1 Introduction: Diagnosing Indonesia

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Canvassing health transition in Indonesia

In 1950, about 189 out of 1,000 babies born alive in Indonesia would not have survived past their first birthday. Such a high infant mortality rate overwhelmingly contributed to the population's low life expectancy for the newly independent nation at the time. Assuming the prevailing age-specific patterns of deaths, for the same year, life expectancy at birth was estimated to be 39.4 years. By 2022, Indonesia's infant mortality rate has fallen to 17.7 deaths per 1,000 live births, and life expectancy at birth has risen to 68.25 years.[1]

If we go by these trends in infant mortality rate and life expectancy, the future trajectory for the general health and wellbeing of the average Indonesian is looking rosy. After all, the two indicators are meant to capture the underlying factors and contexts that shape the health of the nation. At the outset, gains in life expectancy—and correspondingly, the reduction in infant mortality rate—reflect a narrative of improvements in income per capita, living conditions, nutritional intake and education, as well as access to and quality of health care in recent decades. But focusing only on these two broad indicators may also obfuscate the complex history of Indonesia's health transition, where wins are often coupled with setbacks, and where health-related innovations regularly intersect with novel conundrums.

What do we mean by health transition, and why do we often hear that Indonesia's health transition has been marked by increasing complexity over time? The term health transition is often used interchangeably with

1 United Nations Data Portal Population Division, https://population.un.org/DataPortal/, accessed 31 August 2022.

epidemiologic transition. The latter was first conceptualised by Abdel Omran in 1971 to refer to the long-term shifts in the mix of diseases as people live longer through the course of economic development and social change. More specifically, Omran coined the term epidemiologic transition to describe 'the complex change in patterns of health and disease and on the interactions between these patterns and their demographic, economic and sociological determinants and consequences' (1971: 510). In the first iteration of the epidemiologic transition theory, Omran proposed that there are three distinct stages in the transition: the age of pestilence and famine, the age of receding pandemics, and the age of degenerative and man-made diseases. Herein lies the basic premise of the epidemiologic transition theory: along with development and social change, the mortality and disease patterns in a particular geographic location would gradually shift from being dominated by infectious diseases (afflicting predominantly infants and young children) to chronic, non-communicable and degenerative diseases that tend to occur in older ages.

Over the years, there have been many critiques, iterations and challenges to the epidemiologic transition theory (Mackenbach 2022; Omran 1998; Santosa et al. 2014; Vallin and Meslé 2004). The re-emergence of infectious diseases, and emergence of new infectious diseases such as HIV/AIDS, and now COVID-19, is one of the more obvious challenges. Another glaring limitation is to do with how the original epidemiologic transition theory—like many other concepts in social science and public health—was largely drawn from a characterisation of what had happened in Western Europe and North America in the past (Mackenbach 2022).

In this book, we adopt a wider definition of health transition whereby the epidemiologic transition is a component in the overall transformation of the health profile of Indonesia as a nation. Frenk et al. (1991) conceptualised two broad components in health transition. The first is to do with the long-term shifts in the 'patterns of diseases, disability and death', and the second component refers to the shift in the 'organized social response to health conditions' (p. 23). The second component, for example, relates to factors such as transformations in health care infrastructure and provisions.

Like the experiences of many other middle- and lower-middle-income countries, Indonesia's health transition is governed by multiple challenges, the first of which is to do with inequality. The history and nature of economic development in many developing countries is marked by deep socioeconomic inequalities, making patterns of health transitions across their diverse subpopulations incredibly complex (Frenk et al. 1991). In the case of Indonesia, inequalities in access to and quality of health care are shaped not only by wealth inequalities, but also by longstanding

regional inequalities. As shown in the chapter by Andre Meliala and Srimurni Rarasati in this book, Indonesia continues to struggle to address the unequal access to health infrastructure and health care professionals across its vast archipelago. Another challenge is the double burden of mortality and morbidity from infectious and non-communicable diseases (Mackenbach 2022). In Indonesia, and in other countries of similar economic standing, before the decline in mortality attributed to infectious diseases has reached low levels (see Chapter 12 by Utarini on dengue eradication, for example), mortality from non-communicable diseases is already on the rise (Bloom et al. 2015; Kusuma et al. 2019; Mboi et al. 2018; Witoelar and Miranti 2021).

This book aims to capture a slice of the complex story of how Indonesia's quest for longer and healthier lives of its people has unfolded to date. The contributors of this edited collection are scholars, policymakers and expert practitioners who were invited to speak at the 2021 Indonesia Update—an annual conference hosted by the Indonesia Project of the Australian National University in Canberra, Australia, usually timed to take place during the southern hemisphere's early spring. In the first quarter of 2021, we were optimistic that the pandemic would turn a corner, and that it was possible to hold a hybrid event by September 2021. We were wrong.

By July 2021, Indonesia had become the epicentre of the pandemic, and two large states in eastern Australia were deep in lockdown. The Delta variant drove record numbers of new COVID-19 cases and deaths in Indonesia. The health system was on the verge of collapse and cemeteries were overwhelmed with the sudden and excess demands for burials (Abdurachman et al. 2021). This book came at a time where we—and the contributors of this volume—were ironically traversing the very setbacks and novel conundrums of a health transition. As we navigated our personal and collective grief and losses through the pandemic, the statistics, theories and challenges of health transition became all-consuming and too close for comfort. Indeed, the heavy toll from the COVID-19 pandemic has now been reflected in the estimated loss of roughly three years in the estimated life expectancy at birth in Indonesia, from 70.52 in 2019 to 67.57 in 2021. After the largest loss in life expectancy being recorded during the mass 'anti-communist' killings in the 1960s (estimated decline from 49.23 in 1964 to 42.60 years in 1965), this was the second-largest dip in life expectancy in the country's post-independence demographic history.[2]

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2 United Nations Data Portal Population Division, https://population.un.org/DataPortal/, accessed 31 August 2022.

An assessment of Indonesia's health transition has been long overdue, even before COVID-19 came into the picture. The last time health transition was a major theme for the Update series was in 1996. The late Professor Gavin Jones and Professor Terry Hull—the convenors of the Update at the time—wrote in their introduction:

> While the New Order government has given single-minded attention to reducing rates of population growth by reducing fertility, it has been less single-minded about reducing mortality. Vaccination campaigns have certainly been conducted with some enthusiasm, but budgetary figures reveal very low proportion of government budgets devoted to health by regional standards and an overemphasis on expensive curative facilities in the large cities at the expense of an effective system of primary health care and efficient referral. The results are clear in Indonesia's greater success in reducing fertility than in reducing mortality. There is an urgent need to allocate more resources to health and improve the effectiveness in the health sector. (Jones and Hull 1997: 3)

How has Indonesia traversed the path of health transition since then? Clearly much has changed, with some promising trends and new challenges emerging prior to COVID-19. Using estimates from the Global Burden of Disease Study, Mboi et al. (2018) found that Indonesia's life expectancy at birth had risen by about 8 years between 1990 and 2016. Such gain in life expectancy was higher than the average of 6.6 across comparable countries. In the same period, they further estimated that the total disability adjusted life years (DALYs) lost to communicable, maternal, neonatal and nutritional causes had significantly declined by 58.6 per cent. In contrast, total DALYs due to non-communicable diseases had risen. Six of the top ten causes of DALYs in 2016 were non-communicable diseases, up from three in 1990. In 2019, seven of the top ten diseases—including the top three of cardiovascular disease, cancer, and diabetes and chronic kidney disease—were non-communicable diseases (Witoelar and Miranti 2021). While the increasing share and number of people with chronic non-communicable diseases in the population's health profile is straining health system financing, Indonesia still faces serious problems associated more with countries at a lower level of development, such as child underweight and stunting, and neglected tropical diseases such as dengue (see Chapter 12 by Utarini). Furthermore, underneath the indicators of health outcomes that reflect progress at the aggregate level, the issues of geographical disparities persist. And it is only recently that disability and mental health have become national health priorities (see Chapter 10 by Contreras Suárez and Cameron and Chapter 11 by Hunt, Onie and Pols).

Assessing the vulnerabilities of the health system

An observation frequently made since the COVID-19 pandemic is how the pandemic unmasked the vulnerabilities of a country's health system. For Indonesia, and perhaps for some other countries, that observation may be misleading. Despite much progress in the health sector in the past few decades, the vulnerabilities of Indonesia's health system were apparent even before the pandemic. For example, indicators of availability of physical infrastructure for health, such as the number of health facilities, remain below the World Health Organization standards, and the growth in the number of human resources for health (HRH) at all levels has not kept up with increasing need (Booth et al. 2019; Mahendradhata et al. 2017). There are large disparities between regions in terms of both quantity and quality of health infrastructure (Wulandari et al. 2022) as well as HRH (Meliala et al. 2013; Chapter 5 by Meliala, this volume). One of the main reasons for this is the continuing underinvestment in health. In the past two decades, government expenditure on health as a percentage of government budget—indicating prioritisation—was around 3 per cent per year until it increased to about 5 per cent from 2016. This stands in contrast with central government expenditure on education, which since 2008 has been around 20 per cent of the budget. Health expenditure per capita in purchasing power parity in 2019 is US$358, below the Philippines (US$380), Vietnam (US$559), and less than half of Thailand's expenditure (US$731).[3]

The national health insurance program, Jaminan Kesejahteraan Nasional (JKN), was launched in 2014 with the ambitious aim to have universal coverage within just five years. Badan Penyelenggara Jaminan Sosial Kesehatan (BPJS-K, Healthcare and Social Security Agency) was established to administer the mandatory health insurance, making it the operator of the largest single-payment health insurance scheme in the world. The JKN is mandatory and enrolment is paid through contribution schemes either by individuals, employers, or, in the case of the eligible poor, by the government. The early participants came from the recipients of the existing health insurance schemes that are mostly subsidised by the government (e.g. Askes, Jamkesmas, Jamsostek and Jamkesda), and the fully subsidised health insurance for the eligible poor. The membership was then expanded to include formal employees from small, medium and large corporations, and informal and self-employed workers (Agustina et al. 2019). As in other countries with a large share of informal workers,

3 World Health Organization Global Health Expenditure Database, accessed 10 May 2022, https://apps.who.int/nha/database/Select/Indicators/en

there is a sizeable 'missing middle', the uninsured informal sector workers who are unwilling to enrol in the program. By January 2022, BPJS-K claims to have covered 86 per cent of the population, of which around 42 per cent are under the subsidised scheme (BPJS-K 2022). The JKN has been running a deficit since its inception, and the central government is mandated to pay the deficit (Agustina et al. 2019; Pratiwi et al. 2021; Chapter 2 by Trisnantoro, this volume). The deficit is partly due to the low amount of contributions relative to total health expenditure. The system is considered to be generous: many advanced and expensive treatments are fully covered, including for non-communicable diseases that lead to catastrophic health expenditure (Pratiwi et al. 2021). At the hospital level, chronic diseases such as cardiovascular disease, kidney disease and cancer account for the largest case-based payment from BPJS-K (Prabhakaran et al. 2019). The double burden of morbidity and mortality from infectious and non-communicable diseases means that the financial strain on the JKN will only get worse.

On the supply side, in addition to the shortage and uneven distribution of HRH including medical specialists, there is also the issue of availability of medical equipment and affordable drugs and vaccines. While the increase in demand spurred by the expansion of the health insurance system has impelled private sector expansion in the markets for medicines, medical devices and hospitals, until 2018 much of the growth was still concentrated in more urbanised Java and Sumatra (Britton et al. 2018). Regulations governing the production, procurement and licensing of pharmaceuticals and medical devices may need to be reformed in order for the market to be more responsive to the increase in demand.

Decentralisation adds to the complexity of health system governance where, on one hand, some outcomes have turned out to be positive, such as an increase in health utilisation by the poor and, in some regions, development of health initiatives to address local challenges. On the other hand, significant discrepancies in fiscal capacities between local governments have led to uneven distribution of health services. Decentralisation has also weakened the link between the national health information system and the district-level health information system (Mahendradhata et al. 2017).

It was under these straitened circumstances that Indonesia was hit by the COVID-19 pandemic. One question that emerged was how the health crisis would affect the trajectory of health reform: whether it will change the trajectory, accelerate the reform or derail the reform together. In Chapter 2, Laksono Trisnantoro examines how the trajectory of health-reform financing will likely be affected by the COVID-19 pandemic. He begins by reviewing the early health sector fiscal responses to the

pandemic and the pre-existing health system challenges. The high and increasing proportion of payments for advanced treatment services from BPJS-K continue to threaten the financial sustainability of the JKN. In the second part of the chapter Trisnantoro describes a road map of post-pandemic health reform that reflects a shift to a health system that puts more weight on primary care screening and prevention.

In Chapter 3, Andrew Rosser and Luky Djani investigate the political dynamics that have shaped health policy reforms in post–New Order Indonesia, and how these have resulted in uneven reform. The authors focus on the key actors who play the major roles in shaping health policy reforms and set forth in detail each actor's often conflicting interests and agendas: the technocrats who support state investment in provision of health services and a robust social safety net, paying attention to affordability and cost-effectiveness, while encouraging high levels of private sector involvement; the political, military and bureaucratic officials who more strongly support health investment that is central to their own interests; the progressive element of civil society with only limited access to pockets of health policymaking; and finally the politicians, national and local, who seek to mobilise political support. Using this framework, Rosser and Djani then examine the political dynamics between the actors and the outcomes that emerge by focusing on three cases of health reform: health insurance, tobacco control and health security. They show how the nature of the reforms—whether they are access-enhancing or address underlying preconditions of health—and the political dynamics between the actors explain the uneven outcomes. They conclude by discussing whether the shocks to the health system brought about by COVID-19 will shift the power alignment and alter the future trajectory of reforms.

In Chapter 4, Terry Hull assesses the results of the 2020 Population Census, which was disrupted by the COVID-19 pandemic. He begins by describing the role of the census in building the strength and capacity in the Indonesian government to produce and make data available for research and policy, and the importance of high-quality data in shaping demographic-informed health policy. The 2020 census was supposed to be groundbreaking in several ways. First, it was supposed to resolve the longstanding tensions between Statistics Indonesia (BPS) and the Ministry of Home Affairs on the 'official' estimate of the population numbers. Second, it would be the first Indonesian population census conducted with in-person interviews and digital data collections, a truly ambitious innovation. The COVID-19 pandemic derailed parts of the plan. Most importantly, the post-enumeration survey in 2021 that was originally designed to collect detailed information of a sample of the households did not take place. The quality of the 2020 Population Census is likely to

be compromised as a result. Hull presents and assesses the population numbers, total fertility rate and survivorship numbers based on the available results, with a stern warning about the quality.

The JKN program has increased the demand for high-quality health services, such as access to medical specialists, at affordable costs. To meet this increase in demand it was expected that the supply side, whether government or private sector, would respond. In Chapter 5, Andre Meliala and Srimurni Rarasati investigate the supply barriers that allow regional disparities in access to medical specialists to persist. The archipelagic nature of the country, the complexity of HRH planning and management under decentralisation, and the multitude of stakeholders with conflicting interests are among some of the factors behind the disparities. The authors highlight the regulatory barriers in producing and licensing medical specialists and some signs of private sector responses motivated by the expansion of the JKN.

In Chapter 6, another chapter focusing on the supply side of health services, Elizabeth Pisani and co-authors investigate how the establishment of the JKN program has changed the landscape of medicine production and distribution in Indonesia. The move to mandatory universal health insurance has meant that most of the drugs that were paid for by patients are now paid for by the insurance system. The government has created incentives to push prices of medicines down, through a set of regulations governing medicine procurement. The authors seek to learn how the quest to provide affordable medicines—a quest misaligned with the incentives of pharmaceutical companies to maximise profit and health providers' interests for cost recovery—affects the availability and quality of medicines in the market. The authors built on their extensive work on this topic and used an array of secondary data from national institutions and primary data collected through in-depth interviews, price and stocks data, and mystery shopper surveys. What they found was an intricate description of an equilibrium with segmented markets where medicines of different quality are offered at different price points, targeted to different groups of patients.

Health for all: Lessons and strategies

The strengths and weaknesses of health systems shape people's health-seeking behaviour and outcomes. In the next five chapters of this volume, the contributors explore everyday challenges faced by Indonesians in accessing essential health services for mothers and children, and for those living with disability, discrimination and mental illness.

In Chapter 7, Nyoman Sutarsa analyses inequities to health services access in an approach that uses multiple lenses beyond the individual-level analysis. Sutarsa draws on two case studies of transgender people navigating HIV services. He employs an intersectionality approach and demonstrates how this method can be helpful in providing insights into the underlying causes of health access inequities. In one of the case studies, he shows how mainstreaming HIV services into health community centres may end up missing those on the margins. The approach not only helps to better understand health and health inequity outcomes, it will also help to improve ways to formulate policies.

At the onset of the COVID-19 pandemic, essential health services in many countries around the world were severely disrupted. Understanding the ways in which pandemic-induced disruptions have derailed ongoing efforts to achieve equitable health transition in Indonesia is particularly important given the novel risks posed by future shocks associated with climate change and emerging pandemics. In Chapter 8, Tiara Marthias and Yodi Mahendradhata present a case study on how the pandemic has caused disruptions in the provision of routine maternal, neonatal and child health (MNCH) services. They use an integrated database, from the Ministry of Health, that collects monthly reporting of reproductive, maternal and child health services from 514 districts, and combine that information with COVID-19 data from Our World in Data. The trends in selected key MNCH services are plotted against COVID-19 confirmed cases to show the impact of the disruptions. In their investigation they also find how the pandemic has exacerbated the existing health system challenges in Indonesia: the uneven distribution of HRH, the limited health information system and quality of data, and the underinvestment in health.

The longstanding issue of maternal health in Indonesia continues to be the focus of Chapter 9 by Salut Muhidin and Jerico Pardosi. At present, various estimates suggest that Indonesia's maternal mortality ratio is unacceptably high, ranging from 200 to 350 maternal deaths per 100,000 live births in 2015 (Utomo et al. 2021). More conservative estimates still put Indonesia's maternal mortality ratio at an unacceptably high level, particularly when compared to other countries in the region. For example, the United Nations Population Fund estimated that the maternal mortality ratio in Indonesia was 177 deaths per 100,000 live births in 2017, compared to Thailand (37), Vietnam (43), Malaysia (29), the Philippines (121), Cambodia (160) and India (145).[4] Muhidin and Pardosi

4 UNFPA World Population Dashboard, www.unfpa.org/data/world-population, accessed 31 August 2022.

begin their chapter with a comprehensive overview of the trends and determinants of maternal mortality in Indonesia. They include a detailed discussion canvassing various policy initiatives and issues surrounding maternal health provision around the country which, again, underline the ever-present problem of regional disparities. Here, they look deeper beyond the statistics and drew upon their recent fieldwork in East Nusa Tenggara to examine the three pressing drivers of maternal mortality in regional Indonesia: (1) delay in decision-making to seek care, (2) delay in reaching a health facility and (3) delay in receiving adequate care.

The challenge with high maternal mortality is one that is longstanding, but arguably it has received more policy attention than other facets of serious health challenges in the country, including that of disability. It was only roughly ten years ago—in 2011—that the Indonesian government ratified the United Nations Convention on the Rights of Persons with Disabilities. In 2016, a new law on disabilities (Law No. 8/2016) was passed, promising equal rights for people with disabilities, including protection of their rights to employment. Indeed, Diana Contreras Suárez and Lisa Cameron begin Chapter 10 with a strong statement: 'For many of us, the concept of disability is at once familiar and unknown'. Data on disability prevalence and needs in Indonesia remain limited, hindering programmatic development and reach to promote disability inclusion. Drawing on various data sources, including the Indonesian Census, the National Socioeconomic Survey (Susenas), the National Labour Force Survey (Sakernas), and the Indonesia Family Life Survey, Contreras Suárez and Cameron provide a baseline of disability indicators. These include disability prevalence and its regional variation, profiles of disability status by age group, causes of disability, unmet demands for assistive devices and services, comparative indicators on access to education, employment and public services among people with and without disabilities, and a profile of families and carers of people with disabilities. Overall, this comprehensive snapshot provides a useful starting point to canvas disability-related challenges facing Indonesia. Moreover, these data can potentially serve to track the progress of disability inclusion over time.

Apart from disability, mental health is another serious health challenge that tends to be forgotten in national policy discourse. Starting with two vignettes of individuals living with mental illness, in Chapter 11, Aliza Hunt, Sandersan Onie and Hans Pols call for urgent action to make mental health a priority in Indonesia's national health agenda. Drawing upon their collective expertise and long experience of field-based research in the country, the authors complement the vignettes with a comprehensive mapping of the prevailing mental health system, mental health data, existing challenges to do with treatment gaps, and the strategies employed

by various civil society, consumer groups and for-profit organisations to overcome such challenges. They further provide a nuanced discussion on the impact of COVID-19, juxtaposing the rising demands for mental health services with a welcome rise in awareness of mental health issues more broadly.

The final chapter in this volume describes the remarkable 10-year journey of an innovation in public health policy that may help solve a persistent health problem in Indonesia. In Chapter 12, Adi Utarini discusses the public health intervention that was conducted by her and her colleagues from the World Mosquito Program Yogyakarta to control dengue, a viral infection transmitted by the *Aedes* mosquito. The intervention involves injecting *Aedes* mosquitoes with a *Wolbachia* bacterium, which inhibits replication of the dengue virus inside the mosquitoes. As part of a randomised control trial, the *Wolbachia*-infected mosquitoes were released into communities in parts of Yogyakarta. The prevalence of mosquitoes in the treatment area was quickly dominated by the *Wolbachia*-infected mosquitoes. By comparing the treatment and control areas, Utarini and her team found that the intervention reduced the incidence of dengue by 77 per cent, a result that was celebrated by the international scientific community. The chapter recounts the long path taken by the project and offers valuable lessons on the challenges in applying innovative research as a public health intervention, which include the efforts to earn buy-in from the government and other stakeholders, and the somewhat unorthodox ways that were used to gain public trust and acceptance.

Conclusion

This book explores questions of how Indonesia's quest for longer and healthier lives of its people has unfolded in the past and present, and what this means for the future. Drawing on the interdisciplinary expertise of our contributors, the chapters in this volume examine longstanding and emerging health challenges, and identify lessons learnt and opportunities for health system strengthening in the country. All contributors stress the immediate need for reliable and accessible data on health services, health financing, HRH, health supplies and health surveillance data for formulating health policy and research. With several chapters examining the political dynamics that shape health policies and affect the supply side of the health system, we show how health transition is intrinsically situated within broader socioeconomic and political contexts. Discussions on how Indonesians navigate the barriers to access services as they come into contact with the health system underline the enduring problems of

regional and socioeconomic inequalities, as well as persistent stigma and discrimination afflicting marginalised populations.

On 15 July 2019, in his first speech at the beginning of his second term, President Joko Widodo stated that human capital development is the key to Indonesia's future. There is evidence that in terms of some important health outcomes, Indonesia has been moving in the right direction. The COVID-19 pandemic has disrupted the trajectory, exposing the existing vulnerabilities of the health system and causing major setbacks in most areas of health, from which the country has not fully recovered. At the same time, the pandemic has also given the impetus for the country to strengthen its health system and to move to a new path that leads to faster improvements in health. As summarised by the pioneering work of Jack and Pat Caldwell on health transition in developing nations: 'most effective health services are also the most democratic in that they are easy to access in all parts of the country and to every social group while not imposing high-cost barriers' (1991: 14). With several key infrastructures—including the promise of universal health coverage—in place, Indonesia might be on track to reach the ultimate goal of health for all, but it might be a long and arduous journey after all.

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