PRAKARSA
Welfare Initiative for Better Societies

UNIVERSAL HEALTH COVERAGE:
TRACKING INDONESIA'S PROGRESS

PRAKARSA
Welfare Initiative for Better Societies

RESEARCH REPORT

Universal Health Coverage: Tracking Indonesia's Progress

Universal Health Coverage: Tracking Indonesia's Progress

Herawati
Robert Franzone
Adrian Chrisnahutama

PRAKARSA
Welfare Initiative for Better Societies

2020

Universal Health Coverage: Tracking Indonesia's Progress

ISBN: 978-623-91350-3-4

Authors:
Herawati , Robert Franzone, Adrian Chrisnahutama

Reviewers:
Eka Afrina Djamhari, Cut Nurul Aidha, Herni Ramdlaningrum

Managing Director:
Ah Maftuchan

Design and Layout:
Bambang Nurjaman

Referencing:
Herawati, Franzone, R., Chrisnahutama, A. 2020. Universal Health Coverage: Tracking Indonesia's Progress. Perkumpulan PRAKARSA: Jakarta.

Keywords:
Universal Health Coverage, Sustainable Development Goals, Inequality

Publisher:
Perkumpulan PRAKARSA
Rawa Bambu 1 Blok A No. 8E
Pasar Minggu, Jakarta Selatan
Daerah Khusus Ibukota Jakarta 12520
Indonesia

Disclaimer:

This report is based on "Universal Health Coverage: Tracking Indonesia's Progress" which is supported by *Brot fur die Welt* (BfdW). This report is the responsibility of the authors.

GLOSSARY

ART	Anti-Retroviral Therapy
Askeskin	*Asuransi Kesehatan bagi Masyarakat Miskin*, Health Insurance for Poor Family
BPJS	*Badan Penyelenggara Jaminan Sosial*, Social Security Agency
BPJS-K	*Badan Penyelenggara Jaminan Sosial – Kesehatan*, Healthcare and Social Security Agency
BPS	*Badan Pusat Statistik*, Central Bureau of Statistics
DJSN	*Dewan Jaminan Sosial Nasional*, The National Social Security Council
DPT	Diphtheria-Pertussis-Tetanus
FCTC	Framework Convention on Tobacco Control
HepB3	Hepatitis B 3rd Dose
HIV	Human Immunodeficiency Virus
ID	Infectious Disease
IHR	International Health Regulations
JKN	*Jaminan Kesehatan Nasional*, National Health Insurance
Jamkesmas	*Jaminan Kesehatan Masyarakat,* Public Health Insurance
MDGs	Millennium Development Goals
MMR	Maternal Mortality Ratio
NCDs	Noncommunicable Diseases
ORS	Oral Rehydration Solution
RISKESDAS	*Riset Kesehatan Dasar*, Basic Health Research
RMNCH	Reproductive, Maternal, Newborn and Child Health
SC	Service Capacity and Access
SDGs	Sustainable Development Goals
SUPAS	*Survei Penduduk Antar Sensus*, Intercensal Population Survey

SUSENAS	*Survei Sosial Ekonomi Nasional*, The National Socioeconomic Survey
TNP2K	*Tim Nasional Percepatan Penanggulangan Kemiskinan*, The National Team for the Acceleration of Poverty Reduction
UHC	Universal Health Coverage
WHO	World Health Organization
TB	Tuberculosis
TBAs	Traditional Birth Attendants

TABLE OF CONTENTS

TABLE OF TABLES, FIGURES, CHARTS AND MAPS

PREFACE

The right to a prosperous life and the right to access health services are the rights of citizens enshrined in the Constitution of Indonesia. The obligation to provide health protection and services is specifically regulated in Law No. 40/2004 under the National Social Security System (SJSN). As a commitment to provide universal health coverage (UHC), the government of Indonesia launched National Health Insurance (*Jaminan Kesehatan Nasional* – JKN) in 2014. Based on data from the Healthcare and Social Security Agency (Badan Penyelenggara Jaminan Sosial – BPJS Health), JKN membership has reached 224.1 million or 83 per cent of the total population of Indonesia. This number is below the government's target of 100 per cent coverage in 2019.

This report examines progress towards UHC in Indonesia. By adopting frameworks developed by the World Health Organization (WHO), this study measures UHC in two dimensions: (1) Service Coverage Index, measuring the progress of health service coverage in all provinces in Indonesia and, (2) Financial protection, measuring catastrophic spending and impoverishment due to out-of-pocket spending on health care in all provinces in Indonesia.

PRAKARSA, as a think-tank organization that participates in advocating for the importance of social protection in Indonesia, believes it is important to assess progress towards achieving UHC in order to identify highlight areas that need improvement. This report will provide recommendations for the government and other key stakeholders to further develop strategic policies to improve accessibility to and the quality of the national health insurance program.

This report contributes to ongoing efforts to improve access to health coverage and well-being of Indonesians. Indonesia needs to continue strengthening efforts for achieving UHC as mandated in the Constitution. Failure to do so will mean not all citizens will have access to affordable health coverage.

Thank you and congratulations to Herawati, Robert Franzone, and Adrian Chrisnahutama as the main researchers who wrote this report. Thank you to Herni Ramdlaningrum, Eka Afrina Djamhari, and Cut Nurul Aidha and others who supervised and provided constructive criticism to strengthen the quality of this report. Thank you also to all parties, both internal and external, who provided support toward this report, especially to Brot fur die Welt. Hard work will never betray the results, and the best of good intentions are those carried out in the form of deeds.

I wish you an enjoyable and informative read. We welcome feedback and further discussion on this important policy issue.

South Jakarta, January 2020

Ah Maftuchan
PRAKARSA Executive Director

EXECUTIVE SUMMARY

Indonesia's health system is transitioning to universal health coverage (UHC) with the aim of providing access to health for the entire population. The National Health Insurance (Jaminan Kesehatan Nasional-JKN), is the national health program dedicated to achieving UHC as mandated under Law No. 40/2004. UHC has generally only been explored in terms of participation levels of JKN. However, UHC has broader dimensions, namely service coverage, service quality, and financial protection for health. Therefore, a more comprehensive analysis is required to access UHC progress in Indonesia.

The World Health Organization (WHO) in 2017 published a global progress report of UHC titled 'Universal Health Coverage Tracking: 2017 Global Monitoring Report'. The framework adopted in that report to measure UHC progress is based on Sustainable Development Goal (SDG) 3, target 3.8 and indicators 3.8.1 (service coverage) and 3.8.2 (financial protection). Applying this framework, PRAKARSA conducted a study on UHC progress in Indonesia based on 2018 data. This study aims to measure progress made toward service coverage and measure the financial difficulties experienced by the community due to out-of-pocket spending on health expenditure.

There are four dimensions and 14 indicators used to track UHC service coverage in Indonesia. The index is obtained from the average value of the index of the four dimensions where the index value of each dimension is obtained from the average index value of a set of indicators. Service coverage index presents a numerical value based on a scale of one to one hundred, with the higher the index the better the service coverage. Meanwhile,

financial protection is measured through incidence of catastrophic spending and impoverishment due to out-of-pocket spending on health. Data for out-of-pocket spending on health care is collected from the national socioeconomic survey, which consists of: (1) costs for medical / curative services (including delivery costs and medicine that cannot be specified), (2) costs for medication purchased at pharmacies, (3) costs for preventive services, and (4) transportation costs for health-seeking. Data for this research was collected from Basic Health Research (*Riset Kesehatan Dasar* – RISKESDAS) 2018 from Ministry of Health's, National Socio-Economic Survey (*Survei Sosial Ekonomi Nasional* – SUSENAS) 2018 from the Central Bureau of Statistics (*Badan Pusat Statistik*– BPS) and other sources as complementary data.

Indonesia's service coverage index is 60 in 2018, showing a slight increase from 49 in 2015, according to the WHO. Therefore, achieving UHC is proving to be a difficult task and this report highlights areas where work is needed to further improve UHC in Indonesia. There are gaps in service coverage between regions, such as Java and areas outside of Java. DKI Jakarta and DI Yogyakarta are provinces demonstrating the highest indexes, while West Sulawesi, East Nusa Tenggara and North Maluku are the provinces with the lowest indexes. Noncommunicable diseases have the lowest index with only 49, while the dimension of service capacity and access have the highest index at 67. Meanwhile, the index for infectious diseases is 59 and 65 for reproductive, mother, newborn, and child health.

Regarding financial protection, out-of-pocket spending on health care in Indonesia is still relatively high. Thirteen million people spend more than ten per cent and 2.5 million people spend more than 25 per cent of their total consumption for health care. In addition, there are 0.22 per cent, around 600 thousand people, of the population impoverished due to out-of-pocket spending on health care, based on the USD

1.90 per capita per day poverty line. Furthermore, 0.74 per cent, approximately two million, of the population are impoverished due to out-of-pocket health expenditure, based on the poverty line of USD 3.10 per capita per day. As for the national poverty line per capita per month, there are 0.41 per cent, approximately one million people, of the population who are impoverished due to out-of-pocket spending on health care.

Achieving UHC remains a challenge for Indonesia. Based on the analysis, there are five findings that need to be addressed. First, public awareness of health facilities provided by the government are still lacking. This can be seen from the the screening for cervical cancer indicator, with a national index of only nine. Second, the high prevalence of smoking and unhealthy lifestyles contributes significantly to the low index for noncommunicable diseases. Third, out-of-pocket spending on health care in Indonesia is still high, hindering efforts in providing financial protection, with almost 13 million people spending more than 10 per cent of their total consumption on health services. Fourth, there is a gap between provinces in Java and the western parts of Indonesia with other regions. This disparity results from the uneven distribution of health workers and inadequate infrastructure in poorer areas. Fifth, provinces with a low service coverage index tend to have low catastrophic spending on health. For example, Papua and East Nusa Tenggara are provinces with high poverty rates and have low service coverage indexes with low catastrophic spending. Low catastrophic incidence could indicate access to health services is inadequate due to geographical condition, poor health infrastructure, and health inequality in their ability to seek healthcare is limited due to their low financial situation.

Based on our findings, there are four thematic areas that need attention if UHC is to be achieved in Indonesia: (1) Lowering inequality between provinces by providing adequate

health infrastructure and facilities, including better distribution of health workers, especially in poor provinces that have low service coverage index, (2) Strengthen health promotion and preventive efforts through cross-sectoral coordination. National and local governments can work together with communities and religious leaders in developing communication strategies to deliver health information to the public. (3) Conducting further research into potential excise taxes as efforts for encouraging healthy lifestyles, and (4), formulating more comprehensive surveys to identify components of out-of-pocket spending contributing to high catastrophic incidence.

This page intentionally left blank

1 INTRODUCTION

> **“ Indonesia’s health system is transitioning into universal health coverage (UHC), with the current system aiming to provide universal health care by the end of 2019” – TNP2K, 2015**

As we enter 2020, analysis is required to review the extent to which National Health Insurance (Jaminan Kesehatan National – JKN) is on the path to achieving UHC. This report will seek to illustrate Indonesia’s current position in achieving UHC using frameworks established by the World Health Organization (WHO).

Adopting the WHO’s definition of UHC “that all people have access to the health services they need, when and where they need them, without financial hardship” (The World Health Organization, 2019). Indonesia requires a system that adequately caters for nearly 270 million people (The World Bank, 2019). The current system, JKN, which was launched on 1 January 2014 (Maharani et al., 2019), is the consolidation of multiple previous health schemes that will become the most extensive single-payer social health insurance program in the world (Erlangga et al., 2019).

Progress toward achieving UHC in Indonesia, is hindered by, amongst others, the triple burden of diseases as discussed by Moeloek (2017); noncommunicable diseases (NCDs), communicable diseases, and the neglected tropical diseases. Diseases, such as tuberculosis (TB), have seen greater spread due to high rates of urbanisation and population growth (Moeloek, 2017). Common NCDs, such as stroke, heart disease, and diabetes mellitus, have been the leading cause of morbidity and mortality in Indonesia since 2010 and has led to NCDs affecting all socioeconomic classes, affecting younger and older people (Moeloek, 2017). High rates of

smoking in Indonesia, an unhealthy diet and a lack of physical activity are all contributing to the burden of NCDs and rising obesity in Indonesia (Moeloek, 2017).

Policymakers need to prepare for a changing population and how that will impact the health system. The Indonesian population is still relatively young, with a current median age of 28.8 years (Worldometers, 2019). Although Indonesia currently has a relatively young population, it is expected to transition into an ageing population within the next 30 years (Adioetomo and Mujahid, 2014). It is predicted that the proportion of people in Indonesia over the age of 50 in 2030 will be approximately 25% and about 10% for those older than 65 years (Agustina et al., 2019). This demographic shift will dictate how the health system will need to operate and provide adequate services to the population.

1.1 Pathway to Universal Health Coverage in Indonesia

The first scheme to cover informal workers and the poor in Indonesia, and the first of a series of health reforms before the introduction of JKN, was called *Askeskin (Asuransi Kesehatan untuk Keluarga Miskin, Health Insurance for Poor Families)* (Sparrow et al., 2013). Introduced in 2005, *Askeskin* was a subsidised health insurance program to provide financial protection from health shocks for the poor and informal workers (Sparrow et al., 2013). This was Indonesia's first attempt at providing universal coverage for its citizens, with a target population of 60 million. The program provided basic outpatient care, inpatient care in some hospitals, an obstetric service package, mobile health services and services for remote areas or islands, immunisation programs, and access to medicines (Sparrow et al., 2013). In 2008, the *Askeskin* scheme was further developed into a program called *Jamkesmas (Jaminan Kesehatan Masyarakat, Public Health Insurance)* (Brooks et al., 2017). This program aimed to provide health access for the near-poor also, through the community health centres (*Puskesmas*) and some basic government or private hospitals

(Brooks et al., 2017). *Jamkesmas* provided free health services that included comprehensive maternity benefits, including antenatal care, institutional delivery, and postnatal care (Brooks et al., 2017). Following the implementation of *Jamkesmas*, a national strategy was developed in 2004 that saw the development of a comprehensive framework for social security, and included plans to establish UHC for Indonesia (Mahendradhata et al., 2017). This scheme was to provide generic social security cover that included health care, life insurance, work-related injuries, and care for older people (Mboi, 2015). As discussed above, mainly civil servants, the police, and military were already covered by the program when it was adopted in 2004, so a more significant focus was created to increasing health to poor (Mboi, 2015).

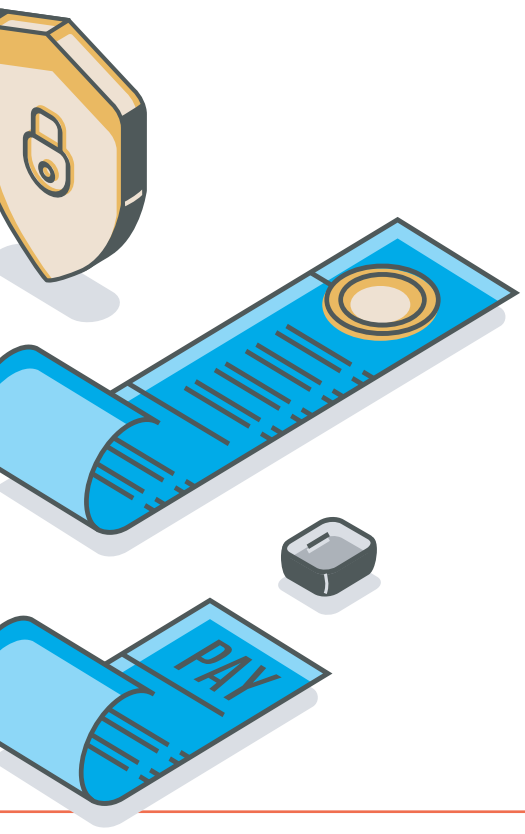
This pathway to UHC in Indonesia started in 2004 under Law No. 40/2004 (Mboi, 2015, Vidyattama et al., 2014). The launch of JKN in 2014 is designed to provide health care for the entire Indonesian population with four main objectives:

- To enable people to access healthcare services without financial hardship;
- To perform cost-contained and quality-controlled healthcare services;
- To strengthen healthcare services at primary and referral health facilities;
- To prioritise preventive and promotive measures in rendering healthcare services to reduce the prevalence of disease, and to lower the number of sick people with efficient healthcare services (The World Health Organization Indonesia, 2019)

Responsibilities of health services are divided between the central, provincial, and district governments, and a mixture of private and public providers make up JKN (Mahendradhata et al., 2017). The overall health system in Indonesia is said to have weakened with decentralisation in the late 1990s, with reporting, data and communication not managed centrally (Mahendradhata et al., 2017).

JKN is managed through a third party called Healthcare and Social Security

Agency (*Badan Penyelenggara Jaminan Sosial untuk Kesehatan-BPJS-K*) and is responsible for the administration of JKN (Mahendradhata et al., 2017). BPJS-K is monitored by the National Social Security Council, *Dewan Jaminan Sosial Nasional* (DJSN), which reports directly to the president of Indonesia (Mahendradhata et al., 2017).


PAY


A
DESI
EARCH

2 OBJECTIVES

As mentioned in the introduction, this report will generate an overview of the progress made by JKN to achieve UHC objectives and SDGs. The objectives of this report are:

1. To report on progress made toward service coverage in achieving UHC in all Indonesian provinces.
2. To report on out-of-pocket spending for health care in Indonesia and the impact it has on providing financial protection to the population.

Beneficiaries of this report include Indonesian policymakers, the Ministry of Health, and others advocating for a more equal and universal health system in Indonesia. This report advocates for further and ongoing monitoring of UHC in Indonesia using SDGs' framework.

This report was prepared by Perkumpulan PRAKARSA, a Non-Government Organisation-based think tank in Jakarta, Indonesia. PRAKARSA's commitment to improving welfare initiatives for a better society extends to improving the health standards of Indonesians.


Team
Target
Plan
Do
Act
Check
Cloud
Success
IDEA
Team
Target
Key
Production
Plan

3 METHODOLOGY

This report adopted the SDGs framework for tracking UHC in Indonesia. SDG 3, *Good Health and Well-being*, is based on ensuring healthy lives and promoting well-being for all at all ages (The United Nations, 2019). The SDG 3 consists of 13 targets, which include corresponding indicators for each target (The United Nations, 2019). This report focuses on target 3.8, achieving UHC with financial risk protection. The indicators within target 3.8 are based on service coverage and financial protection, which are respectively called indicators 3.8.1 and 3.8.2 (The United Nations, 2019). The above framework, along with trace indicators from the '*Tracking Universal Health Coverage: 2017 Global Monitoring Report*', compiled by the World Health Organization and the World Bank, were used to build a contextually appropriate framework to track UHC in Indonesia.

Data for this research was collected from Basic Health Research (*Riset Kesehatan Dasar*-RISKESDAS) 2018, from Ministry of Health's SUSENAS 2018, from BPS and other data sources such as provincial health reports and the World Bank. The data was calculated based on the above frameworks by the authors to generate all indexes and estimations provided in the results section. All the maps, charts, and tables found in this report use data from the above data sources and were created by the authors.

3.1 Service Coverage

The framework used to track UHC service coverage in Indonesia consists of four dimensions, which are consistent with those found in the '*Tracking Universal Health Coverage: 2017 Global Monitoring Report*'; (1) Reproductive, Maternal, Newborn and Child Health (RMNCH), (2) Infectious Diseases, (3) Noncommunicable Diseases, and (4) Service Capacity and Access (WHO and World Bank, 2017). For each of those four dimensions, a set

of indicators were established that were contextually appropriate for Indonesia, based on available data and existing efforts made by the health system. The indicators used in this report are as follows:

Reproductive, Maternal, Newborn and Child Health (RMNCH):

1. Demand for family planning satisfied by modern methods (% of married women with demand for family planning);
2. Births attended by a skilled health worker;
3. Immunisation (DPT, HepB3 and Measles); and
4. Oral rehydration solution (ORS) therapy for child diarrhoea.

Infectious Diseases:

1. Tuberculosis effective treatment coverage (Case detection rate (% all forms) and Treatment Success Rate (% of new cases);
2. People living with HIV receiving antiretroviral treatment (ART) (%); and
3. People using at least basic sanitation services (% of population).

Noncommunicable Diseases:

1. Prevalence of normal blood pressure;
2. People with diabetes receiving treatment;
3. Cervical cancer screening (Women 30–49yrs) %; and
4. Adults aged ≥ 15 years not smoking tobacco in the last 30 days (%).

Service Capacity and Access:

1. Hospital beds per capita;
2. Health worker density (Physicians per 100,000 people; Surgeons per 100,000 people and other health workers); and
3. Access to essential medicines.

To calculate a service coverage index for indicator 3.8.1, we followed the method used in the '*Tracking Universal Health Coverage: 2017 Global Monitoring Report*'. For the majority of the indicators, their natural scale was used. For example, indicator two, births attended by a skilled health worker, the percentage found for each province to include in the formula. For each of the four dimensions and corresponding

indicators, Table 1 below explains the method used to calculate an index for each dimension and method for calculating a final index value.

Table 1 Service Coverage Indicators

Dimension	Indicator	Formula	Method
Reproductive, Maternal, Newborn and Child Health (RMNCH)	Demand for family planning satisfied by modern methods (% of married women with demand for family planning)	$\left(\frac{X_{FamilyPlan}}{100}\right) \times 100 = I_{FamilyPlan}$	This dimension uses only the natural scale value for each included indicator. The percentage of indicator was collected for each province, totalled together and then divided by four to provide a final index for RMNCH. The immunisation indicator was the average of the three vaccines. For ORS, the most used brand of ORS in Indonesia was used for data representation, called Oralit.
	Births attended by a skilled health worker.	$\left(\frac{X_{BirthsAttend}}{100}\right) \times 100 = I_{BirthsAttend}$	
	Immunisation (DPT, HepB3 & Measles)	$\left(\frac{X_{DPT}}{100}\right) \times 100 = I_{DPT}$ $\left(\frac{X_{HepB3}}{100}\right) \times 100 = I_{HepB3}$ $\left(\frac{X_{Measles}}{100}\right) \times 100 = I_{Measles}$ $\frac{I_{DPT} + I_{HepB3} + I_{Measles}}{3} = I_{Immunisations}$	
	ORS therapy for childhood diarrhoea	$\left(\frac{X}{100}\right) \times 100 = I_{ORS}$	

Infectious Diseases	Tuberculosis effective treatment coverage	$\left(\frac{X_{CDR}}{100}\right) \times 100 = I_{CDR}$ $\left(\frac{X_{TSR}}{100}\right) \times 100 = I_{TSR}$ $\frac{I_{CDR} + I_{TSR}}{2} = I_{TBeffective}$	For the infectious diseases' dimension, the natural scale value was used. The sum of the three indicators were then divided by three, to provide an index for infectious diseases. The indicator 'use of insecticide-treated bed nets (% of under-five population), was excluded from the calculation of this index. A decision was made to omit that indicator, as pre-assessment concluded that there are only several provinces that experience endemic malaria in Indonesia.
	People living with HIV receiving ART (%)	$\left(\frac{X_{HIV}}{100}\right) \times 100 = I_{HIV}$	
	People using at least basic sanitation services (% of population)	$\left(\frac{X_{Sanita}}{100}\right) \times 100 = I_{Sanita}$	

Non-communicable Diseases	Prevalence of normal blood pressure	$\frac{(X_{NormalBlood} - 50)}{(100 - 50)} \times 100 = I_{NormalBlood}$	To obtain the prevalence of normal blood pressure, data for people who do not have hypertension and those who are currently taking medication to control their hypertension were summed together. The result was then rescaled into a formula obtained from the WHO Tracking Report to calculate the index. The diabetes' indicator and the cervical cancer indicator was based on their natural scale. The smoking indicator was calculated by using the
	People with diabetes receiving treatment	$\left(\frac{X_{Diabetes}}{100}\right) \times 10 = I_{Diabetes}$	
	Cervical cancer screen (Women 30-49yrs) %	$\left(\frac{X_{Screening}}{100}\right) \times 100 = I_{Screening}$	
	Adults aged ≥ 15 years not smoking tobacco in the last 30 days (%)	$\frac{(X_{NoSmoking} - 50)}{(100 - 50)} \times 100 = I_{NoSmoking}$	

			percentage of those who were non-smokers and then it was rescaled using a formula to calculate the index.
Service Capacity and Access	Hospital beds per capita	$\left(\frac{X_{Beds}}{\frac{10}{18}}\right) \times 100 = I_{Beds}$	This dimension comprised of three indicators. The ratio for hospital beds per 100,000 people was used to calculate an index based on the recommend WHO formula. For ratios that were above 18 beds per 10,000 people, they were automatically given an index of 100 based on the WHO's Tracking Report's methods.
	Health worker density	$\left(\frac{X_{Physic}}{\frac{100}{0.9}}\right) \times 100 = I_{Physic}$ $\left(\frac{X_{Surgeons}}{14}\right) \times 100 = I_{Surgeons}$ $\left(\frac{X_{Nurses} + X_{Midwives} + X_{CHW}}{\frac{100}{4.45}}\right) \times 100 = I_{Other}$ $\frac{I_{Physic} + I_{Surgeons} + I_{Other}}{3} = I_{HealthWorker}$	
	Access to essential medicines	$\left(\frac{X_{Medicines}}{100}\right) \times 100 = I_{Medicines}$	

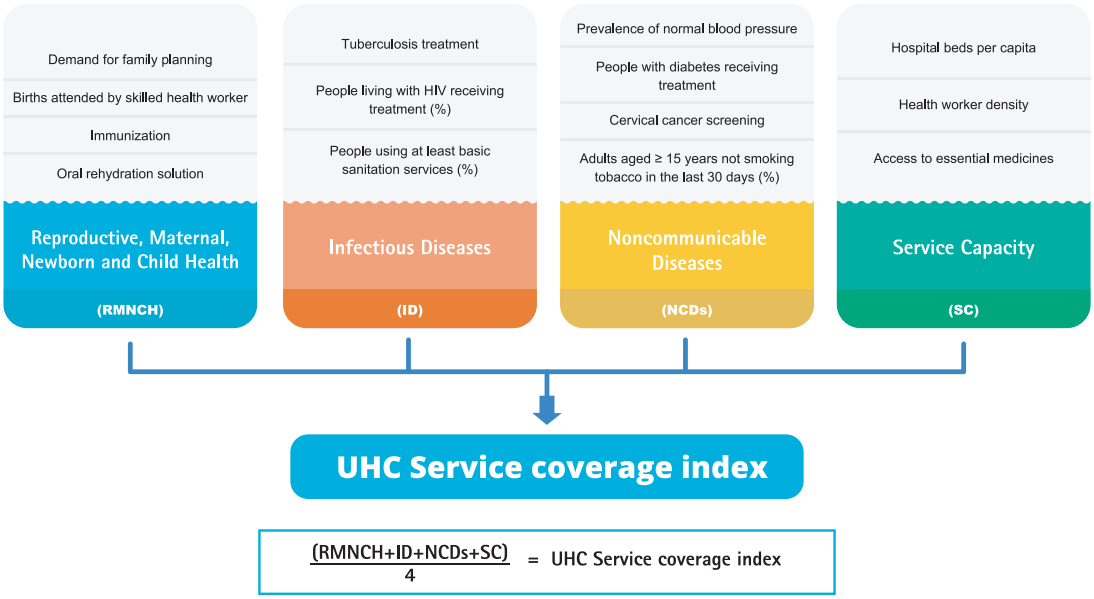
			The health worker density represents all health workers. It is made up from the total number of physicians (threshold of 0.9 per 1000) and surgeons (threshold of 14 per 100,000), and the sum of nurses, midwives, and community health workers (The sum of all three divided by 100 then divided by a threshold of 4.45 obtained from the WHO), and then divided by three. The indicator for access to essential medicines was calculated on its natural scale (percentage).

			An original indicator that is found in the 2017 monitoring report, IHR core capacity index, was not included in tracking UHC for Indonesia as data for provincial level is not available.

Source: World Health Organization, compiled by Authors.

Notes: X is the percentage of each indicator; I is the index of each indicator.

Figure 1 Service Coverage Index Formula



Source: World Health Organization, compiled by Authors

3.2 Financial Protection

Financial protection requires families who receive needed health care do not suffer financial hardship as a result (WHO and World Bank, 2017). Following the WHO's 2017 Global Monitoring Report on universal health coverage (UHC), there are two dimensions this report will focus on; catastrophic spending on health and impoverishment spending on health.

Catastrophic spending is measured by out-of-pocket spending (without reimbursement by a third party) exceeding a household's ability to pay (WHO and World Bank, 2017). It is based on out-of-pocket expenditures exceeding 10% and 25% of a household's total income or consumption, which is adopted from the Sustainable Development Goals' 3.8.2 framework (WHO and World Bank, 2017). This report used the household consumption approach to calculate catastrophic spending in Indonesia.

Impoverishment spending on health occurs when a household is forced to divert spending away from essential needs, such as food, shelter, and clothing (WHO and World Bank, 2017). This type of spending occurs where the lack of spending on these essential items is in line with levels demonstrated below the poverty line (WHO and World Bank, 2017). Even though impoverishing poverty on health is not part of the SDGs' 3.8 indicator, it is important to measure because it links UHC directly with the poverty reduction goal (Wagstaff et al., 2018). This report uses three poverty line values: the USD 1.90 per day, USD 3.10 per day, and the national poverty line set by the Indonesian government. Please note that the poverty line in Indonesia varies among provinces, and the average national poverty line is IDR 401,220 per capita per month in 2018.

3.3 Consumption and Out-of-pocket Spending on Health

Measuring income in low-income countries is difficult to apply because households can produce and consume food from their lands, which is not included as part of their income (Deaton and Zaidi, 2002). Moreover, consumption is believed to be better in capturing long-run

welfare compared to current income (World Bank, 2001). This report uses the consumption approach to measure out-of-pocket spending on health and poverty impoverishment in Indonesia, following the framework used by the World Health Organization (WHO).

Out-of-pocket spending is defined by the World Health Organization and the World Bank.

> “Out-of-pocket payments are those made by people at the time of getting any type of services (preventive, curative, rehabilitative, palliative or long-term care). This excludes any prepayment for health services, for example in the form of taxes or specific insurance premiums or contributions and, where possible, net of any reimbursements to the individual who made the payments.” – WHO and World Bank, 2017

Data for out-of-pocket money spending on health care for this report is collected from the national socioeconomic survey, which consists of: (1) costs for medical / curative services (including delivery costs and medicine that cannot be specified), (2) costs for medicines purchased at the pharmacies, (3) costs for preventive services, and (4) transportation costs for health-seeking.

This page intentionally left blank

4 RESULTS AND DISCUSSION

4.1 Service Coverage Index

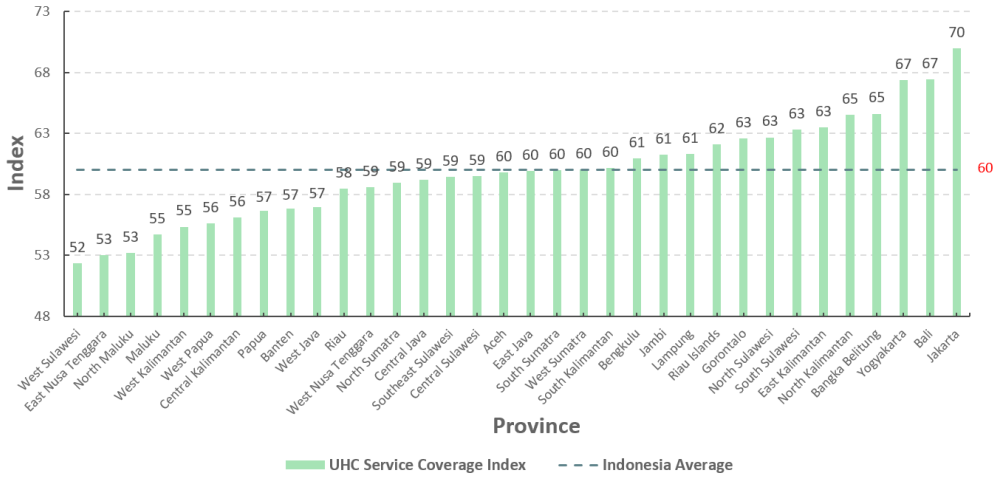
Index Value Indonesia: 60

This report shows progress made toward UHC in Indonesia, with Map 1 below illustrating a service coverage index value of 60 for Indonesia in 2018. Compared to the index published in the *Tracking Universal Health Coverage: 2017 Global Monitoring Report*, it demonstrates a slight increase from 49 for Indonesia in 2015 (WHO and World Bank, 2017). Service coverage index presents a numerical value based on a scale of one to one hundred, with the higher the index the better the result. The value represents achievements made toward meeting people's needs in promotive, preventative, curative, rehabilitative, and palliative health, and whether or not those services are of sufficient quality to achieve potential health gains (WHO and World Bank, 2017). JKN implementation is in its fifth year, and nationally, this research demonstrates a relatively low result. Achieving UHC by the end of 2019 is not feasible, and this report highlights the areas where work is needed to not only extend the coverage of UHC in Indonesia but also how strategies can be used to improve the quality and assist in meeting SDG targets.

Map 1 UHC Service Coverage Index, Indonesia

Source: Authors' calculation.

Chart 1 UHC Service Index, by Province



Source: Authors' calculation.

The research indicates that for service coverage, all four dimensions score relatively low for a health scheme with ambitions to achieve UHC by the end of 2019. High inequity and inequality are still present, with densely populated areas, such as Java, showing more positive results than outer areas. Narratives around the rural and urban gaps are supported by the research, with cities such as Jakarta, Yogyakarta, and Bali presenting better performance for UHC for most of the indicators. Out of the 34 provinces, 17 are below the national average index of 60, while only one province, Jakarta, has an index of 70 or above for all dimensions.

The high inequality in service coverage between provinces is shown with most of the provinces that have an index of 60 or above located in Java, including Jakarta. In comparison, there are only three provinces in eastern parts of Indonesia that have an index of 60 or above, they are, North Sulawesi, South Sulawesi, and Gorontalo. Yogyakarta, also located on Java, has the second-highest index in the research, with a UHC service coverage index of 67. The province with the lowest index is West Sulawesi, with an index of only 52. West Sulawesi scores low indexes for all dimensions, especially for infectious diseases and noncommunicable diseases (NCDs).

West Java, although not having the lowest indexes, surprisingly scores relatively low in most dimensions, considering its proximity to the nation's capital, Jakarta. The overall index for West Java is 57, with the dimension for NCDs having an index of only 43.

Detailed analysis for each dimension is discussed below; however, there are a few indicators that are cause for concern and warrant discussion in this section. Screening for cervical cancer for women aged between 30 and 49, scored a mere nine as an index, even though, screening is available free of charge through JKN. Treatment for people living with HIV (PLWHIV) has an index of only 34, indicating that only 34% of those living with HIV are receiving adequate treatment and care required to live healthy lives. Health worker density, which represents the health workforce, has a poor index of only 38. This low result is a concern for treatment and care for the growing proportion of Indonesians who have NCDs and the high prevalence of smoking in Indonesia. Efforts to tackle smoking rates in Indonesia also demonstrated poorly, with an index of only 44.

If effective service coverage indicators are a way of measuring a country's efforts in providing quality health services to meet people's needs, Indonesia is still far from reaching optimal results (WHO and World Bank, 2017). Effective service coverage entails the required services to meet a population's ability to have access to quality health care and potential health gains, and this research demonstrates many areas are still lacking to provide that to Indonesians (WHO and World Bank, 2017).

Table 2 Service Coverage Indexes

Province	RMNCH	Infectious Diseases	NCDs	Service Capacity and Access	UHC Service Coverage
Aceh	55	56	51	77	**60**
North Sumatra	57	62	48	69	**59**
West Sumatra	65	54	53	69	**60**
Riau	60	63	51	60	**58**
Jambi	69	57	52	67	**61**
South Sumatra	67	61	49	62	**60**
Bengkulu	70	57	49	68	**61**
Lampung	71	65	51	58	**61**
Bangka Belitung Islands	70	66	55	66	**65**
Riau Islands	65	61	52	70	**62**
Jakarta	70	73	51	86	**70**
West Java	67	65	43	53	**57**
Central Java	69	62	46	60	**59**
Yogyakarta	73	61	51	84	**67**
East Java	70	61	47	61	**60**
Banten	64	64	48	51	**57**
Bali	76	60	56	77	**67**
West Nusa Tenggara	71	54	51	58	**59**
East Nusa Tenggara	59	52	48	52	**53**
West Kalimantan	63	54	46	59	**55**
Central Kalimantan	62	57	46	59	**56**
South Kalimantan	67	62	47	64	**60**
East Kalimantan	68	61	46	78	**63**
North Kalimantan	71	66	51	71	**65**
North Sulawesi	65	58	48	79	**63**
Central Sulawesi	62	56	49	70	**59**
South Sulawesi	63	69	49	73	**63**
Southeast Sulawesi	64	61	50	63	**59**
Gorontalo	66	62	49	73	**63**
West Sulawesi	57	45	48	59	**52**
Maluku	51	50	49	69	**55**
North Maluku	51	50	49	62	**53**
West Papua	51	51	51	70	**56**
Papua	63	50	49	64	**57**
Indonesia	**65**	**59**	**49**	**67**	**60**

Source: Authors' calculation.

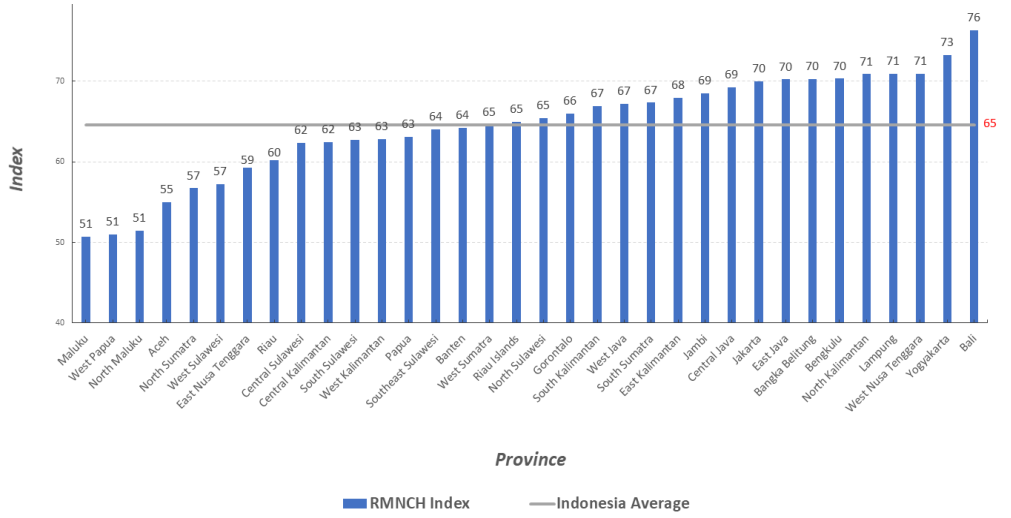
4.1.1. Dimension One: Reproductive, Maternal, Newborn and Child Health

This dimension includes four indicators to represent all aspects of maternal and child health; demand for family planning satisfied by modern methods, the number of births attended by a skilled health worker, and three essential immunisations (DPT, HepB3 and Measles).

Map 2 Reproductive, Maternal, Newborn, and Child Health Index, Indonesia

Source: Authors' calculation.

Chart 2 Reproductive, Maternal, Newborn, and Child Health Index, by Province



Source: Authors' calculation.

The results of this research for RMNCH, as shown in Map 2 and Chart 2, demonstrate many provinces in eastern parts of Indonesia and northern Sumatra having low indexes for the RMNCH index. The majority of Java demonstrate higher indexes, as well as Bali. Results for each indicator are varied across the provinces, with many inconsistencies between the main islands.

Most provinces in Indonesia have scored relatively low for demand for family planning satisfied by modern methods. An index of 58 is calculated nationally. The highest calculated index at 71 is the province of Bengkulu and the lowest calculated index at 25 is calculated for West Papua in far eastern Indonesia. The national index is a disappointing outcome for Indonesia, which was known to have successful family planning programs that other countries would seek advice from (The John Hopkins University, 2019). This was when family planning decisions were made at a national level up until the late 1990s; however, decentralisation has spread government responsibilities and resources over 535 district governments, and now Indonesia has a relatively low use of modern contraception methods in contrast to other Asian countries (The John Hopkins University, 2019). Currently, a program is being rolled out across the country called MyChoice, which is funded by the Bill and Melinda Gates Foundation (The John Hopkins University, 2019). The program has been partnering with two of the largest Muslim organisations in Indonesia to promote family planning information in religious activities (The John Hopkins University, 2019). Increasing the use of modern contraception methods is the main focus of MyChoice, including a range of media platforms that promote more accessible access to modern contraception so women can have more options in choosing from a variety of modern contraception methods (The John Hopkins University, 2019). However, more work needs to be undertaken to increase modern methods of contraception in Indonesia, especially for areas with high population but still low uptake, most likely due to a lack of health promotion and effective delivery of information around family planning options.

In contrast to the modern methods of contraception use, births attended by a skilled health worker are reasonably high across the majority of the provinces in Indonesia, with a national index of 92. The WHO set a maternal mortality rate (MMR) of 102 per 100,00 live births to be reached by the end of 2015 as the Millennium Development Goals (MDGs) transitioned into the SDGs (Brooks et al., 2017). According to data from the World Bank (2019a), the maternal mortality rate was at 177 per 100,00 live births for Indonesia in 2017, indicating that the JKN health insurance scheme has not dramatically reduced the ratio in the past four years, despite the high rate of skilled health workers. Moreover, based on data from the Inter-Census Population Survey (*Survei Penduduk Antar Sensus* - SUPAS) 2015, the maternal mortality rate was at 305 per 100,000 live births for Indonesia. To further reduce this number, an increase in skilled birth attendants is still required, and promotion of the importance of seeking medical assistance during deliveries. The results demonstrate that many parts of eastern Indonesia are still experiencing lower rates of births attended by a skilled health worker, including the provinces of Papua and West Papua, East Nusa Tenggara, and Maluku and North Maluku. In a study of the impact of the *Jamkesmas* health insurance scheme on MMR, it was discovered that many women and their families still preferred to use traditional birth attendants (TBAs), with cultural and religious beliefs influencing those decisions to not seek modern medical assistance (Brooks et al., 2017). These more traditional approaches could still well be the case in eastern parts of Indonesia after the introduction of JKN; therefore, more careful planning around health promotional strategies need to occur to take into consideration any cultural, social, or local traditions that hold high significance in communities.

Immunisations are known to be the most effective method in controlling dangerous and deadly infectious diseases, yet immunisation efforts in Indonesia still lack ideal levels of protection for children. Nearly every province, apart from Yogyakarta and Bali, were calculated to have below-recommended targets for

immunisation coverage rates for measles; the WHO recommends a target of 95% for immunisation coverage for effective control of measles (Hu et al., 2018). Indonesia falls short in providing adequate immunisation coverage for Diphtheria-Tetanus-Pertussis (DTP3). The research suggests a low index of 60 for DPT3 immunisations at a national level, however, it should be noted that data for this immunisation was challenging to locate and data for provincial level is only available for the immunisation type DPT HB/ DPT HB-Hib 3, which was taken from the RISKESDAS dataset (Ministry of Health Indonesia, 2018). This vaccine includes protection against six diseases; Diphtheria, Pertussis, Tetanus, Hepatitis B, Pneumonia, and Meningitis (Arnani, 2019). The WHO had estimated nationally that DPT3 coverage – for DPT3 only – is approximately 79, which is only a one per cent increase from 2014 when JKN was introduced (World Health Organization, 2019). The Global Vaccine Action Plan set a global target for DPT3 coverage to be reached by the end of 2015, and it recommends countries have a coverage of 90% or more to reduce the risk of outbreaks due to gaps in population coverage (Syiroj et al., 2019). This suboptimal coverage for DPT3 led to an extensive diphtheria outbreak in 2017, which claimed 44 lives and a further 954 cases (Syiroj et al., 2019).

The research indicates a slightly higher coverage index for the hepatitis B vaccine, with a national average of 80. As with other vaccines and results for family planning methods, low indexes are recorded for eastern parts of Indonesia, including Papua, West Papua, Maluku, and North Maluku. The province of Aceh also recorded a low index of just 56, which is a province in north Sumatra that practices Sharia Law. Interestingly, other research has suggested that Islamic beliefs play an active role in deterring parents from choosing to have their children immunised against deadly diseases, believing that the vaccine contains *haram* product (Syiroj et al., 2019). The research also suggests that parents prefer naturally acquired immunity against diseases, rather than being injected with 'artificial' vaccines that could kill healthy cells and cause

unwanted side effects (Syiroj et al., 2019). This significant public health concern surrounding barriers for immunising children in Indonesia needs to be overcome to protect them from harmful and deadly diseases. Further work in improving communication strategies need to be improved to ensure accurate information is delivered to local Islamic leaders, such as *ustadz*, to ensure the importance of high immunisation coverage rates occur in Indonesia and reduce further outbreaks of diseases and jeopardising the health of children (Syiroj et al., 2019).

The last component of RMNCH is related to the distribution of oral rehydration solution (ORS) for childhood diarrhoea. This research opted to include this indicator in the framework instead of care-seeking behaviour for pneumonia, as acquiring data for provincial level was difficult to obtain. Diarrhoeal disease is also the leading cause of death for children under five in Indonesia, with a staggering quarter of all children under five in Indonesia suffering from diarrhoea (Unicef, 2019). Data for ORS coverage for this research was collected from the RISKESDAS dataset (Ministry of Health Indonesia, 2018), which provides data for the use of Oralit for each of the 34 provinces. Oralit is the most commonly used brand of ORS in Indonesia (National Population and Family Planning Board et al., 2018). The research indicates extremely low use of Oralit in Indonesia throughout the provinces, with some scoring an index as low as 23, such as South Kalimantan. It is also demonstrated that six provinces in Indonesia score below 30 for Oralit use, with only one province, Papua, having a score above 50, at 59. To further explore this, data is required for the use of various methods of ORS treatment, which include recommended home fluids (RHF) and increased intake of fluids. National-level data indicate better results for ORS use for children under five who experience diarrhoea, with a national average of 66% (National Population and Family Planning Board et al., 2018).

For effective coverage of ORS, 100% of children (under five as per indicator) experiencing diarrhoea should receive ORS treatment to prevent dehydration and loss of vital

fluids. Diarrhoeal disease can be prevented through adequate access to safe drinking water and better sanitation and hygiene behaviour (World Health Organization, 2017). Diarrhoea can leave children without the necessary salts and water to survive, leading to severe dehydration and fluid loss, causing death (World Health Organization, 2017). An infection in the intestinal tract is usually the cause of diarrhoea disease, which can be caused by a variety of organisms, and is usually spread through poor hygiene from person-to-person or contaminated food and drinking-water (World Health Organization, 2017). To reduce the onset of diarrhoea, access to safe drinking-water and improved handwashing with soap is required (World Health Organization, 2017). It is recommended that the onset of diarrhoea be treated with ORS, a mixture of clean water, sugar and salt (World Health Organization, 2017).

Causes of water contamination include water that is contaminated with human faeces. In Indonesia, there are approximately 25 million people who do not have access to toilets and instead defecate in fields, bushes, forests, ditches, streets, canals, or other open spaces (Unicef, 2019). The 2017 Indonesian and Demographic and Health Survey reported that children from households that did not have access to a toilet were more likely to experience diarrhoea than those that did have access (2018). Water quality in Indonesia is poor, regardless of socio-economic class; however, it is the lowest two wealth tiers that endure the gaps in access to proper sanitation (Unicef, 2019). The research results suggest that education around management of diarrhoea for children under five is extremely inadequate, with the low use of ORS, which could indicate a lack of access or knowledge of its effectiveness in treating diarrhoea and the dangers of dehydration.

Table 3 Reproductive, Maternal, Newborn, and Child Health (RMNCH) Index

Province	Demand for family planning satisfied by modern methods	Births attended by a skilled health worker	Immunization	Oral rehydration solution (ORL) therapy for child diarrhoea	RMNCH Index
Aceh	54	98	38	30	**55**
North Sumatra	49	95	56	27	**57**
West Sumatra	57	97	62	43	**65**
Riau	51	93	60	37	**60**
Jambi	69	89	75	42	**69**
South Sumatra	66	93	70	41	**67**
Bengkulu	71	96	78	37	**70**
Lampung	69	94	79	42	**71**
Bangka Belitung	67	97	81	36	**70**
Riau Islands	45	98	83	34	**65**
Jakarta	57	100	84	40	**70**
West Java	66	93	76	34	**67**
Central Java	65	99	86	27	**69**
Yogyakarta	59	100	95	39	**73**
East Java	65	97	82	37	**70**
Banten	65	90	64	38	**64**
Bali	67	100	95	44	**76**
West Nusa Tenggara	62	95	83	44	**71**
East Nusa Tenggara	38	84	69	46	**59**

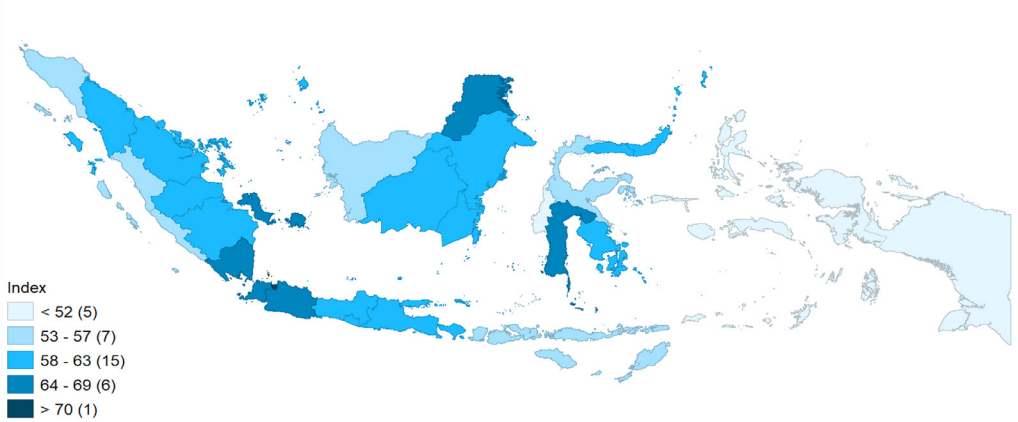
West Kalimantan	59	85	67	40	**63**
Central Kalimantan	67	86	63	34	**62**
South Kalimantan	70	96	79	23	**67**
East Kalimantan	55	97	81	40	**68**
North Kalimantan	66	96	84	38	**71**
North Sulawesi	62	92	76	32	**65**
Central Sulawesi	60	89	68	33	**62**
South Sulawesi	53	96	77	25	**63**
Southeast Sulawesi	66	87	66	38	**64**
Gorontalo	56	95	78	35	**66**
West Sulawesi	39	92	70	28	**57**
Maluku	52	64	55	32	**51**
North Maluku	29	77	61	39	**51**
West Papua	25	89	64	26	**51**
Papua	62	85	46	59	**63**
Indonesia	**58**	**92**	**72**	**36**	**65**

Source: Authors' calculation.

4.1.2. Dimension Two: Infectious Diseases

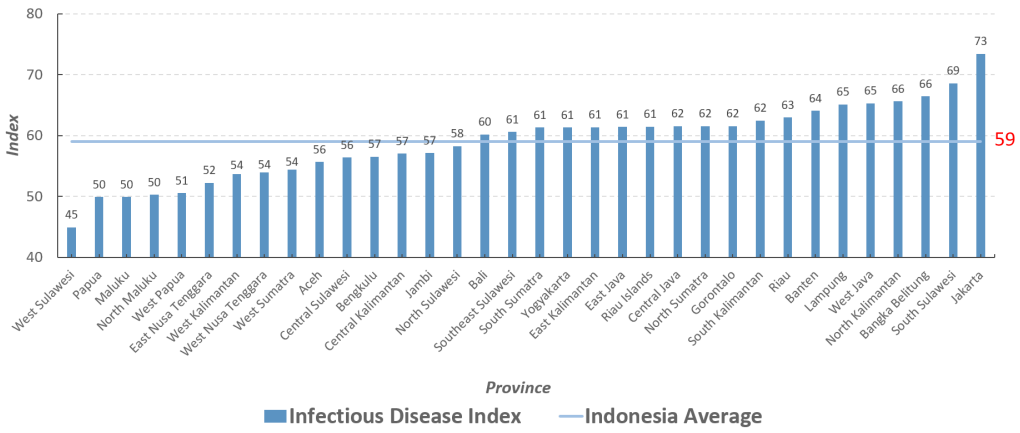
This section of the report examines coverage for infectious diseases in Indonesia, highlighting how JKN's response to managing the burden of infectious diseases. Included in this dimension is coverage for effective tuberculosis (TB) treatment, coverage for people living with human immunodeficiency virus (PLWHIV) who receive antiretroviral treatment (ART), and people using basic sanitation services. It was decided for the purposes of this research, the use of insecticide-treated bed nets was to be excluded from being indexed, as majority of Indonesia is not home to endemic malaria, with Papua, West Papua, East Nusa Tenggara the main areas classified as having endemic malaria (Kementerian Kesehatan Republik Indonesia, 2018). However, malaria is still of significant concern in some parts, with malaria still causing around 40,000 deaths annually in 2017 (Agustina et al., 2019). As discussed earlier in the report, Indonesia is faced with the burned of infectious diseases, noncommunicable diseases, and neglected tropical diseases. Infectious diseases still cause high morbidity and mortality in Indonesia, with Indonesia having one of the highest rates of tuberculosis in the world (Agustina et al., 2019). The country's HIV epidemic is the fastest growing in Southeast Asia, with the majority of PLWHIV in the 20-49 age group (Agustina et al., 2019).

Map 3 Infectious Diseases' Index, Indonesia



Source: Authors' calculation.

Chart 3 Infectious Diseases' Index, by Province



Source: Authors' calculation.

For the infectious diseases' index, the research calculates an index of only 59. Apart from Jakarta with an index of 73, all provinces scored below 70 for infectious diseases. It is clear from the results that many provinces in eastern parts Indonesia again have indexes below the national average for this dimension, with West Sulawesi having an index of only 45. All three indicators demonstrate inadequate efforts in trying to curb the burden of infectious diseases in Indonesia.

Inadequate efforts in response to people living with HIV in Indonesia are presented in this research. A low index of only 34 was calculated nationally for PLWHIV who are receiving the correct treatment, ART. As that index was calculated based on the natural scale, this suggests that only 34% of a possible 100% of PLWHIV in Indonesia are receiving adequate treatment and care. Some provinces were calculated with an extremely low index, such as West Sulawesi with an index on only 8, and provinces in eastern parts of Indonesia, such as Maluku and Papua, having indexes of only 18 and 17 respectfully. These figures are not even close to the UNAIDS' target of 90% of all PLWHIV receiving ART by 2020 (UNAIDS, 2019).

As mentioned above, TB in Indonesia is still a significant problem. This

research supports that. The index for this indicator was calculated using two sub-indicators; the case detection rate and the treatment success rate for new TB cases. The calculated index is 66 nationally, with only one province, Jakarta, having an index of 100. Again, eastern parts of Indonesia seem to be lacking in access to treatment and services for this indicator with low indexes of 47 in North Maluku and 48 in West Papua. Higher indexes for TB include West and East Java, and surprisingly, West Papua with an index of 75. The research also indicates that only a handful of provinces meet the national case detection rate target of 70% by the end of 2020 (Ministry of Health, 2018). The lowest percentage of case detection rates occur in West Nusa Tenggara, at only 29 per cent. This indicates that approximately one third of TB patients in West Nusa Tenggara have been detected compared to the number of estimated patients in West Nusa Tenggara who have TB. Bali is the province with the second lowest percentage of case detection rates, followed by North Maluku, Bangka Belitung and East Nusa Tenggara (see Table 4). For successful treatment rates of TB, results are better, but only eight provinces have reached the set target of 90%. Indonesia has the National Strategic Plan of Tuberculosis Control 2016–2020. The plan sets out to end TB by the end of 2030 in line with the SDGs, ensuring 95% of all people with diagnosed cases enrolled in a treatment plan by the end of 2020 (Ministry of Health, 2018). The research suggests, that although a plan is currently in place for eliminating TB in Indonesia, public awareness is still low regarding knowing when to seek treatment for symptoms of TB or knowing where to go for adequate to receive adequate treatment.

This research demonstrates that for people who have access to basic sanitation services, somewhat adequate efforts have been achieved with a national index of 77. For this indicator, it is difficult to draw on consistencies with other indicators, as higher results are spread across many provinces. The highest index is in East Kalimantan with an index of 91. The provinces of Riau and Riau Islands were the next highest with indexes of 90, followed by the Bangka

Belitung Islands with an index of 88. The lowest scoring index is Papua with an index of only 58, followed by North Maluku with an index of 62. The sanitation indicators have a direct link with the oral rehydration solution indicator, which measures efforts in providing treatment for childhood diarrhoea. As discussed above in dimension one, regarding child health, poor sanitation will increase the risk to water contamination and increase the likelihood of diarrhoea-related illnesses. Improvement in access to basic sanitation needs, and the increase of ORS uptake, will reduce the amount of children dying from diarrhoea-related illnesses, which is the leading cause of death or children under five in Indonesia (Unicef, 2019).

Table 4 Infectious Disease (ID) Index

Province	Tuberculosis (average of case detection rate and treatment success rate)			People living with HIV receiving ART (%)	People using at least basic sanitation services (% of population)	Infectious Disease (ID) Index
	Tuberculosis case detection rate (%. all forms)	Tuberculosis treatment success rate (% of new cases)	Tuberculosis Index			
Aceh	34	86	60	34	73	**56**
North Sumatra	48	91	69	31	85	**62**
West Sumatra	43	81	62	30	72	**54**
Riau	43	82	62	37	90	**63**
Jambi	32	90	61	29	81	**57**
South Sumatra	50	95	73	33	78	**61**
Bengkulu	43	80	61	28	80	**57**
Lampung	45	87	66	43	86	**65**
Bangka Belitung	31	87	59	52	88	**66**
Riau Islands	44	89	67	28	90	**61**
Jakarta	122	81	100	35	83	**73**

West Java	71	85	78	37	81	**65**
Central Java	68	83	75	28	81	**62**
Yogyakarta	34	85	60	44	81	**61**
East Java	64	87	76	32	77	**61**
Banten	77	90	84	27	81	**64**
Bali	30	89	59	43	79	**60**
West Nusa Tenggara	29	89	59	37	67	**54**
East Nusa Tenggara	32	72	52	33	71	**52**
West Kalimantan	34	80	57	26	79	**54**
Central Kalimantan	33	85	59	38	75	**57**
South Kalimantan	51	92	72	37	78	**62**
East Kalimantan	40	93	66	27	91	**61**
North Kalimantan	48	54	51	57	89	**66**
North Sulawesi	64	78	71	29	75	**58**

Central Sulawesi	57	90	73	30	66	**56**
South Sulawesi	84	95	90	35	82	**69**
Southeast Sulawesi	43	81	62	45	75	**61**
Gorontalo	71	82	76	56	52	**62**
West Sulawesi	38	89	64	8	63	**45**
Maluku	59	69	64	18	68	**50**
North Maluku	31	64	48	41	62	**50**
West Papua	58	35	47	33	72	**51**
Papua	79	71	75	17	58	**50**
Indonesia	**51**	**82**	**66**	**34**	**77**	**59**

Source: Authors' calculation.

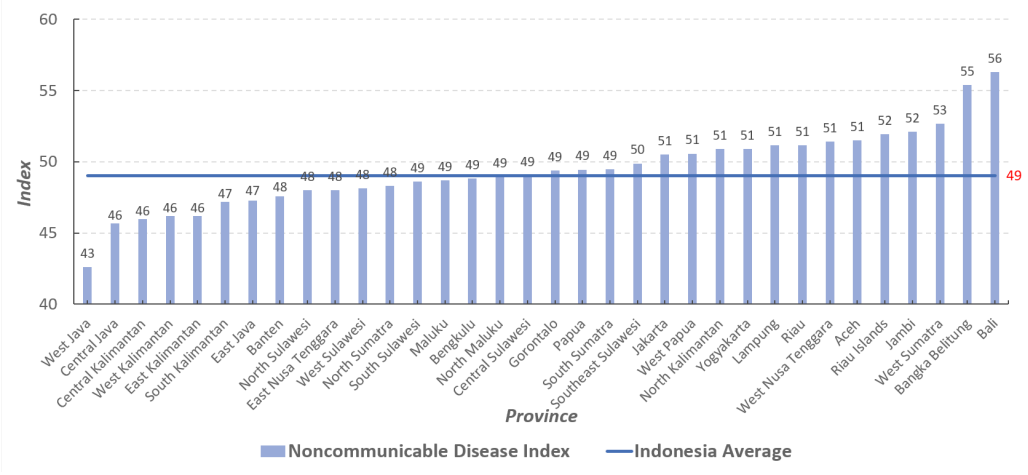
4.1.3. Dimension Three: Noncommunicable diseases (NCDs)

The noncommunicable diseases section of the research consisted of four indicators, including the prevalence of normal blood pressure, people with diabetes receiving treatment, the screening of cervical cancer for women aged 30 to 49 years, and the prevalence for adults aged 15-years or above who have not been smoking in the past 30 days. NCDs in Indonesia are fast dominating the mortality rate, mainly caused by leading diseases, such as heart disease, obesity, kidney disease, lung disease, and cancer (Purnamasari, 2018). It is also reported that the trend for NCDs in Indonesia is increasing compared to reports made five years' ago (Purnamasari, 2018). Majority of NCDs can be progressive in their development, and many patients do not realise they have a disease until symptoms and complications are evident (Purnamasari, 2018). Four major risk factors contribute to the prevalence of NCDs, and they are tobacco use, physical inactivity, harmful use of alcohol, and unhealthy diets (The World Health Organization, 2019b). Reducing the effects of those risk factors is the most feasible way to reduce the prevalence of NCDs. Indonesia has one of the highest burdens of diabetes in the world (Soewondo et al., 2013), and one of the highest prevalence rates of cigarette smoking in the world (Kusumawardani et al., 2018). High rates of smoking and unhealthy lifestyle are contributing to Indonesia's growing burden of NCDs.

Map 4 Noncommunicable Diseases' Index, Indonesia

Source: Authors' calculation.

Chart 4 Noncommunicable Diseases' Index, by Province



Source: Authors' calculation.

The research results do not present an encouraging effort to reduce the burden of NCDs in Indonesia. The overall national index was calculated at only 49. Furthermore, the highest-scoring province for this dimension received an index of 56, Bali, followed by the Bangka Belitung Islands at 55.

The lowest scoring index is in West Java, with a low score of only 43. All indicators for West Java under this dimension reflected poor indexes, with screening for cervical cancer scoring a mere three. Only treatment for diabetes demonstrate any sign of development toward managing NCDs in Indonesia, with an overall index of 90.

Screening for cervical cancer overall scored an extremely low index of only nine, nationally, with some provinces, such as Papua, Southeast Sulawesi only receiving an index of only one, and a score of two in the province of Banten. These low indexes are a cause for concern, as people enrolled in JKN, are entitled to free check-ups for early detection of cervical cancer in primary health care centres (*puskesmas*) and institutions that collaborate with BPJS (RG, 2014). Cervical cancer is extremely difficult to detect in its early stages; therefore, women are advised to be checked every two years, especially if they have given birth (RG, 2014). In 2018, there were over 18,000 cervical cancer deaths in Indonesia, with cervical cancer being the second largest cause of death for women aged between 15 and 44 in Indonesia (Bruni et al., 2019). A study conducted by the UK Medical Research Council suggests that the meagre rates of cervical cancer screening for women in Indonesia is due to a lack of awareness and education (London School of Hygiene and Tropical Medicine, 2017). It was also reported that women are not receiving a letter to invite them to be screened by primary health care centres, instead relying on their initiative to request an appointment (London School of Hygiene and Tropical Medicine, 2017). Education and awareness programs that are contextually appropriate for Indonesia needs investment, to address the low rates of cervical cancer screening attributing to high the rates of death.

To track efforts made towards cardiovascular disease, the prevalence of normal blood pressure was indexed. Tracking the prevalence of normal blood pressure can assist in tracking effective health services and effective medical services for treating hypertension (WHO and World Bank, 2017). Results for this indicator are somewhat contrasting to the majority of the other indicators

reported on in this research. The outer regions of eastern parts of Indonesia, and the province of Aceh, which have tended to have relatively low results, are amongst the highest for this indicator. The provinces of Aceh and Riau Islands hold the highest indexes at 66, with Papua, West Papua, and Maluku scoring 65 and 64 respectively. West Sumatra also scored an index of 65, with other provinces, such as Bali, West Nusa Tenggara, and East Nusa Tenggara scoring in the low 60s. Hypertension is a preventable illness, which is usually attributed to an unhealthy diet, lack of exercise, tobacco use, alcohol consumption, and depression (Peltzer and Pengpid, 2018). These considerably low results for efforts towards controlling hypertension in Indonesia demonstrates that interventions targeting behaviour and lifestyle are insufficient. Awareness around the dangers of hypertension are urgently need expansion within Indonesia, to assist in reducing the risk of cardiovascular diseases.

A significant contributor to NCDs is tobacco use, which is a major public health concern in Indonesia. This indicator looks at tobacco control efforts in reducing the effects smoking has on NCDs. It is well known the detrimental consequences smoking has on people's health, yet, Indonesia is still yet to sign the World Health Organization's Framework Convention on Tobacco Control (FCTC) (The World Health Organization, 2019c). The FCTC was adopted by majority of the WHO's member states in 2003 and completely in force since 2005, covering more than 90% of the world's population (The World Health Organization, 2019c). The decision for Indonesia not to sign the FCTC and show commitment to reducing tobacco use can be demonstrated through the research. Nationally, an index of 44 was calculated for adults aged 15-years or greater, not smoking tobacco in the past 30 days. The provinces with the lowest indexes for the smoking indicator are Gorontalo and West Java at 36, with the highest calculated indicator in Yogyakarta at 52. While many other provinces scored indexes in the 40s, Bengkulu, Lampung, and Central Sulawesi all recorded indexes of only 37. Only two other provinces scored

an index in the 50s, that being Jambi at 50 and South Kalimantan at 51. These indexes and that of Yogyakarta demonstrate that only approximately half of the required efforts to curb smoking rates in Indonesia are being carried out. Smoking is the leading cause of cardiovascular diseases in Indonesia, responsible for over 147,000 cardiovascular deaths each year and nearly 15% of all deaths or 225,000 people in Indonesia (The World Health Organization, 2018). The health consequences of smoking need to be addressed with stronger policies and better health promotion, educating people on the dangers of smoking.

Table 5 Noncommunicable Disease (NCDs) Index

Province	Prevalence of normal blood pressure (Measurement + Medication)	People with diabetes receiving treatment	Cervical cancer screening (Women 30-49yrs) %	Adults aged >= 15 years not smoking tobacco in the last 30 days (%)	Non-communicable Disease (NCDs) Index
Aceh	66	93	3	44	**51**
North Sumatra	54	89	5	46	**48**
West Sumatra	65	89	19	38	**53**
Riau	59	92	11	43	**51**
Jambi	57	93	8	50	**52**
South Sumatra	55	85	17	41	**49**
Bengkulu	61	90	7	37	**49**
Lampung	57	93	17	37	**51**
Bangka Belitung	58	95	25	43	**55**
Riau Islands	66	87	8	47	**52**
Jakarta	54	91	14	44	**51**
West Java	41	91	3	36	**43**
Central Java	42	91	5	44	**46**
Yogyakarta	56	88	8	52	**51**
East Java	45	92	9	44	**47**

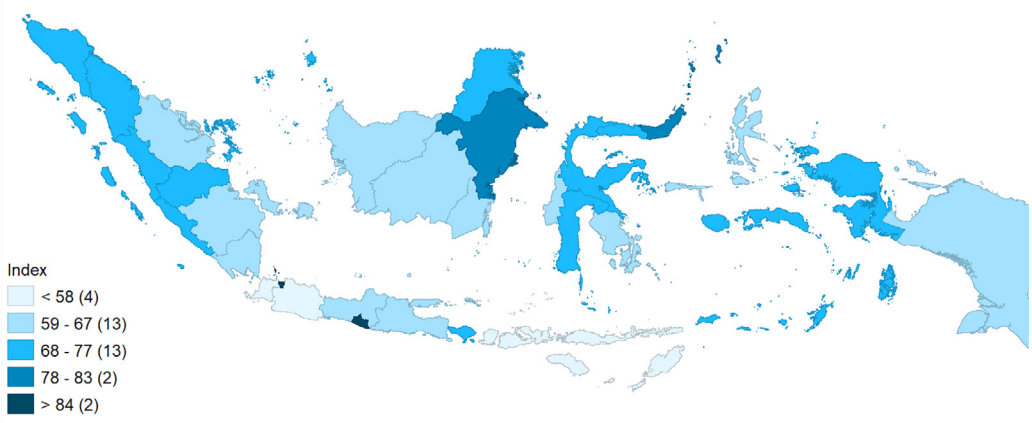
Banten	59	92	2	37	**48**
Bali	60	96	17	53	**56**
West Nusa Tenggara	60	93	13	40	**51**
East Nusa Tenggara	57	83	5	47	**48**
West Kalimantan	44	90	6	45	**46**
Central Kalimantan	50	88	5	42	**46**
South Kalimantan	33	89	15	51	**47**
East Kalimantan	44	86	8	48	**46**
North Kalimantan	55	85	17	47	**51**
North Sulawesi	61	84	7	41	**48**
Central Sulawesi	62	88	9	37	**49**
South Sulawesi	52	89	5	48	**49**
Southeast Sulawesi	55	95	1	48	**50**
Gorontalo	63	96	3	36	**49**
West Sulawesi	46	93	4	50	**48**
Maluku	55	89	7	44	**49**
North Maluku	64	88	4	40	**49**
West Papua	64	88	6	44	**51**
Papua	65	83	1	49	**49**
Indonesia	**55**	**90**	**9**	**44**	**49**

Source: Authors' calculation.

4.1.4. Dimension Four: Service Capacity and Access

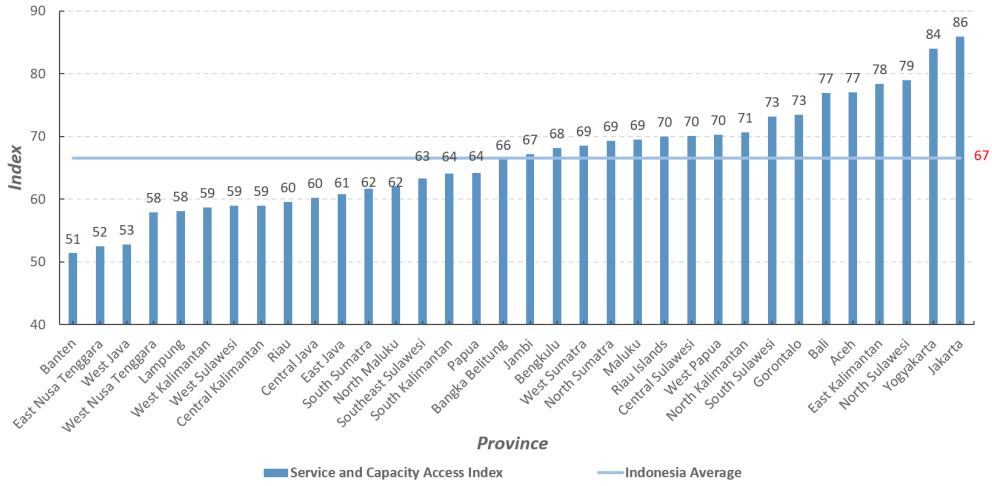
The fourth dimension for service coverage capacity tracks service capacity and access towards UHC. There are three indicators that were used to give us a dimension index, with two of those a combination of three other sub-indicators. The three indicators were hospital beds per capita, health worker density, and access to essential medicines. The health worker density indicator comprises of physicians (GP) per 100,000 people, surgeons per 100,000 people, and the combination of nurses, midwives and community health workers to derive at a health worker density index. For essential medicines, the WHO defines them as being medicines that prioritise and meet the health care needs of the population (The World Health Organization, 2019a). For this research, it was decided that the national list of recommended medicines found in primary health care centres, *puskesmas*, were to be used to track the progress of this indicator.

Map 5 Service Capacity and Access Index, Indonesia



Source: Authors' calculation.

Chart 5 Service Capacity and Access Index, by Province



Source: Authors' calculation.

This research provides mixed results for the service capacity and access dimension. The overall national index is 67, with the highest index calculated for Jakarta at 86. This is followed by Yogyakarta at 84. The next higher scoring provinces are Aceh (77), Bali (77), and East Kalimantan (78). The lowest scoring province is Banten at 51, followed by East Nusa Tenggara at 52 and West Java at 53. The national index for hospital beds per capita is 70, with approximately 128 hospital beds per 100,000 people. Jakarta, Yogyakarta, East Kalimantan and North Sulawesi all scored 100 for an index, while the lowest index was calculated for West Nusa Tenggara at only 39. East Nusa Tenggara also scored a low 45, while provinces, such as West Java and Banten were also relatively low with indexes of 47 and 48 respectively.

For health worker density, the national index was calculated at 38, which is quite poor, considering it represents the health workforce for Indonesia. The highest index was Jakarta at 62, with low indexes of only 17 for West Java and Banten. Other low scores included East Nusa Tenggara with an index of 29 and West Sulawesi with an index of 28. The research highlights that the index for surgeons across Indonesia is low, with a national index of only 15. Some provinces, Lampung, West Nusa Tenggara

and East Nusa Tenggara, score an extremely low index of nine. In fact, only five provinces show an index of 20 or above, which includes, Jakarta, Yogyakarta and Bali.

Other research has highlighted that there were still 430 subdistricts throughout Indonesia that failed to provide a *puskesmas*, with most of those subdistricts in the eastern parts of Indonesia, such as Papua, West Papua, and East Nusa Tenggara (Mahendradhata et al., 2017). Further research discovered that 380 *puskesmas* did not have a physician available, also mostly located in eastern parts of Indonesia (Mahendradhata et al., 2017). This regional disparity and inequality of human and physical resource allocation need to be addressed to ensure adequate rollout of UHC in Indonesia.

Access to essential medicines in Indonesia seems to be doing well compared to indexes regarding the health workforce. A national index of 92 is calculated for the essential medicines' indicator, indicating that adequate availability of suitable medicines is available to the population in primary health care locations. The lowest scoring provinces for this indicator are East Nusa Tenggara and West Papua, with index of 84. Majority of the provinces seem to score in the 90s with some provinces showing a score of high 80s.

Table 6 Service Capacity and Access (SC) Index

Province	Hospital beds per capita	Health Worker Density	Access to Essential Medicines	Service Capacity and Access (SC) Index
Aceh	89	50	92	**77**
North Sumatra	86	33	90	**69**
West Sumatra	73	33	100	**69**
Riau	54	31	93	**60**
Jambi	63	42	97	**67**
South Sumatra	60	33	92	**62**
Bengkulu	66	46	92	**68**

Lampung	51	34	90	**58**
Bangka Belitung	73	38	87	**66**
Riau Islands	80	36	94	**70**
Jakarta	100	62	95	**86**
West Java	47	17	95	**53**
Central Java	64	26	91	**60**
Yogyakarta	100	53	99	**84**
East Java	59	27	96	**61**
Banten	48	17	89	**51**
Bali	86	49	97	**77**
West Nusa Tenggara	39	37	97	**58**
East Nusa Tenggara	45	29	84	**52**
West Kalimantan	57	31	88	**59**
Central Kalimantan	51	37	89	**59**
South Kalimantan	63	34	95	**64**
East Kalimantan	100	42	93	**78**
North Kalimantan	78	44	90	**71**
North Sulawesi	100	46	91	**79**
Central Sulawesi	76	44	90	**70**
South Sulawesi	85	36	98	**73**
Southeast Sulawesi	60	40	90	**63**
Gorontalo	87	41	92	**73**
West Sulawesi	51	28	99	**59**
Maluku	77	35	96	**69**
North Maluku	61	38	87	**62**
West Papua	77	50	84	**70**
Papua	69	36	87	**64**
Indonesia	**70**	**38**	**92**	**67**

Source: Authors' calculation.

4.2 Financial Protection

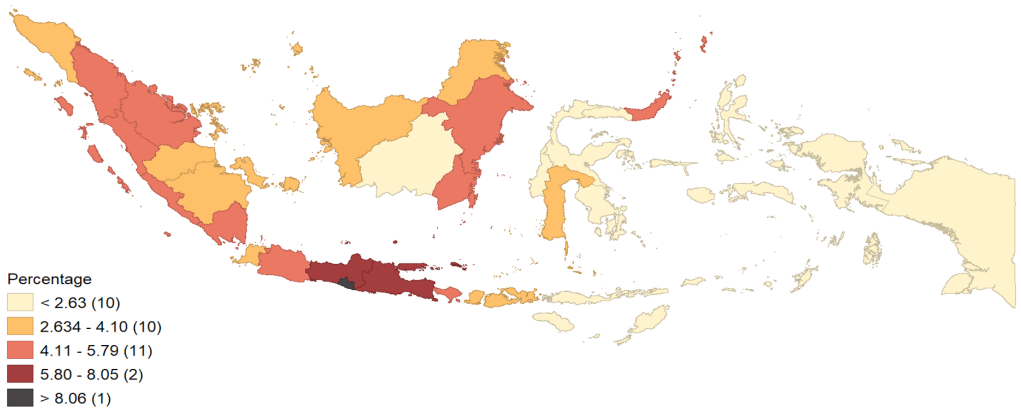
4.2.1. Catastrophic Incidence

This section will discuss the results of catastrophic incidence in Indonesia. Catastrophic incidence is defined as the expenditure for healthcare per household or per capita that exceeds a certain proportion/threshold of income or consumption (Wagstaff and Doorslaer, 2001). Catastrophic incidence is measured by calculating a household's or individual's total expenditure on health, called out-of-pocket payments. Catastrophic incidence shows how much people pay for health services using their own money (Wagstaff, 2008). We used an individual's total consumption on health as a way of measuring catastrophic incidence in Indonesia. Two different thresholds were employed to measure the catastrophic incidence: (1) out-of-pocket payments that exceed 10% of total consumption; and (2), out-of-pocket payments that exceed 25% of total consumption. These thresholds are based on the WHO's recommendations (WHO and World Bank, 2017).

Since 2014, JKN's participation has exceeded 81% of the total population, which is equivalent to 215.7 million people (BPJS Kesehatan, 2019). However, this enormous number of participations does not highlight how far people must pay for health services using their own money. Out-of-pocket incidence in Indonesia is still relatively high, even though the participation of JKN has increased significantly over the years. Indonesia's Ministry of Health stated that out-of-pocket incidence in Indonesia contributed to about 35% of total health expenditure in 2016 (Pinto et al., 2016). Previous studies indicate that medication is the primary contributor for out-of-pocket spending on health care (World Health Organization, 2019). Six countries in Asia spent 75% of out-of-pocket spending on health care for medication (World Health Organization, 2019). Based on their survey, Lauranti et al. (2017) also concluded that medication is the highest component for out-of-pocket spending in Indonesia, followed by inpatients and pathology spending. This suggests that an effective regulation for medication

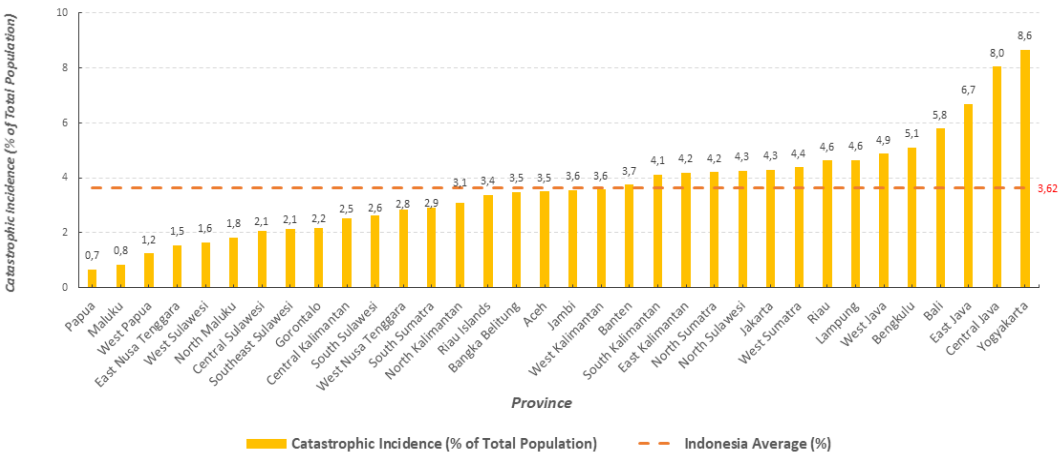
is required to reduce out-of-pocket spending on health care. However, this report cannot capture such findings due to data limitations. The SUSENAS data set is used to obtain figures for out-of-pocket spending on health. The results show that medical costs for health care in public and private hospitals are the highest component of out-of-pocket spending in Indonesia (Badan Pusat Statistik, 2018). However, the survey questions do not specify the type of costs spent at hospitals, whether it is spent on medication, costs for health workers, hospital beds, or other services. Furthermore, spending on medication is only categorised into three components in SUSENAS 2018, such as medication purchased from pharmacies or other locations based on doctors' prescriptions, medication purchased from pharmacies or other locations without doctors' prescriptions, and traditional medication (Badan Pusat Statistik, 2018). Therefore, we are unable to conclude in this report what components of health spending are attributable to the high out-of-pocket spending being experienced in Indonesia.

Map 6 Catastrophic Incidence at a 10% Threshold, Indonesia (%)



Source: Authors' calculation.

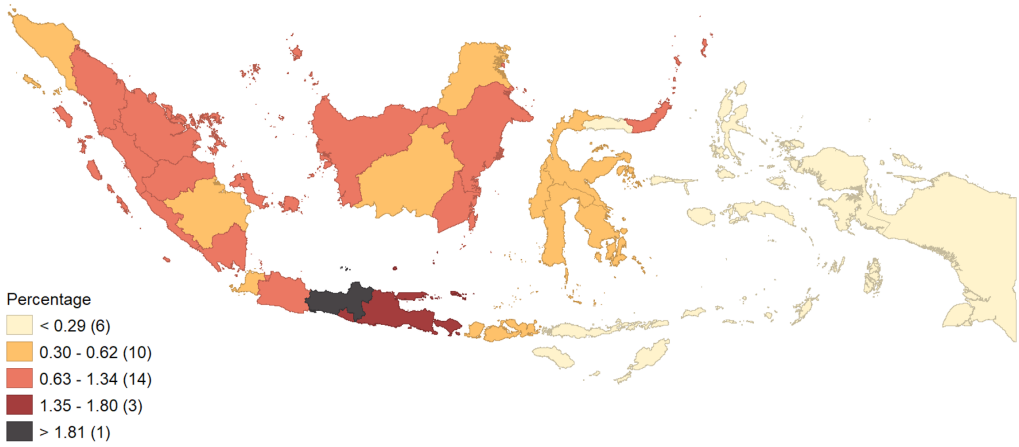
Chart 6 Catastrophic Incidence at 10% Threshold, by Province (%)



Source: Authors' calculation.

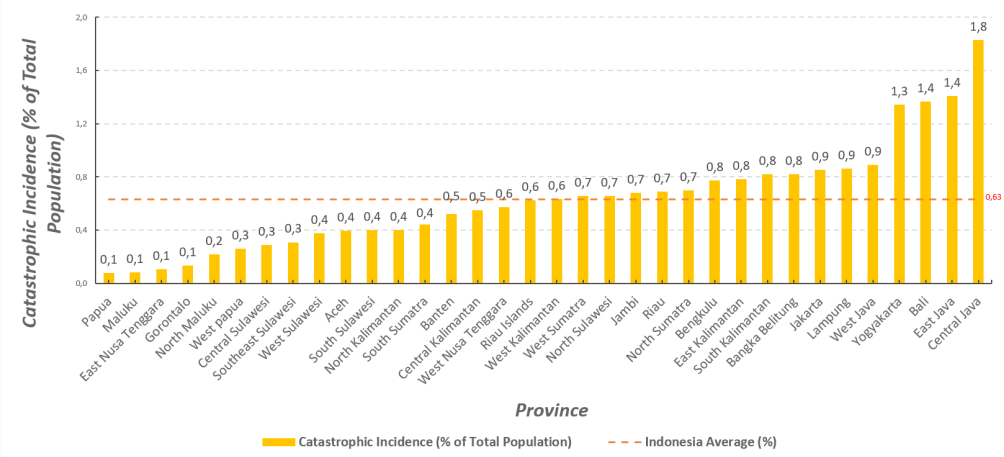
Almost 13 million people spend more than 10% of their total consumption of health services in Indonesia according to this study's calculations. This is equivalent to 3.62% of the total population. This number is lower than the global average of 9.7%, and the Asian average of 10.4% in 2017 (WHO and World Bank, 2017). This indicates that Indonesia is better than other countries at preventing people from experiencing financial hardship caused by out-of-pocket payments on health services (WHO and World Bank, 2017). Based on the research, Central Java has the highest number of people who suffer catastrophic incidence at a 10% threshold (2.7 million people), followed by East Java (2.6 million people), and West Java (2.4 million people). Yogyakarta has the highest rate of catastrophic incidence at a 10% threshold (8.64%), followed by Central Java (8.04%), and East Java (6.68%). West Papua has the lowest number of people who suffer catastrophic incidence at 11 thousand people, followed by Maluku at over 14000people, and North Kalimantan with 21,000 people. Papua has the lowest rate of catastrophic incidence at a 10% threshold (0.67%), followed by Maluku (0.84%), and West Papua (1.24%). The next section will discuss the catastrophic incidence at a 25% threshold.

Map 7 Catastrophic Incidence at a 25% Threshold, Indonesia (%)



Source: Authors' calculation.

Chart 7 Catastrophic Incidence at 25% Threshold, by Province (%)



Source: Authors' calculation.

This research found that almost 2.5 million people spent more than 25% of their total consumption on health services. This is equivalent to 0.63% of the total population, which is lower than the global average of 1.9% in 2017 and the Asian average of 2.1% in 2017. This indicates that Indonesia is better than other countries at preventing people from experiencing financial hardship caused by out-of-pocket payments on health services (WHO and World Bank, 2017). Based on the research, Central Java has the highest number of people who suffer catastrophic incidence at a 25%

threshold (630,000 people), followed by East Java (555,000 people), and West Java (432,000 people). Central Java has the highest rate of catastrophic spending at a 25% threshold (1.83%), followed by East Java (1.41%) and Bali (1.37%). It is also demonstrated that Maluku has the lowest number of people who suffer catastrophic incidence at a 25% threshold (1,500 people), followed by Gorontalo (1,600 people), and West Papua (2,400 people), while Papua has the lowest rate of catastrophic spending at a 25% threshold (0.08%), followed by Maluku (0.08%), and East Nusa Tenggara (0.10%).

High rates of catastrophic incidence are concentrated in the provinces in Java and Sumatra, while some provinces in Kalimantan and eastern parts of Indonesia have low rates of catastrophic incidence. In 2018, the highest rates of catastrophic incidence for both thresholds are in provinces of Java, such as Yogyakarta (8.64% at a 10% threshold and 1.34% at a 25% threshold), Central Java (8.04% at a 10% threshold and 1.83% at a 25% threshold), and East Java (6.68% at a 10% threshold and 1.41% at a 25% threshold). The lowest rates of catastrophic incidence for both thresholds are demonstrated in provinces of eastern parts of Indonesia, such as Papua (0.67% at a 10% threshold and 0.08% at a 25% threshold), Maluku (0.84% at a 10% threshold and 0.08% at a 25% threshold), and East Nusa Tenggara (1.55% at a 10% threshold and 0.10% at a 25% threshold).

Table 7 Catastrophic Incidence in Indonesia, 2018

Province	Number of people spending more than 10% of their household consumption on out-of-pocket health care expenditure	Percentage of people spending more than 10% of their household consumption on out-of-pocket health care expenditure	Number of people spending more than 25% of their household consumption on out-of-pocket health care expenditure	Percentage of people spending more than 25% of their household consumption on out-of-pocket health care expenditure
Aceh	183,870	3.50%	20,748	0.40%
North Sumatra	605,167	4.20%	100,811	0.70%
West Sumatra	234,751	4.38%	35,120	0.65%
Riau	313,358	4.63%	46,734	0.69%

Jambi	126,204	3.55%	24,139	0.68%
South Sumatra	241,456	2.90%	36,945	0.44%
Bengkulu	99,640	5.10%	15,080	0.77%
Lampung	387,147	4.64%	71,931	0.86%
Bangka Belitung Islands	50,619	3.49%	11,902	0.82%
Riau	71,751	3.38%	13,239	0.62%
Jakarta	445,380	4.28%	88,494	0.85%
West Java	2,360,174	4.87%	431,399	0.89%
Central Java	2,766,211	8.04%	629,251	1.83%
Yogyakarta	327,616	8.64%	50,937	1.34%
East Java	2,633,461	6.68%	555,141	1.41%
Banten	472,120	3.75%	65,438	0.52%
Bali	247,677	5.79%	58,489	1.37%
West Nusa Tenggara	142,237	2.85%	28,608	0.57%
East Nusa Tenggara	82,688	1.55%	5,560	0.10%
West Kalimantan	177,721	3.57%	31,600	0.63%
Central Kalimantan	66,570	2.52%	14,489	0.55%
South Kalimantan	170,795	4.10%	34,070	0.82%
East Kalimantan	151,806	4.18%	28,395	0.78%
North Kalimantan	21,792	3.07%	2,843	0.40%
North Sulawesi	105,343	4.26%	16,278	0.66%
Central Sulawesi	62,248	2.08%	8,697	0.29%
South Sulawesi	230,045	2.63%	34,909	0.40%
Southeast Sulawesi	56,435	2.14%	8,158	0.31%
Gorontalo	25,744	2.18%	1,587	0.13%
West Sulawesi	22,086	1.64%	5,081	0.38%
Maluku	14,762	0.84%	1,493	0.08%
North Maluku	22,236	1.82%	2,654	0.22%
West Papua	11,576	1.24%	2,417	0.26%
Papua	22,206	0.67%	2,558	0.08%
Indonesia	**12,952,892**	**3.62%**	**2,485,195**	**0.63%**

Source: Authors' calculation.

4.2.2. Levels of Impoverishment Due to Out-of-pocket Spending: Non-SDGs' Indicators

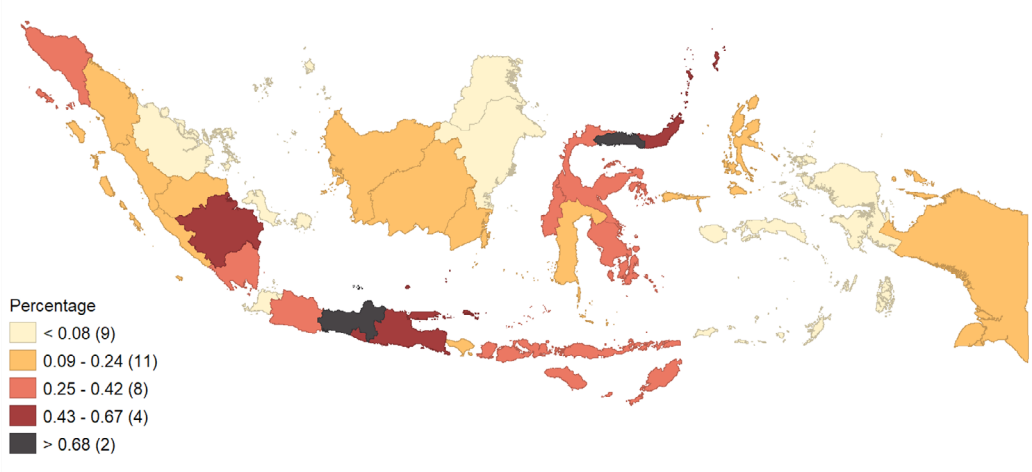
This section explains the results of impoverishment health spending as an addition to catastrophic spending for UHC financial protection. Impoverishment health spending can capture how much financial hardship a household can face, as catastrophic incidence is not able to capture the depth of hardship a household experiences (Wagstaff, 2008). A household becomes impoverished by out-of-pocket spending on health care when the household's consumption, including out-of-pocket spending, is more than the poverty line but without out-of-pocket spending, the household consumption is less than the poverty line (Wagstaff et al., 2018). Impoverishment due to out-of-pocket spending on health can demonstrate an increase in poverty. This occurs when households have no choice but to divert resources from other essential goods and services, to achieve sustainable living standards and life itself (Wagstaff et al., 2018). Although this indicator is not an official indicator for measuring financial protection and catastrophic spending, it has a correlation with SDG 1, poverty eradication (Wagstaff et al., 2018).

Impoverishment incidence is measured by calculating the change in poverty headcount with and without out-of-pocket spending on health, included in the total consumption (Wagstaff et al., 2018). Three different poverty lines were employed for this report, they are: (1) the international standard of USD1.90 per day poverty line, which is also called the extreme poverty line, (2) the international standard of USD 3.10 per day poverty line, which captures poverty in middle-income countries, and (3) Indonesia's national poverty line that varies among provinces with an average national poverty line of IDR 401,220 (USD28.64) per capita per month in 2018. The first two poverty lines chosen are similar to those used by Wagstaff (2018). International poverty lines are converted to local currency units (LCUs to $1) using 2018 Purchasing Power Parity (PPP) and International Comparison Program (ICP), following data from the World Bank (The World Bank, 2019b). Therefore, the value for

USD 1.90 poverty line in Indonesia is 1.90 x $5,104 x 30.5 days = IDR 295,835.17 per capita per month, and USD 3.10 poverty line is 3.10 x $5,104 x 30.5 days = IDR 482,676.8 per capita per month. However, for the third poverty line, Wagstaff (2018) used a relative poverty line that he defined as 50% median consumption. Since this type of poverty line is used by OECD-14 and other high-income countries, it was not included in this report because it is more relevant to measure impoverishment spending in Indonesia based on Indonesia's national poverty line.

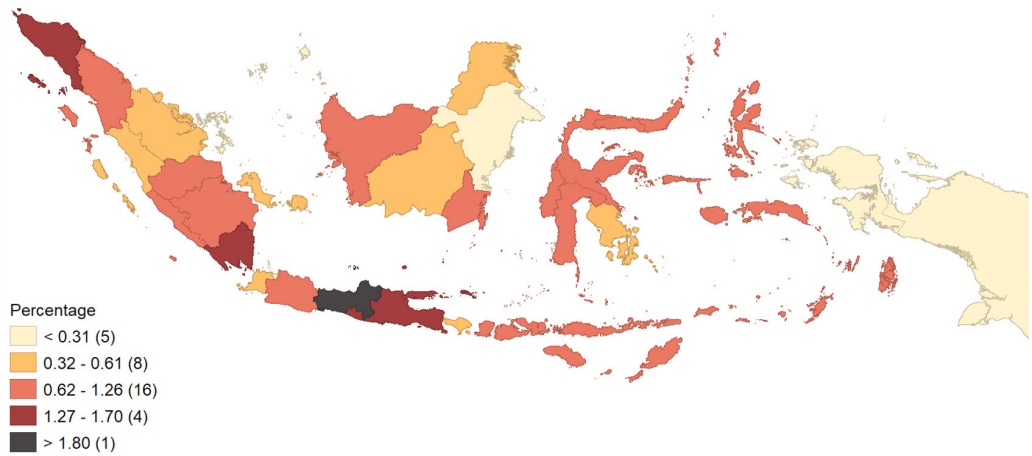
The following section calculates the change in poverty gap due to out-of-pocket spending. The poverty gap can capture the depth of poverty due to out-of-pocket spending of the households that cannot be captured by impoverishment incidence (Wagstaff et al., 2018). The method for calculating the poverty gap between poor households and impoverished households are different (Wagstaff et al., 2018). For poor households, the change in the poverty gap is the total amount of out-of-pocket spending; while for impoverished households, change in the poverty gap is measured by the amount of out-of-pocket spending that pushes them below the poverty line (Wagstaff et al., 2018). The total amount of out-of-pocket spending from these two types of households is then divided by all households to get the overall average change in the poverty gap because of out-of-pocket spending (Wagstaff et al., 2018). In presenting the results, USD 1.90 and USD 3.10 poverty line figures are used. The national poverty line will not be used to show change in the poverty gap due to out-of-pocket spending, as this poverty line would not demonstrate any absolute meaning (Wagstaff et al., 2018).

Map 8 Impoverishment Incidence at $1.90 (2018 PPP), Indonesia (%)



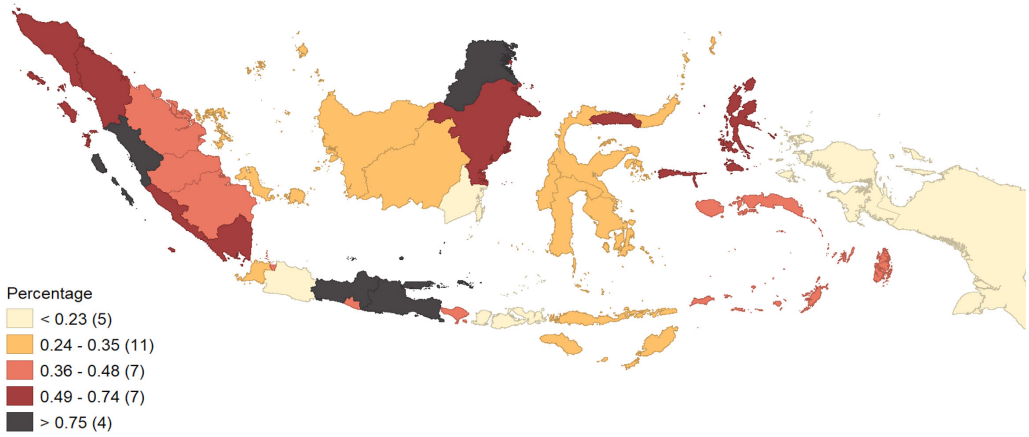
Source: Authors' calculation.

Map 9 Impoverishment Incidence at $3.10 (2018 PPP), by Province (%)



Source: Authors' calculation.

Map 10 Impoverishment Incidence at National Poverty Line, Indonesia (%)



Source: Authors' calculation.

The incidence of impoverishment due to out-of-pocket spending at the USD 1.90 per day poverty line is 0.22 per cent or equivalent to 584,831 people in 2018. The level of impoverishment demonstrates high variation between provinces. Central Java and Gorontalo experience more than a 0.68 per cent impoverishment level. Most of the provinces with high levels of impoverishment are centred in Java. Meanwhile, provinces in Kalimantan and Papua Islands experience low levels of impoverishment, which is less than 0.24 per cent.

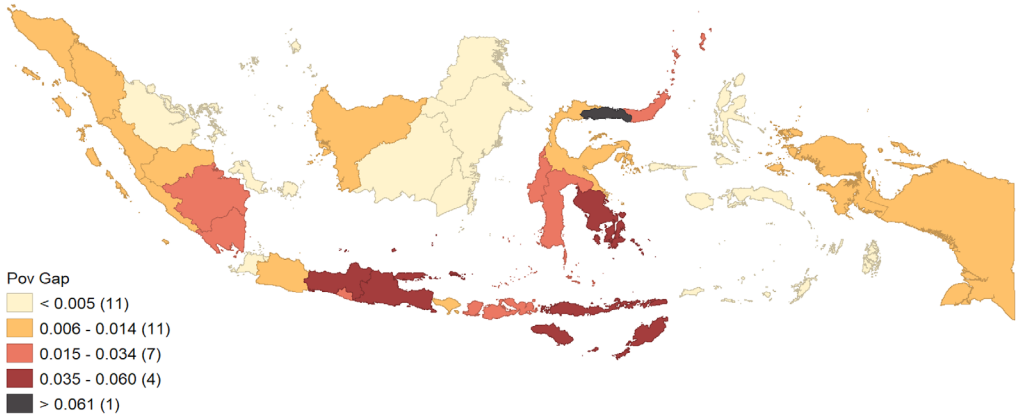
The same pattern is also shown by the incidence of impoverishment due to out-of-pocket spending at the USD 3.10 per day poverty line. The level varies among provinces, with Central Java having the highest level of impoverishment with more than 1.8 per cent of the population impoverished by out-of-pocket spending. The lowest level of impoverishment occurs in East Kalimantan and all provinces in Papua, with less than 0.31 per cent of the population impoverished.

In the case for the national poverty line, the pattern slightly changes, even though it still shows inequality among the provinces. There are four provinces that experience the highest level of impoverishment:

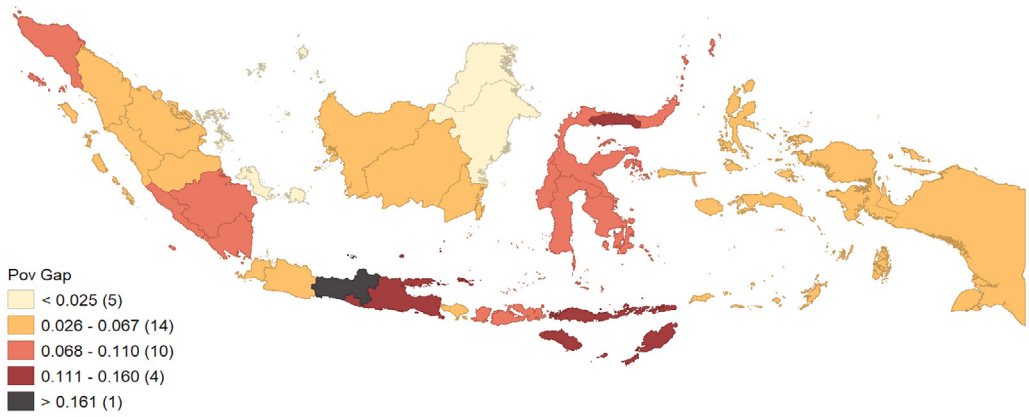
Central Java, East Java, North Kalimantan, and West Sumatra. Meanwhile, West Java, West Nusa Tenggara, South Kalimantan, Papua and West Papua have the lowest level of impoverishment, with less than 0.23 per cent of the population impoverished.

In general, the incidence of impoverishment due to out-of-pocket spending in Indonesia is relatively low, ranging from 0% to 1.8% for all poverty lines. The national averages for incidence of impoverishment are 0.22%, 0.74% and 0.41% for USD 1.90, USD 3.10 and national poverty lines respectively. However, these numbers are higher than that shown by the *Tracking Universal Health Coverage: 2017 Global Monitoring Report,* where incidence of impoverishment in Indonesia for respective poverty lines were 0.07% and 0.66% for USD 1.90 and USD 3.10 in 2018 (WHO and World Bank, 2017). It implies that more people are impoverished due to out-of-pocket spending in 2018 compared to 2011. It is also important to mention that the highest impoverishment incidence due to out-of-pocket spending is centred in Java with the lowest level occurring in eastern parts of Indonesia, such as Papua and Maluku.

Map 11 Poverty Gap at $1.90 (2018 PPP), Indonesia



Map 12 Poverty Gap at $3.10 (2018 PPP), Indonesia



Source: Authors' calculation.

The increase in poverty gap due to out-of-pocket spending is relatively insignificant at USD 0.014 and USD 0.068 per day for the USD1.90 and USD3.10 poverty lines respectively. It is important to note that small changes in the poverty gap are the results from total out-of-pocket spending of poor and impoverished households divided by the total population (Wagstaff et al., 2018). The poverty gap increase due to out-of-pocket spending also varies among provinces. In terms of the USD1.90 poverty line, there are eleven provinces that have a poverty gap below USD 0.005 per capita, with the lowest poverty gap at USD 0.00 per capita occurring in Bangka Belitung. Meanwhile, the highest increase in poverty gap occurs in Gorontalo, reaching USD 0.06 per capita. In terms of the USD 3.10 poverty line, the pattern for the poverty gap due to out-of-pocket spending is like that of the USD1.90 poverty line. On average, the increase in poverty gap is USD 0.068 per capita. Central Java experiences the highest level of an increase in the poverty gap, reaching USD 0.20 per capita per day. Meanwhile, the lowest level of increase in the poverty gap is almost USD 0.00 per capita per day in Jakarta.

Table 8 Impoverishment and Poverty Gap due to Out-of-pocket Spending on Health Care

Province	Percentage of people pushed below the USD1.90 ($ 2018 PPP) poverty line by out-of-pocket expenditure	Percentage of people pushed below the USD3.10 ($ 2018 PPP) poverty line by out-of-pocket expenditure	Percentage of people pushed below the national poverty line 2018 by out-of-pocket expenditure	Poverty Gap at USD1.90 per day ($ 2018 PPP)	Poverty Gap at USD3.10 per day ($2018 PPP)
Aceh	0.25%	1.35%	0.51%	0.008	0.079
North Sumatra	0.15%	0.80%	0.49%	0.006	0.067
West Sumatra	0.09%	0.44%	0.74%	0.005	0.040
Riau	0.00%	0.52%	0.45%	0.001	0.033
Jambi	0.14%	0.70%	0.42%	0.008	0.057
South Sumatra	0.43%	0.82%	0.41%	0.022	0.082
Bengkulu	0.13%	0.87%	0.55%	0.006	0.093
Lampung	0.32%	1.26%	0.56%	0.017	0.110
Bangka Belitung	0.00%	0.37%	0.30%	0.000	0.010
Riau Islands	0.02%	0.31%	0.31%	0.000	0.010
Jakarta	0.00%	0.13%	0.37%	0.000	0.005
West Java	0.24%	0.82%	0.20%	0.013	0.065
Central Java	0.76%	1.84%	0.86%	0.046	0.202
Yogyakarta	0.53%	1.31%	0.39%	0.020	0.140
East Java	0.51%	1.50%	0.88%	0.035	0.160
Banten	0.02%	0.47%	0.33%	0.001	0.034
Bali	0.16%	0.42%	0.39%	0.006	0.043
West Nusa Tenggara	0.36%	0.86%	0.16%	0.019	0.076
East Nusa Tenggara	0.33%	1.01%	0.23%	0.041	0.123
West Kalimantan	0.20%	0.79%	0.34%	0.007	0.060
Central Kalimantan	0.12%	0.48%	0.33%	0.004	0.044
South Kalimantan	0.09%	0.90%	0.11%	0.003	0.040
East Kalimantan	0.01%	0.15%	0.51%	0.000	0.009

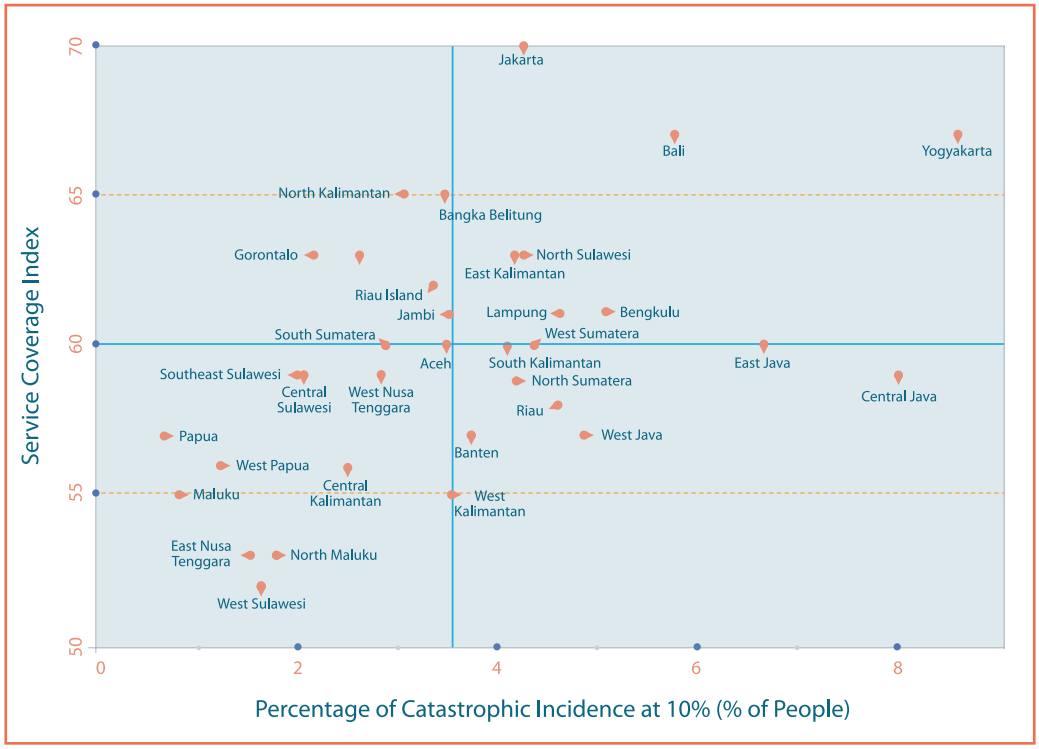
North Kalimantan	0.00%	0.48%	0.93%	0.000	0.015
North Sulawesi	0.62%	0.82%	0.28%	0.018	0.098
Central Sulawesi	0.28%	0.93%	0.34%	0.011	0.078
South Sulawesi	0.18%	0.71%	0.25%	0.033	0.087
Southeast Sulawesi	0.31%	0.61%	0.28%	0.044	0.094
Gorontalo	0.70%	0.68%	0.60%	0.061	0.112
West Sulawesi	0.26%	0.82%	0.25%	0.022	0.095
Maluku	0.03%	0.81%	0.35%	0.004	0.040
North Maluku	0.08%	0.79%	0.59%	0.002	0.055
West Papua	0.06%	0.18%	0.16%	0.007	0.025
Papua	0.17%	0.17%	0.09%	0.009	0.036
Indonesia	**0.22%**	**0.74%**	**0.41%**	**0.014**	**0.068**

Source: Authors' calculation.

4.3 Service Coverage Index and Financial Protection

There is a tendency for provinces that have high service coverage indexes to also have high catastrophic incidence. According to the *Tracking Universal Health Coverage: 2017 Global Monitoring Report*, people who experience low levels of impoverishment or out-of-pocket spending on health could indicate protection from financial hardship (WHO and World Bank, 2017). However, the report also discussed that low out-of-pocket spending and impoverishment could also indicate a lack of access to healthcare or the inability to afford access to health services (WHO and World Bank, 2017). This narrative can be applied to the results generated from this report.

Figure 2 Service Coverage Index and Financial Protection



Source: Authors' calculation.

Provinces in eastern parts of Indonesia, such as Papua and East Nusa Tenggara demonstrate low incidences of catastrophic spending, but also low indexes for service coverage (see Figure 2). These provinces are also home to some of the highest poverty rates in Indonesia, which could suggest that their ability to seek healthcare is limited due to their low financial situation. Furthermore, Lauranti et al. (2017) in their survey found that 10 per cent out of 1,344 respondents are still lacking access to basic health care facilities. The distance of the healthcare facilities, the unavailability of health workers and transportation costs are the key determinants (Lauranti et al., 2017) . Therefore, the low rates of catastrophic incidence could indicate access to health services is inadequate due to geographical condition, poor health infrastructure and health inequality.

This page intentionally left blank

5 CONCLUSION

> **“ This result is higher compared to that published by the WHO’s 2015 index of 49 for Indonesia, demonstrating improvement in health since the introduction of JKN.**

This report delivers a comprehensive assessment of the progress made toward achieving universal health coverage in Indonesia. Frameworks from the WHO were adopted and contextually adapted to calculate indexes for service coverage and financial protection efforts, with an index of 60 for service coverage. A set of indicators were developed to create four dimensions for measuring service coverage and data was collected from 2018 sources. Financial protection measured through the calculating of catastrophic incidence by measuring out-of-pocket spending on health care, indicate that out-of-pocket spending on health care in Indonesia is still high.

This research suggests that community awareness of available health services provided by JKN are still lacking. This can be seen through the screening for cervical cancer indicator, with a national index of only nine. As discussed above, screening for cervical cancer is covered by JKN for all women. The low results indicate that women are unaware of the available services and administration for maintaining such services are inadequate. It is evident that from low indexes for noncommunicable diseases that government awareness towards the importance of reducing the burden of noncommunicable diseases in Indonesia is insufficient. Furthermore, low public awareness for seeking treatment of tuberculosis or having the knowledge of where to obtain appropriate health treatment is hindering efforts toward universal health coverage. Although a special program is currently in place for eliminating tuberculosis in Indonesia, low rates of detection for tuberculosis

are leading to an increase in the spread of the disease.

High rates of smoking and unhealthy lifestyle are contributing to Indonesia's growing burden of NCDs. It was also discovered that lack of effort toward controlling hypertension in Indonesia, indicates that government interventions toward targeting behaviour and lifestyle are still insufficient Indonesia. Therefore, the health consequences of smoking need to be addressed with stronger policies and better health promotion initiatives, educating people on the dangers of smoking and related health consequences. A focus on the awareness around the dangers of hypertension are also urgently in need of expansion, with such low indexes deriving from this research. New communication strategies are crucial to deliver essential health education messages, through appropriate and contextual means, such as religious and community leaders.

Out-of-pocket spending for health care is still high, hindering efforts in providing financial protection, with almost 13 million people spending more than 10 per cent of their total consumption on health services. The incidence of impoverishment due to out-of-pocket spending on health has increased from 2011, implying that more people are impoverished due to out-of-pocket spending in 2018. This indicates that more people are being forced to divert spending away from their essential needs, such as food, shelter, and clothing. However, we are unable to conclude which components of health spending are contributing to such high out-of-pocket spending on health care. This information is crucial for setting effective strategies to reduce *out-of-pocket* spending.

This research also demonstrates that many provinces in Java and other western parts of Indonesia, on average, have a better health service coverage compared to provinces outside of Java in eastern parts of the country. Low ratios of hospital beds per capita and low health worker density remain a crucial issue that needs to be addressed in poorer provinces. Therefore, disparity and inequality of human and physical resource allocation need to be addressed to ensure

adequate rollout of universal health coverage in Indonesia. As discussed in the introduction, the indicators are designed to measure efforts made toward universal health coverage, instead of measuring the prevalence of diseases. Therefore, with all four dimensions and corresponding indexes being relatively low, indicates that JKN is not providing access to quality health care for all Indonesian citizens. Furthermore, some provinces that experience high poverty levels have a tendency of having low service coverage indexes to also have low catastrophic incidence. Inadequate access due to geographical conditions, poor health infrastructure and health inequality is a serious problem in those provinces.


Rp

6 RECOMMENDATIONS

This research adopted frameworks from the SDGs to track progress made by JKN, toward achieving universal health coverage. Based on the research findings, a number of recommendations for follow-up are:

	The government needs to commit to reducing health inequality with better development of basic health infrastructure and facilities in provinces that demonstrate poor health service coverage. The government needs to provide more primary health care centres, puskesmas, and hospitals, including the development of better road infrastructure for people to access health services.
	Health promotion efforts need to be revised and expanded to encourage better health outcomes and reduce the burdens placed on health service systems. Local and national governments must work with respected local community and religious leaders to formulate new communication strategies that deliver essential health information.
	The government needs to conduct further research into potential excise taxes that could curb the growing burden of noncommunicable diseases attributed to healthy lifestyle in Indonesia.
	The government needs to conduct more comprehensive surveys to identify what components of out-of-pocket health spending are contributing to such high rates of catastrophic incidence. This data is crucial to formulate policies that target specific components to reduce out-of-pocket spending on health in Indonesia.

7 REFERENCES

Adioetomo, S. M. & Mujahid, G. 2014. Indonesia on the Threshold of Population Ageing. *UNFPA Indonesia Monograph Series: No.1.* Jakarta: UNFPA Indonesia.

Agustina, R., Dartanto, T., Sitompul, R., Susiloretni, K. A., Suparmi, Achadi, E. L., Taher, A., Wirawan, F., Sungkar, S., Sudarmono, P., Shankar, A. H., Thabrany, H., Susiloretni, K. A., Soewondo, P., Ahmad, S. A., Kurniawan, M., Hidayat, B., Pardede, D., Mundiharno, Nelwan, E. J., Lupita, O., Setyawan, E., Nurwahyuni, A., Martiningsih, D., Khusun, H. & Global Indonesian Health Systems. 2019. Universal health coverage in Indonesia: concept, progress, and challenges. *The Lancet,* 393, 75-102.

Arnani, M. 2019. Beri Imunisasi kepada Anak, Perhatikan Daftar Imunisasi Ini... *Kompas.com*, 10/04/2019.

Badan Pusat Statistik. 2018. Survei Sosial Ekonomi Nasional. *In:* BPS (ed.). Jakarta.

BPJS Kesehatan. 2019. *Peserta Program JKN* [Online]. Indonesi: BPJS Kesehatan. Available: https://bpjs-kesehatan.go.id/bpjs/home [Accessed 31/08/2019 2019].

Brooks, M. I., Thabrany, H., Fox, M. P., Wirtz, V. J., Feeley, F. G. & Sabin, L. L. 2017. Health facility and skilled birth deliveries among poor women with Jamkesmas health insurance in Indonesia: a mixed-methods study. *BMC Health Services Research.*

Bruni, L., Albero, G., Serrano, B., Mena, M., Gómez, D., Muñoz, J., Bosch, F. & De Sanjosé, S. 2019. Human Papillomavirus and Related Diseases Report: Human Papillomavirus and Related Diseases in Indonesia. ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre).

Deaton, A. & Zaidi, S. 2002. Guidelines for constructing consumption aggregates for welfare analysis. *LSMS Working Paper.* Washington: World Bank.

Erlangga, D., Ali, S. & Bloor, K. 2019. The impact of public health insurance on healthcare utilisation in Indonesia: evidence from panel data. *International Journal of Public Health,* 64, 603-613.

Hu, Y., Wang, Y., Chen, Y., Liang, H. & Chen, Z. 2018. Measles vaccination coverage, determinants of delayed vaccination and reasons for non-vaccination among children aged 24-35 months in Zhejiang province, China. *BMC public health,* 18, 1298-1298.

Kementerian Kesehatan Republik Indonesia. 2018. Hari Malaria Sedunia, Pemerintah Perluas Wilayah Bebas Malaria. Available: https://www.depkes.go.id/article/view/18043000010/hari-malaria-sedunia-pemerintah-perluas-wilayah-bebas-malaria.html [Accessed 17/10/2019].

Kusumawardani, N., Tarigan, I., Suparmi & Schlotheuber, A. 2018. Socio-economic, demographic and geographic correlates of cigarette smoking among Indonesian

adolescents: results from the 2013 Indonesian Basic Health Research (RISKESDAS) survey. *Global health action,* 11, 1467605-1467605.

Lauranti, M., Afrina, E., Mawesti, D., Nurrahamah, B., Mustafa, F. & Suriyanto, F. 2017. Bantuan Iuran Jaminan Kesehatan Nasional: Ekuitas Kesehatan bagi Masyarakat Miskin dan Hampir Miskin di Indonesia. Jakarta: Perkumpulan Prakarsa.

London School Of Hygiene And Tropical Medicine. 2017. *Indonesia: Only one in five Indonesian women are aware of cervical cancer screening* [Online]. London: Vaccine Confidence Project Available: https://www.vaccineconfidence.org/latest-news/indonesia-only-one-in-five-indonesian-women-are-aware-of-cervical-cancer-screening?rq=indonesia [Accessed 03/12/2019 2019].

Maharani, C., Afief, D. F., Weber, D., Marx, M. & Loukanova, S. 2019. Primary care physicians' satisfaction after health care reform: a cross-sectional study from two cities in Central Java, Indonesia. *BMC Health Services Research,* 19, 290.

Mahendradhata, Y., Trisnantoro, L., Listyadewi, S., Soewondo, P., Harimurti, P., Marthias, T. & Prawira, J. 2017. *The Republic of Indonesia Health System Review 2017.*

Mboi, N. 2015. Indonesia: On the way to universal health care. *Health Systems and Reform,* 1, :91-97.

Ministry Of Health Indonesia 2018. Riset Kesehatan Dasar (RISKESDAS). Jakarta.

Ministry Of Health, K. 2018. *Current status of integrated community based TB service delivery and the Global Fund work plan to find missing TB cases* [Online]. The World Health Organization. Available: https://www.who.int/tb/features_archive/indonesia_11apr18.pdf?ua=1 [Accessed 03/12/2019 2019].

Moeloek, N. F. 2017. Indonesia national health policy in the transition of disease burden and health insurance coverage. *Medical Journal of Indonesia,* 26, 3-6.

National Population And Family Planning Board, Statistics Indonesia, Ministry Of Health & The Dhs Program Icf 2018. Indonesia Demographic and Health Survey 2017. Jakarta, Indonesia: BKKBN, BPS, Kemenkes, and ICF.

Peltzer, K. & Pengpid, S. 2018. The Prevalence and Social Determinants of Hypertension among Adults in Indonesia: A Cross-Sectional Population-Based National Survey. *International Journal of Hypertension,* 2018, 9.

Pinto, R., Harimurti, P., Masaki, E. & Pinto, R. 2016. *Indonesia Health Financing System Assessment. [electronic resource] : Spend More, Spend Right, Spend Better*, The World Bank.

Purnamasari, D. 2018. The Emergence of Noncommunicable Disease in Indonesia. *Acta Medica Indonesiana,* 50, 273-274.

Rg. 2014. Jangan Khawatir, BPJS Kesehatan Menjamin Deteksi Sebelum Kanker Serviks Menyerang. Available: https://www.bpjs-kesehatan.go.id/bpjs/index.php/post/read/2014/262/Jangan-Khawatir-BPJS-Kesehatan-Menjamin-Deteksi-Sebelum-Kanker-Serviks-Menyerang/berita [Accessed 03/12/2019].

Soewondo, P., Ferrario, A. & Tahapary, D. L. 2013. Challenges in diabetes management in Indonesia: a literature review. *Globalization and health,* 9, 63-63.

Sparrow, R., Suryahadi, A. & Widyanti, W. 2013. Social health insurance for the poor: targeting and impact of Indonesia's Askeskin programme. *Social Science & Medicine (1982),* 96, 264-271.

Syiroj, A. T. R., Pardosi, J. F. & Heywood, A. E. 2019. Exploring parents' reasons for incomplete childhood immunisation in Indonesia. *Vaccine,* 37, 6486-6493.

The John Hopkins University. 2019. *My Choice* [Online]. Baltimore: The John Hopkins University Available: https://ccp.jhu.edu/projects/family-planning-indonesia/ [Accessed 04/11/2019 2019].

The United Nations. 2019. *Sustainable Development Goals Knowledge Platform* [Online]. New York: United Nations. Available: https://sustainabledevelopment.un.org/sdg3 [Accessed 10/10/2019 2019].

The World Bank. 2019a. *Maternal Mortality Ratio (Modeled Estimate, Per 100,000 Live Births)* [Online]. The World Bank Group Available: Https://Databank.Worldbank.Org/Source/Health-Nutrition-And-Population-Statistics [Accessed 03/12/2019 2019].

The World Bank. 2019b. *PPP Conversion Factor, Private Consumption (LCU Per International $) - Indonesia* [Online]. The World Bank Available: Https://Data.Worldbank.Org/Indicator/PA.NUS.PRVT.PP?Locations=ID [Accessed 05/12/2019 2019].

The World Bank. 2019c. *The World Bank Indonesia: Overview* [Online]. The World Bank. Available: Https://Www.Worldbank.Org/En/Country/Indonesia/Overview [Accessed 10/10/2019 2019].

The World Health Organization. 2018. *Indonesia Tobacco Factsheet 2018* [Online]. The World Health Organization. Available: Https://Apps.Who.Int/Iris/Bitstream/Handle/10665/272673/Wntd_2018_Indonesia_Fs.Pdf?Sequence=1 [Accessed 03/12/2019 2019].

The World Health Organization. 2019a. *Essential Medicines And Health Products* [Online]. The World Health Organization. Available: Https://Www.Who.Int/Medicines/Services/Essmedicines_Def/En/ [Accessed 03/12/2019 2019].

The World Health Organization. 2019b. *Noncommunicable Diseases* [Online]. The World Health Organization. Available: Https://Www.Who.Int/En/News-Room/Fact-Sheets/Detail/Noncommunicable-Diseases [Accessed 03/12/2019 2019].

The World Health Organization. 2019c. *WHO Framework Covention On Tobacco Control* [Online]. The World Health Organization. Available: Https://Www.Who.Int/Fctc/En/ [Accessed 03/12/2019 2019].

The World Health Organization. 2019. *Universal Health Coverage* [Online]. The World Health Organization. Available: Https://Www.Who.Int/Health-Topics/Universal-Health-Coverage#Tab=Tab_1 [Accessed 07/10/2019 2019].

The World Health Organization Indonesia. 2019. *Universal Health Coverage And*

Health Care Financing Indonesia [Online]. Indonesia: The World Health Organization Available: Http://Www.Searo.Who.Int/Indonesia/Topics/Hs-Uhc/En/ [Accessed 10/10/2019 2019].

TNP2K 2015. The Road To National Health Insurance (JKN). Jakarta: National Team For The Acceleration Of Poverty Reduction

UNAIDS. 2019. *90-90-90: Treatment For All* [Online]. UNAIDS. Available: Https://Www.Unaids.Org/En/Resources/909090 [Accessed 03/12/2019 2019].

UNICEF. 2019. *Water, Sanitation And Hygiene* [Online]. Unicef. Available: Https://Www.Unicef.Org/Indonesia/Water-Sanitation-And-Hygiene [Accessed 06/11/2019 2019].

Vidyattama, Y., Miranti, R. & Resosudarmo, B. P. 2014. The Role Of Health Insurance Membership In Health Service Utilisation In Indonesia. *Bulletin Of Indonesian Economic Studies,* 50, 393-413.

Wagstaff, A. 2008. *Measuring Financial Protection In Health. [Electronic Resource]*, The World Bank.

Wagstaff, A. & Doorslaer, E. V. 2001. *Paying For Health Care. [Electronic Resource] : Quantifying Fairness, Catastrophe, And Impoverishment, With Applications To Vietnam, 1993-98*, World Bank, Development Research Group, Public Services For Human Development.

Wagstaff, A., Flores, G., Smitz, M.-F., Hsu, J., Chepynoga, K. & Eozenou, P. 2018. Progress On Impoverishing Health Spending In 122 Countries: A Retrospective Observational Study. *The Lancet Global Health,* 6, E180-E192.

WHO & World Bank 2017. Tracking Universal Health Coverage: 2017 Global Monitoring Report. World Health Organization, International Bank For Reconstruction And Development.

World Bank 2001. *World Development Report 2000/2001 Attacking Poverty,* Washington, D.C., The World Bank.

World Health Organization. 2017. *Diarrhoeal Disease* [Online]. World Health Organization. Available: Https://www.Who.Int/En/News-Room/Fact-Sheets/Detail/Diarrhoeal-Disease [Accessed 05/11/2019 2019].

World Health Organization. 2019. *WHO vaccine-preventable diseases: monitoring system. 2019 global summary* [Online]. World Health Organization. Available: http://apps.who.int/immunization_monitoring/globalsummary/estimates?c=IDN [Accessed 04/11/2019 2019].

World Health Organization. 2019. Primary health care on the road to universal health coverage: 2019 monitoring report: executive summary. World Health Organization.

Worldometers. 2019. *Indonesia Population* [Online]. Dadax. Available: https://www.worldometers.info/world-population/indonesia-population/ [Accessed].

PRAKARSA

Welfare Initiative for Better Societies

Perkumpulan PRAKARSA is a think tank organization based in Jakarta, Indonesia. We work to nurture and enhance welfare ideas and initiatives through independent research and active engagement in order to create social justice and prosperous society.

We conduct research, analysis and capacity building on a wide range of topics related to welfare issues. We work with national and local governments, parliaments, financial authorities, CSOs, universities, international organizations, private sectors and mass media to bring ideas into initiatives and actions. We are supported by experts and intellectuals who have formidable reputation in academic or policy circles to produce innovative research and policy analysis for proposing specific and practical ideas.

Jl. Rawa Bambu I Blok A No. 8E
Pasar Minggu, Jakarta Selatan
Indonesia 12520

☎ +62 21 7811 798
✉ perkumpulan@theprakarsa.org

FOLLOW OUR SOCIAL MEDIA

Perkumpulan PRAKARSA
ThePRAKARSA
Perkumpulan PRAKARSA
ThePRAKARSA

ISBN 978-623-91350-3-4

www.theprakarsa.org