal research project investigated the influence of the BCG vaccine on the lepromin test, with a view to investigating the effect of vaccination in treating borderline leprosy cases. The Institute also studied the posology (part of medicine that is concerned with dosage) of different leprosy drugs and compared their therapeutic efficacy. As well, it undertook the training of all medical students in Jakarta in leprology (as the Department of Dermatology at Universitas Indonesia did not offer this course).

By the mid-1950s, the operation of leprosy campaigns in Indonesia was decentralised to the provinces. Provincial health inspectors, who had considerable autonomy in allocating funds for leprosy control from provincial health budgets. The regency administration was entrusted with the responsibility to forming a leprosy unit: each unit would spread awareness on the prevention of leprosy, undertake surveillance of infected individuals, isolate infected individuals to break the chain of transmission, and administer treatment to the detected patients. But, due to the acute shortage of medical personnel, only one leprosy unit in Indonesia (in the regency of Blora) was fully functional by 1955.<sup>157</sup>

In February 1958, the WHO and the Indonesian government signed a basic agreement to undertake leprosy control in Indonesia. The WHO would assist the Indonesian government in demonstrating the modern methods of leprosy control by employing an institutional approach (detection of infected individuals and treating them in the leprosaria with sulphones).<sup>158</sup> In 1959, the Indonesian leprosy control program obtained supplies of DDS from UNICEF. For the pilot project, four locations in Java were chosen—Bekasi (West Java), Kampong Melayu (Jakarta), Menganti (regency of Surabaya), and Blora (Central Java).

The archipelagic nature of Indonesia, in terms of varying population densities and epidemiological distribution of leprosy across the islands, was crucial in determining specific epidemiological strategies for executing leprosy control. The prevalence of leprosy in Indonesia was patchy. Some villages reported a prevalence rate of 15.81 patients per thousand people whereas others registered no cases at all.<sup>159</sup> In the more densely populated areas with a high prevalence of leprosy, surveillance was used to trace the infected patient and contacts. Once the former were located, they were treated with DDS tablets to prevent the transmission of infection. In sparsely populated areas, or areas with a scattered prevalence of leprosy, undertaking surveys proved more difficult. Leprosy cases detected at local polyclinics were administered intramuscular DDS injections. In the urban areas, leprosy control programs used ‘focal surveys’ to systematically examine not only household contacts, but all persons living within the *Rukun Tetangga* (urban neighbourhood). These surveys led to total population coverage.

Focal surveys were used in the pilot projects at Bekasi and Kampong Melaju. In Menganti, the leprosy control program was integrated into the TCPS as the prevalence of infectious yaws was less than 0.5% by 1958. The *djuru pateks* were involved in leprosy surveys in Menganti. The Director of the TCPS, Raden Kodijat, reached an agreement with Boenjamin, the Director of the Leprosy Institute, that if the prevalence of yaws dropped below 0.5%, the *djuru pateks* would have a limited case-load and could therefore look for leprosy lesions after receiving basic training in the diagnosis of leprosy.<sup>160</sup> The *djuru patek*’s task was to report suspected leprosy cases to the *mantri kusta* (leprosy nurse). The integration of leprosy control activities into the overall activities of the TCPS in Menganti reduced the cost of the control

project fourfold.<sup>161</sup> In the regency of Blora, case finding activities were undertaken by *djuru penerangan kusta* (leprosy information assistants), who would also educate the village population about leprosy. Pilot projects revealed that the prevalence of leprosy in Central and East Java was higher than West Java.<sup>162</sup> Therefore, the WHO recommended that the pilot projects in Central and East Java be expanded to cover the whole province by 1960.

Leprosy treatment recorded good progress in the province of East Java. In the regency of Menganti, 529 patients were treated in 1960: 86% were cured after 18 months of medication with DDS.<sup>163</sup> The Venereal Disease Institute at Surabaya offered refresher courses for medical students, nurses, and regency health officers in East Java. The courses consisted of theoretical lectures, films, demonstration of patients, and visits to the pilot project at Menganti. In the regency of Bangkalan (Madura), the regency medical officer trained nurses to undertake the detection of leprosy cases. However, a major bottleneck affecting the progress of leprosy control operations in East and Central Java was the reporting system. The *mantri kusta* had to fill out individual forms, specifying the case history of each detected patient and send them to the Leprosy Health Service of the province, a task that was time consuming and interfered with successful examination and treatment of the entire population. The training program of the *djuru pateks* to detect leprosy cases was time consuming as well: they were given six hours of training in anatomy and physiology, two hours in epidemiology, two hours in bacteriology, and eight hours learning to understand leprosy. These courses were given at the Venereal Disease Institute in Surabaya.<sup>164</sup> But, while the *djuru pateks* were given only a theoretical instruction in leprosy treatment, there was no scientific rationale for how the target patient population would be chosen for examination.

Although leprosy surveys were carried out efficiently in East Java with the assistance of *djuru pateks*, many patients opted not to report regularly for treatment, particularly those from the regencies of Madura. Their excuse was that the treatment centres were located at a distance of over three kilometres from their homes. To alleviate the situation, the WHO recommended appointing drug distributors to supply DDS to patients who were either unwilling or unable to visit the treatment centres.<sup>165</sup> The medication of patients would be monitored on a regular basis

by village heads who would report the result of DDS treatment to the *mantri kusta*. Apart from educating the personnel of the leprosy control program, e.g., the *mantri kustas*, the *djuru penerangan kustas* and the *djuru pateks*, no systematic efforts were made by the provincial health authorities across Indonesia to educate the population on the infectiousness of leprosy or eradicate stigma associated with the disease.

Boenjamin advocated the rehabilitation of leprosy patients with the overall vision of integrating them into mainstream society. He proposed teaching them vocations such as carpentry tailoring, and educating the children of leprosy patients in community schools.<sup>166</sup> Boenjamin's approach of leprosy was to impart religious education to patients with a view to dispelling the popular belief that 'leprosy was a commandment of God' and to strengthen the afflicted's self-confidence. Boenjamin conceived of rehabilitating leprosy patients from a holistic perspective, not only through physical restoration, but also through restoring the normal social life of the person. Arrested cases of leprosy that were no longer contagious could be rehabilitated as well. For Satrio (who was the Minister of Health in 1961), rehabilitating leprosy patients was a part of the broader program of national reconstruction.

The rehabilitation of leprosy patients proved to be a major bone of contention between the Ministry of Health and the WHO Senior Leprologist M. Blanc, Leprosy Advisor to the Indonesian government, on the one hand, and the WHO headquarters (located in Geneva) on the other. Unlike the WHO headquarters, which prioritised case-finding and treatment of leprosy patients, the Indonesian Ministry of Health and Blanc showed considerable independence and initiative in executing a plan of rehabilitation of leprosy patients without first consulting Geneva. Like Boenjamin, Blanc envisioned the assimilation of leprosy patients into mainstream society and overcoming stigma.<sup>167</sup> The WHO headquarters were disturbed because Blanc did not first consult them for advice about rehabilitation.<sup>168</sup> In its correspondence, the WHO headquarters explicitly stressed that they had no objection to the Indonesian government creating a large scale rehabilitation scheme; but, they could not financially support the various referral levels of rehabilitation which Blanc had suggested.<sup>169</sup> The WHO prioritised case finding and individual treatment in the execution of leprosy control in Indonesia. By 1961, only 1.4 million Indonesian

people out of a total population of over 70 million were examined for leprosy. As the country's leprosy control program was in the preliminary stage in the early 1960s, the WHO focused on prioritising case findings and treatment, not rehabilitation. The WHO sponsored overseas fellowships for Indonesian medical students to undertake studies in reconstructive surgery and physiotherapy but considered any plan of rehabilitation of leprosy patients within the broad framework of treatment.<sup>170</sup> It was not merely the financial question that underlay the differences between the WHO and the Indonesian Ministry of Health; that is not simply the cost of rehabilitating leprosy patients but a broader tension in public health between a narrow biomedical approach that emphasised the prevention and treatment of leprosy, and a holistic approach that envisioned overcoming stigma and integrating former patients into mainstream society.

Indonesian physicians were pondering of optimal ways of resolving the unfavourable leprosy patients-to-beds ratio. One influential leprologist, M. Arif, who was Director of the Leprosy Institute in 1961, supported by Blanc, conceptualised an ambitious scheme of leprosy rehabilitation at the village, regency, provincial, and national levels that involved not only curing patients of their disease but also integrating former patients into mainstream society. This approach was tested through a pilot project at the Sitanala Hospital, Tangerang, and served as the nucleus of leprosy rehabilitation for Indonesia as a whole.<sup>171</sup> Provincial rehabilitation centres would be located in the provincial capitals and would be assisted by the rehabilitation team at Sitanala hospital. Regency clinics would treat trophic ulcers and refer more complex cases to the provincial rehabilitation centre. The lowest referral centre for rehabilitation was the village. *Mantri kustas* would train leprosy patients under treatment (with or without deformities), to examine their limbs, avoid burns, and perform simple exercises.

In 1963, the leprosy control program was extended to the Outer Islands, including Sumatra, Sulawesi, Kalimantan and Maluku, based on detecting leprosy cases at the polyclinics and the intention to cover a fifth of the population every year through case finding operations.<sup>172</sup> Again, the program was not fully implemented across all the regencies, especially in the Outer

Islands such as Kalimantan and Nusa Tenggara. These areas lacked provincial leprologists to supervise the activities of leprosy nurses at the sub-district level.

Between 1956 and 1967, the obstacles associated with leprosy in Indonesia were largely archipelagic, due to the varying population densities, and the prevalence of leprosy that influenced the method of treatment. The execution of the leprosy control program was decentralised to the regency doctor and to the *mantri kusta*. Individual factors such as the enthusiasm of the regency doctor or the *mantri kusta* for educating the villagers about leprosy or the importance of early treatment were central factors in ensuring regular attendance at the sub-district polyclinic. However, the inability of the provincial departments to implement leprosy education effectively resulted in the non-compliance of the patients with treatment. Many remained unconvinced regarding the efficacy of the treatment.

Unlike the control of malaria, tuberculosis, and, to a lesser extent, yaws—which were of direct economic importance according to the US, the WHO, and the Indonesian Ministry of Health—the control of leprosy in Indonesia received minimal financial support from the WHO. Nevertheless, the Ministry of Health perceived the symbolic value of curing leprosy patients and integrating them into mainstream society as an initiative to create a modern Indonesian society free of superstition. In this section, I want to stress that although Indonesia was a recipient of technical assistance from the WHO, it did not uncritically accept recommendations from the organisation's headquarters but pragmatically tailored WHO recommendations on leprosy to suit its own ideas, in particular those appertaining to rehabilitation and epidemiological requirements. In 1958, when the WHO entered into an agreement with the Indonesian government to demonstrate modern methods of leprosy control to the Government of Indonesia, it advocated an institutional approach; that is, treatment that involved isolation of leprosy cases in leprosaria and administration of sulphone drugs. In contrast to this approach, Indonesian physicians—ever aware of the acute shortage of beds in leprosaria and varying population densities across the archipelago—designed a flexible two-pronged approach that consisted of: (a) detection of leprosy cases; and, (b) containment of infection and treating patients using DDS. In the densely populated areas, the leprosy control program utilised the services of paramedical personnel to

detect cases. They dispensed DDS tablets to cure individual patients whereas in areas where the populations were dispersed, leprosy cases were detected in polyclinics and administered DDS injections. Additionally, the Indonesian Ministry of Health optimised the utilisation of scarce financial resources by integrating leprosy control into the activities of the anti-yaws campaign. The chief bone of contention between the Indonesian Ministry of Health and the WHO was not so much about the financial costs involved in rehabilitating leprosy patients as about the fundamental differences in public health; that is, between the holistic and the narrow biomedical approaches in public health. The Indonesian physicians and the Ministry of Health instead elected for a holistic approach in public health that symbolically related leprosy control and rehabilitation of the individual patient with nation-building and recreating a modern society based on science.

## Conclusions

Starting in the early 1950s, Indonesia has been increasingly open to receiving international developmental assistance, particularly in the field of health, provided by UN agencies such as the WHO and UNICEF. But the ways in which Indonesians appropriated international aid and the ideas that were associated with it were dictated by political calculations and national concerns. In particular, the United States was motivated by the politics surrounding the Cold War, while Indonesia's focus was on the task of nation-building. In the post-World War II era—characterised by rivalry between the USA and the USSR—international aid was seen as a bargaining chip to purchase the allegiance of the newly-independent states of Asia and Africa. The US perceived the strategic significance of supporting the campaign against disease in developing countries—with aid funnelled through UN aid agencies—as a means to counteract the rising influence of communism in Asia and Africa. The US equated disease with underdevelopment in order to persuade the leaders of Asia and Africa to accept disease eradication campaigns and to steer postcolonial societies towards a Western-led model of

development. Nevertheless, Indonesian leaders were astute in perceiving that uncritical acceptance of foreign aid would lead to the erosion of Indonesia's political sovereignty.

In this chapter I argue that Indonesia neither universally accepted nor welcomed international aid. Rather, Indonesia's leaders creatively appropriated overseas assistance in health in order to suit its own requirements in health that were in accord with the Bandung spirit, which emphasised technological self-sufficiency and solidarity with other developing nations. In the post-World War II era, there were two competing approaches to disease eradication, broadly in tension with each other: (a) the narrow biomedical approach that emphasised technological solutions such as DDT or vaccination against disease; and, (b) the holistic approach that emphasised raising the living standards of the people and inculcating health education. Indonesian physicians opted in favour of the holistic approach to health that incorporated health into the agenda of nation-building. The nationalist rhetoric surrounding the Indonesian struggle for independence was appropriated by Indonesian physicians, who depicted disease eradication campaigns as battles that would lead to victories of the nation against poverty, illiteracy and disease and cultivate a strong and healthy citizenry. In 1950, Abdul Halim's cabinet viewed the symbolic significance of framing malaria, tuberculosis, yaws and leprosy as the 'big four' endemic diseases affecting the overall vitality of the population.

Indonesia's malaria eradication program was the second largest in Southeast Asia after India. The Malaria Institute at Jakarta had undertaken thorough epidemiological studies related to the resistance of mosquitoes to DDT; but, unfortunately the knowledge was not applied in the actual eradication campaign. The failure of the malaria eradication campaign was not so much due to the resistance of the anopheline species to DDT; rather, the program was impeded by organisational factors such as negotiating the bureaucratic labyrinths of the Indonesian government that interfered with particular aspects of the eradication program such as spraying DDT.

Similar to Indonesia's malaria eradication campaign, Indonesia's tuberculosis eradication program was frustrated by organisational factors related to negotiating the byzantine maze that was the Indonesian bureaucracy, i.e. achieving coordination between the Tuberculosis Institute at

Yogyakarta, the headquarters of the BCG campaign at Bandung and the Ministry of Health based in Jakarta. Although tuberculosis control in Indonesia was closely aligned to WHO prescriptions that sought to use BCG vaccine as a prophylactic measure against the disease, the low take rate of the vaccine forced the Ministry of Health to reassess the feasibility of using BCG. The unique nature of Indonesia's ambulatory treatment was a response to the lack of medical personnel and the shortage of hospital beds. By 1956, the Indonesian pilot project for tuberculosis had informed WHO circles about the practicality of using such an approach; that is, administering isoniazid or streptomycin to the infected patients, educating the patient's family about the importance of nutrition and hygiene and following up on treatment, was the first program of its kind in the Southeast Asian region and to inform the WHO how tuberculosis control should be undertaken in a resource-poor setting.

The Indonesian anti-yaws campaign was the world's largest when it was inaugurated in 1949. Led by retired Indonesian physician Kodijat, the campaign, which consisted of examination of all yaws cases and treatment of only infectious cases using penicillin, was based on voluntary examination of village populations for the disease. But, the Kodijat method was far from perfect as it treated only active cases: passive cases were left behind. In addition, the implementation of this method was heavily dependent upon the recruitment of nurses and paramedical personnel who were in short supply in islands outside Java. For reducing the prevalence of yaws throughout Indonesia, the Ministry of Health adopted a two-pronged strategy: (a) the adoption of the Kodijat method on the island of Java, which had a high population density; and (b) total mass treatment involving the administration of penicillin injections to patients and their contacts in the Outer Islands where the population was dispersed and the availability of paramedical personnel rare. The Kodijat method resulted in a spectacular twentyfold decline in the prevalence of yaws between 1951 and 1956 such that neighbouring Malaya, which was yaws endemic during the mid-1950s, upon noting its promise also adopted the Kodijat method. The success of the anti-yaws campaign was apparent. Whereas statistical figures revealed the absolute decline in yaws prevalence throughout Indonesia, latent cases were missed out. Therefore, transmission of infection continued among untreated individuals suffering from latent infection and as a result,

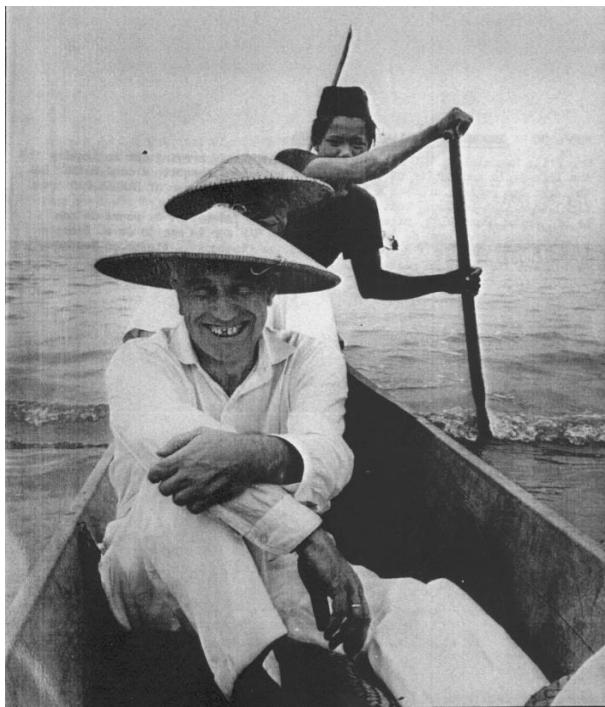
the prevalence of yaws continued to remain patchy in Indonesia. The originality of the Indonesian yaws eradication campaign was its response to the shortage of medical personnel: assistants (*djuru pateks*) were educated specifically to fill this void.

Unlike malaria, tuberculosis and yaws, the economic losses sustained in connection with leprosy were insignificant. Nevertheless, it was incorporated into the agenda of the ‘big four’ campaign as the eradication of superstition (associated with the social stigma of leprosy patients) was perceived as central in recreating a modern Indonesia based on scientific principles. Leprosy control was one area of public health where the Indonesian Ministry of Health diverged considerably from the WHO recommendations. Because the prevalence of leprosy across the Indonesian archipelago was uneven—with some regencies recording a higher prevalence than others—the Ministry of Health engineered a two-pronged strategy: (a) in the densely populated regencies of Java, detection of leprosy cases with the assistance of paramedical personnel and prevention of infection using DDS tablets; and, (b) in the regencies of the Outer Islands, where the population was relatively dispersed, detection of leprosy cases in polyclinics and administration of DDS injections. Additionally, the leprosy control program utilised the services of paramedical personnel engaged in the anti-yaws campaign in certain regencies where the prevalence of yaws had declined to negligible levels. They were free to engage in leprosy work, a strategy that intended to optimise the use of scarce financial resources available to the Ministry of Health. The WHO, in contrast, advocated a standardised approach of isolating leprosy patients in leprosaria where they would be administered DDS tablets to break the chain of infection. Rehabilitation of leprosy patients was a major bone of contention between the Ministry of Health and the WHO headquarters at Geneva. Whereas Geneva conceptualised the rehabilitation of leprosy patients as a component of medical treatment, the Ministry of Health advocated not only treatment of leprosy patients, but also their integration into mainstream society. Leprosy control in Indonesia illustrated the tension between the narrow biomedical approach of the WHO (that emphasised the treatment and containment of the disease) and the holistic approach of the Ministry of Health (that emphasised not only treatment, but also the integration of patients into mainstream society).

This chapter highlights the paradox that despite the Indonesian physicians' adoption of a holistic approach to public health that related health to nation-building, and developing unique approaches suited to Indonesian conditions, the actual implementation of the 'big four' campaigns often tended to address the symptoms, not the causes of disease. Both the Ministry of Health and the WHO papered over the socio-economic and political conditions that affected the overall well-being of the population. For example, patients suffering from malnutrition were treated for malaria based on the identical symptoms of these two diseases. The malaria eradication program did not address issues such as inadequate distribution and consumption of food. WHO consultants and Indonesian physicians had undertaken comprehensive surveys that established a correlation between inadequate hygiene and nutrition and the prevalence of tuberculosis. In practice, however, educating the public about preventive measures against tuberculosis was contingent upon the support of local governments that was lacking in most parts of Indonesia. The country's anti-yaws campaign, while successful in drastically reducing the prevalence of the disease, overlooked the rising cost of living.

What I have called Indonesia's 'Bandung approach', which sought to reconcile Indonesia's ambition to exercise its control over its health policy while remaining open to international assistance, was reflected in the actual implementation of the 'big four' campaigns. Indonesia did not adopt a standard epidemiological strategy advocated by the WHO in its disease eradication campaigns. Rather, the Ministry of Health pragmatically tailored the WHO's recommendations to suit the archipelagic nation's requirements in terms of varying population densities and epidemiological conditions in instances where a standard epidemiological strategy would not work. In addition, it developed new strategies that took into account the shortage of health personnel and the lack of beds in institutional settings.

Indonesia: Malaria by the Sea



Above: Dr. Fritz Ronnefeldt, WHO malariologist in Indonesia, carries out an inquiry into the lifecycle and habits of the *anopheles sundaicus* mosquito in the Java Sea region and crosses a *tambak* (dyke/ shallow estuary) where fish are bred in a flat-bottomed boat (1957).

Source: File 6130, Binder 205 (WHO Photo Archives, Geneva).



President Soekarno inaugurates Indonesia's malaria eradication program at Desa Tirtomartani, Yogyakarta on 12 November 1959.

Source: Satrio and Mona Lohanda, *Perjuangan dan Pengabdian: Mosaik Kenangan Prof. Dr. Satrio*, Penerbitan Sejarah Lisan Nomor 3 (Jakarta: Arsip Nasional, 1986).



Above: Malaria Eradication, Indonesia: DDT spraying in progress (12 November 1960). This image elucidates that malaria eradication in Indonesia was organised as a military campaign.

Source: Departemen Kesehatan, *Sejarah Kesehatan Nasional Indonesia*, Volume II (Jakarta: Departemen Kesehatan, 1980).

Magsaysay Award Recipient Raden Kodijat: Architect of the Indonesian Treponematoses Control Program



Raden Kodijat (then aged 71) was the 1961 recipient of the Ramon Magsaysay Award for Government Service.

Source: 'Ramon Magsaysay Award Foundation,' last accessed 22 February 2013,  
<http://www.designbluemana.com/test/rmaf/main/awardees/awardee/profile/107>.

Where the Road Ends, Yaws Begin: Images from the Indonesian Anti-Yaws Campaign during the 1950s

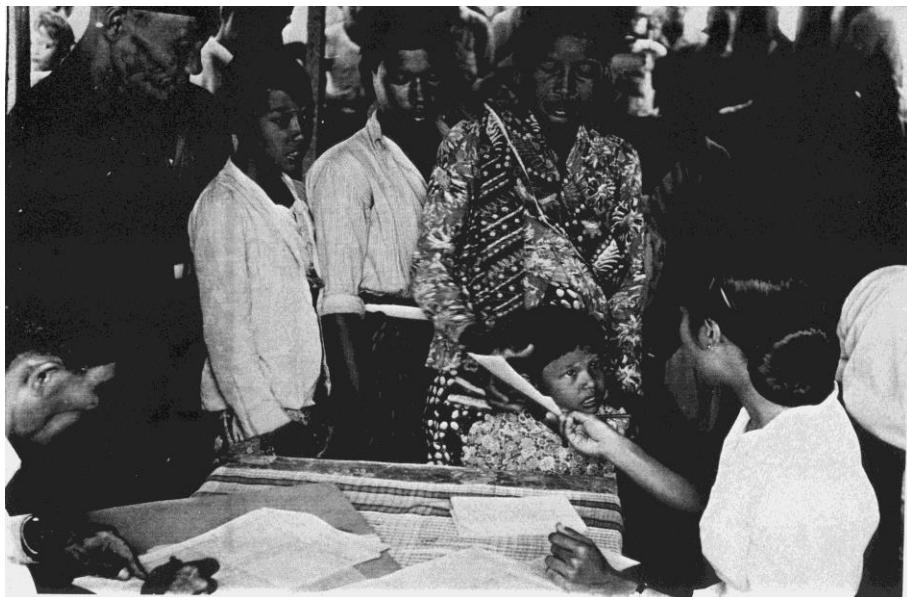
*The Kodijat Method of Yaws Control*



Above: In the central Javanese *desa* of Getas, villagers hear a talk by their headman about the approaching visit of the anti-yaws team. Earlier, the team leader had explained the campaign to the headman, who now passes on the information to his village and pleads for full cooperation.

Source: File 37458, Binder 245 (WHO Photo Archives, Geneva).

*The Kodijat Method of Yaws Control*



Detection of yaws cases in the village in the sub-district of Cerme (under the jurisdiction of the regency of Gresik, East Java). Only patients with active lesions are treated with penicillin (see the next photo).

Source: File 4529, Binder 178 (WHO Photo Archives, Geneva).

*The Kodijat Method of Yaws Control*



A Javanese nurse (left) treats a young boy with penicillin in the regency of Karangsem, Bali.

Source: File 37435, Binder 245 (WHO Photo Archives, Geneva).

*Yaws Control: the Outer Islands, 1957*



b

PAM (short for Procaine Penicillin with Aluminium Monostearate, which cures yaws lesions in a few days), is the name of a steam launch which takes a yaws eradication team to remote islands in Indonesia. As the PAM approaches the island the captain checks the approach channel with his glasses.

Source: Yaws on the island and the "PAM": Indonesia, 1957, WHO website, accessed February 20 2013, [http://www.who.int/features/2009/photoarchives/tropical\\_diseases/photo\\_story/en/index1.html](http://www.who.int/features/2009/photoarchives/tropical_diseases/photo_story/en/index1.html).

*Yaws Control: the Outer Islands, 1957*

Below: Mass Treatment of Yaws Patients



The 299 villagers of Njamplang are examined. Forty-seven persons, of whom nine are infectious, are given an injection of repository penicillin. Often, a preventive injection is given to the entire village population.

Source: Source: Yaws on the island and the "PAM": Indonesia, 1957, WHO website, accessed 20 February 2013,  
[http://www.who.int/features/2009/photoarchives/tropical\\_diseases/photo\\_story/en/index7.html](http://www.who.int/features/2009/photoarchives/tropical_diseases/photo_story/en/index7.html)

*Yaws Control: the Outer Islands, 1957*



Juvenile mass examination and treatment of all children (the island of Sapudi) using penicillin.

Source: Binder 245, File 7765 (WHO Photo Archives, Geneva).

Yaws, Before and After Treatment: Penicillin a Magic Bullet



The photograph on the left depicts a yaws-afflicted infant who is treated with penicillin. The results of the cure are self-evident (right).

Source: Binders 169 and 170 (WHO Photo Archives, Geneva).

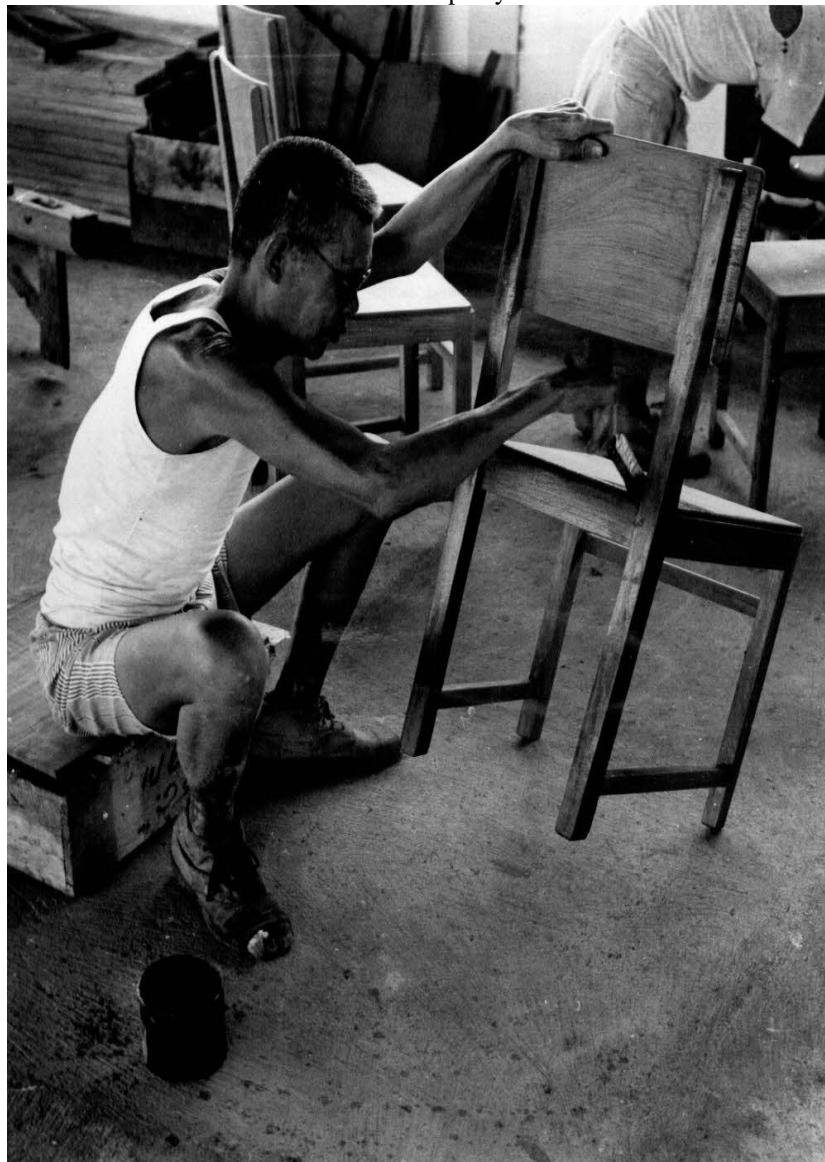
A Symbolic Victory against Yaws: WHO Propaganda



This photo frames the anti-yaws campaign in Indonesia as a battle that will lead to further victories of the nation against poverty, disease and illiteracy. After eradicating yaws, farmers develop initiatives to improve their socio-economic conditions.

Source: Binder 178, File 37329 (WHO Photo Archives, Geneva).

SEARO Leprosy



In Indonesia, the national leprosy campaign set underway by the Indonesian government (photo taken in 1959) includes a program of rehabilitation.

Source: Image WHO\_A\_008747 (WHO Photo Archives, Geneva).

SEARO Leprosy



Beginning 1956, the Indonesian government initiated a national campaign against leprosy in collaboration with the WHO that involved the detection of leprosy patients and treating them with sulphones. For the Indonesian government, the campaign against leprosy embodied the recreation of a modern society free from superstition and to eradicate the prevalent stigma associated with the disease. For these reasons, the Indonesian government accorded primacy to rehabilitation of leprosy patients.

Above: A school for leprosy children (1959). The teacher of this school is an ex-sufferer of leprosy.

Source: Image WHO\_A\_008744 (WHO Photo Archives, Geneva).

## References

- <sup>1</sup> Marcos Cueto, ‘Appropriation and Resistance: Local Responses to Malaria Eradication in Mexico, 1955-70,’ *Journal of Latin American Studies* 37, no. 3 (2005): 533-59, 536. The WHO promoted malaria eradication in Mexico as an example for other parts of the world.
- <sup>2</sup> Sunil Amrith, *Decolonising International Health: India and Southeast Asia* (Basingstoke: Palgrave, 2006), 13.
- <sup>3</sup> Amrith, *Decolonising International Health*, 54.
- <sup>4</sup> Randall Packard, ‘Visions of Postwar Health and Development and their Impact on Public Health Programs in the Third World,’ in *International Development and the Social Sciences: Essays in the History and Politics of Knowledge*, eds., Frederick Cooper and Randall Packard (Berkeley: University of California Press, 1997), 99. In Indonesia, anti-malarial measures had opened up vast areas of land for settlement in Sumatra and the Outer Islands for cultivation and easing overcrowding of the population on the island of Java. In the Philippines, the US Special Technical and Economic Mission implemented malaria eradication in conjunction with the Magsaysay government that opened up densely forested areas for settlement of landless farmers in order to contain the Huk insurgency.
- <sup>5</sup> See Marcos Cueto, ‘Metaphors of Malaria Eradication in Cold War Mexico,’ in D. Ann Herring and Alan C. Swedlund, eds., *Plagues and Epidemics: Infected Spaces Past and Present* (New York: Berg, 2009), 287-304. In this essay, Cueto challenges the ‘silver bullet’ approach in Mexican public health during the 1950s that relied on narrowly directed technological solutions such as DDT to control malaria. Although the malaria eradication campaign in Mexico in the mid-1950s was envisioned within the Mexican political circles as a pathway to modernising the indigenous Mexicans through medical activities, the campaign did not take into account the indigenous nosology of ‘fevers’ that could be framed within the context of malaria. The indigenous Mexicans explained malaria in terms of magical harm, eating unripe fruit, and sudden temperature changes. Obtaining blood samples of infected villagers for the malaria eradication campaign in rural Mexico led to circulation of the rumour that indigenous blood was sold to the Americans. Mexican villagers also resisted the spraying of DDT owing to the rumour that spraying DDT increased the bedbug population. These rumours highlight the shortcomings of using the ‘silver bullet approach’ of public health to usher in modernisation of the rural areas in developing countries.
- <sup>6</sup> United Nations Department of Social Affairs, *Preliminary Report on the World Social Situation* (New York: United Nations Department of Social Affairs, 1952), 22.
- <sup>7</sup> Randall Packard, ‘Visions of Postwar Health,’ 101.
- <sup>8</sup> See also my discussion related to the ‘Indonesian thinking on social medicine,’ Raden Mochtar’s illustration of the role of the broader social and environmental factors leading to disease (Chapter 2). The WHO began to perceive the impact of socio-economic and environmental factors on health only in the late 1970s which questioned the feasibility of narrowly-targeted disease eradication campaigns. See WHO Regional Office in South East Asia, *Sixty Years of WHO in South-East Asia: Highlights 1948-2008* (New Delhi: SEARO, 2008), 79.
- <sup>9</sup> In malarial nations such as Thailand and the Philippines, for example, absenteeism of the workforce due to malaria pushed the cost of raw materials imported into the US by approximately five per cent per annum. Refer *The United States and International Health: Hearings Before a Subcommittee of the Committee on Interstate and Foreign Commerce: House of Representatives: 84<sup>th</sup> Congress Second Session* (Washington: Government Printing Office, 1956), 62-63.
- <sup>10</sup> Packard, ‘Visions of Postwar Health,’ 97.
- <sup>11</sup> Marcos Cueto, *Cold War, Deadly Fevers*, 21.
- <sup>12</sup> United Nations Secretary General, *Technical Assistance for Economic Development: Plan for an Expanded Cooperation Programme through the United Nations and the Specialized Agencies* (New York: United Nations, 1949), 8.
- <sup>13</sup> James A. Gillespie, ‘Social Medicine, Social Security and International Health,’ in *The Politics of the Healthy Life: An International Perspective*, ed. Esteban Rodriguez-Ocana (Sheffield: European Association for the History of Medicine and Health Publications, 2002), 225-34. Within US policy circles ‘socialized medicine’ was associated with the practice of medicine in the Soviet Union. Certain Congress delegates expressed reservations that socialized

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medicine was associated with Moscow's plans for world domination. Therefore US negotiations with the WHO for dropping socialized medicine from its agenda in 1948 were political. Socialized medicine guarantees every individual the constitutional right to public health facilities. See Henry E. Sigerist, *Medicine and Health in the Soviet Union* (New York: Citadel Press, 1947), x.

<sup>14</sup> *Sixty Years of the WHO in Southeast Asia*, 4.

<sup>15</sup> C.L. Gonzalez, *Mass Campaigns and General Health Services* (Geneva: WHO, 1965), 12.

<sup>16</sup> Amrith, *Decolonising International Health*, 82.

<sup>17</sup> *Sixth Regional Committee Meeting of the SEARO: 16-19 September 1953* ( New Delhi: SEARO, 1953) Doc. SEA/RC6/R2 Malaria (1953), WHOL.

<sup>18</sup> 'Hearings before a Subcommittee of the Committee on Foreign Relations United States Senate: Eighty Fourth Congress First Session on Technical Assistance Programs,' *Technical Assistance Programs* (Washington: Committee on Foreign Relations, 1955), 3-4.

<sup>19</sup> Sunil Amrith, 'Asian Internationalism: Bandung's Echo in a Colonial Metropolis,' *Inter-Asian Cultural Studies* 6, no.4 (2005): 557-69, 558.

<sup>20</sup> *Report of the Eighth Session of WHO Regional Committee for Southeast Asia: 5 September 1955-10 September 1955* (New Delhi: SEARO, 1955), SEA/RC8/RD, WHOL.

<sup>21</sup> 'Speech by President Soekarno to Participants of the Southeast Asian Regional Conference of the WHO,' Istana Bogor 28 August 1960, ANRI *Pidato Presiden Republik Indonesia*, Arsip No. 209.

<sup>22</sup> *Ibid.*

<sup>23</sup> *Ibid.*

<sup>24</sup> *Ibid.*

<sup>25</sup> Soekarno, 'Hari Ulang Tahun Proklamasi Kemerdekaan Indonesia, 17 Agustus 1955,' 223-24.

<sup>26</sup> Henk Schulte Nordholt, 'Indonesia's National Culture in the 1950s and the Death of the Citizen,' *Proceedings of Conference Kemerdekaan Perubahan Dan Jati Diri: Post-Colonial Indonesian Identity* (Yogyakarta: Jurusan Sejarah Universitas Gajah Mada, 2010): 125-142, 130.

<sup>27</sup> 'Hari Ulang Tahun 17 Agustus 1955,' 229-30.

<sup>28</sup> Abu Hanifah, 'Beberapa Fikiran Tentang Kesehatan Rakjat,' *Madjalah Dokter Indonesia* 2, no 6 (1949):134-49, 134.

<sup>29</sup> *Ibid.*

<sup>30</sup> Hanifah, 'Beberapa Fikiran,' 141-42.

<sup>31</sup> Azis Saleh, 'Hari Ulang WHO ke-X,' *Pidato J.M. Menteri Kesehatan Pada Tanggal 7 April 1950: Berkennaan Dengan Hari Kesehatan Sedunia* (Jakarta: Kementerian Penerangan, 1958), 9.

<sup>32</sup> Saleh, *Pidato J.M. Menteri Kesehatan*, 8-9.

<sup>33</sup> 'Eradication Plan Will Clear Indonesia of Malaria in 1970,' *Times of Indonesia*, 13 August 1959.

<sup>34</sup> 'President Opens Malaria Eradication Programme,' *Times of Indonesia*, 13 November 1959.

<sup>35</sup> 'Eradication Plan,' *Times of Indonesia*, 13 August 1959.

<sup>36</sup> Allan M. Brandt, *No Magic Bullet: A Social History of Venereal Disease in the United States since 1880* (New York: Oxford University Press, 1985), 4.

<sup>37</sup> Walter Dowdle, 'The Principles of Disease Elimination and Eradication,' *WHO Bulletin OMS*, Supplement 2 (1998): 22-25.

<sup>38</sup> For a detailed account of the malaria control program undertaken by the colonial period see R.M.M. Mangkoewinoto, 'Sanitation of the Tjihea Plain,' in *Reports of the Dutch-Indian Medical Civil Service: Including Reports of the Medical Laboratory at Weltevreden*, eds., C.D. de Langen, H.W. Hoesen and J. Huizinga (Weltevreden: Djamboelaan, 1923), 236-74. In 1912, J. J. Van Lonkhuyzen, Inspector of the West Java Civil Medical Service, launched preliminary investigations regarding the prevalence of in the Cihea (Tjihea) plain. His investigations revealed that unhealthy conditions in the sawah (wet paddy fields), and tambak (fishponds) provided favourable conditions for the breeding of *anopheles aconitus*. By 1919, the West Java Irrigation Service in coordination with the Civil Medical Service, undertook sanitary measures that involved drying the sawah (simultaneous harvesting and planting), cleaning ditches carrying irrigation water, and mass quininisation of the

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population. The sanitary measures were resented by the local population as they had to bear an enormous financial burden for cleaning the ditches. By 1920, the colonial government bore capital expenditure for the upkeep of the irrigation ditches. Between 1919 and 1922, the parasitic rate among infected individuals at Cihea had almost halved from 32.5% (1919) to 17.6% (1922).

<sup>39</sup> H.T. Soeparmo and Stoker, 'Malaria Control in Indonesia,' *Berita Kementerian Kesehatan* 2, no1 (1952): 24-29, 24.

<sup>40</sup> Soeparmo and Stoker, 'Malaria Control,' 25.

<sup>41</sup> C.A. Ferullo, 'Assignment Report on Malaria Control in Indonesia,' *WHO Project: Indonesia* 4, 31 January 1958, Doc. SEA/MAL/11(New Delhi: SEARO, 1958) [Restricted].

<sup>42</sup> C.A. Ferullo, 'Malaria Control in Indonesia,' Doc. SEA/MAL/11.

<sup>43</sup> F. Ronnefeldt, 'Assignment Report on Malaria Control Demonstration, Tjilatjap and Semarang,' *WHO Project: Indonesia* 4, 9 July 1956-7 June 1957, Doc. SEA/MAL/15 (New Delhi: SEARO, 1958)[Restricted].

<sup>44</sup> *Ibid.*

<sup>45</sup> Ronnefeldt, 'Assignment Report on Malaria Control Demonstration,' Doc. SEA/MAL/15.

<sup>46</sup> 'Program for Malaria Eradication in Indonesia,' Doc. Ino/MEP/001, *WHO Project File Archives*, WHO Archives, Geneva (WHOA).

<sup>47</sup> C.Y. Chow, 'Assignment Report on Strengthening of Malaria Section: Malaria Section, Ministry of Health, Jakarta,' *WHO Project Indonesia* 32, 2 May 1955-22 June 1968, Doc. SEA/MAL/14, WHO Library and Historical Collections, Geneva (WHOL) [Restricted].

<sup>48</sup> *Ibid.*

<sup>49</sup> Malaria Institute, *Malaria Control Program: Manual of Operations* (Jakarta: Ministry of Health, 1956), 24.

<sup>50</sup> 'Revised Plans for Malaria Eradication Programme, Indonesia,' 16 August 1963-5 September 1963, *WHO Indonesia* 32, *WHO Project Files*, Box 235, File INO-MPD-001(A), File 2, WHOA.

<sup>51</sup> 'Memorandum from Regional Director, SEARO to Indonesian Ministry of Health,' 20 August 1958, *WHO Indonesia* 32, *WHO Project Files*, Box 234, File INO-MPD-001, WHOA.

<sup>52</sup> 'Draft letter from Ministry of Health, Azis Saleh to Prime Minister Djuanda,' *WHO Indonesia* 32, *Project Files*, Box 235, WHOA [Undated, 1958?].

<sup>53</sup> Herbert Feith, 'Indonesian Political Symbols and their Wielders,' *World Politics* 16, no.1 (1963): 79-97, 82.

<sup>54</sup> Departemen Kesehatan, *Sejarah Kesehatan Nasional Republik Indonesia*, vol.2 (Jakarta: Departemen Kesehatan, 1980).

<sup>55</sup> *Ibid.*

<sup>56</sup> 'Indonesia Malaria,' 1 April 1959, File F5, Box 234, *Project Files*, WHOA.

<sup>57</sup> Marsaid Sastrodihardjo (Director of the Malaria Eradication Programme, Central Java) and S.C. Edward (Provincial Malariologist), 'Quarterly Report of Malaria Eradication Programme in Central Java,' 1961, Box 236, File M2/372/3(B) Indo, 1961, *Project Files*, WHOA.

<sup>58</sup> *Ibid.*

<sup>59</sup> *Ibid.*

<sup>60</sup> 'Quotations from Report by G. Sambasivan, Senior Malariologist and Project Leader, Indonesian Malaria Eradication Programme,' in 'Plans of Operations and Related Correspondence,' File 3, INO-MPD-001(A), *Project Files*, WHOA.

<sup>61</sup> *Ibid.*

<sup>62</sup> 'Letter to Eugene Campbell, Director of Public Health ICA, From Prince Mohan Kaul, Assistant Director General of the WHO,' 'Plans of Operations and Related Correspondence,' File 3, ME/372/3 Indo, 8 July 1960, *Project Files*, WHOA [Confidential, Not Sent].

<sup>63</sup> *Ibid.* See also Azil Widjajakusuma, 'Operasi Pembasmian Malaria di Indonesia Suatu Usaha Nasional,' *Madjalah Kesehatan Angkatan Darat* Tahun 2, No.2 (1963): 43-47.

<sup>64</sup> 'Letter from James Deeny, Area Representative of the WHO to C. Mani, Director General of SEARO,' 22 June 1960, INO-MPD-001(A), File 3 'Plans of Operations and Related Correspondence,' *Project Files*. WHOA [Strictly Confidential].

<sup>65</sup> ‘Report of the Thirteenth Session of the WHO Regional Committee for Southeast Asia Held in Bandung,’ 22-29 August 1960, Doc. SEA/RC13/16 (New Delhi: SEARO, 1960), *SEARO Regional Committee Meetings* (RC), WHOL.

<sup>66</sup> ‘Draft Plan of Operations for Development of Health Services, Indonesia,’ WHO Project Indonesia 55, *Project Files*, WHOA.

<sup>67</sup> R. Baidya, ‘Draft Assignment Report of Pre Eradication Programme: South Kalimantan, Indonesia, 1963-64,’ WHO Project Indonesia 32, *Project Files*, WHOA.

<sup>68</sup> *Ibid.*

<sup>69</sup> *Ibid.*

<sup>70</sup> In 1964, the exchange rate was 7,000 rupiahs to US\$1 whereas the salary of a malaria field worker was only about 400 rupiahs.

<sup>71</sup> ‘Confidential Tour Notes of Senior Regional Malaria Officer, SEARO,’ Malaria Eradication Division, 11-17 December 1964, *WHO Project Files*, WHOA.

<sup>72</sup> ‘Administrative Roles for the Second Quarter 1965,’ Indonesia 32, Box 238, *WHO Project Files*, WHOA.

<sup>73</sup> *Ibid.*

<sup>74</sup> ‘Comments, Summaries, Conclusions, Recommendations of the WHO Team: Malaria Eradication Programme, Indonesia,’ February [1968/69?], Box 234, *Project Files*, WHOA.

<sup>75</sup> Boentaran Martoatmodjo, ‘Pandangan Mengenai Kemajuan Usaha Usaha di Bidang Kesehatan Selama 25 Tahun Merdeka,’ *Madjalah Kesehatan Masjarakat* 1, no 1(1971): 22-28, 23.

<sup>76</sup> Martoatmodjo, ‘Usaha Usaha di Bidang Kesehatan,’ 25-26.

<sup>77</sup> *Ibid.*, 25-26.

<sup>78</sup> Correspondence, C.A. Alvarado (Director of Malaria Eradication) and C. Mani (Regional Director, SEARO), ‘Malaria Eradication Program in Indonesia,’ 3 February 1960, File M2/372/3 INDO, Doc. INO/MPD/001, Box 234, *Project Files*, WHOA.

<sup>79</sup> *Ibid.*

<sup>80</sup> Sunil Amirth, ‘In Search of a Magic Bullet for Tuberculosis: South India and Beyond, 1955-65,’ *Social History of Medicine* 17, no.1 (2004):113-130, 113-15.

<sup>81</sup> L.G.J. Samallo, ‘Lima Tahun Pemberantasan Penjakit Tuberculose di Jogjakarta,’ *Madjalah Kedokteran Indonesia* 5, no.3 (1957): 46-53.

<sup>82</sup> L.G.J. Samallo, ‘Penjuntikan B.C.G. Contra T.B.C.,’ *Kedaulatan Rakjat*, 31 August 1954.

<sup>83</sup> *Ibid.*

<sup>84</sup> *Ibid.*

<sup>85</sup> *Ibid.*

<sup>86</sup> K. Osterkov Jensen, ‘Assignment Report on Tuberculosis Control in Indonesia,’ *WHO Project Indonesia* 8B, April 25, 1958, Doc. SEA/TB/5(New Delhi: SEARO, 1958) [Restricted].

<sup>87</sup> Jensen, ‘Assignment Report on Tuberculosis,’ 24-25.

<sup>88</sup> Jensen, ‘Assignment Report on Tuberculosis,’ 26-27.

<sup>89</sup> Jensen, ‘Assignment Report on Tuberculosis,’ 28.

<sup>90</sup> Jensen, ‘Assignment Report on Tuberculosis,’ 31.

<sup>91</sup> Jensen, ‘Assignment Report on Tuberculosis,’ 26.

<sup>92</sup> Jensen, ‘Assignment Report on Tuberculosis,’ 35-36.

<sup>93</sup> Leimena, *Public Health in Indonesia: Problems and Planning* (Djakarta: Van Dorp, 1956), 19-20.

<sup>94</sup> ‘Pidato Pembukaan Drs L.G.J. Samallo, Kepala Bagian Pemberantasan Penjakit Tuberculose,’ Conferentie Pemberantasan Penjakit Tuberculose di Bandung, August 8-13, 1955, *Berita Tuberculosea Indonesiensis* (Jogjakarta: Kementerian Kesehatan Republik Indonesia, 1955): 6-11.

<sup>95</sup> C.F. Borchgrevink and Nio Kok Hien, ‘Report on the BCG Campaign in Indonesia,’ November 1953-March 1956, Doc SEA/TB/4, *WHO Project -Indonesia* 8A, *Project Files*, WHOA [Restricted].

<sup>96</sup> Soerono, ‘Organisasi BCG Mass Campaign di Indonesia,’ *Berita Tuberculosea Indonesiensis* (1955): 64-65.

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<sup>97</sup> Borchgrevink and Hien, ‘BCG Campaign,’ 13-17. Dr. Rhonda Chang, who is a practitioner of Chinese traditional medicine in Sydney, is of the opinion that in the Chinese medical tradition, diseases are cured by restoring the natural balance between opposing/complementary forces such as *yin* and *yang*. Injections/vaccinations go against the natural healing mechanism of the diseased body (Rhonda Chang, e-mail correspondence with Vivek Neelakantan, 1 December 2011).

<sup>98</sup> See Vivek Neelakantan, ‘Eradicating Smallpox: The Archipelagic Challenge, Indonesia,’ *Health and History* 12, no. 1(2010): 61-87, 79-80.

<sup>99</sup> Borchgrevink and Hien, ‘BCG Campaign,’ 18.

<sup>100</sup> Borchgrevink and Hien, ‘BCG Campaign,’ 21.

<sup>101</sup> Borchgrevink and Hien, ‘BCG Campaign,’ 22.

<sup>102</sup> See also Christian W. McMillen and Niels Brimnes, ‘Medical Modernisation and Resistance in Modern India: Resistance to Mass Vaccination in Postcolonial India, 1948-1955,’ *Comparative Studies in Society and History* 52, no.1 (2010):180-209, 204-5. In southern India, when the mass campaign against tuberculosis was in progress, there were rumours that children went blind after being vaccinated with BCG.

<sup>103</sup> See Neelakantan, ‘Eradicating Smallpox,’ 71.

<sup>104</sup> Liem Tjay Tie, ‘Tentang Tuberkulose Kanak Kanak,’ *Berita Tuberculosea Indonesiensis* (1955): 12-48, 20.

<sup>105</sup> R. Trisoelo, ‘Penjakit Tuberkulose dan Pendidikan Kesehatan Rakjat,’ *Berita Tuberculose Indonesiensis* 2, no.1 (1955):26-36, 28-29.

<sup>106</sup> J.C. Kapitan, *Masalah Tuberkulose di Perusahaan* (Surabaja: Universitas Airlangga, 1958).

<sup>107</sup> *Ibid.*

<sup>108</sup> R. Soerooso, ‘Pengobatan Antimicrobeel dari Tuberculosis,’ *Berita Tuberculosea Indonesiensis* (1955): 118-67.

<sup>109</sup> A.D.A.M. *Medical Encyclopedia*, <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002317>, Accessed 16 September 2011.

<sup>110</sup> C.J. Hackett, ‘Yaws Eradication in Indonesia: Dr. Raden Kodijat’s Contribution,’ *Transactions of the Royal Society of Tropical Medicine and Hygiene* 64, no.4 (1970):615-22, 615.

<sup>111</sup> R. Kodijat, ‘Measures for Combating Framboesia Tropica in Rural Districts,’ File Indonesia 1A Jacket 1.2, *Project Files*, WHOA.

<sup>112</sup> *Ibid.*

<sup>113</sup> ‘Treponematoses Control Program, Indonesia,’ File 1 B (‘Treponematoses Control’), *Project Files*, WHOA [Undated].

<sup>114</sup> Letter from Johannes Leimena, Ministry of Health(Indonesia) to Mr. Carl Bergithon, UNICEF Chief of Mission (Djakarta), ‘Treponematoses Control,’ 15 April 1950, File Indonesia 1B, *Project Files*, WHOA.

<sup>115</sup> ‘Treponematoses Control Program Indonesia,’ File Indonesia 1B, *Project Files*, WHOA.

<sup>116</sup> *Ibid.*

<sup>117</sup> Wisnu Subagyo, *Tokoh Nasional Dr. R. Kodijat* (Jakarta: Departemen Pendidikan dan Kebudayaan, 1981), 36.

<sup>118</sup> Cecil Hackett, ‘Assignment Report on Treponematoses Control, Indonesia,’ *WHO Project: Indonesia 001*, August 13, 1969, Doc. SEA/VDT/12 Rev.1 Corr.1 (New Delhi: SEARO, 1969) [Restricted].

<sup>119</sup> *The Djuru Patek: The Man and His Work* (Surabaja: Venereal Disease Institute of Indonesia, 1953).

<sup>120</sup> Letter from Johannes Leimena, Minister of Health to Mr. Carl Bergithon, ‘Programme for the Control of Treponematoses: The United States of Indonesia, 1950,’ File Indonesia 1A, Jacket 1.2, *Project Files*, WHOA [Undated].

<sup>121</sup> ‘Appendix III-Exchange of Correspondence between S.M.Keeney, UNICEF and Johannes Leimena, Ministry of Health, Republic of Indonesia,’ 3 July 1953, Jackets 7,8,9, file Indonesia 1D(Treponematoses Control), Doc. VDT, *Project Files*, WHOA.

<sup>122</sup> M. Soetopo and R. Wasito, ‘Experience with Yaws Control in Indonesia: Preliminary Results with a Simplified Approach,’ *Bulletin of the WHO* 8, nos. 1-3(1953):273-91, 276.

<sup>123</sup> Soetopo and Wasito, ‘Yaws Control,’ 282.

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<sup>124</sup> Soetopo and Wasito, ‘Yaws Control,’ 279-80. The average prevalence of yaws for the Driyo sub-district was 15 % in 1951. However individual villages within the jurisdiction of this sub-district recorded a yaws prevalence ranging from 7 % to 20%.

<sup>125</sup> Soetopo and Wasito, ‘Yaws Control,’ 281.

<sup>126</sup> Indra Gayatri, *Prof. Dr. M. Soetopo: Hasil Karya dan Pengabdianya* (Jakarta: Departemen Pendidikan dan Kebudayaan, Direktorat Sejarah dan Nilai Tradisional dan Proyek Inventarisasi dan Dokumentasi Sejarah Nasional, 1983), 38-9.

<sup>127</sup> *Ibid.*, 38.

<sup>128</sup> Indra Gayatri, *Prof. Dr. M. Soetopo*, 39.

<sup>129</sup> Subagyo, Dr. Raden Kodijat, 48. However, the prevalence of yaws in Indonesia showed a sharp variation from one locality to another, depending largely on social factors such as land ownership. Prevalence among land owning households was 17.9%; among non-land owning households, 28.4%. This hypothesis is based on a study of yaws prevalence in the households of the sub-district of Cawas, Central Java. See A.H. Klokke, ‘Yaws Prevalence in the Households of Tjawas, Central Java,’ PhD Thesis (Jogjakarta: Universitas Gadjah Mada, 1956). The prevalence of yaws is closely related to personal hygiene. Wealthier land owning households were in a better position to prevent infection.

<sup>130</sup> ‘Fifth Addendum to the Plan of Operations for the Expansion of the Treponematoses Control Project in Indonesia,’ 24 October 1960, sd. Satrio (Minister of Health, Indonesia) and S.M. Keeny (UNICEF), File Indonesia 1B (‘Treponematoses Control’), *Project Files*, WHOA.

<sup>131</sup> J. Clearkin, ‘Some Aspects of Yaws Control in Malaya,’ *International Conference on Yaws Control, Nigeria*, 6 November 1955, Doc. WHO/VDT/209, WHOL.

<sup>132</sup> *Ibid.*

<sup>133</sup> ‘Treponematoses Control Project in Indonesia,’ *The First International Symposium on Yaws Control by Thai Medical Association and WHO: March 14-30, 1952*, 25 June 1952, Doc. INT/VD/55, WHOL.

<sup>134</sup> N. Jungalwalla (WHO Regional Adviser in Communicable Diseases, Southeast Asia), ‘Development of Plan of Operations,’ *First International Symposium on Yaws Control*, 14-22 March, 1952, Doc. WHO/VD/104.

<sup>135</sup> Hackett, ‘A Report on a Study in Indonesia,’ WHOL.

<sup>136</sup> *Ibid.*

<sup>137</sup> *Ibid.*

<sup>138</sup> ‘Urgensi Program Pengluasan Daerah Pemberantasan Penjakit Framboesia,’ *Kabinet Presiden Republik Indonesia*, ANRI No. 655.

<sup>139</sup> Pramoedya Ananta Toer, *The Mute’s Soliloquy: A Memoir* (New York: Penguin Books, 2002), 242.

<sup>140</sup> S.M. Keeny, ‘The Reward for Those Who Work to End Yaws: Holiday in Sumput,’ *WHO Newsletter* 7, no.5 (1964), WHOL.

<sup>141</sup> *Ibid.*

<sup>142</sup> ‘Magsaysay Award for Dr. R. Kodijat,’ *Jakarta Mail*, 6 August 1961.

<sup>143</sup> Soedarto Sosroamidjojo, *Recurrence of Yaws in Three Rural Areas of Indonesia* (Jakarta: Ministry of Health, 1971).

<sup>144</sup> Sosroamidjojo, *Recurrence of Yaws*, 3.

<sup>145</sup> Sosroamidjojo, *Recurrence of Yaws*, 4.

<sup>146</sup> Sosroamidjojo, *Recurrence of Yaws*, 25.

<sup>147</sup> Ruth Peters, Dadun, Mimi Lusli et al., ‘Meaning of Leprosy and Everyday Experiences: An Exploration in Cirebon, Indonesia,’ *Journal of Tropical Medicine* (2013):1-9.

<sup>148</sup> Peters, Dadun, Lusli et al., ‘Meaning of Leprosy,’ 4-7.

<sup>149</sup> Kamal Mahmud, ‘Leprosy Eradication,’ *Pedoman dan Berita Departemen Kesehatan* 1 and 2 (1967), n.p.

<sup>150</sup> *Ibid.*

<sup>151</sup> Toer, *The Mute’s Soliloquy*, 242-43.

<sup>152</sup> Boenjamin, ‘Penjakit Kusta dan Pemberantasannya,’ *Madjalah Kedokteran Indonesia* 10, 11, and 12(1954), n.p.

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- <sup>153</sup> R. Boenjamin, 'Aspek Aspek Sosial dari Penjakit Kusta,' *Berita Kementerian Kesehatan Republik Indonesia* 5, no1 (1956):13-21.
- <sup>154</sup> Boenjamin, 'Aspek Aspek Sosial,' 18-19.
- <sup>155</sup> Gay Prieto, 'Report on the Leprosy Problem in Indonesia,' July – September 1955, Doc. SEA/Lep/12, Dated 31 January 1956, WHOL [Restricted].
- <sup>156</sup> Boenjamin, 'Study of Carotenoids and of Vitamin A in the Blood Serum of Leprosy Patients and of their Healthy Housemates,' *International Journal of Leprosy* 20, no1 (1952): 53-66; Boenjamin, 'The Social Aspects of Leprosy,' *International Journal of Leprosy* 24, no 2(1956): 152-58.
- <sup>157</sup> Prieto, 'Leprosy Problem.'
- <sup>158</sup> 'First Addendum to the Plan of Operations for Leprosy Control in Indonesia,' File Indonesia 9, Jackets 1, 2, and 3, *Project Files*, WHOA.
- <sup>159</sup> Prieto, 'Leprosy Problem.'
- <sup>160</sup> M.V.J. Blanc, 'Assignment Report on Leprosy Control Project, Indonesia: September 1956-August 1963,' Doc. SEA/Lep/16, Dated 22 August 1963, *WHO Project: Indonesia 9* (New Delhi: SEARO, 1963) [Restricted].
- <sup>161</sup> 'First Addendum to the Plan of Operation for Leprosy Control in Indonesia.'
- <sup>162</sup> Blanc, 'Assignment Report on Leprosy Control Project, Indonesia.' The overall prevalence of leprosy in the pilot area of West Java decreased from 4.9 per thousand in 1957 to 0.5 per thousand in 1959. In East Java, the overall prevalence of leprosy for 1959 was 4.4 per thousand for the pilot area of Menganti whereas Blora regency of Central Java recorded a prevalence rate of 2.85 per thousand.
- <sup>163</sup> M. Blanc and M. Arif, 'Fourth Quarter 1960: Leprosy Control Java and Bali in Operation, Special Programme for Outer Islands,' Dated 20 December 1960, File Indonesia 9, *Project Files*, WHOA.
- <sup>164</sup> 'Correspondence between Gay Prieto, WHO Leprologist, and Dr. R.H. Bland: Leprosy Control Project First Quarterly Report, 1961,' Dated 21 April 1961, File Indonesia 9, *Project Files*, WHOA.
- <sup>165</sup> 'Leprosy Control: Field of Operations,' November and December 1961, File Indonesia 9, *Project Files*, WHOA.
- <sup>166</sup> Boenjamin, 'Aspek Aspek Sosial,' 14.
- <sup>167</sup> M. Blanc, and M. Arif, 'Quarterly Field Report, Leprosy Control: First Quarter, 1961,' Dated 20 March 1961, file Indonesia 9, *Project Files*, WHOA.
- <sup>168</sup> 'Letter from WHO Headquarters (Geneva) to M. Blanc (Senior WHO Leprologist, Indonesia),' Dated 24 August 1961, File Indonesia 9, *Project Files*, WHOA.
- <sup>169</sup> *Ibid.*
- <sup>170</sup> *Ibid.*
- <sup>171</sup> M. Blanc (WHO Senior Leprosy Advisor to the Indonesian Government) and M. Arif (Director of the Leprosy Institute), 'Quarterly Field Report: Second Quarter, 1961,' 20 June 1961, File Indonesia 9, *Project Files*, WHOA.
- <sup>172</sup> *Fifteenth Annual Report of Regional Director to the Regional Committee for Southeast Asia: August 1, 1962-August 1, 1963*, Doc. SEA/RC16/2 (New Delhi: SEARO, 1965), 161.

## **CHAPTER FIVE**

### **EXPANSION AND TRANSFORMATION OF MEDICAL EDUCATION IN INDONESIA**

After Indonesia gained independence, the country suffered from an acute shortage of physicians. After 1945, most Dutch physicians had left; and to compound the shortage, the medical schools in the Dutch East Indies only graduated a modest number of Indonesian physicians. During most of the 1950s, the country's three medical schools (Jakarta, Surabaya and Yogyakarta) only graduated a disappointing number of approximately thirty physicians annually. Indonesia attempted to remedy this shortage by changing the curricula at the existing medical schools and by founding new medical schools on the Outer Islands. The Indonesians had inherited the Dutch model of medical education, a model that followed the German model which emphasised research and individual study, allowing students to sit their examinations whenever they felt adequately prepared. Starting in 1952, proposals were made to remodel the medical curricula on the American model, which fostered problem solving and critical thinking, and introduced cohort-based rather than individual examinations. Universitas Indonesia (Jakarta; UI) and Universitas Airlangga (Surabaya; UNAIR) affiliated themselves with the University of California medical school with the aim of implementing the American model. At the same time, during the 1950s, new medical faculties were established on the islands of Sumatra and Sulawesi.

In reality, the American model was neither implemented in the leading Indonesian medical schools (UI, UNAIR, and Universitas Gadjah Mada (Yogyakarta; UGM)), nor in those founded on the Outer Islands. Initiatives were contingent to political factors, especially US-Indonesian relations and the political differences between Java and the Outer Islands. Starting in 1955, affiliation of the UI and the University of California's medical school commenced, leading to the restructuring of the former's curriculum. President Soekarno's suspension of parliamentary democracy in 1957, and the subsequent deterioration of relations between the US and Indonesia, led to the postponement of the affiliation of the UNAIR medical school with the University of California until 1959; until that time, the former continued to follow the Dutch model. The

medical faculty at UGM was not affiliated to the University of California but restructured its curriculum independently following the American model in 1965. The founding of medical schools in the Outer Islands was largely the outcome of private initiatives and funding from international agencies. The central government's involvement in the establishment of medical faculties on the islands of Sumatra and Sulawesi was minimal and half-hearted at best. The medical faculties at Medan, Bukittinggi and Makassar followed a variant of the Dutch model of medical education. At the same time as the organisation and restructuring of Indonesian medical education took place, increased emphasis was placed upon public health.

Several obstacles impeded the implementation of the American model of medical education in Indonesia, in particular the lack of infrastructure and the shortage of qualified teachers. The transition from the Dutch to the American model was unevenly implemented, in particular at UNAIR and the medical schools on the Outer Islands due to lack of adequate administrative support from the Ministry of Education. Since there was hardly any process of selection to enter the medical school, attrition rates remained high, especially during the premedical year. Cohort-based teaching could not be successfully implemented due to the shortage of Indonesian academic staff. By 1969, the American model proved unsustainable at UNAIR and the medical school reverted to the Dutch curriculum. Because of these reasons, the implementation of the American model in Indonesian medical schools failed to maximise the output of physicians across Indonesia.

### **Medical Education in Jakarta: Transition from the Dutch to the American Model of Medical Education**

Between 1927 and 1942, the medical faculty at Batavia (Geneeskundige Hoogeschool, GH) and subsequently the UI in Jakarta (1950-54) utilised the Dutch model of medical education, which was patterned along German lines. In this Dutch model, examinations were on an individual basis and could be taken whenever the student felt prepared. The curriculum was rigorous: it emphasised extensive theoretical grounding in the natural sciences followed by a written examination. The course of study was completed with an oral examination.<sup>1</sup> As a result of the

rigorous curriculum, approximately eighty per cent of students failed, both at the GH and at the UI medical school. Consequently, the latter graduated only a modest number of approximately thirty physicians annually during the early and mid-1950s. Starting in 1952, in line with the initiatives of Indonesian academics including Soetomo Tjokronegoro, proposals were made to introduce the American model of medical education, which consisted of a guided curriculum that emphasized cohort-based teaching and encouraged the development of problem solving skills. By 1954-55, the medical faculty at UI had introduced the American model, which required affiliation with the University of California. Increased emphasis on public health—although not technically emphasised in the American model—was incorporated in 1954-55 at all levels of medical study; this was initiated by UI academics such as Raden Mochtar. The aim was to orient future physicians to health problems peculiar to Indonesia such as the high prevalence of maternal and infant mortality and infant malnutrition.

In 1851, the Dokter Djawa School was established at Batavia. The School was an initiative of Willem Bosch, the head of the Netherlands Indies medical service, and the Dutch East Indies colonial government and aimed to train local medical personnel to be employed as smallpox vaccinators.<sup>2</sup> The training course at the Dokter Djawa School lasted two years, at the end of which medical graduates were awarded the title of *Dokter Djawa* (Javanese doctor). In the beginning, Malay was the language of instruction. In the mid-1870s it was replaced by Dutch , because the teachers at the school were convinced that Malay did not suffice as a language of scientific instruction. In 1875, the duration of the training program was raised from two to seven years, of which two years were for preparatory courses science and five for medical training.<sup>3</sup> In addition, starting in 1890, students were given outpatient training for surgery and eye diseases.

In 1902, the school was renamed STOVIA (School ter Opleiding van Inlandsche Artsen) and the curriculum was revised once again. STOVIA students who successfully passed all of their examinations were awarded the title of *Inlandsch Arts* [Native Physician]. In 1913, the NIAS (Nederlandsch-Indische Artsen School) was established in Surabaya, patterned on the STOVIA curriculum. Students who successfully completed their medical training at NIAS were conferred with the title of *Indisch Arts* [Indies Physician] (from that date, the STOVIA also

awarded this degree).<sup>4</sup> In 1927, the GH opened, awarding the same medical degrees as universities in the Netherlands. At this time, the STOVIA no longer accepted new students, but students who had already enrolled could finish their study or transfer to the GH. The NIAS did not change; consequently, there were two different courses of study open to students in Indonesia.

Following the Japanese occupation in 1942, the medical schools in Jakarta and Surabaya were closed for one year. In 1943, the Japanese established the *Ika Daigaku* (Medical Academy) in Jakarta. The duration of medical education at this school was five years.<sup>5</sup> Thirteen STOVIA and GH graduates, including Abdul Rasjid, Bahder Djohan, Boentaran Martoatmodjo, Soetomo Tjokronegoro and Sardjito were appointed lecturers. They also became members of the *Izi Hoko Kai*, which was a precursor to the Indonesian Medical Association [*Ikatan Dokter Indonesia*], which was established in 1950. Shortly after the defeat of the Japanese in August 1945, the *Balai Perguruan Tinggi Republik Indonesia*—The Institute of Higher Education of the Indonesian Republic, and precursor to the UGM—with its faculties of medicine and law, was inaugurated at Jakarta by Soetomo Tjokronegoro.<sup>6</sup> In early October 1945, the Dutch returned to the Indonesian archipelago; by this time, the Netherlands Indies Civil Administration (NICA) had established control over Jakarta. Due to the political uncertainty in the period that followed, the *Balai Perguruan Tinggi*'s Faculty of Medicine was transferred to Yogyakarta and Klaten in central Java, areas that were under the control of the revolutionaries.<sup>7</sup>

In 1946, the Dutch established the *Nooduniversiteit* (Emergency University) in Jakarta. It consisted of Faculties of Medicine, Law, Humanities, Agriculture and Technical Education. In 1947, its name was changed to *Universiteit van Indonesië*. Gradually, as the Dutch reasserted their control over the Indonesian archipelago, they established Faculties of Mathematics and Physics in Bandung (using the former Technical College buildings), Faculties of Veterinary Medicine and Agriculture in Bogor, a second Medical Faculty in Surabaya, and a Faculty of Economics at Makassar, all of which were affiliated to the newly-established *Universiteit van Indonesië*.<sup>8</sup> The *Universiteit* was able to continue its educational programs uninterrupted until December 1949.

In 1950, the Universiteit van Indonesië was renamed Universitet Indonesia (UI), before it was again renamed Universitas Indonesia in 1954.<sup>9</sup> By now, the Republic of Indonesia had three medical schools, i.e., the Faculty of Medicine at Yogyakarta (UGM), the Faculty of Medicine at Jakarta, and the Faculty of Medicine at Surabaya. All three came under UI administration from 1950 to 1954, when the Faculty of Medicine at Surabaya was amalgamated with Universitas Airlangga (UNAIR) in 1954.

From 1950 to 1954, the medical schools of the UI at Jakarta and Surabaya followed the Dutch medical model. The Dutch medical schools' curriculum allowed considerable flexibility: students were neither compelled to attend lectures nor did they have to appear for examinations when they were not adequately prepared. The curriculum was theoretical, combined teaching with research, and emphasised basic medical sciences, in particular anatomy and physiology.<sup>10</sup> The Dutch model laid less emphasis upon apprenticeship as a means for medical students to gain practical experience as it primarily educated students to become medical researchers.

Technically, any student who passed the high school examination was accepted into the premedical year. Consequently, the number of students who were admitted into the premedical year by far exceeded the physical capacity of the available classrooms, which also included a number of students who had to repeat classes.<sup>11</sup> The premedical curriculum was a burden for the medical schools at Jakarta and Surabaya as the instruction in botany, zoology, chemistry and physics did not strictly constitute a part of the medical curriculum. The teachers were recruited on a part-time basis from other institutions, e.g., the School of Natural Sciences, or the School of Technology; thus, they could not devote their full attention to develop a strong academic foundation.

Unfortunately, during the early 1950s, there was a steady exodus of Dutch lecturers and other scientists to the Netherlands as the monthly remuneration of Dutch academics in post-independent Indonesia could not keep pace with the rising inflation. In addition, the Indonesian Decree (1946) stipulated that all academic lectures had to be delivered in Bahasa Indonesia.<sup>12</sup> Many of the Dutch had experienced considerable hostility from Indonesians and were eager to leave the country. Running the medical school following their departure became very difficult as

vacancies could not be filled by Indonesian academics. The number of physicians graduating from the medical schools at Jakarta and Surabaya remained small (estimated at less than thirty for the early 1950s). Most of the new medical graduates preferred to work as private practitioners in urban areas where salaries were higher, thereby creating a gap in the availability of physicians between the rural and urban areas of Indonesia.

To change this situation, in 1952, Professor of Pathology Soetomo Tjokronegoro (Universitas Indonesia) approached Francis Scott Smyth, the chairperson of the Foreign Graduate Student Committee at the University of California San Francisco (UCSF) with a proposal to affiliate the UI Faculties of Medicine at Jakarta and Surabaya with the UCSF. His aim was to remodel the medical curriculum based on the American model, which intended to deepen the student's conceptual understanding of the structure, function and behaviour of the human organism in health and disease. The lectures, which emphasised active learning through laboratories, internships and small group discussions, were designed to teach students how to acquire knowledge essential to facilitating their solving of problems. However, the training of medical students in universities in the US did not emphasise preventive medicine, occupational medicine, and the doctor-patient relationship. These were incorporated into the revised medical curricula patterned on the American model at the initiative of UI academics, in particular Raden Mochtar, to sensitise the future medical student to the public health problems of Indonesia.

During the 1950s, Indonesia was the focus of several international aid-based organisations including the TCA (Technical Cooperation Administration of the American government), Australian Aid (administered through the Colombo Plan), the World Health Organisation (WHO), and private philanthropies such as the Ford Foundation and the Rockefeller Foundation. Their interest in Indonesia was related to its geopolitical significance during the Cold War era, particularly after the Communist victory in mainland China. Because the US was apprehensive about the spread of communism to Southeast Asia, as a preventative strategy it utilised technical assistance, particularly Harry Truman's Point Four Program, to advance the economic and social development of the newly-decolonised Southeast Asian nations, especially Indonesia.<sup>13</sup> In 1951, Indonesian foreign minister Achmad Subardjo

committed Indonesia to Section 511a (Economic and Technical Assistance of the US Military Security Act), a US technical assistance package, without sanction from the parliament. This led to a general fear that Indonesian foreign policy would become entangled with the politics of the Western Bloc.<sup>14</sup> Indonesians were initially sceptical of accepting any form of American aid, including education personnel, out of fear that US technical aid could have political or military strings attached.

The affiliation between the medical schools at UI and the UCSF was implemented in the volatile political context of Cold War Politics. E. Ross Jenney (Chief of the US Technical Mission to Indonesia and Head of the Public Health Division from 1950-1953) proposed the ‘adoption’ of Indonesian universities by their American counterparts as part of the technical assistance program. The Indonesian Ministry of Education and Culture expressed reservations about the use of the word ‘adoption,’ stating that this notion signified that Indonesian universities were subservient to their American counterparts.<sup>15</sup> For this reason, the word ‘adoption,’ was dropped from the American proposal when the question of affiliating the UI medical school with the UCSF was proposed in 1952.<sup>16</sup> However, problems arose on the American side. The Regents of the University of California argued that their local medical faculties were burdened with returned World War II veterans. They also questioned the feasibility of transplanting the American medical education model to the Indonesian medical schools given that Indonesia’s public health conditions differed drastically from those in America.<sup>17</sup> As a result of mutual misgivings, no agreement could be brokered at the official level.<sup>18</sup> Yet, progress towards affiliation was evident at the level of academics, beginning in 1952 with Soetomo Tjokronegoro’s proposal.<sup>19</sup> Smyth, however, was initially unprepared to advocate affiliation between the two faculties as the Regents of the University of California lacked sufficient information pertinent to Indonesia’s health conditions. In anticipation of the proposal to affiliate, in 1953, Dr Nathaniel Burbridge of the Department of Pharmacology, University of California, was sent to Jakarta to reorganise the Department of Pharmacology at UI.

The Memorandum of Understanding between the University of California Medical School and the Faculty of Medicine at UI was officially signed on 29 June 1954 and effective

from 1 July 1954 to 30 June 1957. Completely financed by the ICA (International Cooperation Administration), it involved affiliating the Medical Faculty at Jakarta with the Faculty of Medicine at the University of California, San Francisco. As per the provisions of the contract, 31 US medical educators with expertise in basic medical and clinical fields were deputed to Indonesia for periods ranging from six months to seven years.<sup>20</sup> The University of California team of visiting lecturers offered assistance to the medical faculty of UI in the selection of prospective medical students and the reorganisation of the medical curriculum. The latter could not be implemented until 1955 as American lecturers could not be recruited at short term notice.

On 17 December 1954, the UI medical faculty appointed a committee consisting of Sarwono Prawirohardjo, Professor of Obstetrics and Gynaecology; Soedjono Djoened Poesponegoro, Dean of the Medical School and Professor of Paediatrics; Edwin Schultz, Chairman of the University of California-Field Staff and Visiting Professor of Pathology; Sutarman, Professor of Physiology; Satrio, Associate Professor of Anatomy; Raden Mochtar, Associate Professor of Public Health; and Sujito Danusuproto, Associate Professor of Physics.<sup>21</sup> The function of this committee was to propose changes to the medical curriculum and increase the supply of doctors. The committee proposed that the duration of medical training be reduced to six years and specifically recommended the introduction of the American model. The medical school's adoption of the American curriculum in 1955 was intended to foster problem-based experiential learning and initiate cohort-based—rather than individual—examinations so that an entire batch of doctors could graduate from the medical school each year.

The American medical model emerged in the mid-nineteenth century. Medical educators in the US deemphasised didactic teaching by lecturers, instead advocating medical education that produced problem-solvers and critical thinkers who could evaluate information independently.<sup>22</sup> Clinical research required making meticulous bedside observations of patients. In every department of the medical school, there was congruence between teaching required courses and the specific research interests of the teaching faculty.<sup>23</sup> Instructors were passionate about alerting students about the research problems they themselves had encountered when pursuing their own research. The medical curriculum in the US was arranged logically: i.e., the preclinical subjects,

namely anatomy, biochemistry, physiology, bacteriology and pharmacology, oriented the medical student for clinical study.<sup>24</sup> The courses undertaken during the preclinical and clinical years were intended to familiarise medical students with the basic processes governing the functioning of structure, function and behaviour of the human organism in health and disease. Instruction emphasised active learning through small group-discussions during which students practiced problem-solving skills. A great deficiency of the American model of medical education was the scant attention devoted to issues such as preventive medicine, occupational medicine, and the doctor-patient relationship.<sup>25</sup>

The most noticeable change associated with the switch from the Dutch to the American curriculum at the UI medical school was the structuring of the lectures. Under the old approach, lectures were delivered in classical didactic style with very little input from the students. The number of hours devoted to premedical, preclinical and clinical subjects was flexible and students could choose not to attend classes. Teaching at the premedical level largely emphasised anatomy and histology; there was no integration of the lectures with the laboratory. With the introduction of the American model in 1955, lectures were structured around the semester. At the preclinical level, the teaching hours dedicated to physiology and biochemistry equalled those of anatomy and histology with the objective of deepening the student's conceptual understanding of metabolic processes.<sup>26</sup> Beginning in 1955, training of medical students in public health commenced during the preclinical (second) year and included instruction in public health theory, medical ecology, demography, home economics, social anthropology, and statistics. During the third year, students were trained in the prevention of infectious diseases, health education, interpretation of epidemiological data, and smallpox vaccination. Theoretical training in public health synchronised well with practical training such as administering vaccinations. At the commencement of clinical study (the fourth year), students received instruction in social medicine. During the clerkship period (fifth year), students would be posted to maternal and child health centres where they assisted with pilot demonstration projects and subsequently discussed their field experiences in class. Students also conducted surveys related to the impact of socio-economic factors affecting the general health at the household level. In the sixth year,

they undertook internships in public health lasting two months, worked as general practitioners and held discussions with regency health officers on public health questions.

Premedical training under the American curriculum was implemented at the commencement of their medical education and consisted of instruction in physics, chemistry and biology. The first phase of preclinical training consisted of coursework in anatomy, histology, physiology, biochemistry, public health and nutrition, followed by instruction in anatomical pathology, parasitology, microbiology, pharmacology, clinical pathology, public health, nutrition and psychiatry. The preclinical examinations were marked by a high attrition rate, as coursework was intensive. Unfortunately, reliable statistics regarding the performance of students at each level of medical study for the mid and late 1950s and 1960s are not available.<sup>27</sup> The fourth, fifth and sixth years were devoted to clinical studies in surgery, paediatrics, obstetrics and gynaecology, psychiatry, public health, dermatology, ophthalmology, dentistry, and forensic medicine.<sup>28</sup> In addition to their field experiences and group discussions, students discussed the latest scientific literature.

Firman Lubis, formerly Professor of Public Health and Preventive Medicine at UI, recounts in his memoirs that during his student days at the Faculty of Medicine, UI, subsequent to the introduction of the American model, practicals supplemented lectures in biology, chemistry and physics even during the premedical year.<sup>29</sup> Medical training was intensive. Students had to prepare themselves for periodic tests by consulting recommended readings in the library. However, some had difficulty following the textbooks as these were published either in English or German, both of which were languages most students were not familiar with. With the commencement of preclinical study, students were oriented to theories within public health and took practicals in anatomy. In the third year, they were introduced to biochemistry with a special focus on enzymes, vitamins and metabolism. Although medical students were introduced to various aspects of public health in the preclinical year, the teaching of epidemiology and public health statistics proved unsatisfactory as the majority of students lacked the mathematical foundation to comprehend the lectures.<sup>30</sup> Clinical instruction at the UI—intended to facilitate comprehension of the lectures—was organized into watertight compartments, often led by

faculty members who jealously safeguarded their disciplinary boundaries.<sup>31</sup> Clinical training in paediatrics, midwifery and surgery afforded an opportunity for medical students to apply theoretical knowledge gained during the first three years of premedical and preclinical study through careful bedside observation of patients.<sup>32</sup> During the internship training in midwifery, students studied cases of septic abortion at Rumah Sakit Tjipto Mangoenkoesoemo, the UI medical school's teaching hospital. Soon after attending such cases, the lecturers would organise students into small groups and initiate a discussion focusing on the socio-economic factors affecting the prevalence of septic abortion, associated risks, and the necessity to introduce birth control as a prophylactic measure.<sup>33</sup> The Department of Obstetrics and Gynaecology at UI initiated a pilot project using midwives to train *dukun bayis* (Traditional Birth Attendants) in scientific birthing practices. Medical students assisted midwives during obstetrical emergencies. The clinical training of medical students at the UI thus afforded an opportunity for problem-based experiential learning that sought to situate public health problems within their broader socio-economic contexts and develop pragmatic solutions.

In accordance with the terms of the affiliation, a number of Indonesian students received advanced instruction at UCSF. In late 1967, John S. Wellington—Associate Dean of the UCSF medical school who had earlier worked in Jakarta during the 1950s as a UCSF adviser—interviewed 36 Indonesians who had undergone one-year postgraduate training in pathology and clinical medicine. His aim was to gauge the relevance of the American model of medical education to Indonesia. Wellington's interviews revealed that trainees were frequently disappointed on their return to Indonesia as they perceived a difference between American medical education and practice in Indonesia.<sup>34</sup> They were unable to apply the basic principles learnt during their training, especially critical thinking, as they were not habituated to independent learning and consulting the library. The trainees were also faced with colleagues who were unreceptive to new initiatives such as the establishment of a new specialty.<sup>35</sup>

The introduction of the American curriculum at UI since 1954-55 was criticised by Slamet Iman Santoso—President of UI from 1958-1965—in his autobiography *Warna Warni Pengalaman Hidup* (Colourful Life Experiences). According to Santoso, the execution of the

American model at UI was such that when students failed a single course, they had to repeat the whole year.<sup>36</sup> As a result, less than one-fifth of the class managed to reach the clinical level of study. In addition, the high standards of the American curriculum could not be sustained as most lectures were delivered by graduate assistants. The number of graduates from the medical school had more than doubled with the introduction of the American curriculum in 1954-55, an initiative that saw the first batch of doctors graduate in 1959. The introduction of the American curriculum at the UI was unable to establish an equitable distribution of physicians between rural and urban areas of Indonesia. Even during the late 1960s, Indonesia had one of the lowest ratios of physicians to total population in the world, estimated at one doctor per 25,000 people, roughly translating into 4,000 doctors for a population of approximately 100 million, mostly concentrated in the country's urban areas.<sup>37</sup>

The transition from the Dutch to the American curriculum at UI was completed by 1955 and involved the reorganisation of the preclinical and clinical levels of study. The duration of medical training was reduced from seven years under the Dutch model to six years under the newly-introduced American model. Examinations under the new curriculum were cohort-based rather than individualised and intended to test students' application of knowledge gained through lectures and classroom discussions. Due to the difficulties encountered by most students in appropriating textual knowledge gained in English into Bahasa Indonesia, small group discussions could not be sustained in preclinical classes and attrition rates were high. In contrast, at the clinical level, problem-based learning centred on careful bedside observation of patients. Group discussions proved successful due to a critical adaptation of public health into the American model by Raden Mochtar. Under the new curriculum, the first batch of 157 students graduated in 1959 in contrast to 59 graduates a year earlier under the Dutch curriculum. However, because the majority of physicians remained concentrated in the urban areas of Indonesia, the implementation of the American curriculum in the medical faculty at UI was unsuccessful in achieving an acceptable doctor to population ratio.<sup>38</sup> A critical orientation of the American model to the health conditions of Indonesia—accomplished at the clinical level of study—ensured that medical graduates were in a position to critically evaluate the impact of

public health programs initiated by the Ministry of Health in conjunction with the WHO. For these reasons, medical education at UI, patterned on the American model, has continued uninterrupted to the present.

### **Medical Education in Surabaya**

The history of medical education in Surabaya began in 1913 with the establishment of the NIAS, the curriculum of which was similar to that of STOVIA and continued until the outbreak of the War in the Pacific in 1941. Medical education in Surabaya was suspended from 1942 until the Dutch military action (1948). In 1948, the Dutch established the *Faculteit der Geneeskunde* (Faculty of Medicine), which was then affiliated to the Universiteit van Indonesië under the leadership of A.B. Droogleever Fortuyn, who was Professor of Genetics and Veterinary Science.<sup>39</sup> Soon after the transfer of sovereignty to the Indonesian Republic in December 1949, the medical faculty at Surabaya was transferred to the newly-established UNAIR and continued to employ the Dutch model of medical education until 1960.

However, the examination system under the Dutch model had its shortcomings as it did not foster verbal skills through classroom-based learning that would otherwise facilitate the preparation of the student for the annual examination. David F. Opdyke, Visiting Professor of Physiology at UNAIR during the academic years 1962 to 1964, reflected on the shortcomings of the Dutch model as follows:

No one can possibly master every fact and idea in medical science today. There must be a selection of facts and ideas that form the hard core of our working knowledge; at best, we can only show where other less essential details may be found. A student must be examined on this hard core of knowledge only, regardless of what type of examination is used. (It is easy to prove statistically that the oral examination works to the disadvantage of the student as the amount of material he is expected to know increases.) The greatest unfairness to the student is to give him an all-or- nothing oral examination when he is deficient in oral skill. He is showered with kindness and solicitude but is crucified by the system.<sup>40</sup>

The above quote illustrates that the Dutch model was too heavily dependent upon verbal skills. High school education in Surabaya did not promote problem-solving skills among students. Thus, incoming medical students lacked a conceptual understanding of physics, chemistry, biology and mathematics, essential for success in the premedical examinations. As result, approximately 60 to 70 per cent of students failed the premedical and preclinical examinations.<sup>41</sup> From 1952 to 1957, UNAIR graduated only 63 physicians from its medical school.<sup>42</sup>

The main factor contributing to the high attrition rates at all levels of medical study was the system of selection of medical students. Technically, any student who passed the *Sekolah Mengenah Atas* (SMA, equivalent to university preparatory school) examinations was eligible for entry into the UNAIR medical school. In 1954, 400 graduates from SMA gained admission into the medical faculty. In the academic year 1955, 600 students were enrolled.<sup>43</sup> In 1954-55, due to space constraints, the UNAIR medical school was housed in the old NIAS building and was unable to accommodate the approximately 1800 students from the incoming group and repeaters from the previous years. In 1956, entrance examinations were conducted at the medical school, as a preliminary step towards selecting students based on their aptitude and reducing the high failure rate.

At the same time as the UI restructured its medical curriculum based on the American model, beginning in 1955, academics from the medical faculty at the newly-constituted UNAIR, particularly M. Soetomo (Professor of Surgery and Visiting Scholar at Johns Hopkins University in 1955) and Oey Hway Kiem (Lecturer of Physiology at UNAIR), proposed introducing the American medical curriculum. Their aim was to advance the development of problem-based learning so that students could apply principles learnt in the classroom to solve entrenched problems such as maternal mortality and malnutrition among infants. The American model at UNAIR was intended to design well-structured coursework at the premedical, preclinical and clinical levels of study with the objective of facilitating greater student participation in learning. Periodic tests would be conducted throughout the course in order to gauge the effectiveness of learning strategies and provide feedback on teaching. The entire class would sit a final written examination towards the end of the course. The assumption was that if the students spent more

time on preparation, they would perform better in lectures and classroom discussions. The adoption of the American model of medical education at UNAIR was a practical strategy intended to maximise the output of physicians. It was accomplished through affiliating UNAIR with UCSF, although political uncertainties in Indonesia during the period 1955 to 1960 delayed the remodelling of the undergraduate medical curriculum by five years.

The contract to affiliate the UNAIR medical school with the University of California medical school remained suspended until 1959 due to strained US-Indonesian relations following Soekarno's move towards 'guided democracy' and the abrogation of Indonesian parliamentary institutions.<sup>44</sup> As a result, the existing contract of the University of California with the UI medical school came under scrutiny in the US. Due to the volatile political situation, Soedjono Djoened Poesponegoro, Dean of Medicine at the UI, recommended that Dr Smyth cancel his visit to Jakarta in 1958, work out a phase-out program with the UI medical school, and sign a contract affiliating the UNAIR and the University of California medical schools.<sup>45</sup> Despite the strained political relationship and UNAIR medical school Dean J.C. Kapitan's unexpected demise in October 1959, the UNAIR medical faculty signed a six year contract (1960-1966) with the University of California to restructure the curriculum.

The introduction of the American curriculum at UNAIR was constrained by several financial and administrative bottlenecks, which were largely attributable to Indonesia's high inflation rate, the depreciation of the rupiah in 1960, and the procedural difficulties encountered in securing counterpart funding from the University of California which was disbursed in rupiahs. By 1960, the University of California had disbursed 7.5 million rupiahs (equivalent to a little less than US\$70,000) via the Indonesian Ministry of Education, a sum that was inadequate considering the prevailing inflation rate of approximately 100% and the eightfold depreciation in the international exchange value of the rupiah between 1952 and 1959.<sup>46</sup> For example, the Microbiology Department had only basic amenities and was accommodated in the premises of the East Java Public Health Department until 1961. Then it was moved into the newly-constructed building at Karangmendjangan, which was originally intended to house chemistry.<sup>47</sup> Due to inadequate space, the Departments of Biology and Zoology were merged into the

Department of General Biology and moved into the space designated for the library. The academic heads within the medical school had little say in the annual budget that was proposed by the Dean of the UNAIR Medical Faculty and sent to the Ministry of Education, Jakarta, for approval. The centralisation of the administrative apparatus at Jakarta proved a hindrance to the timely disbursement of funds requested by the various departments of the medical faculty. For these reasons, the American model was introduced piecemeal into the UNAIR medical school between 1959 and 1964.

For the first year of the affiliation (1959) the UNAIR medical school curriculum was divided into one year courses dedicated to premedical sciences such as physics, chemistry, and biology: eighteen months were allocated to basic medical sciences particularly anatomy, physiology and biochemistry; one year to preclinical sciences, e.g., pathology, microbiology, pharmacy and internal medicine; and, two years to clinical studies, including internship.<sup>48</sup> Under the American model at UNAIR, students would be awarded their medical degrees after six years of study. The new curriculum was first implemented in 1959 in accordance with the clerkship system whereby sixth year students were assigned to work in general hospitals.<sup>49</sup> The introduction of the American model in the sixth year, prior to the reconstruction of the premedical and preclinical levels of study, was somewhat premature as the sixth year students, who had been schooled according to the Dutch curriculum, were not adequately prepared for the clerkships. Soon after the implementation of the curriculum in the sixth year, the premedical curriculum was revised to include instruction in physics, chemistry, biology, English, *Pantjasila* ideology and religion. The premedical education in the revised curriculum constituted the weakest link in the student's learning as sufficient time could not be devoted to the study of premedical sciences particularly physics, chemistry, and biology, due to religion and *Pantjasila* ideology being incorporated into the curriculum. By 1964, the transition from the Dutch to the American curriculum was fully implemented at UNAIR. It involved the shortening of the duration of the preclinical courses from eighteen months to twelve months, the addition of public health and psychiatry as well as instruction in anatomy, physiology and biochemistry.<sup>50</sup> However, due to the reduction of the course duration for preclinical subjects, the teaching of

physiology suffered. As a result, the students lacked the strong foundation required to undertake clinical studies. From 1962 to 1967, only one-sixth of the students managed to pass the preclinical examinations.<sup>51</sup>

The implementation of the American model at UNAIR was impeded by the passive resistance of medical students who opposed the enforcement of compulsory attendance at lectures.<sup>52</sup> Opdyke had structured the third-year preclinical curriculum in physiology in 1962 and supervised the training of Indonesian faculty members. The physiology students' were assessed according to their performance in periodic tests which were graded objectively.<sup>53</sup> Opdyke discovered that the grades obtained by the physiology class at UNAIR were ten percentage points below those of their American counterparts examined on identical issues.<sup>54</sup> With the introduction of the American curriculum, textbooks supplemented classroom learning. But, because the physiology and other premedical and preclinical textbooks were published in English, a foreign language to the UNAIR students; they were unable to complete their reading assignments. They proved unable to weave facts into a coherent argument due to deficiencies in verbal reasoning that could be traced to the high school education in Indonesia, which largely emphasised rote learning and the accumulation of knowledge. Students at UNAIR thought that the basic information and ideas could be gained through the lectures. Opdyke faced considerable cultural resistance when attempting to inculcate reading habits in the students, to pose questions based on textbook material during lecture hours and to propagate the notion that timely completion of their medical education was essential.<sup>55</sup> In order to stimulate students to think critically, lectures were delivered in Bahasa Indonesia and note-taking was forbidden during the lectures. But, the students violently objected to the latter proposal.<sup>56</sup>

In January 1965, the Student Senate of the Medical Faculty at Airlangga urged the Indonesian government to abrogate the affiliation of the UNAIR medical school with the University of California. The Student Senate also supported President Soekarno's proposal to withdraw Indonesia from the UN.<sup>57</sup> The activities of the UNAIR Student Senate strained the affiliation project, so much so that towards mid-1965, the USAID (United States Agency for International Development) office in Jakarta instructed the University of California to withdraw

its academic staff from Indonesia.<sup>58</sup> In 1966, the affiliation of UNAIR medical school with the University of California officially ended, although the American curriculum continued to be utilised until 1969.

Twelve physicians graduated every year from the UNAIR medical school prior to 1959; but, with the complete restructuring of the curriculum based on the American model, by 1964 the medical school managed to graduate 188 physicians each year (from 1964 until 1967).<sup>59</sup> Nearly all of the graduates from the UNAIR medical school elected to set up private practice in the country's urban centres where remuneration was considerably higher than in the rural areas. As a result, the acute shortage of physicians in the rural areas of Indonesia persisted even with the rising number of students graduating from the UNAIR medical school. Thus, health conditions in the countryside remained poor.

The American model was unsuited to Indonesian conditions. Most US medical schools required a four year undergraduate degree before entering medical school, but during that degree they mastered physics, chemistry, mathematics, and many liberal arts subjects. In contrast, incoming medical students at UNAIR were admitted soon after they graduated from high school. As a result, they lacked the verbal skills critical to success in the medical school. The American curriculum intended to foster problem-based learning through intensive student participation in coursework and written examinations. UNAIR students, however, were not only unaccustomed to initiating discussions in the classroom but also lacked an adequate command of English. Even with the introduction of periodic tests, structured readings and academic discussions in the classroom, medical students continued to view study only as a means of passing examinations. Ultimately, the American curriculum was considered unsuited to the prevailing academic climate at the UNAIR medical school. In 1969, it was abrogated in favour of the older Dutch model.

## **Establishment and Transformation of Medical Education at UGM: Dutch to American Curriculum, 1950-1965**

From the time of its recognition as a university by the Indonesian Ministry of Education in 1950 up until 1965, the UGM medical school followed the Dutch curriculum. Lectures were unstructured and students could elect when to appear for the annual examinations. As a result, not more than ten students from the medical school, in any given year during the 1950s, ever managed to graduate. As a remedial measure, M. Sardjito (President of the UGM from 1950 until 1961) approached international agencies, for example the WHO in 1952, to recruit short-term visiting faculty members who would structure the preclinical and clinical courses. The recruitment of short-term visiting faculty staff was little more than a band-aid measure as the UGM medical school was unable to recruit new academics once the original short-term contracts expired. As a result, the medical school was unable to ensure continuity of teaching. At the preclinical and clinical levels, attrition rates continued to remain particularly high. In order to maximise the graduation of physicians, the Faculty of Medicine introduced the American curriculum during the academic year 1965 with assistance from the WHO. But a complete transformation of the medical curriculum based on the American model could not be accomplished in 1965 due to a shortage of teaching staff and the reenrolment of a large number of students who had failed the examinations under the Dutch model. With the introduction of the American curriculum, the number of physicians graduating annually from the medical school showed a moderate increase.

The UGM became a public university in 1950. In his annual address to the University, Sardjito reported that the UGM was undergoing a process of *bangunan* or construction of university buildings, laboratories, libraries, and university hospitals. In other words, a microcosm of nation-building was in progress in the newly-independent Indonesia.<sup>60</sup> The enrolments in all faculties including medicine, dentistry, pharmacy, agriculture, veterinary science, engineering, education, law and philosophy had grown by almost 500 per cent over a three year period from nearly 500 students in late 1949 to over 2500 students by 1953. As a result, the existing laboratories and classrooms were unable to cope with the increase in student numbers.<sup>61</sup> For

example, the premedical batch for the Faculties of Medicine, Dentistry and Pharmacy for the academic year 1952-53 totalled approximately 600. Students had to share classroom space with students in veterinary science and agriculture because these two faculties shared a common first year curriculum including biology, chemistry, and physics. Also, due to the resultant overcrowding, the laboratories faced shortages of experimental equipment.

Between 1952 and 1953, the UGM was a significant recipient of international assistance in the form of grants-in-aid administered through philanthropic foundations such as the China Medical Board, and the British Council, and visiting fellowships awarded by UN agencies such as the WHO, FAO and UNESCO. In the same year, Harold Loucks of the China Medical Board donated 10,000 US dollars for the purchase of essential textbooks for the medical library. During the academic year 1952-53, Soedjono Djoened Poesponegoro (Professor of Paediatrics at UI) delivered weekly lectures on paediatrics at the UGM medical school. K. Hill, WHO Visiting Professor from Jamaica for 1952-53, not only delivered public lectures on the prevalence of yaws in Indonesia, but also supervised the construction of the university hospital in 1953.<sup>62</sup> During the 1953-54 academic year, T.N. Seth from India, a Visiting Professor on a WHO fellowship, delivered lectures on biochemistry.<sup>63</sup>

Franz Parabo, a Professor of Paediatrics who visited UGM during the academic year 1954-55, helped to reorganise its paediatrics department by establishing close coordination with the maternal and child health consultancy bureaus in Yogyakarta.<sup>64</sup> Parabo noted that during the academic year 1954 to 1955, UGM lacked a fulltime undergraduate teacher of paediatrics. Although the Chair of Paediatrics at UGM was offered to paediatricians working under Poesponegoro at the UI, they were unwilling to accept the offer as Yogyakarta did not offer opportunities for private paediatric practice.<sup>65</sup> During his stay at UGM (1954-55), Parabo instituted the clinical teaching of paediatrics and forged collaboration with Bethesda Hospital (which was run by missionaries) so that patients could be taken regularly for clinical demonstrations.<sup>66</sup> The WHO sponsorship of visiting professors contributed to the development of academic specialties within UGM such as paediatrics, for example. Academics were able to establish a good rapport with students, especially at the clinical level of study. But, because the

visiting fellowships were offered on a short term basis, students lacked continuity of instruction especially at the preclinical and the clinical levels. Instructors would depart for their countries of origin as soon as their contracts were completed.

From the 1950s until 1965, UGM was unable to develop either research capacity of its own, or prepare existing medical students for future academic or medical careers given the constraints of the Dutch curriculum. As a result, less than two per cent of incoming classes ever managed to graduate from the medical school at UGM. For example, during the academic year 1952-53, of the approximately 150 students who registered for the *propaedeuse* (premedical) examination, only 73 passed whereas of the 24 students registered for the clinical examination, approximately two-thirds were successful.<sup>67</sup> Regarding the physician examination during the same year, two students appeared for the examination and only one successfully managed to graduate with a medical degree.<sup>68</sup> For the academic year 1953-54, 299 candidates registered for the premedical examination (including those who had failed the examination in the first attempt). Less than a third managed to clear the premedical year whereas at the clinical stage nine students attempted the examination and seven passed but only two candidates managed to clear the final examination.<sup>69</sup> In 1957-58, a record number of 761 students appeared for the premedical examination with an attrition rate of nearly 80 per cent. Not one passed the clinical examination and only seven graduated with the medical degrees.<sup>70</sup> Scrutiny of the annual results of the UGM medical school for the 1950s reveals that the number of graduates produced by the UGM medical school failed to meet Indonesia's growing demand for physicians. Newly-graduated physicians mostly chose to work as general practitioners in the urban areas of Indonesia rather than become teachers in medical schools. This left very little scope for training a future cadre of Indonesian doctors.

The American curriculum was introduced for the first time at the UGM medical school during the academic year 1965-66. The revised syllabus was initially implemented at the preclinical level, which had a regrettable history of high attrition rates. The major constraints to the transformation from the Dutch to the American model included: (i) the nature of the new syllabus, which was based on the integration of classroom lectures with practical experience;

and, (ii) the reenrolment of 237 students who had failed the premedical and preclinical examinations under the Dutch curriculum, resulting in the overcrowding of classrooms and laboratories.<sup>71</sup> During this period, the Dutch model continued at the clinical level.<sup>72</sup> With the transition of the curriculum from the Dutch to the American model, the total number of physicians graduating from the UGM medical school registered a moderate increase from 101 in 1964 to 127 by 1966-67. But, the attrition rates in the first semester of premedical study remained high.<sup>73</sup>

From 1964 to 1967, the WHO sponsored A.M. Trzebski, a Visiting Professor of Physiology, to improve the preclinical training of medical students in physiology, their post-graduate education in physiology, and to foster collaboration with the teaching staff of the various departments, especially the Department of Biophysics. The aim was to encourage the development of an interdisciplinary approach to physiology.<sup>74</sup> The WHO assistance to the Physiology Department was intended to bridge the gap between the premedical and clinical subjects, and to orient medical students to the changing physical and social environment that affected bodily functions. The revised syllabus implemented by Trzebski reformed the administration of the physiology examination at the preclinical level, sharply reducing the overall attrition rate.<sup>75</sup> Multiple choice tests were introduced in the six-monthly and final examinations to objectively assess students' basic knowledge of physiology and to eliminate any linguistic difficulties. At the postgraduate level, Trezebski oriented the students towards research methodology in physiology by teaching topics such as instrumentation, error, accuracy of measurements and sampling. Students were also expected to deliver presentations showcasing the progress achieved in selected branches of physiology such as the general concepts of regulation, cardiovascular and respiratory physiology, and neurophysiology.<sup>76</sup> The WHO supplied physiology journals to the UGM library from 1964-68 to acquaint staff members, post-graduate students and assistants with the latest developments within the discipline. Trezebski's visit to UGM was successful. The five senior post-graduate assistants who obtained certificates of specialisation in physiology were hired as lecturers in the physiology department.<sup>77</sup>

From 1950-1965, the UGM adopted the Dutch curriculum; but only approximately two per cent of the enrolled medical students managed to graduate. During the 1950s, the UGM was the recipient of technical assistance, particularly from the WHO. Visiting faculty staffs sponsored by the WHO were instrumental in giving the existing medical curriculum a definitive shape. But, despite delivering periodic lectures and conducting clinical demonstrations, student participation remained minimal. In addition, the appointment of visiting faculty staff was a stopgap measure designed to address the shortage of teaching staff in the medical faculty at the UGM and the continuity of instruction at the premedical, preclinical and clinical levels suffered once the short-term contracts of the visiting academic was finished. Graduates from UI were unwilling to teach at UGM as the monthly salaries were lower than those that could be obtained in private practice. In order to improve the graduation rate of the medical school, UGM introduced the American model in 1965. Unlike the UI and UNAIR, UGM was not affiliated to the University of California: it had implemented the American model with assistance of the WHO. During the transition from the Dutch to the American model, the UGM was unable to cope with (a) the reenrolment of students who had failed under the Dutch curriculum; and, (b) the shortage of teaching staff. As a result, the complete transformation of the medical curriculum based on the American curriculum could not be accomplished.

### **Medical Education and the WHO Initiative: The Medan Medical School**

In 1952, a medical school was established in Medan with financial assistance from *Jajasan Sumatera Utara*, a foundation spearheaded by the Governor of North Sumatra, Abdul Hakim to fulfil the educational aspirations of the people of that province. In 1957, the Faculties of Law, Education, and Agriculture merged to constitute Universitas Sumatera Utara (USU). Surgeon Tengkoe Mansoer (1897-1953)—who graduated from STOVIA in 1920—and Governor Abdul Hakim were the founding fathers of USU medical school. The school, which followed the Dutch curriculum, suffered from a shortage of teaching staff, particularly at the premedical and preclinical levels of study. To remedy this situation, the Indonesian government approached the

WHO for technical assistance; that is, for the recruitment of short-term WHO Visiting Professors from 1956 to 1960 who would develop Indonesian teaching capacity. Although the Visiting Professors were successful in structuring the medical curriculum, particularly at the preclinical level, they were unable to train Indonesian academics who would take over teaching responsibilities once they left. The political differences between Jakarta and the Outer Islands, particularly Sumatra, affected the smooth administration of the Medan medical school. For these reasons, the school failed to graduate physicians until 1960.

Medical study at Medan was patterned according to the Dutch model. The duration of study was seven years with the first year devoted to premedical subjects; specifically, physics, botany, zoology and chemistry. During the second and third (preclinical) years, students were instructed in anatomy, physiology, biochemistry and general pathology.<sup>78</sup> The preclinical years were followed by two years of theoretical instruction in clinical subjects followed by annual examinations.<sup>79</sup> The sixth and seventh years were devoted to the practical training of medical students in clinical subjects. At the end of the seventh year, the student sat a final examination, hopefully culminating in graduation. Examinations were administered orally and students could choose when they wanted to appear.

From the time of its establishment, the Medan medical faculty suffered from an acute shortage of teaching staff, particularly at the premedical and preclinical levels of study. The professors teaching the premedical courses were Dutch nationals. Prior to 1956, the preclinical courses in anatomy, histology and physiology were delivered by a Professor of Internal Medicine, an Indonesian national who was assisted by a lecturer without any specialist training.<sup>80</sup> Teaching in the medical school was largely conducted in Bahasa Indonesia except for the premedical lectures which were delivered in English. Lecturers at the Medan medical school supplemented their meagre salaries by working private practice; for this reason they were unable to devote full attention to their teaching responsibilities. The Medan medical school did not follow a policy of screening prospective students. Technically, any student who had graduated from SMA was eligible for admission. The school gained notoriety for accepting ‘failed’ medical students from Jakarta, Surabaya and Yogyakarta.<sup>81</sup> Due to a combination of inadequate

instruction, lack of essential textbooks and the weak scientific background of most of the incoming students, less than one-sixth of the students managed to pass the premedical examination.<sup>82</sup> The Medical Faculty followed a policy of promoting several preclinical students, who obtained ‘marginal marks’ to the clinical level of study.<sup>83</sup> With their weak conceptual foundation in preclinical subjects, students were unable to cope with the rigours of clinical study. In order to upgrade the quality of preclinical teaching, the Indonesian government enlisted the technical assistance of the WHO for a four year period from 1956 to 1960.<sup>84</sup> The WHO recruited short-term Visiting Professors of Physiology (Paul Kruhffer, 1956 to 1958) and Anatomy (E. Landboe Christensen, 1956 to 1960) to structure the preclinical courses. At the time of his recruitment as WHO Visiting Professor of Anatomy at the Medan medical school, Christensen was Head of the Institute of Medical Anatomy at the University of Copenhagen.

From 1952-1957, effective teaching of physiology was constrained by a shortage of classrooms. Consequently, preclinical lectures in physiology for second and third year students were conducted jointly, with the first eight months of the academic year dedicated to the teaching of third year students.<sup>85</sup> The teaching of the basic principles of physiology, intended for the second year, was, therefore neglected. Because the Medan medical school library was under-resourced in terms of textbooks for preclinical subjects, students were dependent upon their lecture notes. Kruhffer sought to structure the physiology examination to include problem solving skills. But the execution of his plan was constrained by particular aspects of the Dutch model. For example, students were given the freedom to withhold the results of the examination even after registering for the preclinical courses. Some may not have even taken part in the examination. In the academic year 1956, 110 students registered for the preclinical examinations; fewer than 10% of candidates were successful.<sup>86</sup> Kruhffer accordingly restructured the physiology examination to incorporate written examinations which tested the student’s understanding of basic physiological processes and a final oral examination. Attendance at lectures improved. By 1958, 60% of the candidates (who had registered for the preclinical examinations) were successful.<sup>87</sup> Despite an improved pass percentage at the preclinical level in the physiology course, achieved through the improvisation of teaching and the restructuring of

the examination, problems persisted. Infrastructural bottlenecks, most notably shortages of apparatus and textbooks and the absence of regulation limiting the timeframe of medical study inhibited effective classroom learning.<sup>88</sup>

The Anatomy Department at the Medan medical school was severely under-resourced evident in the fact that it was housed in an old Dutch school and shared rooms with premedical courses.<sup>89</sup> In 1959, the USU financed the construction of an anatomy complex. But, the construction could not be completed as the Dutch architect who had designed the building departed for the Netherlands. The administration of the Medan medical school developed differences with the Public Works Department at Jakarta that delayed the completion of the building.<sup>90</sup> The departments of anatomy and histology were subsequently shifted to the office of the governor of North Sumatra province.<sup>91</sup> However, rooms allocated to the departments of anatomy and histology for conducting lectures within the Governor of North Sumatra's office were not always accessible as they shared space with premedical classes. The Department of Anatomy did not have sufficient equipment for conducting dissections. Lecturers often used anatomical papier mâché models in demonstrations and lectures, a temporary measure unsuited to a preclinical class. And, preclinical students often had to borrow microscopes from the biology department.

Christensen oriented the anatomy lectures with a view to generating critical thinking, group discussions and experimentation; but, his plan proved overambitious as there was a shortage of specimens available for dissection. To compensate for the shortage, student assistants would demonstrate dissections, and then distribute topographical anatomical instructions among small groups of students. However using student assistants for demonstrations in the preclinical class was not sustainable given that the majority had failed the clinical examinations and were therefore unable to find adequate time to participate in the demonstrations. Prior to 1957, preclinical examinations in anatomy and histology were administered jointly as oral examinations. In conformity with Christensen's initiative, the anatomy and histology examinations were reorganised as written and practical examinations and added to the oral examinations.<sup>92</sup> He was also instrumental in setting up the histological laboratory that specialised

in making micro slides and the histological staining methods used in general histology. Under his supervision, a photographic laboratory was established that specialized in making lantern slides for teaching purposes.

After Christensen's departure in 1960, the department of anatomy was staffed by a single staff member, a UI graduate who had only one year of experience in anatomy as a preclinical student and post graduate training at the University of California. But, he had no training in histology whatsoever.<sup>93</sup> In 1961, for the first time in its history, the Medan medical school graduated six physicians.<sup>94</sup> One of them, S. Djamaruddin, was sent to the US for postgraduate training in psychiatry in 1963 funded by USAID. Upon his return, he was appointed as the Dean of the USU Medical School.<sup>95</sup> During his tenure from 1965-67, the medical faculty introduced postgraduate courses. Far from being alleviated by two isolated cases of Indonesian doctors who returned to Medan after undergoing postgraduate training in US universities, the chronic shortage of academic staff remained a serious concern into the late-1960s.

Given that the WHO program of technical assistance to the preclinical departments of the Medan medical school was administered within the framework of the Dutch curriculum, enforcing the compulsory attendance of students during lectures could not be achieved even after restructuring the coursework and the examination pattern. Attrition rates continued to remain high at the preclinical and clinical levels. The visiting academics sponsored by the WHO were unable to train advanced-level medical students to undertake full-time teaching responsibilities as they had failed the clinical courses. Political differences between Jakarta and the Outer Islands delayed the timely disbursements of grant-in-aid from the central government. The WHO program of technical assistance for the Medan medical faculty proved unsustainable. With the expiry of the short-term contracts of the WHO faculty staff, there were instances of preclinical departments that were staffed by a single academic.

## **Initiating Medical Education in Makassar**

Medical education in Sulawesi began in 1956 with the inauguration of the Makassar medical school that came under the jurisdiction of Universitas Hasanuddin. Soegiono Djoened Poesponegoro, the older brother of Djoened Soedjono Poesponegoro, was the first dean of the medical faculty. The Makassar medical school adopted the Dutch model until 1958. Aspiring students were selected based upon the marks they had obtained in the SMA examination. But, the medical school was unable to cope with the increasing enrolment of students at the premedical level. Incoming students, who were fully funded by the Indonesian government, were free to take the premedical examination whenever they were ready. The attrition rates at the premedical level were high (although reliable statistical figures were not available) due to a shortage of essential textbooks and the departure of reputed Dutch professors during the academic year 1958. Among those who left was J.A.W. Groenewegen, who had taught biology at the premedical level.<sup>96</sup> As a result, the Makassar medical school was unable to sustain the high academic standards required of the Dutch curriculum. It was unable to graduate the required number of physicians annually who would serve in the rural areas of Sulawesi. The school was not in a position to hire overseas academics on a contractual basis to staff its premedical and preclinical departments due to financial constraints.

In 1958, the Makassar medical faculty signed an agreement to affiliate the medical school with the UI. The UI medical school would serve as a feeder faculty, viz. provide *dosen terbang* (flying lecturers, particularly Sarwono Prawirohardjo and Soedjono Djoened Poesponegoro) to deliver lectures in premedical and preclinical subjects on a short term basis.<sup>97</sup> In the same year, the Makassar medical school introduced the American model at all levels of medical study and instituted entrance examinations. But, the introduction of the *dosen terbang* scheme could not be implemented smoothly as UI professors from Jakarta often had to cancel their flights to Makassar due to flight delays and other commitments, forcing the rescheduling of premedical and preclinical classes. The provincial pride of Makassar prevented Universitas Hasanuddin from hiring lecturers who had graduated from UI on a permanent basis.<sup>98</sup> The introduction of the

American model registered some success by 1960 when 50 students cleared the clinical examinations and obtained *doctorandi* status. Their achievement was all the more noteworthy considering the difficulties they had to contend with, e.g., irregular premedical, preclinical, and clinical lecture schedules and lack of adequate library facilities.<sup>99</sup> By the early 1960s, the medical school at Makassar had developed specialties in ophthalmology and paediatrics, evidenced from the academic journal *Madjalah Universitas Hasanuddin*. The staff of the department of ophthalmology, including Soenarso and Oemar Fauzy under the leadership of S.J. Warouw, published articles on the prevalence of glaucoma in Makassar and on trachoma in central Maluku. They explored the social factors affecting the prevalence of eye diseases and the importance of preventative measures.<sup>100</sup>

The UI and the UNAIR medical schools, restructured their curricula, which were based on the American model through affiliation with UCSF (or Medan, which had received technical assistance from the WHO in the form of recruitment of short-term overseas academics who would develop teaching capacity in the preclinical fields). Unlike the above two schools, the Makassar medical school lacked finances required to facilitate the recruitment of foreign faculty staff on a contractual basis. As a cost-effective alternative, the faculty affiliated itself with the UI, which provided visiting lecturers (most notably Sarwono Prawirohardjo and Soedjono Djoened Poesponegoro), and restructured its curriculum based on the American model. However, the political differentiation between Jakarta and the Outer Islands, particularly Sulawesi, prevented the full-time hiring of academics from UI. But, family ties with Jakarta, in particular Dean Soegiono's relationship with Soedjono Djoened Poesponegoro (the Dean of the UI medical school) allowed partial ironing out of the political differences between Sulawesi and Jakarta and expedited the introduction of the American curriculum at the Makassar medical school. As a consequence of the transformation of its medical education, the Makassar medical school managed to lower its attrition rates at the preclinical level.

## **The Establishment of the Bukittinggi Medical School: The Failure of International Technical Assistance**

Subsequent to the establishment of the medical school in Bukittinggi (West Sumatra) in 1955, the Indonesian government approached Australia seeking technical expertise to assist in the development of various departments under the Colombo Plan. Australia's interest in the Bukittinggi project was shaped by its desire to stem the rising communist influence that had threatened Indonesian politics during the mid-1950s. In order to expedite the Bukittinggi project, the Australian government approached the University of Melbourne with a proposal to recruit academics on a short-term contractual basis who would assist with the development of various departments that would constitute the medical faculty. The political differences between Java and Sumatra that persisted in 1957 were in part attributable to the anti-communist uprising in West Sumatra. Supported by the Masjumi, the uprising challenged Soekarno's proclamation of Guided Democracy and alliance with the Communists. The central government's suspected that Australia was circumventing the authority of Jakarta by establishing a medical school in Bukittinggi (and also supporting the rebels). A combination of these suspicions resulted in the abrogation of the Australian proposal to assist the Bukittinggi medical school by 1958. The failure of the Bukittinggi project was symptomatic of the political differences that persisted between Java and the Outer Islands.

The Bukittinggi medical school, which was established in 1955 with assistance from the local Minangkabau community of West Sumatra, was subsequently incorporated into the newly-constituted University of Andalas. The 58 students who had enrolled during the academic year 1955-56 had commenced premedical work in physics, chemistry, and biology.<sup>101</sup> But, newly-enrolled premedical students lacked practical training. Lectures in physics, chemistry and botany were provided by visiting lecturers, and at the preclinical level, instruction in anatomy was provided by visiting professors from the newly-established Faculty of Agriculture at Payakumbuh and a local physician.<sup>102</sup>

In 1956, the Indonesian government approached the Australian government with a request for technical assistance to assist in the development of the Bukittinggi medical school

under the Colombo Plan. Since 1951, the latter had offered technical and material assistance to the countries of Southeast Asia such as funding infrastructural projects including dams, power plants and the mechanisation of agriculture. The Colombo Plan was financially supported by Britain, Australia, New Zealand and Canada. Its implicit intention was to coerce newly-independent South and Southeast Asian nations into an alliance with the Western bloc through developmental aid that would buttress Southeast Asia against communist infiltration.<sup>103</sup> On behalf of Australian government, which was desirous of proceeding with a plan of limited assistance for the Bukittinggi project, the Department of External Affairs approached Sydney Sunderland, Professor of Anatomy at the University of Melbourne (1940-1961) for assistance with the project. However, misgivings regarding the proposed project developed on both the Australian and Indonesian sides.<sup>104</sup>

In 1956, Frank Fenner, who was then Professor of Microbiology at the Australian National University, together with Sunderland, represented the Australian Medical Mission which travelled to Indonesia in July 1956 to assess the immediate needs of the Bukittinggi medical school. When the Australian Department of External Affairs initially approached the Universities of Sydney, Melbourne and Adelaide for assistance on the Bukittinggi project, it concluded that only the University of Melbourne could respond to Indonesia's request for assistance.<sup>105</sup> The Department proposed that N.D. Crosby, who was then the outgoing Reader of Physiology at the University of Western Australia, should serve as the adviser to Bukittinggi medical school.<sup>106</sup>

Within Indonesia, especially in West Sumatra, misunderstanding prevailed that the Australians were planning to 'establish' a medical school. The central government at Jakarta was sceptical of foreign intervention in Indonesian affairs in the late 1950s that coincided with the West Sumatran Rebellion.<sup>107</sup> The rebellion had the support of the moderate Islamic Masjumi party, which voiced the grievances of the Outer Islands, particularly of Sumatra against Soekarno's over centralisation, bureaucracy, neglect of the area and overt tolerance of the communists.<sup>108</sup> In 1957, army-led councils forced the civilian government of West Sumatra to abdicate. Jakarta was unable to assert its control over West Sumatra and entered into negotiation

with the military rebels, who stressed that they did not intend to undermine the unity of Indonesia. They insisted that former Vice President Hatta return to the post of Prime Minister. President Soekarno, however, was opposed to brokering a solution with the rebels as he had personally introduced the notion of Guided Democracy in 1957 which undermined the functioning of political parties. In December 1957, top Masjumi leaders including former Prime Ministers Natsir, Burhanuddin Harahap and Sjafruddin Prawiranegara (the then governor of the reserve bank) fled to West Sumatra. The rebels declared Sjafruddin Prawiranegara as Prime Minister at Padang in February 1958.<sup>109</sup> Foreign support to the Revolutionary Government (Padang) continued albeit in covert forms, especially from the US.

The University of Melbourne stressed that its medical faculty was involved in setting up new medical faculties at both Monash University; and the University of New South Wales; thus there was already competition for recruiting staff from the Melbourne medical school.<sup>110</sup> Thus, the University of Melbourne had to postpone recruitment of its medical staff for the Bukittinggi medical school by at least one year; but, it expressed its willingness to train Indonesian technicians and demonstrators for the project locally in Australia, instead, under the Colombo Plan.<sup>111</sup> Fenner maintained that medical education in Australia was designed to train local physicians: it was not suited to training doctors in ‘tropical countries remote from the laboratory and other settings of a big city.’<sup>112</sup> He expressed the reservation that Indonesian undergraduate medical students trained overseas in nations such as Australia would be uprooted from the context of their social structure and may return to Indonesia quite unsuited for work in the country’s rural areas. Under such circumstances, discontented undergraduate medical students could develop antisocial behaviour.<sup>113</sup>

In July 1956, Fenner organised a meeting with the ICA staff and the University of California medical faculty in Jakarta. His purpose was to obtain first-hand assessment of how the affiliation scheme of the UI with the University of California was implemented between 1954 and 1956 and whether the affiliation scheme had any lessons to offer the proposed assistance of the Melbourne medical school to the Bukittinggi project.<sup>114</sup> The meeting revealed that the ICA had spent close to 700,000 US dollars during the period from 1954-56 on providing technical

assistance to UI and despatched undergraduate medical students to the US for further preclinical training.<sup>115</sup> Fenner's conversation with Schultz revealed that the affiliation of UI with the University of California had failed due to Indonesia's inability to provide accommodation for visiting professors and its lack of relevant apparatuses for premedical and preclinical practicals.<sup>116</sup> Fenner was of the opinion that the UI dean was a mere figurehead: that real control was in the hands of foreign experts.<sup>117</sup> Unlike the medical school at UI which inherited the legacy of the Dutch medical model, the Bukittinggi medical school had to start from scratch and the Australians were expected to temporarily staff the entire university, establish a curriculum and train undergraduate students which were difficult for Australia, given the domestic commitments of the medical faculty at Melbourne. The ICA was willing to plug any holes in the Bukittinggi project and expressed its willingness to supply equipment such as microscopes needed for premedical biology classes as Australia was only able to meet little more than half the project costs.<sup>118</sup>

By 1957, Australia had proposed delivering assistance to the medical faculty at Bukittinggi in the form of premedical textbooks (physics, chemistry, and biology) and preclinical textbooks in anatomy.<sup>119</sup> Australian academics including Fenner advocated that a modified version of the American model be implemented for medical education at Bukittinggi, which would integrate lectures and practicals. The duration of study would be six years. Lectures in preclinical subjects, e.g. anatomy, biochemistry and physiology would be delivered by the visiting Australian professors over a four month period. They would be followed by examinations, a so-called block system of lecturing that would prevent academics long periods of absence from Melbourne University.<sup>120</sup> The proposed curriculum for the first year (premedical year) would incorporate instruction in physics, chemistry, biology and English; during the preclinical year, students would be taught anatomy, physiology, biochemistry and pathology; the third year would consist of lectures in clinical pathology, parasitology, bacteriology, introduction to clinical subjects and public health; the fourth would be devoted exclusively to medical surgery; internal medicine would be introduced in the fifth year when students would be trained in the practical aspects of public health; during the final year, students would be expected to

work as interns prior to graduation. Fenner recommended that the intake of the first year class should be capped at fifty students, a move that was resented by the Indonesians.<sup>121</sup> Due to the tense political relationship between Java and the Outer Islands, and the uncertainties of inter-island shipping, the ICA and the Australian External Affairs Department intended to route the shipments of laboratory equipment to Bukittinggi via Singapore bypassing Jakarta, a move that was resented by the Indonesian central government.

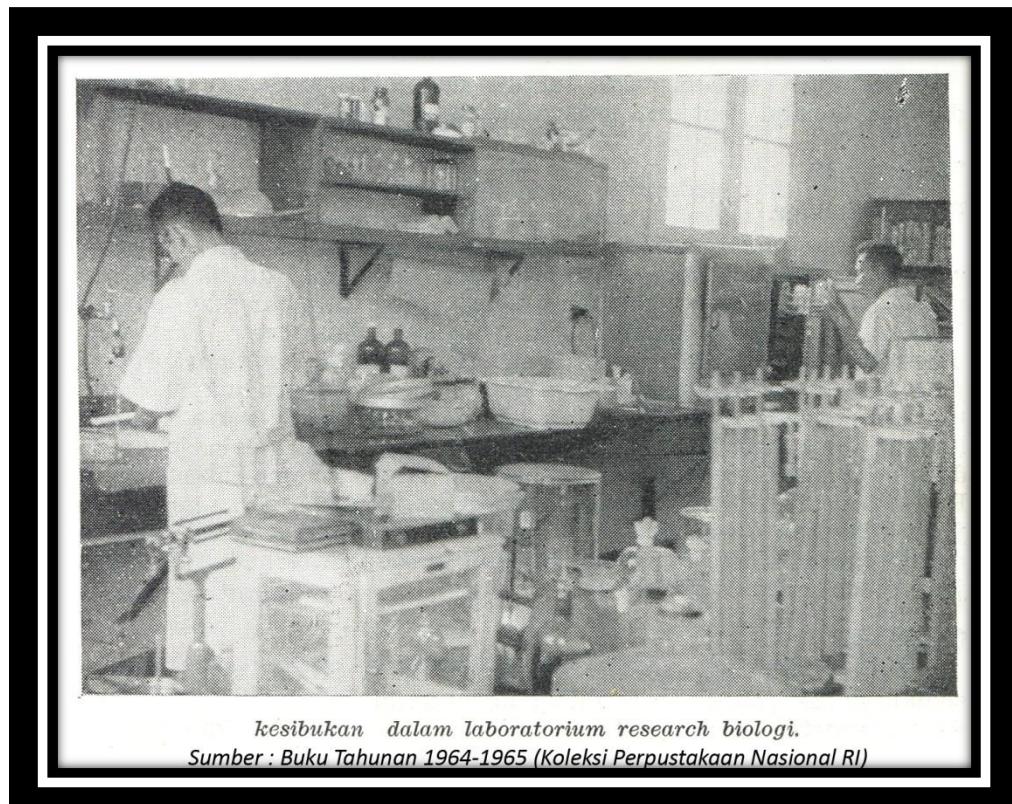
The materialisation of Australian technical assistance to the Bukittinggi medical school through the Colombo Plan in 1958 came into jeopardy, given the progress of the West Sumatran rebellion. In April 1958, Bahder Djohan, who was originally from West Sumatra and was the then President of the UI, resigned from his academic position in protest at the central government's bombing of suspect rebel areas in Bukittinggi. It was rumoured locally in West Sumatra that Djohan would take over as President of Andalas University; but, this did not materialise.<sup>122</sup> By June 1958, the Indonesian government had banned all diplomatic travel on the Outer Islands. The Ministry of Education at Jakarta recommended that aid for the Bukittinggi medical school under the Colombo Plan be diverted to another university.

### **Conclusion**

The transformation of the existing medical curriculum at the faculties of medicine in Indonesia into one based upon the American model, along with the establishment of new medical schools, especially in the Outer Islands of Sumatra and Sulawesi, were two strategies employed to increase the number of graduating physicians. Unfortunately, for a variety of reasons, the transformation of the medical curriculum failed to maximise the output of physicians. Several problems were encountered: for example, the new curriculum was implemented unevenly across the medical faculties at UI, UNAIR, and UGM. All medical schools had a shortage of teaching staff, insufficient infrastructure, and lacked administrative support from the Indonesian Ministry of Education. As entrance examinations were not fully implemented throughout Indonesia, students with weak mathematical backgrounds were often enrolled at the premedical and preclinical levels. Consequently, they were unable to cope with epidemiology, statistics and

demography which were introduced at the preclinical levels as a part of public health training. Medical education in the new medical schools in the Outer Islands, which was loosely patterned on the Dutch model, was developed with technical assistance from international agencies in the form of overseas visiting academics. The latter would develop Indonesian teaching capabilities at the preclinical level. But, there were insufficient physicians in Indonesia to staff these schools; and, because the prevailing Dutch model emphasized individual study over demonstrations and discussions, the medical undergraduates from the Outer Islands lacked practical experience, both of working in pilot health demonstration centres and of conducting vaccinations. The ongoing political differences between Java and the Outer Islands inhibited coordination between Jakarta and the medical faculties which, by extension, prevented the recruitment of graduates from UI to staff the preclinical faculties. For these reasons, the expansion of medical education on the Outer Islands continued to be constrained.

Medical Education at Universitas Indonesia: The Introduction of the American Curriculum

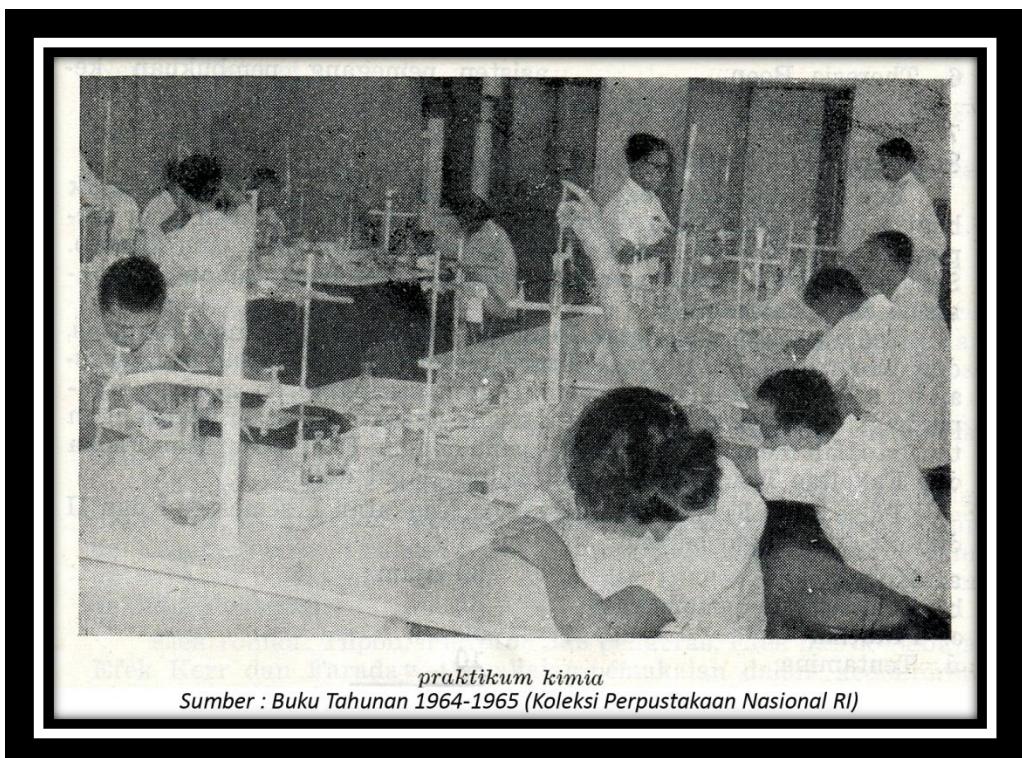


*kesibukan dalam laboratorium research biologi.*

*Sumber : Buku Tahunan 1964-1965 (Koleksi Perpustakaan Nasional RI)*

Premedical practicum in biology, Universitas Indonesia.

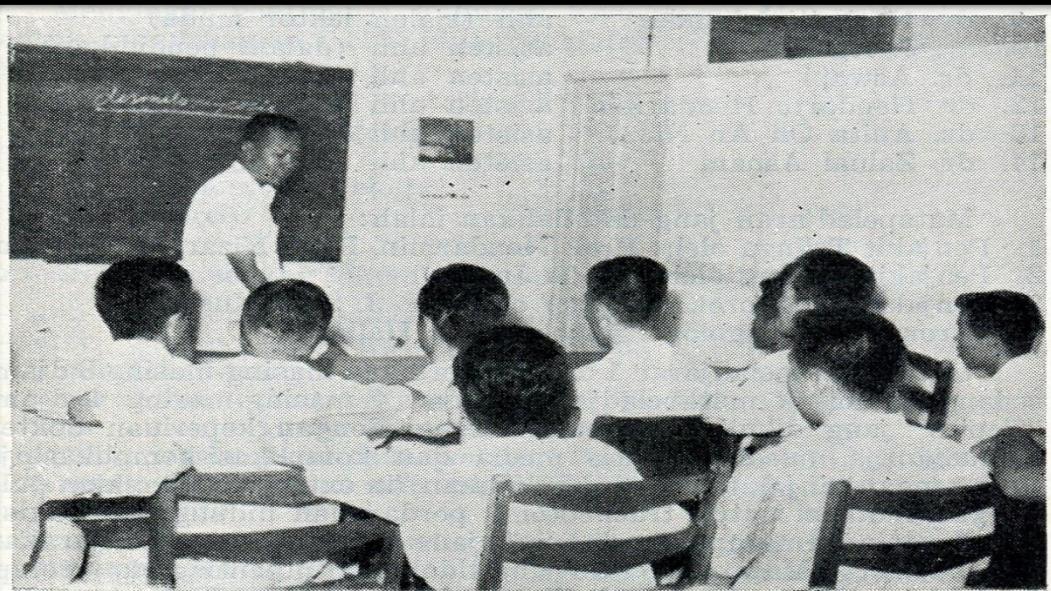
Source: *Buku Tahunan, 1964-1965: Universitas Indonesia Fakultas Kedokteran* (Djakarta: Fakultas Kedokteran Universitas Indonesia, 1965).



Tujuh Rempel dan Tariun praktikum kimia  
Sumber : Buku Tahunan 1964-1965 (Koleksi Perpustakaan Nasional RI)

Premedical practicum in chemistry, Universitas Indonesia.

Source: *Buku Tahunan, 1964-1965: Universitas Indonesia Fakultas Kedokteran* (Djakarta: Fakultas Kedokteran Universitas Indonesia, 1965).

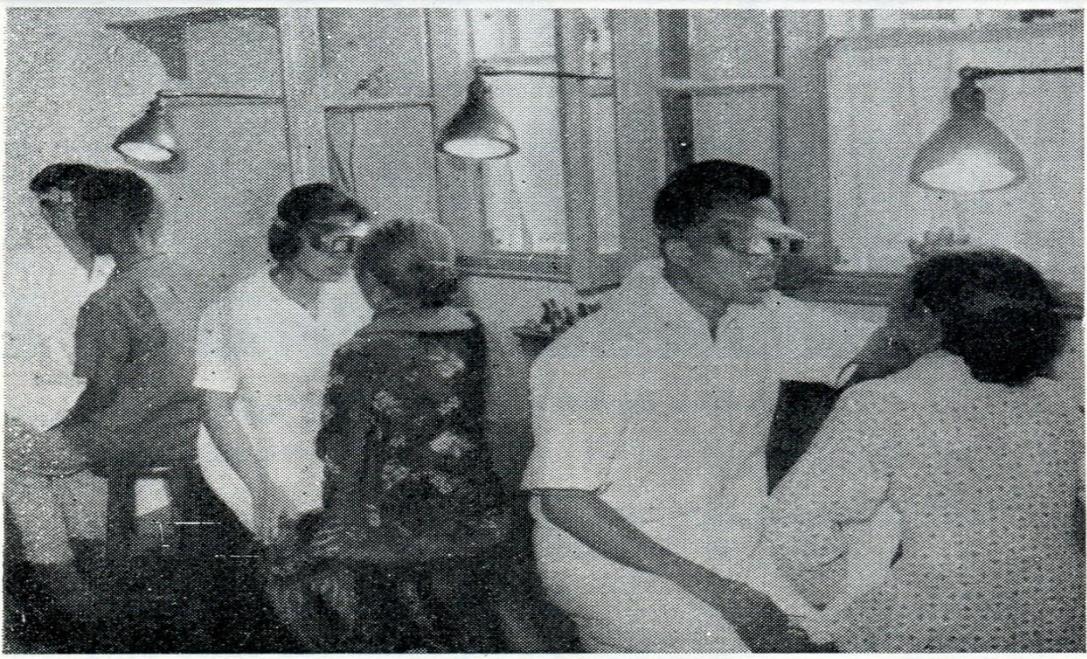


,,wardlecture” dan diskusi intensif pada mahasiswa dalam rombongan ketjil-ketjil.

Sumber : Buku Tahunan 1964-1965 (Koleksi Perpustakaan Nasional RI)

Problem-based Experiential Learning: An extant characteristic of the American model of medical education at Universitas Indonesia (1965).

Source: *Buku Tahunan, 1964-1965: Universitas Indonesia Fakultas Kedokteran* (Djakarta: Fakultas Kedokteran Universitas Indonesia, 1965).



*mahasiswa dipoliklinik mata.*

*Sumber : Buku Tahunan 1964-1965 (Koleksi Perpustakaan Nasional RI)*

Clinical Training in Ophthalmology, Universitas Indonesia (1965).

Source: *Buku Tahunan, 1964-1965: Universitas Indonesia Fakultas Kedokteran* (Djakarta: Fakultas Kedokteran Universitas Indonesia, 1965).

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- <sup>1</sup> Thomas Neville Bonner, *Becoming a Physician: Medical Education in Britain, France, Germany, and The United States, 1750-1945* (Baltimore: Johns Hopkins Press, 2000), 254-55.
- <sup>2</sup> Liesbeth Hesselink, *Healers on the Colonial Market: Native Doctors and Midwives in the Dutch East Indies* (Leiden: KITLV, 2011), 83.
- <sup>3</sup> Hesselink, *Healers on the Colonial Market*, 265.
- <sup>4</sup> Agus Harianto, Urip Murtedjo et al., *90 Tahun Pendidikan Dokter di Surabaya* (Surabaya: Fakultas Kedokteran Universitas Airlangga, 2003), 9.
- <sup>5</sup> S. Somadikarta, Triwahyuning M. Insyam, and Boen S. Oomerjati, *Tahun Emas Universitas Indonesia: Dari Balai ke Universitas*, vol.1 (Jakarta: Universitas Indonesia Press, 2000), 32. Soetomo Tjokronegoro, who graduated from the GH in 1936 was a Professor of Pathology at *Balai Perguruan Tinggi* from 1945-1947. Sarwono Prawirohardjo graduated from GH in Gynaecology in 1937.
- <sup>6</sup> Somadikarta, Irsyam, and Oomerjati, *Tahun Emas Universitas Indonesia*, 12-13.
- <sup>7</sup> Sardjito and Asikin Widjajakusumah were the leading academics of the medical faculty of *Balai Perguruan Tinggi*. Sardjito conducted preclinical lectures at Klaten and Asikin Widjajakusumah was in charge of clinical training at Solo.
- <sup>8</sup> Somadikarta, Insyam, and Oomerjati, *Tahun Emas Universitas Indonesia*, 15.
- <sup>9</sup> I prefer to use the name Universitas Indonesia (UI) to avoid confusion.
- <sup>10</sup> Bonner, *Becoming a Physician*, 272.
- <sup>11</sup> FKUI, *Laporan Perkembangan Pendidikan Dokter Pada Fakultas Kedokteran Universitas Indonesia* (Djakarta: FKUI, 1960), 19-26. Of the 626 students attending premedical classes in 1954, 301 failed the premedical examination and were forced to repeat an academic year. For the academic period from 1951-52, only approximately one sixth of the premedical students managed to qualify for the preclinical stage of medical education, including those who had attempted the premedical examinations more than once. At the preclinical level, approximately one seventh of the candidates (38 out of approximately 280 candidates from 1951-1954) managed to qualify for entry into the clinical courses. At the end of the seventh year examination, of the over 600 students who attended premedical classes at UI, only twenty to thirty physicians managed to graduate from the medical faculties at Jakarta and Surabaya, a number grossly insufficient to meet the needs of Indonesia's growing population estimated at approximately eighty million in the early 1950s.
- <sup>12</sup> Adam Messer, 'Effects of the Indonesian National Revolution and the Transfer of Power on the Scientific Establishment,' *Indonesia* 58(1994): 41-68, 56.
- <sup>13</sup> E. Ross Jenney, 'Technical Assistance for Public Health in the Republic of Indonesia,' *Public Health Reports* 68, no.7 (1953): 707-13.
- <sup>14</sup> Anne M. Schmidt, 'History of the University of California School of Medicine Affiliation with Medical Faculty of Universities at Djakarta and Surabaja,' in *Projects in Medical Education: Indonesia Papers 1951-1966*, Parnassus Archives, 12.
- <sup>15</sup> Firman Lubis, *Jakarta 1960- an: Kenangan Semasa Mahasiswa* (Jakarta: Masup, 2008), 160.
- <sup>16</sup> *Ibid.*, 160.
- <sup>17</sup> Francis Scott Smyth, 'University of California Medical Science Teaching in Indonesia,' *Journal of Medical Education* 32, no.5 (1957): 344-49,344-45.
- <sup>18</sup> Schmidt, *History of the University of California School of Medicine*, 28-29. Until 1954, the politics of the Cold War influenced the decision whether or not to affiliate the faculties of medicine at Jakarta and Surabaya with the University of California. Even by February 1954, the Regents of the University of California were undecided regarding the proposal forcing the UI to 'negotiate with other institutions' (according to the wired correspondence between the Indonesian ambassador at Washington and Dr Smyth on 26 February 1954). At the same time,

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Indonesian diplomats were trying to establish their presence in Moscow, forcing the Regents of the University of California to expedite the affiliation contract.

<sup>19</sup> See also John S. Wellington, ‘Indonesian Physicians Studying Abroad,’ *Journal of Medical Education* 43(1968): 1183-91.

<sup>20</sup> E. Harold Hinman and Clifford A. Pease, ‘International Assistance to Medical Education,’ *Journal of Medical Education* 36(1961): 1042-51, 1047.

<sup>21</sup> Schmidt, *History of the University of California School of Medicine*, 34-35.

<sup>22</sup> Kenneth Ludmerer, *Time to Heal: American Medical Education from the Turn of the Century to the Era of Managed Care* (New York: Oxford University Press, 1999), 6.

<sup>23</sup> Ludmerer, *Time to Heal*, 37.

<sup>24</sup> Ludmerer, *Time to Heal*, 66.

<sup>25</sup> Ludmerer, *Time to Heal*, 198.

<sup>26</sup> FKUI, *Laporan Perkembangan Pendidikan Dokter*, 31.

<sup>27</sup> *Buku Tahunan 1964-1965: Universitas Indonesia Fakultas Kedokteran* (Djakarta: Fakultas Kedokteran UI, 1965), 12.

<sup>28</sup> *Ibid.*, 12.

<sup>29</sup> Lubis, *Jakarta 1960-an*, 169.

<sup>30</sup> Lubis, *Jakarta 1960-an*, 178.

<sup>31</sup> Lubis, *Jakarta 1960-an*, 272.

<sup>32</sup> Lubis, *Jakarta 1960-an*, 280.

<sup>33</sup> Lubis, *Jakarta 1960-an*, 296.

<sup>34</sup> Wellington, ‘Indonesian Physicians,’ 1188.

<sup>35</sup> Wellington, ‘Indonesian Physicians,’ 1185.

<sup>36</sup> Boen S. Oomerjati, *Warna Warni Pengalaman Hidup* (Jakarta: Universitas Indonesia, 1992), 237.

<sup>37</sup> Wellington, ‘Indonesian Physicians,’ 1191.

<sup>38</sup> Schmidt, ‘History of the University of California School of Medicine,’ 87.

<sup>39</sup> Agus Harianto, Urip Murtedjo et al., eds, *90 Tahun Pendidikan Dokter di Surabaya* (Surabaya: Universitas Airlangga, 2003), 10-11.

<sup>40</sup> David Opdyke, ‘The Indonesian Medical Student and His Relation to Modern Medical Education,’ *Journal of Medical Education* 39 (1964): 755-61, 758.

<sup>41</sup> *Ibid.*, 758.

<sup>42</sup> Mohammed Zaman, ‘Tugas Workshop Dalam Rangka Perkembangan Fakultas Kedokteran,’ *Madjalah Kedokteran Surabaya* 5, no. 4 (1968), n.p.

<sup>43</sup> *Ibid.*

<sup>44</sup> US-Indonesian relations became strained following the Cikini attempt on Soekarno’s life in February 1957. In 1958, Sjafruddin Prawiranegara of the Masjumi party proclaimed a rival government in Padang, West Sumatra which denounced Soekarno’s ‘guided democracy’ and demanded regional autonomy based on faith in God. In February 1958, the Indonesian government accused Allen Pope of flying rebel planes into West Sumatra and northern Sulawesi.

<sup>45</sup> Schmidt, *History of the University of California School of Medicine*, 74.

<sup>46</sup> Schmidt, *History of the University of California School of Medicine*, 93. The international exchange value of the rupiah had fallen eightfold from 11.4 rupiahs to a dollar in 1952 to nearly 90 rupiahs in 1959-60.

<sup>47</sup> Schmidt, *History of the University of California School of Medicine*, 98-99.

<sup>48</sup> Schmidt, *History of the University of California School of Medicine*, 95.

<sup>49</sup> Zaman, ‘Tugas Workshop.’

<sup>50</sup> Zaman, ‘Tugas Workshop.’

<sup>51</sup> *Ibid.*

<sup>52</sup> By passive resistance, I refer to the non-violent protests of medical students who opposed the introduction of lectures in English—reflecting the stronger political orientation of the Student Senate of the UNAIR medical

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school—in contrast to its counterpart at UI. The passive resistance of the UNAIR medical students alludes to the nationalist imprint, led by Surabaya-based physicians from NIAS (particularly Soetomo and Soetopo), on medical education. For an in-depth understanding of the political and cultural climate of Surabaya see John Ingleson, ‘Sutomo, the Indonesian Study Club, and Organised Labour in Late Colonial Surabaya,’ *Journal of Southeast Asian Studies* 39, no.1 (2008): 31-57. In 1924, Soetomo founded an Indonesian Study Club (*Indonesische Studieclub*), for furthering the cause of education among Indonesians. At the time, Surabaya was a leading industrial centre in the Dutch East Indies and the Study Club sought to forge enduring linkages between Indonesian physicians and Surabaya workers. The Indonesian Study Club was proud of its Surabayan identity. Its members were wary of the growing dominance of Batavia and Bandung in the nationalist movement and were determined not to be subservient to the labour leaders of these cities, highlighting cleavages within the Indonesian national movement.

A primary account of the academic culture at the UNAIR medical school is provided by the memoir of J. Tiong H. Cam. See J. Tiong H. Cam, ‘A Memoir,’ in *Memoirs of Indonesian Doctors and Professionals: More Stories that Shaped the Lives of Indonesian Doctors* 2, eds., Tjien Oei and H.G. Kwee (Bloomington: Xlibris Corporation, 2010), 65-80.

<sup>53</sup> Opdyke, ‘The Indonesian Medical Student,’ 755.

<sup>54</sup> *Ibid.*, 755.

<sup>55</sup> Opdyke, ‘The Indonesian Medical Student,’ 759.

<sup>56</sup> *Ibid.*, 759.

<sup>57</sup> Schmidt, ‘History of the University of California School of Medicine,’ 135.

<sup>58</sup> Schmidt, ‘History of the University of California School of Medicine,’ 141-42.

<sup>59</sup> Schmidt, ‘History of the University of California School of Medicine,’ 133.

<sup>60</sup> M. Sardjito, *Laporan Tahunan Universiteit Negeri Gadjah Mada: Bagi Tahunan Pengadjaran 1952-53* (Jogjakarta: Jajasan Fonds Universiteit Gadjah Mada, 1953).

<sup>61</sup> *Ibid.*

<sup>62</sup> Sardjito, *Laporan Tahunan 1952-53*, 5-6.

<sup>63</sup> Sardjito, *Laporan Tahunan Universiteit Negeri Gadjah Mada: Bagi Tahunan Pengadjaran 1953-54* (Jogjakarta: Jajasan Fonds Universiteit Gadjah Mada, 1954 ), 1.

<sup>64</sup> Sardjito, *Laporan Tahunan 1953-54*, 6.

<sup>65</sup> Franz Parabo, ‘Final Report on Assistance in the Development of Paediatrics at the Gadjah Mada University, Jogjakarta,’ 18 February 1957, Doc. SEA/MCH/5, File Indonesia 13, *WHO Project Files*, WHOA.

<sup>66</sup> *Ibid.*

<sup>67</sup> Sardjito, *Laporan Tahunan 1952-53*.

<sup>68</sup> *Ibid.*

<sup>69</sup> Sardjito, *Laporan Tahunan 1953-54*.

<sup>70</sup> Sardjito, *Laporan Tahunan Universitas Gadjah Mada: Bagi Tahunan Pengadjaran 1957-58* (Jogjakarta: Universitas Gadjah Mada, 1958), 30.

<sup>71</sup> Ir. Johannes, *Laporan Tahunan Universitas Gadjah Mada: Tahun Pengadjaran 1964-65* (Jogjakarta: Universitas Islam Indonesia, 1967), 12-13.

<sup>72</sup> *Ibid.*, 12-13.

<sup>73</sup> A.M. Trzebski, ‘Assistance to the Department of Physiology: Medical Faculty, University of Gadjah Mada, Jogjakarta,’ *WHO Project Indonesia 0062*, Doc. SEA/ Med. Educ. /92, February 26, 1968 (New Delhi: SEARO, 1968), 4 WHOL [Restricted].

<sup>74</sup> Trzebski, ‘Assistance to the Department of Physiology,’ 6-7.

<sup>75</sup> Trzebski, ‘Assistance to the Department of Physiology,’ 10.

<sup>76</sup> Trzebski, ‘Assistance to the Department of Physiology,’ 11.

<sup>77</sup> *Ibid.*, 11.

<sup>78</sup> Richard A. Keeney, ‘Final Report on Assistance to the Medan Medical School Department of Physiology,’ December 1958 to October 1960, *WHO Project Indonesia 34*, Doc. SEA/ Med Educ./24 (New Delhi: SEARO, 1960), WHOL [Restricted].

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- <sup>79</sup> E. Landboe- Christensen, 'Final Report on Assistance to Medan Medical School Department of Anatomy,' September 1956 to August 1960, *WHO Project Indonesia 34*, Doc. SEA/Med Educ./22 (New Delhi: SEARO, 1960), WHOL [Restricted].
- <sup>80</sup> *Ibid.*
- <sup>81</sup> Keeney, 'Final Report on Assistance to the Medan Medical School.'
- <sup>82</sup> Author Unknown, *25 Tahun Fakultas Kedokteran Universitas Sumatera Utara* (Medan: Universitas Sumatera Utara, 1977).
- <sup>83</sup> Paul Kruhffer, 'Final Report on Assistance in Physiology to the Medan Medical School,' November 1956 to October 1958, Doc. SEA/Med Edu/8 (New Delhi: SEARO, 1958), WHOL [Restricted].
- <sup>84</sup> Regional Director, *Thirteenth Annual Report of the Regional Director to the Regional Committee for Southeast Asia: July 1960 to August 1961*, Doc. SEA/ RC 14/2 (New Delhi: SEARO, 1961), 126.
- <sup>85</sup> Kruhffer, 'Final Report of Assistance to Medan Medical School.'
- <sup>86</sup> *Ibid.*
- <sup>87</sup> *Ibid.*
- <sup>88</sup> *Ibid.*
- <sup>89</sup> Christensen, 'Final Report of Assistance to Medan Medical School.'
- <sup>90</sup> *Ibid.*
- <sup>91</sup> *Ibid.*
- <sup>92</sup> *Ibid.*
- <sup>93</sup> Author Unknown, *25 Tahun Fakultas Kedokteran Universitas Sumatera Utara*.
- <sup>94</sup> *Ibid.*
- <sup>95</sup> *Ibid.*
- <sup>96</sup> 'Laporan Tahunan Universitas Hasanuddin: Diutjapkan Pada Dies Natalies III, November 10, 1959,' *Madjalah Universitas Hasanuddin* 1, no.1 (1960), n.p.
- <sup>97</sup> *Ibid.*
- <sup>98</sup> Francis Scott Smyth, 'Communications: Health and Medicine in Indonesia,' *Journal of Medical Education* 38(1963): 693-96, 696.
- <sup>99</sup> *Ibid.* See also Senat Mahasiswa, *Buku Peringatan 3 Tahun Berdirinya Fakultas Kedokteran Makassar* (Makassar: Senat Mahasiswa Fakultas Kedokteran Universitas Hasanuddin, 1959), 13.
- <sup>100</sup> Soenarso, 'Pengalaman Mengenai Glaucoma di Makassar,' *Madjalah Universitas Hasanuddin* 14-15(1964): 11-23. Oemar Fauzy, 'Trachoma in Central Maluku,' *Madjalah Universitas Hasanuddin* 14-15(1964): 24-41.
- <sup>101</sup> Frank Fenner and Sydney Sunderland, 'Fenner Report,' *Report on Medical Education*, Series A411, Item 146/3, National Archives of Australia (henceforth NAA).
- <sup>102</sup> *Ibid.*
- <sup>103</sup> Daniel Oakman, *Facing Asia: A History of the Colombo Plan* (Canberra: ANU E-Press, 2010), 82.
- <sup>104</sup> Sydney Sunderland, L.J. Ray, and N.D. Crosby, 'Report on the Mission to the University of Andalas, December 1957,' *Australian Technical Assistance to Indonesia: Medical Schools and Training*, Series A11604, Item 705/1/3 Part III, NAA.
- <sup>105</sup> 'Statement by the Dean: Faculty of Medicine, The University of Melbourne,' 6 June 1958, *Australian Technical Assistance to Indonesia: Medical Schools and Training*, Series A11604, Item 705/1/3, NAA [Confidential].
- <sup>106</sup> *Ibid.*
- <sup>107</sup> Herb Feith and Daniel Lev, 'End of the Indonesian Rebellion,' *Pacific Affairs* 36, no.1 (1963):32-46.
- <sup>108</sup> Feith, 'End of the Indonesian Rebellion,' 33.
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- <sup>111</sup> *Ibid.*
- <sup>112</sup> Frank Fenner, Sydney Sunderland and H.N. Robson, 'Report on Medical Education in Indonesia,' Series A 4311, Item 146/3, NAA.

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<sup>113</sup> *Ibid.*

<sup>114</sup> Fenner and Team, ‘Report on Visit to Bukittinggi,’ Memo No. 1575, 11 September 1956, *Australian Technical Assistance to Indonesia: Medical Schools and Training*, Series A11604, Item 705/1/3 Part I, NAA [Confidential].

<sup>115</sup> *Ibid.*

<sup>116</sup> *Ibid.*

<sup>117</sup> *Ibid.*

<sup>118</sup> ‘Memo from the Secretary: Department of External Affairs, Canberra,’ Memo No. 181, 4 February 1958, *Australian Technical Assistance to Indonesia: Medical Schools and Training*, Series A11604, Item 705/1/3 Part III, NAA.

<sup>119</sup> Fenner and Sunderland, ‘The Fenner Report.’

<sup>120</sup> Fenner and Team, ‘Visit to Bukittinggi.’

<sup>121</sup> S. Sunderland, L.J. Ray, and N.D. Crosby, ‘Report of the Mission to the University of Andalas: December 1957,’ *Australian Technical Assistance to Indonesia: Medical Schools and Training*, Series A11604, Item 705/1/3 Part III, NAA.

<sup>122</sup> ‘Memorandum from Secretary of External Affairs, Canberra,’ April 24, 1958, Memorandum no 637, *Australian Technical Assistance to Indonesia: Medical Education and Training*, Series A11604, Item 705/1/3 Part IV, NAA.

## CHAPTER SIX

### SCIENCE IN THE SOEKARNO ERA

At the closing reception of the *First Indonesian National Science Conference* in Malang in 1958, President Soekarno connected the ideals of the Indonesian revolution to science for the very first time. He expressed confidence in the contribution that science could make to the realisation of a just and prosperous society. Scientific training promised to lead to the development of technical skills, which were a crucial element in achieving Indonesian economic independence and self-sufficiency (*berdiri di atas kaki sendiri*). It could also help to make Indonesia self-sufficient with respect to food. In his address, Soekarno focused in particular on industrialisation and increasing the production of rice. Two years earlier, science in Indonesian had been institutionalised through the establishment of the *Madjelis Ilmu Pengetahuan Indonesia* (MIPI, Indonesian Council of Scientific Research). The aims of this organisation were to further science in Indonesia and to assist the Indonesian government to develop policy associated with science and technology. In the aftermath of Soekarno's speech, MIPI had a much broader mandate.

Eight years earlier, in 1951, the *Ikatan Dokter Indonesia* (IDI; Indonesian Medical Association) was established, led by Sarwono Prawirohardjo, Soedjono Djoened Poesponegoro and Poorwo Soedarmo. The IDI was instrumental in establishing minimum standards of medical practice in Indonesia and in developing local medical vocabulary by appropriating scientific terminology from Dutch, Latin and English in order to aid the Indonesianisation of medical research and practice. Paediatrics and nutrition received special attention during the Soekarno era as the ideal of promoting children's health converged with Soekarno's call for the Indonesian revolution as a period of investment for the future. Long before Soekarno's speech, eager to contribute, Indonesian physicians had connected their work with the ideals of the Indonesian revolution.

Within the existing historiography appertaining to science, technology and society in post-World War II Indonesia, the role played by technology in the formation of the national identity and the institutional growth of Indonesian science have received much attention. The

contribution of physicians to the institutional growth of Indonesian science, although significant, receives scant attention compared to the career of biologists.<sup>1</sup> The symbolic role played by medicine in furthering the Bandung spirit—in this context, the nation’s aspirations of ensuring self-sufficiency by eliminating dependence on the Cold War superpowers and strengthening its solidarity with newly-independent countries of Africa and Asia—remains overlooked.<sup>2</sup> This chapter explores the specific ways in which Indonesian physicians presented medical problems as national problems, aligning their practice, teaching, and research rhetorically with Soekarno’s interpretation of science.

### **Indonesian Thinking on Science**

During the Soekarno era, applied and problem-oriented science, for example nutrition, which physicians symbolically related to the nationalist vision of achieving the country’s self-sufficiency in economic affairs, shaped the course of Indonesian scientific thinking. Soekarno advocated the development of science which, he maintained, would address the country’s entrenched problems such as food scarcity because of its significance in realising the nationalist ideal of achieving a just and prosperous society.<sup>3</sup> Science was important to Soekarno because it would help realise *pembangunan* (nation-building). If it were to accelerate the role of science in the service of the nation, Indonesia needed to invest in human skills (technical expertise) and to orient the minds of scientists and Indonesians alike towards possible solutions to existing problems such as food scarcity. Soekarno perceived a deeper challenge in orienting the minds of scientists and Indonesians alike towards both existing and emergent problems.

Amongst the most pressing of these priorities was food. The importation of rice had drained Indonesia of millions of dollars’ worth of foreign reserves. Soekarno claimed that the nation’s food shortage could be eliminated by employing three approaches: opening up new land for cultivation in the Outer Islands; maximising agricultural productivity through the use of fertilisers; and, changing the dietary habits of the people.<sup>4</sup> He observed that the national diet had become predominantly rice-based since World War II and, as a consequence, Indonesians had become ‘rice minded.’<sup>5</sup> The diet of average Indonesian citizens had become homogeneous as a

result and the populace had become prone to nutritional disorders. Soekarno recommended that Indonesians diversify their existing rice-based diet, stressing that technology alone could provide the solution to Indonesia's food problem. The Soviet Union had offered the results of its rice research to Indonesia in the late 1950s; but, Soekarno was dissatisfied and stressed that research into high yielding varieties of rice should be undertaken in Indonesia itself:

Yes, we have received an offer of a good variety of rice from the Soviet Union, but this is a gift from someone else. We will be happy if we can discover the new variety of rice ourselves. Multaluli, a well-known Dutch writer once said, that happiness is not only in cutting the rice, but lies in cutting the rice one has planted in one's own ricefield. Yes, we have our own ricefield, our own State. Let us seriously devote ourselves to the community in our state through our own strength and genius.<sup>6</sup>

This notion of science sought to cautiously strike a balance between increased openness to foreign technical assistance and the notion of *berdiri di atas kaki sendiri* (self-reliance in economic matters).

As Mochtar Lubis pointed out in his novel *Twilight in Djakarta*, the main problem confronting Indonesia with respect to its relationship to the West was which external values the country should embrace.<sup>7</sup> Within Indonesia there were tensions regarding whether the country should adapt to the modern technology of the West or whether technology should be selected to conform to Indonesian patterns of living. The local intelligentsia preferred the first approach, i.e., bringing about a psychological change in the people and making them more adaptable to modern technology. For Pranoto, one of the characters in the novel, the acceptance of Western technology was a necessary prerequisite to ensuring Indonesia as a strong and independent nation.<sup>8</sup> Most Indonesian intellectuals of the 1950s were very accepting of modern technology; but, for a small minority claimed that uncritical acceptance of Western values would not lead Indonesians anywhere. Instead, they advocated a blend of the spiritualism of Islam and modern technology.

During the 1950s, Indonesian physicians, in particular M. Sardjito, Sarwono Prawirohardjo and Soedjono Djoened Poesponegoro, emerged as influential thinkers in science due to their nationalist antecedents. During their student days at the medical school in Batavia in

the late 1920s, Prawirohardjo and Poesponegoro became actively involved in the activities of *Jong Java*, a nationalist youth organisation focused on fostering awareness of Java's cultural heritage. Sardjito was active in *Boedi Oetomo* during the mid and late-1920s (a nationalist organisation founded at the medical school). Unlike Prawirohardjo and Sardjito, who developed the institutional foundations of Indonesian science, Poesponegoro rose to prominence in Indonesian politics as Minister of Research from 1962 to 1966. As Soekarno's family paediatrician, Poesponegoro garnered support because he related paediatrics to the President's conceptualisation of the Indonesian revolution as a period of investment in the human skills of the population.<sup>9</sup>

#### *M. Sardjito's Contribution to Indonesian Science*

M. Sardjito, who was founder and President of UGM from 1950-1961, developed a nationalist interpretation of science through his association with *Boedi Oetomo*, a Java-based nationalist organisation founded at the STOVIA. In 1943, during the Japanese occupation of the Indonesian archipelago, he was active in *Izi Hoko Kai* (Association of Medical Doctors), an organisation which actively promoted research into cost-effective indigenous herbal remedies (*djamu*). Shortly after the proclamation of Indonesian independence in 1945, he directed the Pasteur Institute at Bandung, became involved with the Indonesian Red Cross program of supplying vaccines from the newly-translocated Pasteur Institute based at Klaten, and established the *Balai Perguruan Tinggi*, the precursor to UGM and the first Indonesian-founded higher academy of its kind. For Sardjito, the initiation of laboratory-based research in post-independent Indonesia was symbolic of Indonesian achievement of self-sufficiency in science. He perceived science as a tool for achieving social improvement. Sardjito, the founding president of UGM, advocated a greater niche for Indonesian universities in solving national problems, particularly in the area of disease eradication. During the mid-1950s, he undertook research into serum used in the anti-yaws campaign and discovered the potential of *djamu* for treating diabetes and kidney disorders.<sup>10</sup> For these reasons, he was nominated to the MIPI in 1956.

In 1958, MIPI convened the *First National Science Congress* in Malang to critically evaluate how Indonesian scientists applied science to solve the nation's problems and address ethical dilemmas.<sup>11</sup> In his address to this Congress, Sardjito speculated as to whether science had furthered the cause of human happiness.<sup>12</sup> He observed that, subsequent to World War II, the threat of nuclear warfare emerged between the US and the USSR. Sardjito, lamenting that science had a potential to be misused, stated: 'Thus at present [the 1950s], we [humankind] no longer control science, but science controls us.'<sup>13</sup> He exhorted the world's scientists to resolve the impending nuclear crisis. Although his speech did not directly relate to the contribution of medical sciences in addressing the nation's problems, it illustrated the influence of the Bandung spirit on Indonesian science. The Bandung spirit in Indonesian science was reflected through a non-aligned Indonesian foreign policy that sought to minimise the country's technological dependence on either the USSR or the US that involved a creative reorientation of Western technology to Indonesian conditions.

At the *First National Science Congress*, Soekarno was convinced by Sardjito's argument that, in the midst of the advancements in nuclear science, the world's scientists needed to evaluate to what degree science was directed towards the pursuit of human happiness.<sup>14</sup> He saw the need to use science as a tool to further the aims of the Indonesian Revolution, i.e., the creation of a just and prosperous society. For the successful utilisation of science in the furtherance of the country's revolutionary objectives, Soekarno argued that science needed to be built to address social problems.

#### *Sarwono Prawirohardjo: The Institutionalisation of Indonesian Science*

Sarwono Prawirohardjo, who was Professor of Obstetrics at UI and founder of MIPI, was undoubtedly one of the most influential Indonesian thinkers in the area of science during the Soekarno era. Prawirohardjo graduated from the GH as Indonesia's first obstetrician and gynaecologist. Founder of the *Balai Perguruan Tinggi*, he viewed science as a means to combat Indonesia's national problems, particularly food scarcity. Prawirohardjo prioritised applied over

basic science. Adopting a cautious approach to foreign aid's furthering the development of Indonesia's scientific capabilities, Prawirohardjo sought to establish Indonesian pre-eminence in scientific research, particularly in the fields of botany, zoology and geology. His focus was upon imbuing Indonesians with a scientific mindset.

A major constraint that impeded the growth of scientific temper during the Soekarno era was the traditional Indonesian obsession with titles. Education was traditionally seen in Indonesian society in terms of enhancing one's social prestige rather than cultivating problem-solving skills.<sup>15</sup> Indonesia made remarkable strides in primary school enrolment during the early 1950s, with over 630,000 pupils enrolled by 1955 in contrast to 2 million during the colonial period (1940).<sup>16</sup> Technical education, to say the least, was devalued due to a traditional contempt for manual labour and could not relate to the needs of Indonesian society. In 1954, of the 14,622 enrolled students at UI and UGM, 3,467 attended engineering courses. But, for the decade 1945–1955, Indonesia managed to graduate only seven engineers, in contrast to approximately thirty physicians who graduated from the medical schools. In 1955, the Ministry of Education—as a populist measure to satisfy the nation's thirst for degrees and titles declared that any student who appeared for the high school comprehensive examinations would pass by default in mathematics and physics.

In 1951, Prawirohardjo was chosen as the head of a nine-member committee appointed by the Minister of Education to investigate the founding of the MIPI. Sardjito was also included in this committee.<sup>17</sup> In April 1956, MIPI was formally established in accordance with Presidential Decree No. 118.<sup>18</sup> As a central body, (i) it would be dedicated to developing and coordinating all scientific endeavours undertaken within Indonesia; (ii) it would establish Indonesia's reputation in science internationally; and, (iii) MIPI would be an autonomous institution intended to promote research in Indonesia without undue interference from the government.<sup>19</sup> The MIPI saw advancements in science as a means to further national development. Prawirohardjo envisioned that it would complement Indonesian universities by making scientific research relevant to Indonesia's needs.<sup>20</sup> Eminent Indonesian professors, particularly Prawirohardjo, Poorwo Soedarmo and Sardjito, helped to coordinate research

undertaken in the universities in accordance with the objectives of the MIPI. Unfortunately, the initiative was yet another bureaucratic elephant; it failed to succeed fully although its aims and ideals had been lofty. The major obstacle faced by the MIPI was financial.<sup>21</sup> Research in Indonesia was inhibited by lack of financial support: i.e. the low salaries paid to academics and the stringent foreign exchange regulations that hampered the purchase of textbooks from overseas.

Prawirohardjo maintained that the main issue inhibiting the development of research in Indonesia was the shortage of scientific manpower.<sup>22</sup> After the transfer of sovereignty, the Dutch scientists, who had formed the backbone of scientific research during the colonial period, departed for the Netherlands. As a result, Indonesia experienced a great shortage of scientific personnel. The few established Indonesian physicians, notably Sardjito, Prawirohardjo and Poesponegoro, were faced with the challenge of developing Indonesia's research capabilities. Prawirohardjo recommended that if the research gap between senior and junior scientists was to be bridged, Indonesia would need to introduce postgraduate training fellowships that would allow promising students to study abroad.<sup>23</sup> By, Indonesia witnessed an extraordinary growth in higher education with the establishment of 55 new universities. In the late 1950s, due to the devaluation of the rupiah, the salaries of scientists were no longer competitive. By the early 1960s, as most of the senior scientists of Indonesia were approaching retirement, research institutions recruited inexperienced graduates who were unable to train their younger colleagues in research.<sup>24</sup>

Apart from his involvement in the MIPI, Prawirohardjo was active in Indonesia's family planning program. He established the *Perhimpunan Keluarga Berentjana Indonesia* (Indonesian Planned Parenthood Association or PKBI), which was aided by the US-based Brush Foundation. Its overall aim was to promote family welfare through the use of birth control as a means of limiting family size.<sup>25</sup> He persuaded Soekarno that birth control was a preventative measure that could save mothers' lives or prevent unplanned pregnancies.<sup>26</sup> But, Soekarno was dismissive of Prawirohardjo's ideas: he feared antagonising religious groups. Also, as president of Indonesia, he did not want to be seen accepting advice from international organisations.<sup>27</sup> Although

Prawirohardjo's differences with Soekarno did not impede the functioning of the MIPI, it cost him his political career. He was, for example, not considered for the newly-created ministerial portfolio for research created by Soekarno in 1962.

### *The Influence of Soedjono Djoened Poesponegoro on Indonesian Medical and Scientific Life*

Soedjono Djoened Poesponegoro (Professor of Paediatrics at the UI) was undoubtedly the most influential Indonesian scientist during the Soekarno era, mainly because his notions regarding science converged with those of President Soekarno. As Soekarno's family paediatrician, he was able to relate paediatrics to Soekarno's conceptualisation of the Indonesian Revolution as a period of investment in the human skills of the population. In other words, paediatrics was a good illustration of science in relation to nation-building.

Poesponegoro's nationalist credentials were shaped by his experience at the medical school at the GH, Batavia, beginning in 1927. After graduating from the GH in 1934, he undertook postgraduate training in paediatrics at Leiden University and established himself as a paediatrician in Semarang between 1938 and 1945. Soon after the transfer of sovereignty, Poesponegoro realised that with the deteriorating Dutch-Indonesian relations and the exodus of Dutch scientists and academics to the Netherlands, Indonesia would suffer from a leadership vacuum in the spheres of medicine and other scientific establishments that would inhibit the training of the next generation of professionals.<sup>28</sup> As a part of his commitment to develop Indonesia's capabilities in medical research, he joined the newly-constituted Faculty of Medicine at UI as a lecturer of paediatric diseases in 1950. Due to his leadership capabilities, he was appointed as dean of the medical school at UI from 1952-1960. His influential role as Soekarno's family paediatrician, together with his leadership skills, saw him appointed Minister of Research in 1962.

Poesponegoro's idea of undergraduate medical education reflected Soekarno's notion of *pembangunan* (nation-building). The latter saw *pembangunan* as a dynamic process involving social, political and economic change that created its own problems.<sup>29</sup> Based on the assumption

that *pembangunan* involved socio-economic change, Poesponegoro argued that such change could have repercussions on the overall health and well-being of the community.<sup>30</sup> If undergraduate medical students were to gain a better understanding of the socio-economic factors determining the prevalence of disease in a given community, and of how to initiate preventative measures, it was essential that they gain training in the social and behavioural sciences, particularly in sociology, anthropology and psychology. To this end, Poesponegoro encouraged the stimulation of scientific curiosity among students through independent study and the identification of the dominant health issues affecting the community.

Poesponegoro was influenced by Soekarno's proposition that every citizen of Indonesia had a stake in the latest scientific developments.<sup>31</sup> He acknowledged utility of the dictum 'science for society,' advocating that liaisons be formed between medical education at Indonesian universities and the Ministry of Health for purposes of identification of public health problems.<sup>32</sup>

Poesponegoro saw the Indonesian revolution as reflecting the rising demands of the population in pursuit of a higher standard of living.<sup>33</sup> Investment in paediatrics as a nation-building endeavour was directed towards creating a strong and healthy future citizenry free of disease. In his inaugural address at the UI in 1953, Poesponegoro expressed hope (*mudah mudahan*) no less than four times that, with the advancement of paediatrics as an academic specialty in Indonesia's medical schools, members of the *Dewan Perwakilan Rakjat* would become sensitised towards the issue of children's health. With women's organisations volunteering to participate in children's health issues, the Ministry of Health would no longer have to focus on addressing issues such as malnutrition or neonatal and infant mortality. Indonesia would become *negara kuat dan sehat* (a strong and healthy nation) if it could successfully deal with neonatal and infant mortality.<sup>34</sup> Poesponegoro's inaugural address represented the advancement of paediatrics as a nation-building endeavour.

The Department of Paediatrics at the UI, under the leadership of Poesponegoro, initiated interdisciplinary research into nutrition in conjunction with the Nutrition Institute (*Lembaga Makanan Rakjat*, an autonomous research institute established in 1950) in Jakarta which was

directed by Poorwo Soedarmo. The aim was to discover cost-effective substitutes for milk that would help to combat *kwashiorkor* (protein energy malnutrition) and xerophthalmia (vitamin A deficiency) in Indonesian infants. This collaboration, in effect, initiated and demonstrated a model of collaboration between Indonesian universities and research institutes. At the Nutrition Institute, Poorwo Soedarmo developed fish flour as a protein substitute for milk.<sup>35</sup> Subsequently, the Department of Paediatrics at UI unsuccessfully conducted clinical trials using fish flour to treat *kwashiorkor* patients.<sup>36</sup> Paediatricians at the UI, who attributed the prevalence of *kwashiorkor* and vitamin A deficiency to the colonial period, appealed to the medical profession saying that if Indonesians sought to create a strong and healthy citizenry free of nutritional deficiencies, they needed to intensify their efforts to increase the production of animal protein and foods rich in vitamin A.<sup>37</sup>

Poesponegoro's initiatives in paediatrics converged with Soekarno's understanding of the Indonesian Revolution after 1956, i.e., as a period of investment in the human skills of the population and a socio-economic revolution that intended to fulfil the basic needs of the Indonesian people. The overall vision was to create a just and prosperous society based on *Pantjasila* principles.<sup>38</sup> At the Second Afro-Asian Congress of Paediatrics held in Jakarta in 1964, he related paediatrics to Soekarno's notion of *pembangunan* and the Indonesian Revolution. For Soekarno, *pembangunan* reflected multiple possibilities such as the eradication of illiteracy, increasing the production of food grains, and forging solidarity with Afro-Asian nations that shared a common legacy of resistance to colonialism. The Afro-Asian or Bandung Conference of 1955 advocated that the destinies of the newly-independent African and Asian nations would not be dictated by either the US or the USSR but by the leaders of Egypt, India and Indonesia. The Second Afro-Asian Congress of Paediatrics convened in Jakarta (1964) built upon the social solidarity forged between newly-decolonised nations of Africa and Asia at Bandung a decade earlier.

Delegates to the Second Afro-Asian Congress of Paediatrics unanimously resolved that determined effort towards eliminating the social and economic causes of ill health among children would achieve social welfare, raise the living standards of the people, and consolidate

the gains of national independence.<sup>39</sup> The Congress claimed that malnutrition was not only a medical but also a social, agricultural and educational problem. It could be alleviated by the self-help initiatives of the people themselves without international assistance. Poesponegoro held that paediatrics provided a powerful force for emancipating the people of Africa and Asia from the scourge of poverty. In his address delivered at the opening ceremony, Poesponegoro commented:

In short, the reality of political independence and its consolidation with economic and social imperatives have unleashed in Indonesia, like in most countries of the African and Asian continents, the pent-up stream of scientific creativity for the benefit of all peoples. It is here that lies the significance of the Second Afro-Asian Pediatric Congress for which we are gathered here today. Although most of the Afro-Asian countries hold membership in the International Paediatric Association and do value the importance and the high quality of its three-yearly sessions, the idea of holding an Afro-Asian Paediatrics Congress originated from the fact that International Pediatric Congress was not always concerned with child health related to Afro-Asian conditions.<sup>40</sup>

Although Indonesia's leaders, particularly Soekarno and Poesponegoro, recognised the symbolic value of paediatrics for moulding future citizens free of disease and as an investment in human skills, by 1964 their ideas had become congruent with those of the leaders of Africa and Asia. Poesponegoro, demonstrating his capability as a statesman, consolidated the political gains of Soekarno at the Bandung Conference (1955) by relating paediatrics to Indonesia's commitment to furthering human happiness through investment in child health.

Poesponegoro was appointed Minister of Research in 1962, a position he held until 1966. As Minister of Research, he was head of the *Departemen Urusan Research Nasional* (DURENAS or Department of National Research), which sought to coordinate research undertaken in Indonesian universities with the activities of the research institutes, particularly the Nutrition Institute (Jakarta), the National Institute of Biology, and the Department of Agriculture, all three of which came under the umbrella of MIPI.<sup>41</sup> DURENAS sought to establish a liaison between the Department of Agriculture and agricultural research undertaken by Indonesian universities, with the aim of transferring research undertaken at the universities to institutes under the jurisdiction of the MIPI.<sup>42</sup>

Because the heads of both organisations were physicians, DURENAS was able to achieve a good working relationship with the MIPI by establishing a liaison between Indonesian universities and research institutes that were under the jurisdiction of MIPI. In 1962, overshadowed by his country's confrontation with Malaysia and the mobilisation of the military on the West Irian question, Soekarno stressed that following the normalisation of the political situation the government would allocate a greater proportion of the budget to scientific research.<sup>43</sup> Despite its promise, the Ministry of National Research was severely underfunded due to the seventeen-fold depreciation in the value of the Indonesian rupiah from 1962-1965.<sup>44</sup>

Prawirohardjo identified the salient factors, notably a shortage of scientific manpower that inhibited the growth of research in Indonesia during the 1950s. Nevertheless, he was not an articulate speaker. Moreover, his controversial position of advocating birth control as a means to promote family planning had cost him his political career. In contrast, Poesponegoro emerged as politically influential within Indonesia's scientific establishment due to his closeness to Soekarno's family and his statesmanship; that is, his relating of paediatrics to the nation-building agenda.

### **Nutrition and Nation-Building**

During the Soekarno era, nutrition was invested with a symbolic significance of achieving Indonesia's self-sufficiency in food, particularly rice. The Nutrition Institute was established in 1950 in Jakarta under the leadership of Poorwo Soedarmo, the Institute's Director, who also was Professor of Nutrition at the UI. The Institute, which undertook an interdisciplinary and problem-oriented approach to research, tried to address issues that were relevant at the time. From the early 1950s on, it undertook collaborative studies with the WHO to investigate how protein-energy malnutrition (*kwashiorkor*) and vitamin A deficiency could be addressed by understanding the specific nutritional requirements of children and developing cost-effective and nutritive alternatives to support their diet. Research into nutrition in Indonesia during the 1950s

was aligned with Soekarno's dream of achieving social justice for all Indonesians, and based on the aphorism *murah sandang murah pangan* (cheap clothing, cheap food).<sup>45</sup>

Between 1952 and 1961, under the leadership of Poorwo Soedarmo, SEARO, in collaboration with the Nutrition Institute, undertook one of the world's most comprehensive research projects, investigating protein-energy malnutrition, avitaminosis of vitamin A (vitamin A deficiency) and cheap protein-rich foods. H.A.P.C Oomen, a WHO consultant to the Nutrition Institute from 1952-53, undertook a preliminary survey of malignant malnutrition in Jakarta toddlers. His results showed that the incidence of *kwashiorkor* was influenced by faulty feeding practices.<sup>46</sup> He attributed the malnutrition problem in Indonesia to a deficiency of protein and vitamin A, and an inadequate calorie intake. Oomen recommended that all doctors in Indonesia should be trained to recognise the symptomatology of malnutrition, e.g., xerophthalmia and keratomalacia, and in the effective treatment of xerophthalmia.<sup>47</sup> Viewing nutrition as a public health problem, he advocated that physicians should be oriented to nutrition problems through postgraduate courses. He further advocated that preventive medicine in Indonesia should aim to create a better understanding of the food requirements of small children and ensure that they had adequate access to a protein-rich diet.

Oomen proposed the inclusion of a social medicine approach towards nutrition in the clinical training of medical students that would broaden their intellectual horizons, enabling them to critically examine the influence of social structure such as family size and population density on land use patterns and the availability of food. He argued to the effect that:

Everyone should know that meat, liver, fish, and eggs are recommendable foods, both for adults and small children. It is not wise to promote the use of cow's milk and other expensive foods among people who are unable to purchase them. To advise an increase in milk production is dangerous in a densely populated country where every acre is needed for foodstuffs with a more generous yield. Cow's milk has proved the solution of the problem of infant malnutrition in some countries, but other remedies must be found for the general population of Indonesia.<sup>48</sup>

Oomen advocated for insights into nutrition that demonstrated simple cost-effective methods of preparing nutritious meals that were culturally acceptable by the general populace, especially by the country's rural dwellers.

In 1952, the Nutrition Institute conducted three short-term courses on nutritional disorders for newly-recruited doctors.<sup>49</sup> The Institute, in conjunction with the WHO, initiated clinical trials incorporating protein-rich adult foods such as *tempe* to children's diet. Poesponegoro commenced clinical trials of *saridele* (a soy-based substitute for milk) as a substitute for animal protein in the children's diet.<sup>50</sup> Apart from conducting clinical trials, the Nutrition Institute also trained *djuru penerangan makanan* (assistant dieticians).

In 1952, Poorwo Soedarmo wrote *Dapur Indonesia Dalam Djaman Baru* (Indonesian Kitchen in the New Age), a series of plays intended to educate expectant and nursing mothers about the importance of a balanced diet.<sup>51</sup> The plays illustrated how food choices at the household level were determined by cultural preferences and the purchasing power of the people during the early 1950s. In one play, Sukarsih, a dietician from the Nutrition Institute, educates Noor (an expectant mother) and Njonja Rachim (a nursing mother) regarding the nutritional value of vegetables, milk and meat, and recommends the addition of milk and eggs to supplement the meagre amount of protein derived from an otherwise essentially rice-based diet.<sup>52</sup> Their conversations reveal that urban households were unable to afford fruit, milk, meat and eggs.<sup>53</sup> The role plays were intended for medical students and not for the general public.

In 1953, when discussing Indonesia's nutritional problems with Poorwo Soedarmo, the Director of the Nutrition Institute, Frederick Stare (Professor of Nutrition at Harvard) argued that the Indonesian people's nutritional problems could variously be attributed to their rice-based diet, an overall shortage of rice, the people's ignorance of what constituted a balanced diet, and the inadequate purchasing power of a vast majority of the people. Taken together, these factors constrained the food choices of many.<sup>54</sup> Stare's discussion revealed that the incidence of xerophthalmia in Java was much higher in boys than in girls in the 1-5 age group, echoing the Javanese saying that 'vegetables were not proper food for men.'<sup>55</sup> Vegetables, as a matter of fact, did not form a significant component of the diet of male infants. In Indonesia, xerophthalmia

occurred in conjunction with kwashiorkor, a trend witnessed neither in Africa nor in Latin America during the 1950s.<sup>56</sup> The breast milk of Indonesian and Chinese women was deficient in vitamin A as their diet lacked adequate consumption of fruits and vegetables.<sup>57</sup> Xerophthalmia was thus a consequence of the breastfeeding of infants. Due to the deficiencies of breastfeeding, infants had a lowered intake of calories and proteins during the weaning period.

Between July 1955 and January 1956, social anthropologist Maurice Freedman engaged in collaborative investigations with the Ministry of Health and the Nutrition Institute in Jakarta, Semarang and the village of Sungai Puar in West Sumatra, in a bid to understand how social variables such as class, gender and income affected households' essential nutrients intake. Freedman observed that during the weaning of infants between the ages of six and eight months, fish, meat and protein-rich foods such as beans were not fed to children as there was a general misconception that the consumption of *ikan asin* (dried salted fish) would lead to worms and blindness.<sup>58</sup> Doctors educated mothers regarding the nutritive value of adding eggs to children's diets; but, most households could not afford to buy them.<sup>59</sup>

The Nutrition Institute initiated educational propaganda in the form of posters, leaflets, radio talks, a nutritional film and verbal communication delivered through dieticians (*ahli diet*) and assistant dieticians.<sup>60</sup> But, as nearly half of the Indonesian population was still illiterate in the mid-1950s, few people were able to understand the significance of the message. Poorwo Soedarmo disseminated health slogans such as *empat sehat, lima sempurna*—four traditional foods for good health including rice, singkong (vegetable), fish, and *tempe* with milk added for achieving perfect health—but the message was not clear due to the poor composition of the message.<sup>61</sup> The Nutrition Institute failed to train dieticians and assistant dieticians to understand the socio-economic and cultural factors affecting food preferences. As a part of its teaching activities, it organised several food demonstrations throughout Indonesia during the 1950s to demonstrate the preparation of a balanced diet for nursing mothers. The basic diet included a variety of cooked Indonesian dishes including rice, fish, meat, *tempe*, fruit, vegetables, milk and tea.<sup>62</sup> Assistant dieticians explained the importance of a balanced diet and stressed the contrast between the right and wrong kinds of foods to nursing mothers albeit the presentation of the food

items was somewhat disorganised.<sup>63</sup> But, despite their efforts, dieticians and assistant dieticians were unable to persuade nursing mothers to adopt a balanced diet. Nutrition demonstrations did not involve the participation of the public and were delivered in the form of didactic lectures. For this reason, they failed to induce behavioural changes in the population vis-à-vis adopting a balanced diet.

B. Napitupulu, a Veterinary Doctor at the Nutrition Institute, estimated that polished rice that was deficient in vitamin B accounted for approximately 90% of the protein and calorie intake in Indonesia whereas meat contributed to less than 5% of the protein requirement.<sup>64</sup> During the late 1950s and early 1960s, due to high inflation, Indonesians increasingly turned to cassava, which is relatively poor in protein, as a cheaper dietary alternative to rice and meat.<sup>65</sup> As a result, Indonesian diets lacked adequate protein variation.

In December 1959, four months after the inauguration of *Kabinet Kerja Pertama* (First Working Cabinet), the government initiated *Operasi Makmur* (Prosperity Operation), intended to further the First Working Cabinet's agenda of satisfying basic needs of the people in relation to food and clothing in accordance with the *Pantjasila* principle that enshrines social justice for all Indonesians. The program was ambitious and intended to make Indonesia self-sufficient with respect to food by November 1960 and improving the composition of people's food both qualitatively and quantitatively.<sup>66</sup> The objectives of *Operasi Makmur* were threefold: (a) increasing food production through improved irrigation; (b) preserving soil fertility; and, (c) educating Indonesian farmers about the latest developments in agricultural science. To this end, the Cabinet established a Centralised Food Command (*Komando Operasi Gerakan Makmur*) that mobilised the Indonesian population through student and farmer organisations based on the Javanese principle of *gotong rojong* (mutual cooperation). Additionally, *Komando Operasi Gerakan Makmur* envisioned achieving coordination between the Ministries of Agriculture, Labour, Public Works, and Education in order to mobilise people's potential in increasing the country's agricultural capacity. In the provinces, *Komando Operasi Gerakan Makmur* was supervised by provincial governors and district heads. As the target for realising Indonesia's self-sufficiency in food was strictly time-bound, the government proposed to reward model farmers. In

his radio broadcast to the Indonesian nation on 10 November 1959, commemorating Heroes' Day, President Soekarno pointed out that besides national heroes, there were heroes in the field of production, distribution, development, and other sectors.<sup>67</sup> Although the First Working Cabinet was imbued with revolutionary fervour in making Indonesia self-sufficient in food by 1960, Indonesia continued to import food for two reasons: (a) price fixing of rice by the government served as a deterrent to farmers to increase acreage under cultivation; and, (b) a precarious balance between Indonesia's population growth and food supply.

President Soekarno argued that despite Indonesia's soil fertility (*loh djinawi*) and political independence, it continued to remain dependent upon foreign countries to meet its annual shortfall of rice. From 1900 to the early 1960s, Indonesia's population doubled from 50 million to 100 million.<sup>68</sup> As a result, Indonesians were unable to subsist on the land. Soekarno saw the industrialisation of agriculture, and the substitution of rice with maize, tubers, peanuts and other locally grown crops as the key to achieving Indonesia's self-sufficiency in food.

In March 1964, Satrio, who was then the country's Minister of Health, observed that the country's ever-increasing population (estimated at 2.5% during the mid-1960s) decreased the per capita availability of food.<sup>69</sup> As a solution to Indonesia's food problem, Satrio recommended the initiation of the People's Food Revolution Project (*Revolusi Makanan Rakjat*) in July 1964, the main aim of which was to ensure the affordability of food for every Indonesian through a mechanism that ensured equitable production and distribution.<sup>70</sup> In order to implement this program, the Indonesian Department of Health introduced the *Operasi Pemberantasan Buta Gizi* (Operation to Eradicate Ignorance in Nutrition) at the provincial and district levels, based on the slogan *empat sehat lima sempurna* that emphasised a balanced diet.<sup>71</sup> The Operation was intended to engender mass awareness of nutrition among schoolchildren, expectant and nursing mothers, and to usher in dietary change. As Indonesia's staple diet varied considerably across the archipelago, the Department of Health devolved considerable autonomy to the district authorities to determine how the slogan *empat sehat lima sempurna* would be executed. For example, in areas suffering from a rice shortage, maize would substitute for rice as the primary source of carbohydrate.

The Operation to Eradicate Ignorance in Nutrition was initially implemented in the famine-affected West Java province in 1964 with the introduction of a high-yielding variety of maize. Since that year, instances of food scarcity were never again reported in West Java;<sup>72</sup> in fact, the distribution of food grains improved in that province. But, because the Food Revolution was implemented during the *konfrontasi* (confrontation) with Malaysia, it was only partially successful. During the confrontation, Satrio envisioned the nurturing of a strong and healthy future generation free of disease through implementation of the Operation to Eradicate Ignorance in Nutrition. As well, he aimed to mobilise *potensi rakjat* (people's potential) on the war front.<sup>73</sup> Although this Operation was successful in mobilising women's organisations to undertake nutrition education, particularly *Kongres Wanita Indonesia* on the principle of *gotong rojong*, introducing variation into people's diets, i.e., including animal protein, proved unachievable. The reality was that for many, meat was unaffordable given the difficult economic conditions precipitated by the country's confrontation with Malaysia.

Between 1959 and 1964, both *Operasi Makmur*, and the Operation to Eradicate Ignorance in Nutrition—imbued with revolutionary ideals—envisioned the creation of a strong and healthy population free of disease and began campaigns to make Indonesia self-sufficient with respect to food. Yet, these campaigns were of symbolic significance and did not alleviate poverty. The failure of both campaigns could be attributed to a combination of high inflation and the fragile balance that existed between population growth and increase in food production. The implementation of both campaigns was contingent upon the cooperation of district and provincial governments that was lacking in most parts of Indonesia at the time.<sup>74</sup>

Research undertaken by the Nutrition Institute conformed to the Soekarno era notion of self-sufficiency in economic affairs, particularly its efforts to ameliorate Indonesia's food scarcity. Apart from initiating dietary surveys that established a vicious cyclical relationship between poverty, food preferences and malnutrition, the Institute recreated the Indonesian balanced diet. In addition, it coined slogans in Bahasa Indonesia that sought to correct popular misgivings regarding the consumption of fish and vegetables. But, despite all efforts, the Institute's educational program—which was administered by the Indonesian Department of

Health—to change food habits by using slogans failed due to the weak purchasing power of the people.

### **Assessing the Contributions of IDI**

The *Ikatan Dokter Indonesia* (The Indonesian Medical Association, henceforth the IDI) was an independent medical society established by Indonesian physicians in September 1950. Its aims were: (a) to advocate better salaries for doctors employed in the public service; (b) to formulate recommendations on changes to the medical curriculum; (c) to recommend the enshrinement of the human right to health within the Indonesian constitution; (d) to improve the standard of public health; and, (e) to enrich the scientific vocabulary of Bahasa Indonesia by appropriating biomedical terms from European languages. The IDI was influential within the Indonesian Ministry of Health given that the Ministers of Health, particularly Johannes Leimena, Azis Saleh and Satrio, were all members of the society.

With the transfer of sovereignty to the Indonesian Republic completed by 1950, the activities of the Society for the Advancement of Medical Sciences (*Vereeniging tot Bevordering der Geneeskundige Wetenschappen in Indonesië*), which was founded in the former Dutch East Indies, were terminated in November 1950. This was done to facilitate closer collaboration amongst Indonesian scientists instituted through the IDI, and included Indonesian physicians such as Sarwono Prawirohardjo (founder and chairperson), Soedjono Djoened Poesponegoro and Poorwo Soedarmo.<sup>75</sup> The relationship between the Society for the Advancement of Medical Sciences and the IDI was initially strained when IDI introduced a policy of adopting Bahasa Indonesia as the lingua franca at its meetings and in its publications, and followed a policy of excluding Dutch physicians from assuming full membership.

The IDI played a significant role in ushering in the transformation of Indonesia's medical education from the Dutch to the American model. Prawirohardjo was undoubtedly the

most influential member of this association due to his connections with President Soekarno, the then Minister of Health, Johannes Leimena, and his standing as Professor of Obstetrics at the UI. He was instrumental in introducing the American curriculum into Indonesian medical schools. At the third annual session of the IDI convened in Bandung in 1952, Prawirohardjo advised the Ministry of Health and the medical schools at Jakarta, Surabaya and Yogyakarta that in order to solve Indonesia's adverse doctor-to-patient ratio, which was estimated at one doctor per 60,000 people in the early 1950s, the medical faculties needed to shorten the duration of the undergraduate curriculum from seven years to less than six years, improve the quality of teaching, and increase the strength of the teaching staff.<sup>76</sup> Regarding the orientation of Indonesian undergraduate medical education towards health problems in the rural areas, Prawirohardjo advocated that medical education should cultivate communication and leadership skills amongst future doctors who could bring about behavioural change amongst the local population in the interests of adopting healthy lifestyles. The third annual session of IDI sensitised the Ministry of Health to the high fees and lack of scholarships for incoming medical students that forced several young aspiring physicians to pursue lucrative private practice in the country's urban areas as a means of repaying their student loans. But, conditions only worked to exacerbate the existing shortage of skilled medical professionals in the rural areas where their skills were most urgently needed.<sup>77</sup> IDI recommended to the Ministry of Health that, in order to ameliorate the acute shortage of doctors in the countryside, the Ministry should facilitate the training of paramedical personnel.

In 1953, the IDI liaised with the WHO to persuade the Indonesian Ministry of Health to allocate a greater proportion of the health budget to the issue of malnutrition. IDI appealed to the spirit of internationalism and social conscience of humankind as follows:

I understand that the UNO is based on the same principles as the League of Nations, namely on more or less equality of sovereign states. But the UNO has something more as it is not only founded on international law alone, but also on Social Conscience and on the acknowledgement of human rights.

The Social Conscience demands relief from extremities of luxury and want, and concerning health, it is the inalienable right of every human being to achieve a reasonable

standard of health, without discrimination according to race, religion, political affiliation, etc.<sup>78</sup>

The IDI identified malnutrition as Indonesia's most significant health problem of the 1950s, claiming that it de-enervated the productive capacity of the Indonesian peoples. It urged the WHO to convince the Ministry of Health to act on the question of improving the nutritional standards of the people.

At the Fifth Annual Meeting of IDI, convened in Semarang in 1954, President Soekarno, in his inaugural address, stated that although he had not entered the 'Halls of Science', he was nonetheless interested in employing science as a tool for the upliftment of the living standards of the population in accordance with the realisation of the *Marhaenist* ideology.<sup>79</sup> Soekarno conceptualised a wider social role for doctors in representing the cause of the underprivileged and urged them to focus on cultivating problem-solving skills.

At the Fifth Session of IDI, delegates Prawirohardjo and Poesponegoro in particular, pointed out that as Indonesia did not have a code of medical ethics in the early 1950s, e.g., the establishment of medical practice, doctor-patient relationships, and general practitioner-specialist relationships, they recommended that Indonesia subscribe to the *International Code of Medical Ethics*.<sup>80</sup> In accordance with the IDI's recommendations, the Indonesian government established the *Madjelis Pertimbangan Kesehatan dan Sjarah* (Indonesian Committee on Bioethics) in 1954 to address controversial medical procedures such as artificial insemination or blood transfusions through the issue of *fatwas* (decrees) in consultation with *ulama*. These IDI initiatives, at least in principle, sought to establish minimum ethical standards for the medical profession in conformity with Islamic laws.

The IDI had observed the correlation between good health and enhanced national productivity in nations such as Japan, the Soviet Union and China, all of which had made great strides in public health after the conclusion of World War II. In addition, it had drawn the attention of the Ministry of Health to the need to guarantee the 'right to health' which the 1945 constitution did not explicitly mention.<sup>81</sup> With input from the IDI, the Ministry of Health enacted the *Undang Undang Tentang Pokok Pokok Kesehatan* (Basic Law on Health, No 9, 1960), which

explicitly stated that the Indonesian government would guarantee the highest possible level of healthcare to the country's citizens. The law intended to mobilise private initiatives in preventive and curative public health based on the notion of *gotong rojong*.<sup>82</sup> It also envisioned combining the results of modern medical knowledge with comprehensive *pembangunan*, and acknowledging the utility of Indonesian traditional wisdom, especially in medicine (*djamu*), as an effective palliative for psychosomatic illnesses.<sup>83</sup>

In 1951, the IDI launched the *Madjalah Kedokteran Indonesia*, an initiative aimed at promoting the use of Bahasa Indonesia in academic circles. As well, it coined scientific equivalents for biomedical terms where none had hitherto existed before. In 1954, Soetomo Tjokronegoro (Professor of Pathology at UI from 1951-69), who was influential in transforming the medical education at UI and UNAIR, promoted the use of Bahasa Indonesia in lectures. Tjokronegoro was also instrumental in revising the *Kamus Istilah Kedokteran* (Dictionary of Indonesian Medical Terms, published during the Japanese occupation of Indonesia in 1943) in an attempt to bring about greater conceptual clarity of biomedical vocabulary. In his *Tjukupkah Saudara Membina Bahasa Kesatuan Kita* (Fostering a Unified National Language), he standardized the lexical usage of Bahasa Indonesia.<sup>84</sup> Physicians employed by IDI, particularly Tjokronegoro, were confronted with the challenge of critically adapting foreign biomedical vocabulary into Indonesian.<sup>85</sup>

The IDI positioned itself between Soekarno's notions of problem-oriented science, social justice, and the international framework of human rights while liaising with the WHO to persuade the Ministry of Health to devote a greater proportion of the budget allocated to public health to preventing malnutrition. As an intermediary between the WHO and the Ministry of Health, the IDI was instrumental in enacting the Basic Law on Health that redefined the state's role in guaranteeing a minimum standard of health for its citizens.

## Conclusion

Soekarno hoped that science would support the Indonesian revolution by discovering new solutions to Indonesia's many problems. To this end, he urged Indonesian scientists to contemplate how science could further the achievement of a just and prosperous society. Physicians hoping to enhance the public reputation of their work and find funding for their research related it to the goals of the Indonesian revolution. Research into nutrition and paediatrics, which could quite easily be related to Soekarno's conceptualisation of the Indonesian Revolution as a period of investment in human skills and aspirations to attaining economic self-sufficiency, received considerable attention.

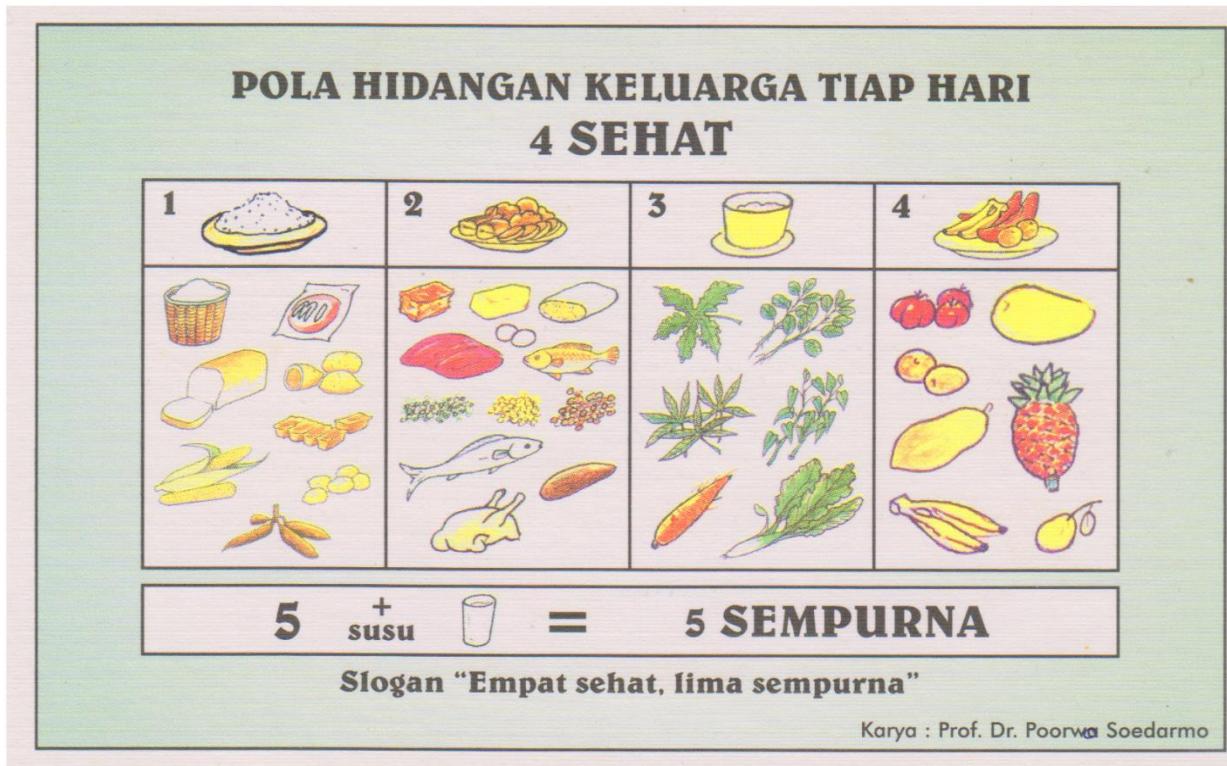
The characteristics of the Soekarno era science can be summed up under several points. The first was the reflection of the Bandung spirit that emphasised Indonesia's self-sufficiency in technology, and its solidarity with newly-independent countries in a similar economic position. The second was the tension between whether Indonesians should adapt to the modern technology of the West, or whether technology should conform to the Indonesian way of life. Indonesian intellectuals advocated that the country should accept modern technology of the West; but at the same time it should follow its own trajectory to modernity, independent of Western influences. The third was the influential role of physicians in shaping the direction of post-World War II science in Indonesia due to their rhetorical ability to draw parallels between medical specialties such as paediatrics and nutrition, on the one hand, and the nationalist vision of creating a strong and healthy population, on the other. Connected also to the third point was the emergence of Poesponegoro as an influential player in Indonesian science due to his astute way of relating paediatrics to wider socio-economic questions—such as poverty, deprivation, and Afro-Asian solidarity—which had dominated the political discussions in Indonesia since the Bandung Conference of 1955. The fourth was a creative appropriation of Western biomedical terminology into the lexicon of Bahasa Indonesia to enhance its scientific status.

In the preceding paragraphs I have highlighted that scientific initiatives during the Soekarno era were related symbolically to the nationalist imagination of creating a strong self-

sufficient Indonesia that was capable of pursuing its own trajectory to modernity. Two major shortcomings of post-World War II Indonesian science were: (a) the emphasis of applied over basic sciences; and, (b) a shortage of scientific manpower. A scientific temper could not be cultivated among Indonesian students due to the weak background of most undergraduates in basic sciences. Due to the depreciation of the rupiah and the economic problems of the late 1950s, the pursuit of scientific careers no longer attracted newly-graduated students.

Below: *Empat Sehat Lima Sempurna* (translated into English as four essential foods for good health with milk added for perfect health), a nutrition slogan devised by Poorwo Soedarmo, Director of the Nutrition Institute in 1952.

Image Courtesy: From the private collection of Soemarmo Poorwo Soedarmo, son of Poorwo Soedarmo.





Above: Professor Sarwono Prawirohardjo, President of the MIPI (left) at the Third Regional Meeting of National Science Research Organisations held at Canberra between 17 and 21 February 1964 to formulate the execution of scientific policies for the Asia-Pacific region.

Source: NAA: A1501, A4893/1 (National Archives of Australia, Canberra).

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- <sup>1</sup> Andrew Goss, *The Floracrats: State Sponsored Science and the Failure of the Enlightenment in Indonesia* (Madison: University of Wisconsin Press, 2011), 141-69.
- <sup>2</sup> Moon, ‘Justice, Geography and Steel: Technology and Identity in Indonesian Industrialization,’ *OSIRIS* 24, no. 1 (2009): 253-77. See also Goss, *The Floracrats*.
- <sup>3</sup> Soekarno, ‘Applied Science in Reconstruction and Development: Speech by President Soekarno at the Closing Reception of the Indonesian National Science Conference in Malang, 8 August 1958’ (Jakarta: Ministry of Information, Republic of Indonesia, 1958), 7. Refer to chapter three for a comprehensive discussion of the *Pantjasila* principles.
- <sup>4</sup> Soekarno, ‘Applied Science,’ 12.
- <sup>5</sup> Prior to 1945, corn mixed with rice constituted the people’s staple diet, particularly in East Java.
- <sup>6</sup> Soekarno, ‘Applied Science,’ 14.
- <sup>7</sup> Mochtar Lubis, *Twilight in Djakarta*, trans. Claire Holt (London: Hutchinson and Co., 1963), 99.
- <sup>8</sup> Lubis, *Twilight in Djakarta*, 135.
- <sup>9</sup> Soekarno conceptualised the Indonesian Revolution as consisting of three phases: (a) the period of Revolution, 1945-1949; (b) period of survival between 1950 and 1955; and (c) period of investment in the population’s human skills (1956 onwards). By investment in the population’s human skills, Soekarno implied greater investment of the state in primary education.
- <sup>10</sup> Anna Riasmiati, Review of Arwan Tuti Artha, ‘Menyingkap Pemikiran Prof. Dr. Sardjito,’ in *Khazanah Bulletin Kearsipan Arsip Universitas Gadjah Mada* 5, no.2 (2012): 40-46.
- <sup>11</sup> M. Sardjito, ‘Pidato Pembukaan Prof. Dr. Sardjito,’ in *Laporan Kongres Ilmu Pengetahuan Nasional Pertama 1958 Djilid Pertama* ed., MIPI (Djakarta: Ilmu Pengetahuan Indonesia and Kementerian Penerangan, 1958), 84-86.
- <sup>12</sup> M. Sardjito, ‘First National Science Congress: Quo Vadis Address by Professor Dr. Sardjito Read at the First National Science Congress in Malang’ (Yogyakarta: Universitas Gadjah Mada, 1958), 4.
- <sup>13</sup> Sardjito, ‘First National Science Congress,’ 5.
- <sup>14</sup> Soekarno, ‘Applied Science,’ 4.
- <sup>15</sup> Justus van der Kroef, ‘The Cult of the Doctor: An Indonesian Variant,’ *Journal of Educational Sociology* 32, no.8 (1959):381-91.
- <sup>16</sup> Justus van der Kroef, ‘Social Dysfunctions of Indonesian Education,’ *Comparative Education Review* 2, no. 2 (1958):15-20.
- <sup>17</sup> Sarwono Prawirohardjo, ‘Madjelis Ilmu Pengetahuan Indonesia dan Universitas Universitas di Indonesia,’ *Berita MIPI* 2, no. 1 (1958): 32-38, 35.
- <sup>18</sup> *Ibid.*, 35.
- <sup>19</sup> Prawirohardjo, ‘Madjelis Ilmu Pengetahuan Indonesia,’ 36.
- <sup>20</sup> Prawirohardjo, ‘Madjelis Ilmu Pengetahuan Indonesia,’ 37. See also ‘Beberapa Catatan Mengenai Ilmu Pengetahuan, Teknologi dan Penelitian: Kutipan dan Sebagian Pidato Prof. Dr Sarwono Prawirohardjo, Ketua Lembaga Ilmu Pengetahuan Indonesia’ (Djakarta: LIPI, 1972), 1. Prawirohardjo argued that unlike Europe, the newly-decolonised nations of Asia, particularly Indonesia which had largely missed out on the scientific revolution, used technology developed in the industrialised West as a catalyst to achieve economic growth. This led to a state of ‘scientific and technological neo-colonialism’ in which Indonesia was reduced to a state of dependency on industrialised nations for the transfer of technological knowhow. Prawirohardjo exhorted Indonesians to realise their national potential in science and technology through innovation.
- <sup>21</sup> Richard J. Russell, ‘Research in Indonesia,’ *Bulletin Madjelis Ilmu Pengetahuan Indonesia* 2(1960): 1-60.
- <sup>22</sup> Sarwono Prawirohardjo, ‘Beberapa Pikiran Tentang Perkembangan Ilmu Pengetahuan dan Penjelidikan di Indonesia,’ in *Laporan Kongres Ilmu Pengetahuan Nasional Pertama 1958:Djilid Pertama*, ed. MIPI (Djakarta: Ilmu Pengetahuan Indonesia and Kementerian Penerangan, 1958), 106.
- <sup>23</sup> *Ibid.*, 13.
- <sup>24</sup> Sarwono Prawirohardjo, ‘The Scientific Development of Indonesia,’ *Berita MIPI* 5, no.5 (1961): 5-14, 13.

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- <sup>25</sup> Asvi Warman Adam, *Sarwono Prawirohardjo: Pembangun Institusi Ilmu Pengetahuan di Indonesia* (Jakarta: LIPI Press, 2009), 24-25.
- <sup>26</sup> Adam, *Sarwono Prawirohardjo*, 30.
- <sup>27</sup> See also Terence and Valerie Hull's chapter, 'From Family Planning to Reproductive Health Care,' in *People, Population, and Policy in Indonesia*, eds., Terence Hull and Valerie Hull, 1-69, 12.
- <sup>28</sup> Dhururudin Mashad, *Tahun Penuh Tantangan: Soedjono Djoened Poesponegoro Menteri Riset Pertama di Indonesia* (Jakarta: LIPI Press, 2008), 43.
- <sup>29</sup> Soekarno, 'Amanat Presiden Soekarno Pada Ulang Tahun Proklamasi Kemerdekaan Indonesia, 17 Agustus 1957 di Djakarta,' *Dibawah Bendera Revolusi:Djilid II* (Djakarta: Panitya Penerbit Dibawah Bendera Revolusi, 1965), 296.
- <sup>30</sup> Mashad, *Tahun Penuh Tantangan*, 48.
- <sup>31</sup> Soekarno, 'Hari Ulang Tahun Proklamasi Kemerdekaan Indonesia, 17 Agustus 1955,' 232.
- <sup>32</sup> Mashad, *Tahun Penuh Tantangan*, 50.
- <sup>33</sup> Soekarno, 'Amanat Presiden Soekarno Pada Kongres Ilmu Pengetahuan Nasional 22 Oktober di Jogjakarta,' *Abdikan Ilmu Pengetahuan dan Persembahan Hidupmu Kepada Tanahair dan Bangsa* (Djakarta: Departemen Penerangan, 1962), 5.
- <sup>34</sup> Soedjono Djoened Poesponegoro, *Masalah Kesehatan Anak di Indonesia: Pidato Pada Penerimaan Djabatan Sebagai Gurubesar Biasa Dalam Ilmu Penjakit Anak Anak Pada Fakulteit Kedokteran Daripada Universiteit Indonesia di Djakarta, 7 Februari 1953* (Djakarta: Jajasan Pembangunan, 1953).
- <sup>35</sup> A.H. Markum, 'Ilmu Kesehatan Anak di Indonesia,' in *Research di Indonesia: Bidang Kesehatan, 1945-1965*, eds., M. Makagiansar and Poorwo Soedarmo (Djakarta: Departemen Urusan Research Nasional Republik Indonesia, 1965), 249.
- <sup>36</sup> *Ibid.*, 249.
- <sup>37</sup> Poey Seng Hin, 'Defisiensi Protein Kalori (Kwashiorkor) dan Penjakit Defisiensi Vitamin A,' in *Research di Indonesia*, eds., M. Makagiansar and Poorwo Soedarmo (Djakarta: Departemen Urusan Research Nasional Republik Indonesia, 1965), 276.
- <sup>38</sup> Soekarno, 'Amanat Presiden Soekarno Pada Ulang Tahun Proklamasi Kemerdekaan Indonesia, 17 Agustus 1956 di Djakarta,' *Dibawah Bendera Revolusi: Djilid II* (Djakarta: Panitya Penerbit Dibawah Bendera Revolusi, 1965), 263. See also Soekarno, 'Amanat Presiden Soekarno Pada Ulang Tahun Proklamasi Kemerdekaan Indonesia, 17 Agustus 1959 di Djakarta,' *Dibawah Bendera Revolusi:Djilid II* (Djakarta: Panitya Penerbit Dibawah Bendera Revolusi), 352.
- <sup>39</sup> 'Resolutions Adopted at the General Session of the Second Afro-Asian Congress of Paediatrics, Jakarta, August 26, 1964: Proceedings of the Second Afro-Asian Congress of Paediatrics,' *Paediatrica Indonesiana* 4, no.4 (1964): I-XLII, XXXVI.
- <sup>40</sup> Soedjono Djoened Poesponegoro, 'Address by His Excellency Dr. Soedjono D. Poesponegoro, Minister of National Research and President of the Organizing Committee: Proceedings of the Second Afro-Asian Congress of Pediatrics on August 19, 1964, Jakarta,' *Paediatrica Indonesiana* 4, no 4(1964): I-XLII, XI.
- <sup>41</sup> Mashad, *Tahun Penuh Tantangan*, 160.
- <sup>42</sup> Soekarno, 'Hari Ulang Tahun Proklamasi Kemerdekaan Indonesia, 17 Agustus 1955,' 195.
- <sup>43</sup> Soekarno, 'Amanat Presiden Soekarno Pada Kongres Ilmu Pengetahuan Nasional 22 Oktober di Jogjakarta,' 11.
- <sup>44</sup> Mashad, *Tahun Penuh Tantangan*, 185.
- <sup>45</sup> Soekarno, 'Hari Ulang Tahun Proklamasi Kemerdekaan Indonesia, 17 Agustus 1959,' 353.
- <sup>46</sup> Poorwo Soedarmo and H.A.P.C. Oomen, 'A Survey of Malignant Malnutrition in Djakarta Toddlers.'
- <sup>47</sup> H.A.P.C. Oomen, 'Infant Malnutrition in Indonesia,' *Bulletin of the World Health Organisation* 9 (1953): 371-84, 381.
- <sup>48</sup> Oomen, 'Infant Malnutrition in Indonesia,' 382.
- <sup>49</sup> 'Sixth Annual Report of the Regional Director to the Regional Committee for Southeast Asia: August 1952-July 1953,' Doc. SEA/RC6/2 (New Delhi: SEARO, 1953), 118.

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- <sup>50</sup> William J. Darby and D.S. McLaren, ‘Assignment Report on Assistance to Institute of Nutrition, Djakarta,’ 27 June-24 July 1957, Doc. SEA/Nut/4 (Geneva: WHO, 1957), WHOL.
- <sup>51</sup> Poorwo Soedarmo, *Dapur Indonesia dalam Djaman Baru* (Djakarta: Djambatan, 1952).
- <sup>52</sup> Poorwo Soedarmo, *Dapur Indonesia*, 5-19.
- <sup>53</sup> Poorwo Soedarmo, *Dapur Indonesia*, 19.
- <sup>54</sup> Frederick Stare, ‘Report on Nutrition in Indonesia: WHO Team of Visiting Scientists to Indonesia, 1953,’ Doc. MH/AS/179.53 (Geneva: WHO, 1953), WHOL.
- <sup>55</sup> *Ibid.*
- <sup>56</sup> Darby and McLaren, ‘Assistance to Institute of Nutrition.’
- <sup>57</sup> *Ibid.*
- <sup>58</sup> Maurice Freedman, ‘A Report on Some Aspects of Food, Health, and Society in Indonesia,’ Doc. MH/AS/219.55 (Geneva: WHO, 1955), 74, WHOL.
- <sup>59</sup> Freedman, ‘A Report,’ 31.
- <sup>60</sup> Freedman, ‘A Report,’ 33.
- <sup>61</sup> *Ibid.*, 33.
- <sup>62</sup> Freedman, ‘A Report,’ 35.
- <sup>63</sup> *Ibid.*, 35.
- <sup>64</sup> B. Napitupulu and Sunardjo, ‘Perkembangan Persediaan Bahan Makanan di Indonesia dalam Djangka Waktu 1951-1959,’ *Medan Ilmu Pengetahuan* 3, no.1 (1962): 379-422, 401-5.
- <sup>65</sup> Napitupulu and Sunardjo, ‘Perkembangan Persediaan Bahan Makanan,’ 407.
- <sup>66</sup> ‘Food Production Command is Set Up,’ 16 December 1959, *Times of Indonesia*.
- <sup>67</sup> *Ibid.*
- <sup>68</sup> Soekarno, ‘Hari Ulang Tahun Proklamasi Kemerdekaan Indonesia, 17 Agustus 1955,’ 229. See also Soekarno, ‘Amanat Presiden Soekarno Pada Ulang Tahun Proklamasi Kemerdekaan Indonesia, 17 Agustus 1962 di Djakarta, *Dibawah Bendera Revolusi:Djilid II* (Djakarta: Panitya Penerbit Dibawah Revolusi, 1965), 492; Soekarno, ‘Amanat Presiden Soekarno Pada Hari Ulang Tahun Proklamasi Kemerdekaan Indonesia, 17 Agustus 1964 di Djakarta,’ *Dibawah Bendera Revolusi:Djilid II* (Djakarta: Panitya Penerbit Dibawah Bendera Revolusi, 1965), 587.
- <sup>69</sup> Satrio, *Revolusi Makanan Rakjat* (Jakarta: Departemen Kesehatan, 1965), 3.
- <sup>70</sup> Satrio, *Revolusi Makanan Rakjat*, 7.
- <sup>71</sup> Satrio, *Revolusi Makanan Rakjat*, 8.
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- <sup>73</sup> Njonja Satrio, *Tavip Dengan Revolusi Menu* (Jakarta: n.p., 1965).
- <sup>74</sup> See also Pierre Van Der Eng, ‘All Lies? Famines in Sukarno’s Indonesia, 1950s-1960s,’ Paper presented at the *Crawford School of Public Policy Seminar, The Australian National University (Canberra)*, 25 September 2012.
- <sup>75</sup> ‘Indonesian Medical Association Founded,’ O.S.R. News II, no.11 (1950): Editorial.
- <sup>76</sup> Sarwono Prawirohardjo, ‘Nota Tentang Pendidikan Dokter,’ *Berita Ikatan Dokter Indonesia* (1952) (n.p.).
- <sup>77</sup> ‘Pendjelasan Kongres Dokter: Nasib Peladjar Dokter,’ 24 December 1952, *Kedaulatan Rakjat*.
- <sup>78</sup> IDI, ‘Adres Ketua P.B. IDI Kepada WHO Visiting Team of Medical Scientists, 17 April 1953,’ *Berita Ikatan Dokter Indonesia* (1953): n.p.
- <sup>79</sup> IDI, ‘Pidato P.J.M. Presiden Soekarno,’ in *Kata Pengantar Buku Peringatan Muktamar ke V Ikatan Dokter Indonesia di Semarang* (Djakarta: IDI, 1954). *Marhaenism*, one of the main political philosophies of the Soekarno era that was based on the notions of humanitarianism and mutual help; socio-democracy, equal opportunities for everyone in the community; mutual help or *gotong rojong* and socialism that ensured minimum wages for the workers. For further information about *Marhaenism* ideology see Guy J. Pauker, ‘Political Doctrines and Practical Politics in Southeast Asia,’ *Pacific Affairs* 35, no 1(1962): 3-10, 4.
- <sup>80</sup> ‘Susila Kedokteran,’ *Berita Ikatan Dokter Indonesia* (1953): n.p.
- <sup>81</sup> Author Unknown, ‘Riwajat Ikatan Dokter Indonesia Selama 10 Tahun Pertama,’ *Madjalah Kedokteran Indonesia* 12, no 9(1962): 270-91, 281-82.
- <sup>82</sup> Author Unknown, ‘Riwajat Ikatan Dokter Indonesia,’ 282.

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<sup>83</sup> Author Unknown, ‘Riwajat Ikatan Dokter Indonesia,’ 283.

<sup>84</sup> Soetomo Tjokronegoro, *Tjukuplah Saudara Membina Bahasa Kesatuan Kita* (Djakarta: Eresco, 1968), 12.

<sup>85</sup> Tjokronegoro, *Tjukuplah Saudara*, 55-58. During the process of adapting foreign loanwords into the Indonesian biomedical lexicon, Tjokronegoro was confronted with the issue of phonological differences between English, Latin, Dutch and Indonesian. For example, the English word gonorrhoea (venereal disease) was assimilated into the Indonesian biomedical vocabulary as *gonore* in order to adapt to the phonological particularities of Bahasa Indonesia.

## CHAPTER SEVEN

### CONCLUSION

In a brief speech delivered at the height of the Japanese occupation of the Indonesian archipelago (1943), in which he reflected on the role of physicians in Indonesian society, Soekarno stated that the latter not only had an obligation to cure sick patients, but also to cultivate a strong and healthy citizenry free from disease. The slogan *Rakjat Sehat, Negara Kuat* (healthy people, strong nation), which was used extensively in public health propaganda during the 1950s to indicate the link between health and nation-building, had already been expressed by Soekarno during the Japanese occupation.<sup>1</sup> Health was going to be an essential part of building an independent Indonesia; thus, the country's physicians directed their personal efforts towards building the nation. In this thesis, I have analysed how Indonesian physicians connected their endeavours to the broader nationalist rhetoric on development and nation-building, and the extent to which those efforts were successful in gaining recognition among politicians and the citizenry. I have also investigated the extent to which Indonesians were successful in channelling their ideas and ideals into building a health infrastructure. As I have demonstrated, the Soekarno era was initially characterised by high idealism and the making of bold plans; but, unfortunately, many were not realised due to the broader political and economic turmoil of the late 1950s and the first half of the 1960s.

Subsequent to the transfer of sovereignty from the Netherlands to the Republic of Indonesia was completed in December 1949, the country inherited a health infrastructure ravaged by seven years of warfare resulting from the Japanese occupation of the Indonesian archipelago and the Indonesian Revolution (1945-1949). At the time, there was a great shortage of physicians, only 1 per 60,000 people. The Indonesian Ministry of Health was forced to surmount innumerable challenges when addressing this situation. Particular focus was on: (a) addressing the acute shortage of physicians through the improvement of medical education; and, (b) initiating an emergency program to combat newly-resurgent epidemics of smallpox and plague and endemic diseases such as malaria, tuberculosis and yaws. In 1951, Leimena, who had

been the most influential Minister of Health since Indonesian independence, introduced the Bandung Plan, which served as a blueprint for the country's health policy. Unfortunately, the Ministry of Health lacked the adequate financial resources to implement the emergency health program, or to develop an adequate health infrastructure in accordance with the objectives of the Bandung Plan. Despite these challenges, President Soekarno and Leimena remained optimistic. The Indonesians had demonstrated considerable resilience in overcoming political obstacles imposed by two Dutch Military Actions (between July 1947 to August 1947 and December 1948 to January 1949) and would collectively overcome challenges in public health as well. The first five years of independence were characterised by optimism. But from the mid-1950s onwards, Indonesia's progress in public health faltered due to a constellation of reasons, among them: (a) political tensions between Java and the Outer Islands; (b) administrative problems, particularly as the provincial and local governments implemented health policy but depended on the centre for the disbursement of finances; (c) political deadlocks; (d) rampant corruption; (e) inflation; and, (f) the declining commitment of international agencies to finance Indonesia's public health programs subsequent to Soekarno's abandonment of parliamentary democracy in 1957.

The nationalist imagery of health during the Soekarno era—which aimed to create a strong and healthy citizenry—was evident in the state's response towards disease. The link between health and nation-building was again articulated in Soekarno's notion of *pembangunan* that sought to promote the benefits of Western science and medicine in Indonesia but without external assistance; that is, as an Indonesian alternative to modernity. This thesis suggests that Indonesia did not blindly accept the policy prescriptions of international aid agencies but creatively refashioned international aid to suit its own requirements. During the 1950s, Indonesian physicians appropriated the rhetoric of struggle, arising from Indonesia's anti-colonial legacy. They depicted the campaigns against diseases as battles that would lead to further victories of the nation against poverty and illiteracy. Prime Minister Abdul Halim viewed the symbolic significance of framing malaria, tuberculosis, leprosy and yaws as the 'big four' endemic diseases that affected the overall vitality of the population. During the Cold War rivalry between the US and the Soviet Union, the US saw the political significance of supporting disease

eradication in developing countries as an important step to countervail the spread of communism and orienting these countries to a Western model of development. But, Indonesia instead elected to follow the Bandung approach that advocated a non-aligned foreign policy independent of superpower intervention and emphasised solidarity with decolonised nations in a similar economic position. Indonesia did not slavishly implement WHO prescriptions on disease eradication. Instead, the Indonesian Ministry of Health tailored WHO recommendations to suit the archipelagic nation's diversity in terms of demographic and epidemiological conditions where a standard epidemiological strategy would not prove effective.

Indonesian scientific and medical initiatives were tied to the Government of Indonesia's desire to carve out a niche within the international scientific community and contribute to the growth of applied science. This, it was assumed would enable to achieve the country's self-sufficiency in economic affairs. Physicians dominated the Indonesian scientific establishment during the 1950s not only due to their numbers but due to their ability to rhetorically relate health and disease to Soekarno's nation-building (*pembangunan*) ideology. Consequently, research into paediatrics and nutrition, which was symbolically related to Soekarno's reading of the Indonesian Revolution as a period of investment in the population's human skills, received considerable state support.

During the early 1950s, there were many reasons for optimism. In 1955, the average life expectancy of Indonesians was approximately 50 years, ten years higher than the figure for the mid-1930s.<sup>2</sup> The number of physicians doubled from 800 to 1,600 between 1945 and 1955. The birth rate of 35 per 1,000 was more than double the death rate of 15 per 1,000.<sup>3</sup> The rapid decline in the death rates for postcolonial Indonesia could be attributed largely to the successful control of infectious diseases such as smallpox and plague. In 1951, nearly 3,000 people died from plague whereas by 1954, this number had registered a thirtyfold decline.<sup>4</sup> By 1955, Leimena expressed his optimism that the overall state of health in Indonesia could be termed as 'satisfactory.' Nevertheless, after fifteen years (by 1970), Leimena was frustrated that the Indonesian state was unable to guarantee the highest level of health for its citizens due to the ever-increasing population and economic uncertainty.<sup>5</sup> The promise of a healthy Indonesia, free

of disease, had not been realised despite the good intentions of the early years of independence and the progress that was made during those years.

Even during the early 1950s, the optimism of physicians and politicians on health matters might not have been fully justified. In 1952, a young Pramoedya Ananta Toer, in his short story ‘My Kampung’—written when the campaigns against endemic diseases were launched—painted a picture not of progress but of pessimism and ever-present death. In sarcastic vein he wrote:

A small guerrilla squad that is cautious is not likely to lose ten people in two years, yet in my peaceful *kampung*, with its stink and its condition, people die one after another. They die a cheap death, friend. Like this, at the back of my house, soon after I started living in Kebun Djahe Kober, one person died of a chronic venereal disease. . . .

And if on one bend of the alley there are paralytics and little children whose job it is to cry for hours every day, on the second bend, there is another TB victim, a civil servant who continues to work anyway. In front of his house, there is another person in whom the accursed but usual disease of our *kampung* has lodged itself. And in the alley over there always lives the family of an Arab who also jolted us with a sickness that suddenly made him a crazy man, jumping up and down and hurting people that who fell into his hands. And later when Sang Djibril comes again to pick one of us up, children will jostle each other to enter the prayerhouse and beat the big drum, because religious teachers have promised them merit in the afterlife for this good deed.

Such, then, is the condition of my *kampung* with its busy Djibril. You too, friend, can come to my *kampung* some time. My *kampung* can also become a soul-enriching tourist *kampung*. Finding it is not hard at all, because everyone in Jakarta knows where the national palace is located. Five hundred metres in a straight line toward the southwest, there my *kampung* stands in all its glory, defying all its doctors and the technical professionals.<sup>6</sup>

Toer’s short story mocked the empty promises of the Indonesian state and international agencies in guaranteeing the right to health for the country’s poor. The *kampung* he described was located very close to the presidential palace, making the contrast even more jarring.

In line with the multiple obstacles that it faced, Indonesian health policy during the 1950s continued to focus on short-term objectives such as maximising the output of doctors from the country’s medical schools and the prevention and control of endemic diseases than on long-term but more sustainable measures such as raising the living standards of the people. Disease control seemed easy compared to addressing widespread deprivation among the people. Within

Indonesian public health there was a tension between two competing approaches: (a) a narrow biomedical approach that advocated using a ‘magic bullet’ to disease, for example using DDT to combat malaria; and, (b) a holistic approach that related health to nation-building. Indonesian physicians, particularly Poorwo Soedarmo and Leimena, were aware that lack of adequate food attributable to the poor purchasing power of the people, and cultural preferences such as a predominantly rice-based diet, exacerbated disease. Unless the living standards of the population were raised, the government could not make progress in resolving the health problems of Indonesia in a sustainable way. Seemingly inevitably, technologically directed campaigns against endemic diseases prescribed by the WHO diverted the Indonesian government’s resources and attention away from dealing with the socio-economic determinants of disease towards quick-fix solutions.

The need to improve the overall well-being of Indonesians seldom featured in strategic discussions, both at Geneva and Jakarta. Instead, specific public health programs such as the campaign against endemic diseases, which could symbolically relate to the nationalist vision of creating a strong and healthy citizenry, were prioritised by the Ministry of Health. For these reasons, the nature of health policy during the Soekarno era can be characterised in terms of the functioning of a number of symbolic yet disparate public health projects that only had a marginal impact on the overall well-being of the population.

This study sheds light on the nature of sovereignty and postcolonial governance in Indonesia. Indonesia’s sovereignty was more fractured than was generally perceived. Tensions between the various loci of governmental authority within Indonesia, especially between the provinces of the Outer Islands and the central authorities at Jakarta were heightened as a result, affecting policy outcomes. The fractured nature of Indonesian sovereignty was evident in the lack of administrative coordination between the Ministries of Health, Education, and Finance at Jakarta, on the one hand, and the provincial governments on the other. This stymied the consistent implementation of health measures as envisioned in the Leimena Plan and the expansion of medical education on the Outer Islands during the late 1950s. The state’s campaign against ill health was impeded by widespread poverty and the problems within the Indonesian

government during the 1950s. As health was a provincial subject, the provincial and local governments were financially responsible for the execution of public health programs whereas the Ministry of Health formulated policy guidelines. Any large-scale public health undertaking would have presupposed complex financial and educational requirements. The Government of Indonesia fared poorly in all of this; and, the Indonesian bureaucracy, which was a major stumbling block, hindered the implementation of public health.

This thesis is an illustration of the fruitfulness of engaging the historiography of postcolonial Indonesian medicine with the political historiography of the 1950s, more generally. The engagement of the two streams provides a vantage point from which to examine how Indonesia implemented its health policy with minimal external intervention at the height of the Cold War. The Bandung approach, a non-aligned approach to international politics, sought to achieve a delicate balance between maintaining Indonesia's sovereignty in health while at the same time adapting the assistance in health from UN agencies to suit the country's health requirements. That the achievements in public health during the Soekarno era were modest yet the holistic vision of public health embraced by the nationalist physicians that related health to nation-building form the backbone to the Ministry of Health's *Healthy Indonesia 2010* vision implemented at the turn of the 21<sup>st</sup> century.

This thesis, which juxtaposes the political history of Indonesia during the 1950s with the history of postcolonial health, underscores how the realities of disease and the implementation of health policy in various islands that constituted the Indonesian archipelago intersected with the success of Indonesia as a new and independent nation. Indonesia sought to retain its independence, a position it formulated during the Afro-Asian Conference of non-aligned nations at Bandung in 1955. It was willing to accept international aid and engage with ideas formulated by international health organisations; but, at the same time it wanted to retain its independence and formulate its own ideas. Indonesia's position within the international community was enhanced with the convening of the Bandung Conference. Indonesian health officials increasingly became involved in public health discussions with the WHO, particularly in investigating the epidemiology of malaria and yaws. In addition, they became more involved in

research and in hosting national and international public health conferences even if the practical application of the epidemiological findings and recommendations resulting from the conferences was rarely implemented. Little was done to improve the overall health and wellbeing of the population.

This thesis explores the contradictions in policy formulation at the WHO headquarters in Geneva, the appropriation and implementation of WHO prescriptions by the Ministry of Health at Jakarta, and the local responses that it generated. First, Indonesia's malaria eradication program was the second largest in the Southeast Asian region of the WHO after India. Epidemiological studies the anopheline species resistance to the insecticide DDT were undertaken in Indonesia both by local epidemiologists at the Malaria Institute, Jakarta, and WHO malariologists. But the gains of this knowledge went nowhere. Malaria eradication in Indonesia failed not so much due to the resistance of the anopheline species to DDT, but due to organisational factors such as negotiating the bureaucratic labyrinths that resulted in the suspension of eradication activities. Second, the country's anti-yaws campaign under the initiative of retired regency physician Raden Kodijat was the world's largest when it was inaugurated in 1950. The originality of the Indonesian anti-yaws campaign lay in its response to an acute shortage of skilled medical personnel. The use of *djuru pateks* (paramedical personnel) to detect yaws in the general population, and the treatment of active cases only with penicillin, led to a dramatic decline in the prevalence of the disease that saw neighbouring Malaya, which was yaws-endemic, adopt the epidemiological strategies of the Indonesian campaign. The anti-yaws campaign was successful inasmuch as it drastically reduced the overall prevalence of yaws due to the effectiveness of penicillin shots. But, by the mid-1960s, Indonesian physicians had started to realise that for the successful conclusion of the disease eradication campaigns, the country needed to address underlying socio-economic factors such as poverty.

The Soekarno era will be remembered in the history of Indonesian health as an era of bold plans and unfulfilled aspirations. Today, Indonesia is facing health problems very similar to those it faced during the Soekarno era: for example, in 2005 it was struggling to cope with the re-emergence of diseases such as polio that once were thought to have been extirpated from the

archipelago. Between 1949 and 1967, the country's health programs faltered because of disagreements between the various inextricable mazes of the administrative hierarchy that characterised the then politics of decentralisation, economic difficulties, massive inflation and waning international support.

Almost forty-eight years have elapsed since the end of the Soekarno era. Unlike the authoritarian Soeharto era (1966-1998), which was relatively successful in the realm of public health, most notably smallpox eradication, the achievements of the Soekarno era pale in comparison. With the fall of the Soeharto regime in 1998, top-down centralised strategies of disease control were discredited and a policy of decentralisation was embarked upon again. Since 1998, the financing health programs have been delegated to the provincial, regency, and village administrations whereas the central government issues broad directives regarding policy implementation, leading to a fractured administration. The Asian financial crisis of 1997 was an additional drawback. Although Indonesia's economy is performing relatively well today, funding for health care is grossly insufficient. This time, economic problems are not to blame. But corruption and nepotism—indicated in Indonesia by the well-known abbreviation KKN (Korupsi, Kolusi, Nepotism or Corruption, Collusion, and Nepotism)—continue to run rampant. As a recent issue of the on-line journal *Inside Indonesia* states it: 'Healthcare in Indonesia suffers from many chronic problems that only healthier politics can cure.'<sup>7</sup> The political system seems sick beyond repair, leaving little hope for medical care. Indonesian physicians appear to be prisoners of the country's bureaucracy that leaves little scope for individual initiatives. The lack of political will and inspired visions among physicians has led to a stalemate that was almost impossible to resolve.

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<sup>2</sup> Johannes Leimena, 'Perkembangan Dibidang Kesehatan Rakjat di Indonesia Selama 25 Tahun Indonesia Kemerdekaan,' *Madjalah Kesehatan* 22, no.3 (1970): n.p.

<sup>3</sup> *Ibid.*

<sup>4</sup> *Ibid.*

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<sup>5</sup> Johannes Leimena, ‘Ten Year Activities of the Ministry of Health,’ *Berita Kementerian Kesehatan* (1956): 5-13.

<sup>6</sup> Pramoedya Ananta Toer, ‘My Kampung,’ in *Tales from Djakarta: Caricatures from Circumstances and their Human Beings* (Ithaca: Cornell University Southeast Asia Program Publications, 1999), 57-58.

<sup>7</sup> Elizabeth Pisani, ‘Medicine for a Sick System,’ *Inside Indonesia* 111 (January- March 2013), accessed via <http://www.insideindonesia.org/write-for-us/medicine-for-a-sick-system>.

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