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# Improving Health of the Left-Behinds: The Case of Indonesia's *Nusantara Sehat* A Quantitative Evaluation Study

November 2019



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This research is under supervision of Bambang Widianto, Executive Secretary of TNP2K

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First publication, November 2019

ISBN:

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Suggested citation: TNP2K, 2019. Improving Health of the Left-Behinds: The Case of Indonesia's *Nusantara Sehat*. TNP2K Working Paper 6-2019. Jakarta, Indonesia.

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# Foreword

To improve the health care utilisation and ensure health equity for the community living in underserved areas, the Ministry of Health, Government of Indonesia has been implementing *Nusantara Sehat*, a team-based deployment program to address the maldistribution of the health workforce and improve primary health care services delivery since 2015. This report aims to evaluate the effect of *Nusantara Sehat* towards the accomplishment of “the Healthy Indonesia Program with Family-based Approach” (*Program Indonesia Sehat dengan Pendekatan Keluarga*: PIS-PK) indicators. We survey approximately 2400 households living in 12 different underserved areas across Indonesia. By using difference in difference (DiD) method, our analysis finds that the *Nusantara Sehat* has significantly improved several indicators related to maternal and child health, and tuberculosis disease detection, which are two main public health problems faced by the country. As this program has been critical to strengthen the primary healthcare services at the grass root level, we recommend the Government to ensure the betterment and sustainability of the *Nusantara Sehat* through continuous political and financial support for this program.

This report consists of:

## **Chapter 1 – Introduction**

This chapter presents background of the study, general and specific objectives, and scope research.

## **Chapter 2 – Program Design**

This chapter consists of the detail explanation of the Program background including the challenges of health delivery in Indonesia’s remote, border, and underserved (DTPK) areas; as well as the Program Implementation including program planning, selection process, pre-departure training process, and deployment process. Besides that, the current evaluation of similar programs in other countries also presented in this chapter.

## **Chapter 3 – Evaluation Design**

Chapter 3 describes the evaluation design, covering the theory of change, selected evaluation indicators, sampling strategy, study sites, and methodology of the study. Theory of change is beneficial for navigating the evaluation process and understanding the mechanism of the NS Program, by adopting 11 out of 12 PIS-PK as the evaluation indicator. In this chapter we also explain the sampling strategy and study sites as well as the methodology.

## **Chapter 4: Results and Discussion**

In this chapter we present the statistical result of each indicators, explain why one indicator is statistically significant and discuss why other indicator is not.

## **Chapter 5: Conclusions and Recommendations**

The last chapter propose the conclusions and recommendations for the relevant stakeholders to improve the NS program in the future; in which specifically addressed to the Ministry of Health and Local Government of the Republic of Indonesia.

Jakarta, November 2019

# Acknowledgements

This evaluation report is written by the National Team for the Acceleration of Poverty Reduction (*Tim Nasional Percepatan Penanggulangan Kemiskinan: TNP2K*) in Jakarta. Prastuti Soewondo, as the Head of Social Health Insurance Working Group at the TNP2K, supervised the evaluation process and the development of this report. She is supported by a team consisting of Retno Pujisubekti, Ade Febriady, Halimah, Adwin Haryo Indrawan Sumartono, and Dwi Oktiana. The late Senior Economist, Meliyanni Johar was involved in planning and conducting the initial activities of this study. The Monitoring and Evaluation team of TNP2K, including Ekki Syamsulhakim, Nur Cahyadi, Agung Setiawan, and Thoriq Akbar also contributed to this evaluation. In addition, Nurul Maretia Rahmayanti and Harsa Kunthara Satrio were also involved during the report preparation process.

The analysis of this evaluation is based on the baseline and end-line survey data with the data collection process undertaken by DEFINIT, a company that offers services in research implementation and other consulting activities.

Financial support for this evaluation is provided by the MAHKOTA (Towards a Strong and Prosperous Indonesian Society), Department of Foreign Affairs and Trade (DFAT) of the Australian Government, and the United States Agency for International Development (USAID) Human Resource and Health 2030 project.

The Government of Indonesia has provided exemplary leadership in implementing the Nusantara Sehat Program during 2015–19. The Ministry of Health of the Government of Indonesia through the Board for Development and Empowerment of Human Resources of Health has a pivotal role in the recruitment, selection, and deployment process of the selected team across DTPK areas. In addition, the National Institute for Health Research and Development (*Badan Penelitian dan Pengembangan Kesehatan: Balitbangkes*) also made a significant contribution by conducting a series of evaluations for the NS improvement.

# Abbreviations and Acronyms

ANC	Antenatal Care
APBD	<i>Anggaran Pendapatan dan Belanja Daerah</i> (Regional Budget)
Balitbangkes	<i>Badan Penelitian dan Pengembangan Kesehatan</i> (The National Institute for Health Research and Development)
Bappenas	<i>Badan Perencanaan Pembangunan Nasional</i> (Ministry for National Development Planning)
BOK	<i>Bantuan Operasional Khusus</i> (Special Operational Assistance - for the deployed Puskesmas)
BPPSDMK	<i>Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia Kesehatan</i> (Board for Development and Empowerment of Human Resources for Health)
BPS	<i>Badan Pusat Statistik</i> (Statistics Indonesia)
DAK-fisik	<i>Dana Alokasi Khusus fisik</i> (Special Allocation Fund - Physical)
DAK-nonfisik	<i>Dana Alokasi Khusus nonfisik</i> (Special Allocation Fund - Nonphysical)
DTPK	<i>Daerah Terpencil, Perbatasan, dan Kepulauan</i> (remote, border, and underserved areas)
HRH	Human Resources for Health
IKG	<i>Indeks Kesulitan Geografis</i> (Geographic Difficulty Index)
JKN	<i>Jaminan Kesehatan Nasional</i> (National Health Insurance)
NS	<i>Nusantara Sehat</i> (Healthy Indonesia)
PIS-PK	<i>Program Indonesia Sehat dengan Pendekatan Keluarga</i> (Healthy Indonesia Program Through the Family Approach)
Podes	<i>Potensi Desa</i> (Village Potential: Village data)
<i>Posyandu</i>	<i>Pos Pelayanan Terpadu</i> (Integrated Village Health Post)
PTT	<i>Pegawai Tidak Tetap</i> (Fixed-term Employee Deployment)
Puskesmas	<i>Pusat Kesehatan Masyarakat</i> (Community Health Centre)
STR	<i>Surat Tanda Registrasi</i> (Certificate of Professional Registration)
TNP2K	<i>Tim Nasional Percepatan Penanggulangan Kemiskinan</i> (The National Team for the Acceleration of Poverty Reduction)
UKBM	<i>Upaya Kesehatan Berbasis Masyarakat</i> (Community-based Public Health Program)

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# Executive Summary

The Ministry of Health, Government of Indonesia launched the Nusantara Sehat (NS), a team-based health workforce deployment program, in 2015. This program addresses the maldistribution of the health workforce in remote areas by deploying five mixed health workforces for two years in each selected site. In addition, this program aims to support implementation of the Healthy Indonesia Program Through the Family Approach (*Program Indonesia Sehat dengan Pendekatan Keluarga*: PIS-PK) to strengthen primary health services in remote, border, and underserved areas (*Daerah Tertinggal, Perbatasan, dan Kepulauan*: DTPK) through the preventive and promotive approach. The NS was initially deployed in 120 selected sites across 44 DTPK. As of February 2019, the program has been expanded to cover 216 community health centers (*Pusat Kesehatan Masyarakat*: Puskesmas) across 131 districts in 19 provinces.

In this study, we aim to evaluate the effect of NS deployment to support the achievement of PIS-PK indicators at the deployed sites. Although the randomized setting that is usually considered as the gold standard for evaluation was not possible, we minimised potential sources of bias by independently selecting the treatment and control groups from the same or nearby districts to obtain similar characteristics. In addition, we also used an evaluation method that is addressing the factors that might change the outcome in the absence of NS, such as endowment effect and the macro trend factors.

The evaluation finds evidence to suggest that NS improved access to maternal health services, such as maternal delivery by a skilled health worker by 5.7 percentage point (pp) and pregnancy checks in *Puskesmas* 6.7 pp. NS also improves TB symptom detection by 2.9 pp. Regarding the quality of access, NS has also contributed to the growth and development of children under five years of age as it improves health promotion and counselling during *Posyandu*<sup>1</sup> visits by 13.6 and 11.9 pp respectively. Furthermore, NS also enhanced knowledge related to the importance of Oralit treatment during diarrhea (14.2 pp), the importance of preventing dehydration in toddlers (14.4 pp), first aid for toddlers during fever (10.9 pp) and knowledge of JKN (*Jaminan Kesehatan Nasional*: National Health Insurance) for family planning services (8.1 pp). For the behavioural aspect, NS has encouraged the community to engage in more frequent physical activities (14.1 pp). As we only conducted an evaluation study over a one-year period, we might have some limitations in detecting effects on behaviour that may take longer to change.

As there is still room for NS improvement, we recommend that the Ministry of Health conduct a more comprehensive pre-departure training for workforce teams. This should consist of modules or sessions that cover: (i) the soft skills needed to deliver health promotion and prevention activities at the community level, aligned with the PIS-PK main approach; (ii) advocacy skills with relevant stakeholders to gain support delivering the PIS-PK programs at the community level; and (iii) in-depth materials for each of the PIS-PK.

To be more effective, NS would also need support from local governments. This support could come in many forms that would facilitate more effective delivery of NS activities in the field. In terms of budgeting, local governments could allocate some of their DAK-fisik, DAK-nonfisik, APBD,2 or the Village Fund to strengthen NS/Puskesmas' activities.

<sup>1</sup> *Posyandu*: *Pos Pelayanan Terpadu* (Integrated Village Health Post).

<sup>2</sup> DAK-fisik (*Dana Alokasi Khusus Fisik*): Special Allocation Funds – Physical; DAK-nonfisik (*Dana Alokasi Khusus Nonfisik*): Special Allocation Funds – Nonphysical; APBD (Anggaran Pendapatan dan Belanja Daerah): Regional Budget.

## 01

# Introduction

The team-based health workforce deployment program in the remote, border, and underserved areas (*Daerah Tertinggal, Perbatasan dan Kepulauan: DTPK*) is believed to be more effective in delivering health services for the targeted community. As it consists of a mixed-skill workforce from both clinical and nonclinical professions, this program provides a comprehensive approach of preventive, promotive, curative, and rehabilitative care.

To give effect to this approach, the Ministry of Health of the Government of Indonesia launched its *Nusantara Sehat* (NS) Program to address the maldistribution of health workers in remote areas. It is also aimed at implementing the Healthy Indonesia Program Through the Family Approach (*Program Indonesia Sehat dengan Pendekatan Keluarga: PIS-PK*). The NS employs five different health practitioners for a two-year period at a selected site to deliver the PIS-PK priorities with an emphasis on health prevention and promotion activities. When the program launched in 2015, 120 community health centres (*Pusat Kesehatan Masyarakat: Puskesmas*) in 44 DTPK were selected as the deployment sites. Since then 11 NS teams have been deployed in 131 districts across 19 provinces.

The NS is a scaled-up program of *Pencerah Nusantara*, a former initiative to strengthen primary health services in rural areas. These two programs are different to the previous fixed-term individual-based deployment program (*Pegawai Tidak Tetap: PTT*) that had been managed by the Ministry of Health since 1951, as the PTT was more focused on delivering curative care for patients. The recent evaluation by the National Institute for Health Research and Development (*Badan Penelitian dan Pengembangan Kesehatan: Balitbangkes*) showed that this team-based approach is proven effective at increasing the public health status of the community. As the NS itself is expected to be a supporting tool in implementing the PIS-PK, in this report we intend to evaluate the effect of NS to achieve the PIS-PK indicators at their deployed sites.

This report presents the main findings of our evaluation. Chapter 2 explains the program design of the NS, starting from its planning until the program execution. Chapter 3 describes our evaluation design, covering the theory of change that we develop, selected evaluation indicators, sampling strategy and study sites, as well as the methodology that we use. The results and discussions are presented in Chapter 4. Finally, Chapter 5 presents the conclusions and recommendations for the relevant stakeholders to improve the NS implementation in the future.

## 02

# Program Design

## 2.1 Program Background

### 2.1.1. The challenges of health delivery in Indonesia's remote, border, and underserved (DTPK) areas

According to the National Health Act (Law No. 36/2009), the Government of Indonesia is responsible for comprehensive health services delivery and ensuring that everyone will have adequate access to these services. Providing health care for more than 260 million inhabitants across 17,504 islands with infrastructure disparities is, however, a challenging task (Mahendradhata et al. 2017). Geographical differences may affect the health status of the community as it is known that rural residents utilise health services less often compared to urban communities. Despite the implementation of the National Health Insurance Program (*Jaminan Kesehatan Nasional: JKN*), urban enrollees still have better access to health care services due to the availability of health workers and the readiness of health facilities (Johar et al. 2018).

To address these challenges, the Government of Indonesia launched the PIS-PK in 2016. This program aimed to strengthen primary health care by: (i) implementing universal health coverage; (ii) improving access to, and quality of, the health services; (iii) strengthening health systems; and (iv) financing health care. The PIS-PK is focusing on the improvement of maternal and child health, nutrition status, as well as communicable and noncommunicable disease control with an emphasis on a promotive and preventive approach (Ministry of Health 2016).

Indonesia currently has 10,017 *Puskesmas* (Ministry of Health 2016) that are the pivotal grass-roots units to implement promotive and preventive programs, while also delivering essential curative and rehabilitative care for patients (Ministry of Health 2014). According to the Minister of Health Decree No. 75/2014, a *Puskesmas* should be staffed by a doctor, dentist, nurse, midwife, public health officer, sanitarian, laboratory analyst, nutritionist, and a pharmacist. Nevertheless, 5,988 facilities (59.77 percent) are not adequately staffed and lack a competent workforce to deliver promotive and preventive programs as the primary function of the *Puskesmas* (Ministry of Health 2016). In addition, more than 12 percent of these facilities lack one or more medical professional (doctor, dentist, nurse, or a midwife) to deliver medical treatment for patients. The percentage varies across provinces, with the worst condition found in DTPK.

Nusantara Sehat, a team-based deployment program, was launched in 2015 by the Ministry of Health to fill the gap in the workforce at the *Puskesmas* and support the implementation of the PIS-PK at the DTPK. This program was a scaling up of the former *Pencerah Nusantara* that was initiated by the Center for Indonesia's Strategic Development Initiatives (CISDI 2019). Furthermore, the Ministry for National Development Planning (*Badan Perencanaan Pembangunan Nasional: Bappenas*) also recommended a team-based deployment approach to address the maldistribution of the health workforce and improve health services delivery in

rural areas. Unlike the PTT, an interprofessional team of health workers was expected to be more effective in improving several indicators under the Minimum Service Standards (Bappenas 2015).

A deployed team initially consisted of five team members from a combination of: doctor, nurse, midwife, nutritionist, sanitarian, pharmacist, public health officer, laboratory analyst, or dentist. In 2017, the NS was expanded to include an individual-based contract scheme, to accommodate several *Puskesmas* that might need less than five of those health workers. They would serve at the deployed place for two years and return after finishing the placement contract.

## 2.2 Program Objectives

According to the Ministry of Health Regulation No. 23/2015, which was revised by the Ministry of Health Regulation No. 16/2017, the NS is designed to:

- a. provide and ensure the sustainability of health services delivery in the DTPK areas;
- b. contribute to addressing local health problems;
- c. improve retention and fulfil the needs of the health workforce in the deployed areas;
- d. conduct community empowerment activities;
- e. implement integrated health services; and
- f. support achieving the PIS-PK targets by improving access to, and quality of, care; particularly related to maternal and child health, nutrition, as well as disease control and prevention programs.

## 2.3 Program Implementation

### 2.3.1 Program planning

The Government of Indonesia has set a long-term health development plan for 2005-25 that included a focus on strengthening health services in DTPK areas during the 2015-19 period. The deployment sites for NS were decided according to this strategy. The health minister, governors, and mayors initially collaborated to decide the workforce formation to be deployed according to local needs. The mayors first conducted a mapping process to analyse the workforce gap at the *Puskesmas* and proposed the required profile to the provincial governor. All proposals from the district level were then compiled and submitted to the Ministry of Health through the Board for Development and Empowerment of Human Resources for Health (*Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia Kesehatan: BPPSDMK*). The Ministry of Health conducted a further verification regarding the workforce needs and proposed a location for the deployment. After the ministry decided the formation and place of deployment, the mayors were responsible for providing supporting facilities for the NS team that would be deployed in their area.

### 2.3.2 Selection process

The Ministry of Health announces the NS formation and recruitment process through its official website and the mass media—selecting the participants by utilising the online platform and a two stage process:

#### a. Stage 1 – Administration Process

All eligible health workers were required to submit several documents for further verification by the ministry. The documents consisted of a national ID card, health certificate, police certificate, certificate

of education qualification, certificate of professional registration (*Surat Tanda Registrasi: STR*), recent photograph, and a letter of commitment. All of these documents were submitted through the NS website on [www.nusantarasehat.kemkes.go.id](http://www.nusantarasehat.kemkes.go.id). The ministry then verified the documents and announced the eligible applicants who could continue to stage 2 of the selection process.

b. Stage 2 – Interview, Medical Check-up, and Psychological Test

The eligible applicants took a series of tests consisting of an interview, medical check-up, and psychological test conducted by the ministry. The list of candidates who passed all the requirements was announced publicly by the Ministry of Health.

### 2.3.3 Pre-departure training process

Before being deployed, the selected candidates took six weeks of pre-departure training. This was conducted by the Ministry of Health in collaboration with the Indonesian Armed Forces, Faculty of Medicine at the University of Indonesia, Cipto Mangun Kusumo National Hospital, and other institutions. The basic modules covered by the training are detailed in Table 2.1. Aside from being equipped with these essential modules, the NS deployees were also trained to develop a proposed action plan that covered several innovative ideas to solve certain health problems at their deployed sites.

**Table 2.1: Nusantara Sehat Pre-departure Training Modules**

Number	Modules	Sub-modules
1.	Basic module	a. NS supporting policy b. Policy on primary health care services
2.	Main module	a. Nationalism b. Leadership c. Interactive communication d. Advocacy e. Community empowerment f. Dissemination of monitoring and evaluation results g. Medical services <ul style="list-style-type: none"> <li>• Community health</li> <li>• Neonatal resuscitation</li> <li>• Village health post, health promotion, and quality assurance</li> <li>• Obstetric gynaecology</li> <li>• Reproductive health</li> <li>• Emergency and trauma care</li> <li>• Child nutrition and infant feeding practice</li> </ul>
3.	Additional module	a. Building learning commitment b. Anticorruption c. Interprofessional collaboration

Source: Ministry of Health 2015.

### 2.3.4 NS deployment process

For the deployment process of the first batch, 120 *Puskesmas* in 44 DTPK were chosen as the placement sites. By February 2019, the program itself had deployed 11 batches in 131 districts across 19 provinces, consisting of 467 interprofessional teams of 2,661 health workers. At this time, 216 teams from batches 6-11 remained active, while the other 251 teams from batches 1-5 had finished their deployment contract. Of the 216 *Puskesmas* with active teams, 91 were chosen for the second time for the team-based form, while another 75 *Puskesmas* were chosen as the sites for NS individual deployments after the completion of NS team-based deployments during the previous period. The remaining 50 *Puskesmas* were recently chosen as new sites. Of the 251 teams from the batch 1-5 deployment, 85 *Puskesmas* were discontinued as the placement sites. According to the Minister of Health Regulation No. 71/2016, a *Puskesmas* selected as a deployment site received an additional operational budget (*Bantuan Operasional Khusus*: BOK) of Rp 200 million to support the implementation of the NS Program.

## 2.4 Current Evaluation of NS and Similar Programs in Other Countries

After the completion of NS batch 1 and 2 in 2017, *Balitbangkes* conducted an evaluation to assess its impact on the public health index of the deployed sites. The evaluation applied a pre- (in 2015), mid- (in 2016), and post-test (in 2017) at 30 *Puskesmas* intervention sites and 30 *Puskesmas* control sites in 27 districts across 15 provinces. The results showed an increase in the average public health index in 2017, compared to its pre-test result in 2015 ( $p=0.0000$ ).

Independent t-test analysis showed that improvement in the public health index was greater in *Puskesmas* intervention sites compared to control sites ( $p=0.046$ ). It showed that this program had a positive effect in strengthening preventive and promotive programs at the *Puskesmas* level. This study recommended further cost-benefit analysis of the program for further improvement (Sari et al. 2019).

A different study in China (Liang et al. 2019) found that the deployment of an additional health care workforce per 1,000 population could reduce the under-five mortality rate by up to 2.6 percent. This program also contributed to the 6.8 percent reduction in the under-five mortality rate in rural and poor areas compared to a fall of only 1.1 percent in developed ones ( $p<0.0001$ ) (Liang et al. 2019). This study was consistent with other findings in Japan, as an additional health worker was associated with a 47 percent decrease of under-five children (Sakai et al. 2016) and a Brazil study that found an increase in physician density reduced the neonatal mortality rate by up to 2.3 percent in its 4,267 counties (Sousa et al. 2013).

## 03

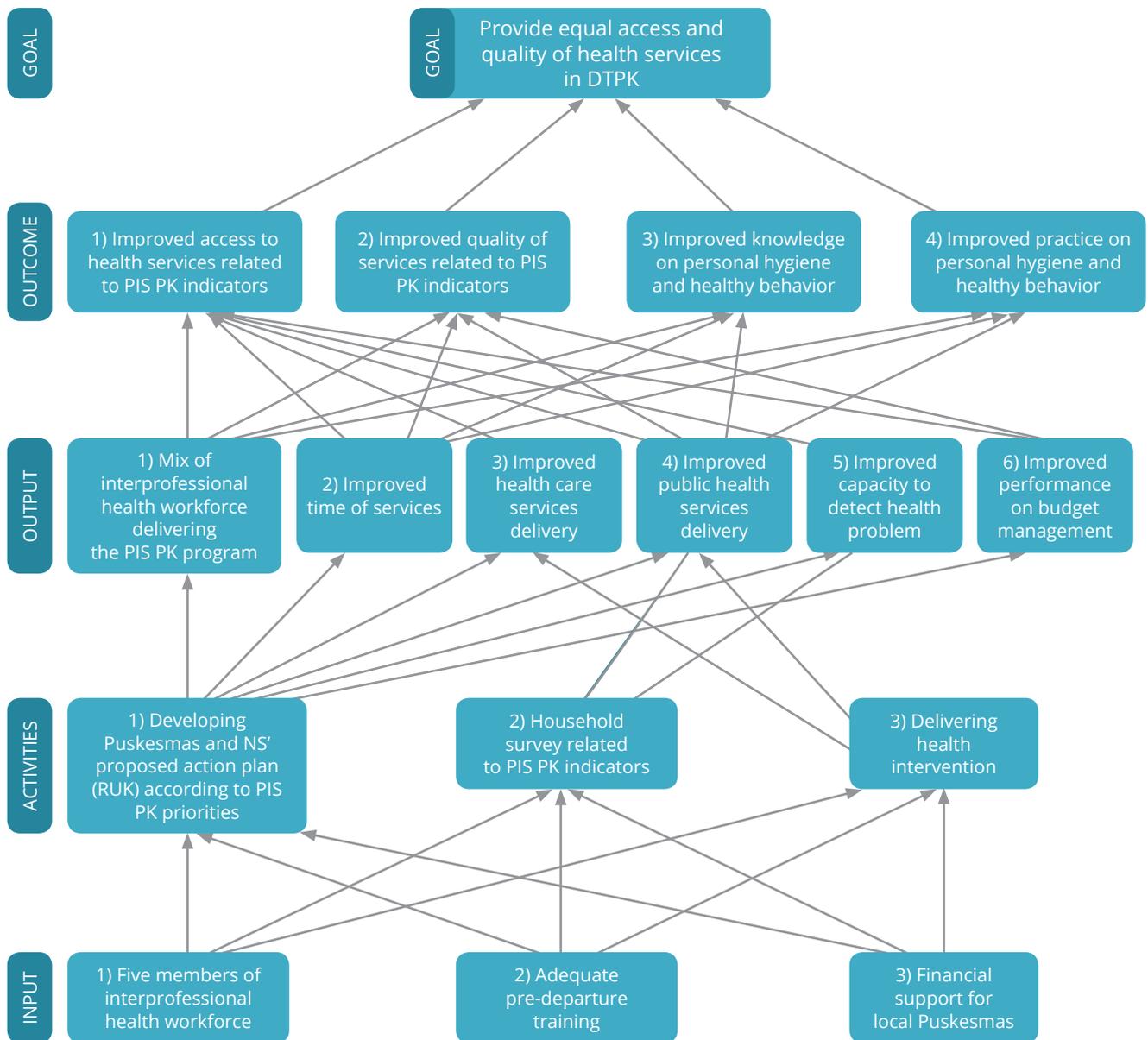
# Evaluation Design

## 3.1 Theory of Change

The NS is designed to support the targets of the PIS-PK Program to improve access to, and quality of, health services in DTPK areas; hence we developed a theory of change aligned with the aspirations of this program. This theory of change is beneficial for navigating the evaluation process and understanding the mechanism of the NS Program that might contribute to improving the access to, and quality of, health services related to PIS-PK indicators in DTPK. We define input as the pre-requisites for the NS Program—covering the workforce numbers, pre-departure training process, and additional financial support to the Puskesmas. After the required inputs are available, the NS would start to implement the program. Firstly, they would discuss their proposed action plan that covers several innovative programs—according to the PIS-PK priorities—with the local workers at their deployed Puskesmas. This proposed action plan itself is developed during the pre-departure training prior to their deployment. A community health census would also be conducted as one of PIS-PK's main activities to assess the current situation and existing health problems at the deployed sites. By having the action plan and adequate baseline data, the NS are expected to be ready to deliver the health intervention within the given timeframe.

Given the NS Program's mixture of skills, it was planned to deliver the PIS-PK program using a multidisciplinary approach so the deployed professionals could complement each other's skills to provide comprehensive health services. In addition, we were looking forward to improved timeliness of services, strengthened capacity in disease detection, and better performance on budget management as other outputs of NS deployment at the selected sites. At the end of the study, we tried to understand the causal relationships of NS deployment in improving the access, quality, knowledge, and behaviour of the community towards the PIS-PK indicators (Figure 3.1). The evaluation indicators will be elaborated in Section 3.2.

Figure 3.1: Theory of Change



Source: Author's analysis based on program design narrative.

### 3.2 Evaluation Indicators

We adopted 11 out of 12 indicators of PIS-PK to analyse the effect of the NS team-based deployment at the selected DTPK. We do not measure severe mental health disorder in this evaluation as we focus on assessing the NS Program's effects on improving access to, and quality of, maternal and child health; communicable and noncommunicable disease control and prevention; personal hygiene and healthy behaviour; as well as universal health coverage in the community. Table 3.2 shows the selected indicators in this evaluation.

**Table 3.2 Selected Indicators**

Health Services	PIS-PK Code	Indicators	Subindicators
Maternal and Child Health	1	Family planning	Use of contraception
			Plan to use contraception in the future
			Pay to get contraception
Communicable and noncommunicable disease control and prevention	2	Pregnancy and delivery	Delivery in health facilities
			Maternal delivery by a skilled health worker
			Place of pregnancy check: <i>Puskesmas</i>
			Place of pregnancy check: Clinics
			Place of Pregnancy Check: Hospital
			Complete ANC during pregnancy (at least 4 checks)
			Check 1 month after delivery
			Iron supplementation during pregnancy
	3	Immunisation	Complete immunisation (HB, BCG, Polio, DPT, Measles)
	4	Exclusive breastfeeding	Exclusive breastfeeding for 6 months
			2 years of breastfeeding
	5	Under-five growth and development	Knowledge: a frequent monthly visit to <i>Posyandu</i>
			Knowledge about Oralit during diarrhoea
			Knowledge about keeping toddlers hydrated during diarrhoea
			Knowledge about taking care of toddlers during fever
			Health promotion during <i>posyandu</i> visit
			Vitamin A supplementation for toddlers
Frequent monthly visit to <i>Posyandu</i>			
<i>Posyandu</i> staff explain the health condition			
Communicable and noncommunicable disease control and prevention	6	Tuberculosis	There are household members who have TB symptoms
			TB patient regularly takes medicine
	7	Hypertension	There are household members who have hypertension
			Hypertension patient regularly takes medicine
			Doing physical activity at least 30 minutes per day
			Household's diet contains a lot of vegetables
			Household is often eating fruit
	Personal hygiene and healthy behaviour	9	Smoking behaviour
Smoking in the house			
Knowledge that smoking cigarettes is bad for health			
10		Access to clean water	Clean water as the main source of drinking

Health Services	PIS-PK Code	Indicators	Subindicators
Personal hygiene and healthy behaviour	11	Access to sanitation	Latrine ownership
Universal Health Coverage	12	JKN Membership	All household members already have JKN
			Knowledge that JKN: can be used for getting health services and drugs
			can be used for medical treatment
			can be used for health screening
			can be used for pregnancy and delivery services
			can be used for family planning

Source: Ministry of Health 2017.

### 3.3 Sampling Strategy and Study Site

This study took place at 12 *Puskesmas* in three provinces—Bengkulu, South Sulawesi, and East Nusa Tenggara—to portray a representative sample of western and eastern Indonesia (Table 3.3). The data collection in both the treatment (intervention site) and control groups (nonintervention sites) was conducted twice with the baseline survey in May 2018 and end-line survey in May 2019. The treatment group were located at the NS Batch 9 and were deployed one month after the baseline survey period. For the control group location, we selected the *Puskesmas* that would not be an NS deployed site during our study period, based on the list provided by the Ministry of Health (see Appendix 1).

**Table 3.3: Selected Study Sites**

Province	Treatment Group		Control Group	
	District	<i>Puskesmas</i>	District	<i>Puskesmas</i>
Treatment group	Bengkulu Tengah	Sekayun	Bengkulu Tengah	Taba Teret
	Lebong	Ketenong		Taba Lagan
South Sulawesi	Tana Toraja	Kondodewata	Tana Toraja	Bittuang
	Luwu Utara	Rampi		Rano
East Nusa Tenggara	Ende	Ngalupolo	Manggarai Barat	Runggu
	Ende	Watuneso		Pacar

Source: TNP2K, 2018

We selected all *Puskesmas* purposively in each province, in which both the treatment and control group were located in the same district or at least nearby districts to keep a similar comparison between both group's characteristics. All *Puskesmas* had been categorized as being in a "very remote area" based on the local government decree. We also checked on the Geographic Difficulty Index status (*Indeks Kesulitan Geografis: IKG*) of the *Puskesmas* subdistricts in our sample from the village data (*Data Potensi Desa: Podes*) 2014. Both the treatment and control group area are categorized as a "difficult area" because their mean IKG is above the national standard.<sup>3</sup> In addition, both groups have a close mean IKG value (Table 3.4).

**Table 3.4 IKG for Each Study Site (2014)**

Type	Mean of IKG 2014
Treatment group	53.67
Control group	52.08
Indonesia	41.00

Source: Authors' analysis on PODES 2014.

We surveyed approximately 200 households in each Puskesmas catchment area with systematic random sampling. The household survey area in each Puskesmas was classified into three clusters based on their distance from Puskesmas location. The first cluster was the area that had a travelling time of around 0 – 30 minutes on foot from the Puskesmas. The second cluster was mid-distance with a travelling time of around 30 minutes – 1 hour by foot and the last cluster was about 1 – 2 hours on foot from the Puskesmas. By calculating the sampling interval, we chose the households' sample until the quota in each cluster was fulfilled. In total, we had a sample of 2,463 households that were successfully interviewed both in the baseline and end-line surveys.

To answer the different sections in our evaluation indicator, we divided the characteristic of the household sample characteristics into three criteria: (i) households with children 0 – 2 years of age; (ii) households with children 0 – 5 years of age; and (iii) all other households.

Some of our evaluation indicators could only be answered by the respondent who fulfilled the criteria, especially for the maternal and child health section. A household that had children 0 – 2 years of age was the subsample for answering the exclusive breastfeeding and delivery and pregnancy section. A household that had children 0 – 5 years of age would answer the immunization and under-five and child development sections. All sections, other than those mentioned above, could be answered by all respondents.

### 3.4 Methodology

For the quantitative analysis, we do a Difference-in-Difference (DiD) analysis with treatment and control groups. The treatment, in this case, is the entry of an NS team. We exploit the staggered deployment of the NS team to construct a treatment group and a control group.

1. The treatment group (T) refers to households living in DTPK areas that have not been previously exposed to an NS team but will receive an NS team in a month's time; and
2. The control group (C) refers to households living in DTPK areas that an NS team has never visited and will not enter during the entire duration of our observational study.

Let the outcome of interest be  $Y$ . Superscript following  $Y$  denotes time (0 for baseline and 1 for follow-up) and subscript denotes group (T for treatment and C for control). With two data collections and two groups, we will have information on the following quantities:

1.  $Y^0_T$  : Outcome of the treatment group at baseline
2.  $Y^0_C$  : Outcome of the control group at baseline
3.  $Y^1_T$  : Outcome of the treatment group in the follow-up period
4.  $Y^1_C$  : Outcome of the control group in the follow-up period

<sup>3</sup> TNP2K calculation on Podes 2014, the methodology of IKG was given by Statistics Indonesia (*Badan Pusat Statistik*: BPS).

Our hypothesis is that improvement in the outcome of the treatment group is significantly bigger than that of the control group:  $(Y^1_T - Y^0_T) - (Y^1_C - Y^0_C) > 0$ . Having a control group can remove any change in the outcome that will happen anyway in the absence of NS teams, such as due to general trend and macro changes, and any endowment effect that is time-invariant.

Note that this study is not a randomised controlled trial where eligible units participating in the trial are randomly allocated to either the control or treatment group. It is often considered the gold standard for a clinical trial because randomisation minimises selection bias that often plagues nonexperimental data. In this case, the location where an NS team is chosen by the Ministry of Health may not be random among (eligible) DTPK areas. For example, the Ministry of Health will not send an NS team to a DTPK area that they judge “unlivable” by the NS team. Similarly, they may send an NS team to non-DTPK areas experiencing health workforce shortages at the request of the local government. This puts a limitation on our study, however, we attempt to minimise any potential bias through: (i) selecting treatment and control areas independently without influence/inputs from the Ministry of Health about these areas’ underlying statistics; and (ii) using a methodology that removes the endowment effect (difference-in-differences).

We perform the DiD analysis in a regression set-up:

$$Y_{it} = \beta_0 + \beta_1 NS_{it} + \beta_2 After_{it} + \beta_3 (NS_{it} * After_{it}) + \gamma X_{it} + \varepsilon_{its}$$

- Y** = the measure of outcome
- NS** = 1 if household *i* belongs to treatment group and NS = 0 if not
- After** = 1 if time period is after the NS program implementation and After = 0 if else
- X** = a set of control variables
- $\varepsilon_{its}$**  = error term clustered at *s* level
- i*** = household identifiers
- t*** = time identifier
- s*** = cluster (cluster level is defined by the distance from *Puskesmas*)

Assuming the changes in outcomes of the treatment and control group would be equal if the treatment group did not receive NS program, the coefficient on the interaction term ( $\beta_3$ ) gives the difference-in-differences estimate of the average treatment effect from the NS program.

## 04

# Results and Discussions

## 4.1 Access

Table 4.1 shows the effects of NS in improving: (i) access to maternal and child health services; (ii) communicable and noncommunicable disease control and prevention; (iii) facilities to support personal hygiene and healthy behaviour; and (iv) universal health coverage.

### 4.1.1. Access to maternal and child health services

The result shows that NS increases pregnancy checks at Puskesmas by 6.7 percentage points which is 15.7 percent higher than the control group.<sup>4</sup> Aligned with the above evidence, the result also shows that the NS increases the maternal delivery by skilled health workers by 5.7 percentage points which is 5.8 percent higher than the control group. The NS itself is designed to strengthen primary health services which is expected to contribute to reducing unnecessary health care utilisation at the hospital level. The results, therefore, reaffirm the contribution of NS to reducing unnecessary pregnancy checks at the hospital, as it could be managed at the Puskesmas level due to a strengthened primary health service at the Puskesmas.

Regarding delivery in a health facility, we find the estimate of positive effect is not robust to the inclusion of covariates. As we try to control for household head characteristics and the household size, the effect becomes statistically insignificant.

Although we estimate some positive effects for complete antenatal care (ANC) during pregnancy, maternal check one month after delivery, iron supplementation during pregnancy, and vitamin A supplementation for toddlers, they are statistically insignificant. We have not enough evidence to say that NS has truly affected these indicators. It could be a different story had NS teams are equipped with more adequate facilities during their deployment. For instance, it was found that the deployed sites lacked medical supplies and devices to support basic laboratory tests that were pivotal for antenatal and post-maternal delivery services (TNP2K 2019b)<sup>5</sup>. If this condition could be improved, the NS could provide better ANC and maternal health services during their deployment.

<sup>4</sup> When comparing the increase relative to the control group, we always refer to the mean of outcome of the control group at the end line period.

<sup>5</sup> TNP2K: *Tim Nasional Percepatan Penanggulangan Kemiskinan* (The National Team for the Acceleration of Poverty Reduction).

Moreover, there is no effect detected on contraception and complete immunisation for children. This finding aligns with a study of interprofessional collaboration practice which suggests that NS has not been very effective in attracting people to attend promotive and preventive services (TNP2K 2019a). However, since these outcomes also related to a behavioral change, we must also remember that we only conducted a one year evaluation.

#### **4.1.2. Access to communicable and noncommunicable disease control and prevention**

The NS has improved the capacity to detect TB (PIS-PK Indicator 6) by 2.9 percentage points in the treatment area which is 161 percent higher than the control group. Another evaluation study at *Puskesmas* level confirms this finding, as the frequency of disease detection was increased up to 50 percent at the NS deployed sites compared to only a 25 percent increase at the control *Puskesmas* (TNP2K 2019b). This success aligned with a similar program implemented by the Ethiopian Government, which showed that the deployment of village-based health workers improved the detection of TB symptoms by up to 157 percent (Datiko et al. 2017).

#### **4.1.3. Access to facilities or infrastructure to support personal hygiene and healthy behaviour**

The NS team has no responsibility to build latrines in the community although this activity is included as one of the PIS-PK indicators. As a health workforce, NS has a critical role in advocacy with relevant stakeholders, including the community leaders and village government regarding the importance to health of a latrine which could support the achievement of the PIS-PK Indicator 11. We, therefore, retain access to a latrine in our evaluation.

Our model suggests a positive but not statistically significant effect on the latrine indicator. An interesting finding by another TNP2K study (2019a) is that several NS teams advocated the allocation of Indonesia Village Fund (*Dana Desa*) to support latrine construction at the community, such as reported from Bengkulu village during their village meeting. As this activity itself is not a mandatory performance indicator during the NS deployment not all NS teams across the treatment areas took the similar initiative (TNP2K 2019a) which might indicate why this finding is not statistically significant.

The NS program also has no effect on increasing access to clean water in the community. This shares the same story with the previous indicator above. According to the regulation by the Ministry of Health's regulation, the selected *Puskesmas* will receive an allocated budget to support the NS implementation in their catchment area. Nevertheless, this budget could not be mobilised to build clean water infrastructure. This implies that, in order for NS to improve physical infrastructure, initiative and advocacy towards relevant village stakeholders are needed.

#### **4.1.4. Access to universal health coverage**

The evaluation finds no evidence to suggest that NS is improving JKN enrolment. Although we observed some positive effect, the result is statistically insignificant. The NS team might need to be more active in encouraging the community's enrolment in the JKN program, such as during the data collection of PIS-PK indicators.

Table 4.1: The Effects of NS Deployment on Access to Health Services

PIS-PK Indicator	Subindicators		Control		Treatment		DID Without Covariate	DID With Covariate	
	Baseline	End line	Mean Difference	Baseline	End line	Mean Difference			
<b>MATERNAL AND CHILD HEALTH</b>									
1	Use of Contraception	0.4	0.422	0.022	0.398	0.405	0.007	-0.015	-0.017
	Plan to use contraception in the future	0.094	0.188	0.094	0.075	0.135	0.06	-0.034	-0.035
	Pay to get contraception	0.571	0.577	0.006	0.608	0.569	0.039	-0.044	-0.025
2	<b>Delivery by a skilled health worker</b>	0.963	0.985	0.022	0.832	0.915	0.083	<b>0.061**</b>	<b>0.057*</b>
	<b>Delivery in health facilities</b>	0.798	0.881	0.083	0.561	0.763	0.202	<b>0.119*</b>	<b>0.12</b>
	<b>Place of pregnancy check: Puskesmas</b>	0.423	0.428	0.005	0.552	0.639	0.087	<b>0.082**</b>	<b>0.067*</b>
	<b>Clinics</b>	0.073	0.051	-0.022	0.026	0.028	0.002	<b>0.025*</b>	<b>0.025*</b>
	Hospital	0.041	0.049	0.008	0.028	0.022	-0.006	-0.014	-0.017
	Complete ANC during pregnancy (at least 4 checks)	0.911	0.913	0.002	0.888	0.915	0.027	0.025	0.028
	Check 1 month after delivery	0.993	0.991	-0.002	0.994	0.994	0	0.002	0.004
3	Iron supplementation during pregnancy	0.967	0.976	0.009	0.956	0.967	0.011	-0.003	-0.001
	Complete immunisation (HB, BCG, Polio, DPT, Measles)	0.868	0.931	0.063	0.729	0.772	0.043	-0.019	-0.016
	Vitamin A supplementation for toddlers	0.973	0.975	0.002	0.935	0.961	0.026	0.025	0.025
<b>COMMUNICABLE AND NONCOMMUNICABLE DISEASE CONTROL AND PREVENTION</b>									
6	<b>There are household members who have TB symptoms</b>	0.038	0.018	-0.02	0.041	0.051	0.01	<b>0.030***</b>	<b>0.029**</b>
<b>PERSONAL HYGIENE AND HEALTHY BEHAVIOUR</b>									
10	Clean water as source of drinking	0.642	0.785	0.143	0.737	0.857	0.12	-0.023	-0.019
11	Latrine ownership	0.698	0.725	0.027	0.555	0.596	0.041	0.014	0.022
<b>UNIVERSAL HEALTH COVERAGE</b>									
12	All household members already have JKN	0.353	0.376	0.023	0.365	0.39	0.025	0.002	-0.008

Note: Covariates include the characteristics of head of household such as age, marital status, educational level, occupation in addition to household size; \*p< 0.1; \*\*p<0.05; \*\*\*p<0.01. Particularly significant variables are highlighted in bold type.

Source: Authors' analysis

## 4.2 Quality

We measure the effect of NS deployment in improving quality of health services, since it is linked with the vision of the PIS-PK (see Figure 1 in Chapter3). The result shows that NS deployment increased the quality of maternal and child health services, particularly related to PIS-PK Indicator 5 (under-five growth and development). The NS improved health promotion conducted at the *Posyandu* by 13.6 percentage points, which translates into an increase 32 percent higher than the control group Table 4.2). In addition, it also improves the *Posyandu*'s quality of service, as the NS team also conduct more individual health counselling by 11.9 percentage points–24 percent higher than the control group. These positive effects might be influenced by an adequate pre-departure training process that equipped the NS team with modules on health promotion and child health, thereby preparing them to deliver these services in the community (see Table 2.1).

**Table 4.2: The Effect of NS Deployment on Improving Quality of Health Services**

PIS-PK Indicator	Subindicators	Control			Treatment			DID Without Covariate	DID With Covariate
		Base line	End line	Mean Difference	Base line	End line	Mean Difference		
<b>MATERNAL AND CHILD HEALTH</b>									
5	<b>Health promotion during a visit to <i>Posyandu</i></b>	0.481	0.428	-0.053	0.496	0.564	0.068	<b>0.121*</b>	<b>0.136**</b>
	<b><i>Posyandu</i> staff conduct individual health counselling</b>	0.429	0.492	0.063	0.496	0.666	0.17	<b>0.106**</b>	<b>0.119**</b>

Note: Covariates include the characteristics of head of household such as age, marital status, educational level, occupation in addition to household size; \*p<0.1; \*\*p<0.05; \*\*\*p<0.01.

Source: Authors' analysis

### 4.3 Knowledge

Table 4.3 shows the effects of NS in improving the knowledge of maternal and child health services; communicable and noncommunicable disease control and prevention; and the universal health coverage program. Further details are elaborated in subsection 4.3.1 – 4.3.3.

#### 4.3.1. Knowledge of maternal and child health

We estimate a positive, albeit statistically insignificant effect on the parent's knowledge to bring toddlers to a *posyandu* for a check once per month. Nevertheless, the NS deployment has improved knowledge related to PIS-PK Indicator 5 (under-five growth and development) particularly on the use of Oralit during diarrhea (14.2 percentage points or equivalent to a 23 percent increase); dehydration prevention on toddlers during diarrhea (14.4 percentage points or equivalent to a 23 percent increase); and treatment for toddlers during fever (10.9 percentage points or equivalent to a 72 percent increase). These health promotion and child health services to the community were part of the NS's training prior to their deployment (see Table 2.1).

#### 4.3.2. Knowledge of communicable and noncommunicable disease control and prevention

The result does not detect an NS effect in improving the knowledge of cigarette smoking's bad impact on the community. This might be affected by the lack of opportunity to deliver health promotion on cigarettes during their deployment. The *Puskesmas* conducts health promotion activities mainly at *Posyandu* and elementary schools covering the topics of diarrhea, tuberculosis, hypertension, child health, exclusive breastfeeding, and hand-washing (TNP2K 2019b).

As there is no regular health promotion event focusing on the topic of cigarettes, this situation might explain the lack of NS effect to improve the community's knowledge regarding this issue. The finding from another NS study (TNP2K 2019b) showed a delay in the disbursement of DAK *Nonfisik* funds that are mandated to support the *Puskesmas*' operational activities, including delivering health promotion on cigarettes to the community. This delay happened since the NS started in the middle of the *Puskesmas*' fiscal year, while the funds were to be transferred in the next fiscal year cycle. Adequate funding right at the start of NS deployment could expand the health promotion activities so that a comprehensive set of topics could be conducted regularly and improve the community's knowledge on this issue.

#### 4.3.3. Knowledge of universal health coverage

The result shows that NS has no significant effect related to the knowledge improvement on JKN except regarding its benefit package for family planning services. For this subindicator, the NS increased the community's knowledge by 8.1 percentage points which translates into a 12 percent higher increase compared to the control group. As discussed in Subsection 4.1.4, the NS had no effect on improving JKN enrolment at their deployed sites, hence the lack of improvement regarding JKN benefits might also be related to this condition.

**Table 4.3: The Effect of NS Deployment on Improving Knowledge on Health Aspects**

PIS-PK Indicator	Subindicators	Control				Treatment			DID Without Covariate	DID With Covariate
		Baseline	End line	Mean Difference	Baseline	End line	Mean Difference			
<b>MATERNAL AND CHILD HEALTH</b>										
5	Knowledge: a frequent monthly visit to <i>Posyandu</i>	0.962	0.973	0.011	0.918	0.946	0.028	0.016	0.02	
	<b>Knowledge on using Oralit during diarrhoea</b>	0.625	0.63	0.005	0.561	0.695	0.134	<b>0.129**</b>	<b>0.142***</b>	
	<b>Knowledge about keeping toddlers hydrated during diarrhoea</b>	0.672	0.623	-0.049	0.734	0.819	0.085	<b>0.133***</b>	<b>0.144***</b>	
	<b>Knowledge about taking care of toddlers during fever</b>	0.193	0.151	-0.042	0.182	0.237	0.055	<b>0.098**</b>	<b>0.109**</b>	
<b>COMMUNICABLE AND NON-COMMUNICABLE DISEASE CONTROL AND PREVENTION</b>										
9	Knowledge that cigarette smoking is bad for health	0.956	0.955	-0.001	0.964	0.958	-0.006	-0.006	-0.008	
	JKN can be used for getting health services and drugs	0.944	0.96	0.016	0.969	0.963	-0.006	-0.022	-0.025	
<b>UNIVERSAL HEALTH COVERAGE (JKN)</b>										
12	JKN can be used for medical treatment	0.826	0.802	-0.024	0.844	0.844	0	0.023	0.011	
	JKN can be used for health screening	0.828	0.833	0.005	0.871	0.89	0.019	0.014	0.009	
	JKN can be used for pregnancy and delivery services	0.864	0.874	0.01	0.893	0.892	-0.001	-0.011	-0.017	
	<b>JKN can be used for family planning</b>	0.622	0.662	0.04	0.575	0.698	0.123	<b>0.082***</b>	<b>0.081**</b>	

Note: Covariates include the characteristics of head of household such as age, marital status, educational level, occupation in addition to household size; \*p<0.1; \*\*p<0.05; \*\*\*p<0.01. Particularly significant variables are highlighted in bold type.

#### 4.4 Behaviour

Table 4.4 below shows the effects of NS to intervene in the behaviour of the population related to maternal and child health; communicable and noncommunicable disease control and prevention; and personal hygiene and healthy behaviour. As we only conducted this study for one year, we were limited in assessing the behavioural improvement of the community by the end of our evaluation process.

##### 4.4.1. Behaviour on maternal and child health

The deployment of NS has a positive albeit statistically insignificant effect on improving the behaviour of women in providing exclusive and breastfeeding for two years on the treatment group. In addition, we could not find an NS effect on behaviour to visit a *Posyandu*. Our interprofessional collaboration study of NS found that the team shifted their focus towards delivering more curative services to successfully adapt and gain the community's trust at the initial stage of their deployment. This approach was chosen since the community had more expectation to get an improved access to curative care, compared to the promotive-preventive services. This condition might, therefore, explain the absence of behavioural change by the community during the study period since the promotive and preventive services were not prioritised (TNP2K 2019a).

##### 4.4.2. Behaviour on communicable and noncommunicable disease control and prevention

The result suggests that NS has no effect for PIS-PK Indicators 6 (tuberculosis treatment) and 7 (hypertension treatment) in the community. We could see, however, that the proportion of TB medication adherence in the treatment group is already high (95.8 percent), thus it is naturally difficult to gain more improvement on the TB adherence. The TB medication program indeed has been one of the national priority health programs—regardless of the NS deployment at DTPK.

For hypertension, the proportion of adherence is less at 73 percent which might be affected by the patients' behaviour in only taking a hypertension drug when it is symptomatic (Naheed et al. 2018). Furthermore, the data from TNP2K's *Puskesmas* study (2019b) showed that the health promotion events for hypertension in both the control and treatment areas were higher during the baseline rather than the end-line. This health promotion event itself has a pivotal role for hypertension control. This condition might help to explain why NS seems to not be affecting this PIS-PK indicator, as there is less available opportunity to engage the community and alter their behaviour to take the medicine regularly.

##### 4.4.3. Personal hygiene and healthy behaviour

The result shows that NS seems to encourage more physical exercise by 14.1 percentage points which translates into a 20 percent higher increase compared to the control group. This behaviour change might be explained by a weekly exercise activity followed by a health check organised by the NS team at their deployed sites (TNP2K 2019a).

On the other hand, the results suggest that NS has no effect on altering the behaviour of smoking in the community. This lack of behaviour change in smoking might be due to limited health promotion that covered this issue during the NS deployment, as the activity is mainly focusing on maternal and child health campaign at *Posyandu* (TNP2K 2019b) or because we simply were not able to observe over a longer time span.

Table 4.4: The Effect of NS Deployment on Intervening in the Behaviour of Several Health Aspects

PIS-PK Indicator	Subindicators	Control			Treatment			DID Without Covariate	DID With Covariate
		Baseline	End line	Mean Difference	Baseline	End line	Mean Difference		
<b>MATERNAL AND CHILD HEALTH</b>									
4	Exclusive breastfeeding for 6 months	0.716	0.75	0.034	0.703	0.812	0.109	0.075	0.087
	Breastfeeding for 2 years	0.974	0.934	-0.04	0.974	0.948	-0.026	0.014	0.008
5	Frequent monthly visit to <i>Posyandu</i>	0.665	0.616	-0.049	0.536	0.449	-0.087	-0.038	-0.033
<b>COMMUNICABLE AND NONCOMMUNICABLE DISEASE CONTROL AND PREVENTION</b>									
6	TB patient regularly takes medicine	0.939	1	0.061	0.938	0.958	0.02	-0.04	-0.078
7	Hypertension patient regularly takes medicine	0.569	0.628	0.059	0.71	0.731	0.021	-0.037	-0.053
<b>PERSONAL HYGIENE AND HEALTHY BEHAVIOUR</b>									
7	<b>Doing physical activity</b>	0.877	0.701	-0.176	0.84	0.786	-0.054	<b>0.122*</b>	<b>0.141**</b>
	Household 's diet contains lots of vegetables	0.961	0.961	0	0.974	0.966	-0.008	-0.008	0
	Household often eats fruit	0.184	0.396	0.212	0.279	0.551	0.272	0.06	0.075
9	Household members smoking in the last 2 weeks	0.664	0.647	-0.017	0.729	0.723	-0.006	0.011	0.01
	Smoking in the house	0.875	0.864	-0.011	0.912	0.899	-0.013	-0.002	0.008

Note: Covariates include the characteristics of head of household such as age, marital status, educational level, occupation in addition to household size; \*p<0.1; \*\*p<0.05;\*\*\*p<0.01. Particularly significant variables are highlighted in bold type.

Source: Authors' analysis

## 05

# Conclusion and Recommendations

This study finds that NS has been improving the access, quality, and knowledge of several PIS-PK indicators related to maternal and child health services delivery, and one indicator related to TB symptom detection. Nevertheless, it has little effect in altering the health behaviour of the community. This is still understandable as such an improvement would require longer and continuous intervention, while the NS teams are only deployed for a two-year period and our study only observed a one-year change. Despite this condition, we have also learned that there are opportunities to improve the NS implementation and strengthen its effect towards the community.

## ***Recommendation for the Ministry of Health Government of Indonesia***

The Ministry of Health could strengthen the NS pre-departure training process to cover modules or sessions as follows:

1. Modules or sessions on the soft skills needed to deliver health prevention and promotion activities at the community level, aligned with the PIS-PK main approach. The soft skills needed consist of:
  - Effective communication with multisectoral stakeholders and the community;
  - Ability to deliver interactive community engagement programs;
  - Self-motivation and awareness to deliver their responsibility during the deployment; and
  - Positive attitude and strong work ethic to gain trust from the community and relevant stakeholders.
2. Modules or sessions on advocacy skills for the NS team members. A recent practice by one of the NS teams in our study shows that they could mobilise the village fund for communal latrine construction. It would be excellent if this success could be replicated by other NS teams across all deployed sites.
3. Modules or sessions that cover more in-depth content for each of the PIS-PK programs. This consideration is due to the finding that the NS has little effect in altering the knowledge and behaviour related to family planning, complete immunisation, hypertension control and prevention, smoking habits, and JKN awareness indicators.

## ***Recommendation for the Local Government***

The local government could provide a substantial support for the effectiveness of NS delivery by using some of the following potential resources to support NS activities:

1. Allocate DAK *Fisik* funds for drugs, medical supplies and devices for basic laboratory services, and reagent procurement to support NS activities. This financial support could be a significant contribution to improving ANC and maternal services post-birth delivery as well as the success of disease medication program at the deployed sites.
2. Allocate DAK Nonfisik funds and its local budget (*Anggaran Pendapatan Belanja Daerah: APBD*), to support the operational requirements of the NS teams, such as by providing financial support to deliver health promotion activities in remote areas.
3. Share a specific proportion of the Village Fund to support public health programs at the community level (*Upaya Kesehatan Berbasis Masyarakat: UKBM*), including an allocation to build latrines, sources of clean water, or to support health promotion activities at the *Posyandu*. This budget allocation could improve the community's access and behaviour towards safe sanitation that could contribute to the success of the stunting intervention program, as one of the current central government's main priorities and NS's tasks at the deployed sites.
4. Ensure universal health coverage for all community members, as people in the DTPK areas are at risk of unequal access to the JKN.

Finally, the PIS-PK, with its emphasis on strengthening primary health services is critical to providing adequate access to health services and improving the population's health status. As the NS is a pivotal tool in delivering the PIS-PK, the government might consider supporting its improvement and maintaining the NS sustainability to deliver health services in DTPK areas.

**Appendix 1: NS Batch 9 Deployment Sites**

No	Province	District	Puskesmas	Puskesmas Type
1	North Sumatra	Nias	Ulugawo	Outpatient care
2	Riau	Rokan Hulu	Rokan IV koto II	Outpatient care
3	Jambi	Merangin	Muara Madras	Outpatient care
4	Bengkulu	Bengkulu Tengah	Sekayun	Outpatient care
5	Bengkulu	Lebong	Ketenong	Outpatient care
6	Kepulauan Riau	Lingga	Tajur Biru	Outpatient care
7	West Nusa Tenggara	Sumbawa	Ropang	Outpatient care
8	West Nusa Tenggara	Sumbawa	Lenangguar	Outpatient care
9	West Nusa Tenggara	Sumbawa	Orong Telu	Outpatient care
10	West Nusa Tenggara	Sumbawa	Lantung	Outpatient care
11	East Nusa Tenggara	Manggarai Barat	Bari	Outpatient care
12	East Nusa Tenggara	Manggarai Barat	Rego	Outpatient care
13	East Nusa Tenggara	Timor Tengah Utara	Haekto	In-patient care
14	East Nusa Tenggara	Timor Tengah Utara	Oemeu	In-patient care
15	East Nusa Tenggara	Alor	Kayang	Outpatient care
16	East Nusa Tenggara	Ende	Ngalupolo	Outpatient care
17	East Nusa Tenggara	Ende	Watuneso	In-patient care
18	East Nusa Tenggara	Ende	Welamos	In-patient care
19	East Nusa Tenggara	Ende	Maurole	In-patient care
20	East Nusa Tenggara	Kupang	Lelogama	In-patient care
21	East Nusa Tenggara	Kupang	Akle	Outpatient care
22	East Nusa Tenggara	Sumba Timur	Kataka	Outpatient care
23	East Nusa Tenggara	Flores Timur	Kalike	Outpatient care
24	West Kalimantan	Sambas	Selakau Timur	Outpatient care
25	Central Sulawesi	Donggala	Lalundu	In-patient care
26	Central Sulawesi	Donggala	Pinembani	Outpatient care
27	Central Sulawesi	Donggala	Balukang	In-patient care
28	Central Sulawesi	Kepulauan Banggai	Lolantang	Outpatient care
29	Central Sulawesi	Kepulauan Banggai	Saleati	Outpatient care
30	South Sulawesi	Tana Toraja	Kondodewata	In-patient care
31	South Sulawesi	Luwu Utara	Seko	In-patient care

No	Province	District	Puskesmas	Puskesmas Type
32	South Sulawesi	Luwu Utara	Rampi	In-patient care
33	South Sulawesi	Selayar	Pasilembana	In-patient care
34	South Sulawesi	Selayar	Pasitallu	In-patient care
35	South Sulawesi	Selayar	Ujung Jampea	In-patient care
36	Gorontalo	Gorontalo	Biluhu	Outpatient care
37	West Sulawesi	Mamasa	Buntu Malangka	Outpatient care
38	Maluku	Kepulauan Aru	Meror	Outpatient care
39	North Maluku	Halmahera Tengah	Damuli	Outpatient care
40	North Maluku	Halmahera Tengah	Banemo	Outpatient care
41	North Maluku	Halmahera Tengah	Messa	Outpatient care
42	North Maluku	Halmahera Selatan	Gane Dalam	Outpatient care
43	North Maluku	Halmahera Selatan	Kukupang	Outpatient care
44	North Maluku	Halmahera Selatan	Sum	Outpatient care
45	West Papua	Raja Ampat	Dabatan	Outpatient care
46	West Papua	Raja Ampat	Lilinta	Outpatient care
47	West Papua	Manokwari	Tanh Rubuh	Outpatient care
48	West Papua	Teluk Bintuni	Aranday	In-patient care
49	Papua	Asmat	Primapun	Outpatient care
50	Papua	Asmat	Basim	In-patient care
51	Papua	Asmat	Binam	Outpatient care
52	Papua	Asmat	Kolfbrasa	Outpatient care
53	Papua	Asmat	Tomor	Outpatient care
54	Papua	Asmat	Unirsirau	Outpatient care
55	Papua	Boven Digoel	Ambatkuy	Outpatient care
56	Papua	Boven Digoel	Manggalum	Outpatient care
57	Papua	Merauke	Tabonji	Outpatient care
58	Papua	Merauke	Waan	Outpatient care
59	Papua	Merauke	Ngguti	Outpatient care
60	Papua	Merauke	Tubang	Outpatient care

Source: Ministry of Health, 2018.

**Appendix 2: The Effects of NS Deployment on Access to Health Services**

PIS-PK Indicator	Subindicators	N (Panel)	Without Covariate		With Covariate	
			Coeff DID	Std Error	Coeff DID	Std Error
<b>MATERNAL AND CHILD HEALTH</b>						
1	Use of contraception	4,289	-0.015	(0.017)	-0.017	(0.021)
	Plan to use contraception in the future	1,869	-0.034	(0.030)	-0.035	(0.030)
	Pay to get contraception	2,787	-0.044	(0.034)	-0.025	(0.040)
2	<b>Delivery by a skilled health worker</b>	<b>1,003</b>	<b>0.061**</b>	<b>(0.028)</b>	<b>0.057*</b>	<b>(0.028)</b>
	<b>Delivery in health facilities</b>	<b>1,003</b>	<b>0.119*</b>	<b>(0.070)</b>	<b>0.12</b>	<b>(0.071)</b>
	<b>Place of pregnancy check: Puskesmas</b>	<b>1,938</b>	<b>0.082**</b>	<b>(0.036)</b>	<b>0.067*</b>	<b>(0.036)</b>
	<b>Clinics</b>	<b>1,938</b>	<b>0.025*</b>	<b>(0.013)</b>	<b>0.025*</b>	<b>(0.014)</b>
	Hospital	1,938	-0.014	(0.018)	-0.017	(0.019)
3	Complete ANC during pregnancy (at least 4 checks)	1,907	0.025	(0.040)	0.028	(0.040)
	Check 1 month after delivery	4,455	0.002	(0.004)	0.004	(0.004)
	Iron supplementation during pregnancy	1,979	-0.003	(0.015)	-0.001	(0.016)
	Complete immunisation (HB, BCG, Polio, DPT, Measles)	1,864	-0.019	(0.034)	-0.016	(0.037)
4	Vitamin A supplementation for toddlers	1,767	0.025	(0.019)	0.025	(0.019)
<b>COMMUNICABLE AND NONCOMMUNICABLE DISEASE CONTROL AND PREVENTION</b>						
6	<b>There are household members who have TB symptoms</b>	<b>4,455</b>	<b>0.030***</b>	<b>(0.011)</b>	<b>0.029**</b>	<b>(0.011)</b>
<b>PERSONAL HYGIENE AND HEALTHY BEHAVIOUR</b>						
10	Clean water as source of drinking	4,455	-0.023	(0.101)	-0.019	(0.101)
11	Latrine ownership	4,455	0.014	(0.054)	0.022	(0.052)
<b>UNIVERSAL HEALTH COVERAGE (JKN)</b>						
12	All household members already have JKN	4,455	0.002	(0.024)	-0.008	(0.022)

Note: Covariates include the characteristics of head of household such as age, marital status, educational level, occupation in addition to household size; \*p<0.1; \*\*p<0.05; \*\*\*p<0.01. Particularly significant variables are highlighted in bold type.

Source: Authors' analysis

### Appendix 3: The Effect of NS Deployment in Improving Quality of Health Services

PI5-PK Indicator	Subindicators	N (Panel)	Without Covariate		With Covariate	
			Coeff DID	Std Error	Coeff DID	Std Error
<b>MATERNAL AND CHILD HEALTH</b>						
5	Health promotion during a visit to <i>Posyandu</i>	1666	0.121*	(0.064)	0.136**	0.136**
	<i>Posyandu</i> staff conduct individual health counselling	1666	0.106**	(0.050)	0.119**	0.119**

Note: Covariates include the characteristics of head of household such as age, marital status, educational level, occupation in addition to household size; \*p<0.1; \*\*p<0.05; \*\*\*p<0.01.

Source: Authors' analysis

**Appendix 4: The Effect of NS Deployment on Improving Knowledge of Health Aspects**

PIS-PK Indicator	Subindicators	N (Panel)	Without Covariate		With Covariate	
			Coeff DID	Std Error	Coeff DID	Std Error
<b>MATERNAL AND CHILD HEALTH</b>						
5	Knowledge: a frequent monthly visit to <i>Posyandu</i>	1,999	0.016	(0.028)	0.02	(0.028)
	<b>Knowledge to use Oralit during diarrhoea</b>	<b>1,999</b>	<b>0.129***</b>	<b>(0.051)</b>	<b>0.142***</b>	<b>(0.051)</b>
	<b>Knowledge about keeping toddlers hydrated during diarrhoea</b>	<b>1,999</b>	<b>0.133***</b>	<b>(0.047)</b>	<b>0.144***</b>	<b>(0.047)</b>
	<b>Knowledge about taking care of toddlers during fever</b>	<b>1,999</b>	<b>0.098**</b>	<b>(0.041)</b>	<b>0.109**</b>	<b>(0.042)</b>
<b>COMMUNICABLE AND NONCOMMUNICABLE DISEASE CONTROL AND PREVENTION</b>						
9	Knowledge that cigarette smoking is bad for health	4,455	-0.006	(0.012)	-0.008	(0.013)
<b>UNIVERSAL HEALTH COVERAGE (JKN)</b>						
12	JKN can be used for getting health services and drugs	4,169	-0.022	(0.017)	-0.025	(0.017)
	JKN can be used for medical treatment	4,169	0.023	(0.030)	0.011	(0.030)
	JKN can be used for health screening	4,169	0.014	(0.029)	0.009	(0.030)
	JKN can be used for pregnancy and delivery services	4,169	-0.011	(0.025)	-0.017	(0.026)
	<b>JKN can be used for family planning</b>	4,169	<b>0.082***</b>	<b>(0.029)</b>	<b>0.081**</b>	<b>(0.031)</b>

Note: Covariates include the characteristics of head of household such as age, marital status, educational level, occupation in addition to household size; \*p<0.1; \*\*p<0.05; \*\*\*p<0.01. Particularly significant variables are highlighted in bold type.

Source: Authors' analysis

## Appendix 5: The Effect of NS Deployment on Intervening in the Behaviour of Several Health Aspects

PIS-PK Indicator	Subindicators	N (Panel)	Without Covariate		With Covariate	
			Coeff DID	Std Error	Coeff DID	Std Error
<b>MATERNAL AND CHILD HEALTH</b>						
4	Exclusive breastfeeding for 6 months	802	0.075	(0.068)	0.087	(0.069)
	Breastfeeding for 2 years	4,455	0.014	(0.011)	0.008	(0.011)
5	Frequent monthly visit to <i>Posyandu</i>	1,835	-0.038	(0.042)	-0.033	(0.041)
<b>COMMUNICABLE AND NONCOMMUNICABLE DISEASE CONTROL AND PREVENTION</b>						
6	TB patient regularly takes medicine	144	-0.04	(0.057)	-0.078	(0.066)
7	Hypertension patient regularly takes medicine	1,519	-0.037	(0.045)	-0.053	(0.050)
<b>PERSONAL HYGIENE AND HEALTHY BEHAVIOUR</b>						
7	<b>Doing physical activity</b>	<b>4,455</b>	<b>0.122*</b>	<b>(0.064)</b>	<b>0.141**</b>	<b>(0.060)</b>
	Household 's diet contains lots of vegetables	4,455	-0.008	(0.009)	0	(0.009)
	Household often eats fruit	4,455	0.06	(0.078)	0.075	(0.081)
9	Household members smoking in the last 2 weeks	4,450	0.011	(0.022)	0.01	(0.024)
	Smoking in the house	3,133	-0.002	(0.022)	0.008	(0.025)

Note: Covariates include the characteristics of head of household such as age, marital status, educational level, occupation in addition to household size; \*p<0.1; \*\*p< 0.05; \*\*\*p<0.01. Particularly significant variables are highlighted in bold type.

Source: Authors' analysis

# References

- Ahmad, R., N.J. Zhu, R.M. Lebcir, and R. Atun. 2019. "How the health-seeking behaviour of pregnant women affects neonatal outcomes: findings of system dynamics modelling in Pakistan." *BMJ Global Health* 4 (2).
- Center for Indonesia's Strategic Development Initiatives (CISDI). 2019. "Pencapaian Program CISDI" (CISDI's program achievements. <http://cisdi.org/pages/index/dampak>)
- Datiko, D.G., M.A. Yassin, S.J. Theobald, L. Blok, S. Suvanand, J. Creswell, and L.E. Cuevas. 2017. "Health extension workers improve tuberculosis case finding and treatment outcome in Ethiopia: a large-scale implementation study." *BMJ Global Health* 2 (4).
- Johar, M., P. Soewondo, R. Pujisubekti, H.K Satrio, and A. Adji. 2018. "Inequality in access to health care, health insurance and the role of supply factors." *Social Science and Medicine* 213: 134-145.
- Liang, S., J. Macinko, D. Yue, and Q. Meng. 2019. "The impact of the health care workforce on under-five mortality in rural China." *Human Resources for Health* 17 (21).
- Mahendradhata, Y., Trisnantoro, L., Listyadewi, S., Soewondo, P., Marthias, T., Harimurti, P. and Prawira, J. 2017. "The Republic of Indonesia Health System Review." New Delhi: World Health Organization.
- Mboi, N., M. Surbakti, I. Trihandini, I. Elyazar, K. Houston-Smith, A.P. Bahjuri, S. Kosen, K. Flemons, S.E. Ray, J. Cao, S.D. Glenn, M.K. Miller-Petrie, M.D. Mooney, J.L. Ried, D.N.A. Ningrum, F. Idris, K.N. Siregar, P. Harimurti, R.S. Bernstein, T. Pangestu, Y. Sidharta, M. Naghavi, C.J.L. Murray, and S.I. Hay. 2018. "On the road to universal health care in Indonesia, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016." *Lancet* 392 (10147): 581-591.
- Ministry of Health, Government of Indonesia. 2014. "Minister of Health Regulation No. 75/2014 on Community Health Center" (*Peraturan Menteri Kesehatan Republik Indonesia No. 75 Tahun 2014 tentang Pusat Kesehatan Masyarakat*). Jakarta: Ministry of Health.
- Ministry of Health, Government of Indonesia. 2015. "Nusantara Sehat team-based deployment program" (*Penugasan khusus Nusantara sehat berbasis tim*). <http://binfar.depkes.go.id/v2/wp-content/uploads/2015/04/PAPARAN-KAPUSDIKLAT-APARATUR-PPSDM-NUSANTARA-SEHAT.pdf>
- Ministry of Health, Government of Indonesia. 2016. "Community health centers with five public health officers in Indonesia" (*Gambaran Puskesmas yang memiliki 5 tenaga kesehatan promotif preventif di Indonesia*). [http://www.bppsdk.kemkes.go.id/info\\_sdmk/info/indikator\\_1](http://www.bppsdk.kemkes.go.id/info_sdmk/info/indikator_1)
- Ministry of Health, Government of Indonesia. 2016a. "Minister of Health Regulation No. 71/2016 on Technical Guidelines of Special Allocation Funds Nonphysical for Health 2017" (*Permenkes No. 71 Tahun 2016 tentang petunjuk teknis dana alokasi khusus non fisik bidang kesehatan tahun 2017*). Jakarta: Ministry of Health.

- Ministry of Health, Government of Indonesia. 2016b. "Minister of Health Regulation No. 39/2016 on Implementation Guidelines of Healthy Indonesia Program Through the Family Approach" *Peraturan Menteri Kesehatan Republik Indonesia Nomor 39 Tahun 2016 tentang Pedoman Penyelenggaraan Program Indonesia Sehat dengan Pendekatan Keluarga*. Jakarta: Ministry of Health.
- Ministry of Health, Government of Indonesia. 2017. "Minister of Health Regulation No. 16/2017 on Special Health Workforce Deployment to Support the Nusantara Sehat Program" (*Peraturan Menteri Kesehatan No. 16 Tahun 2017 tentang penugasan khusus tenaga kesehatan dalam mendukung program Nusantara Sehat*). Jakarta: Ministry of Health.
- Ministry of Health, Government of Indonesia, 2017a. "Monitoring and Evaluation Guidelines for the Implementation of Healthy Indonesia Program Through Family Approach" (*Pedoman monitoring dan evaluasi pelaksanaan Program Indonesia Sehat dengan Pendekatan Keluarga (PIS-PK)*). Jakarta: Ministry of Health.
- Ministry of Health, Government of Indonesia. 2018. "Data and Information on Indonesia's Health Profile 2018" (*Data dan informasi profil kesehatan Indonesia 2018*). Jakarta: Ministry of Health.
- Ministry of Health, Government of Indonesia. 2019. "Minister of Health Regulation No. 3/2019 on Technical Guideline for Special Allocation Funds Nonphysical for Health" (*Peraturan Menteri Kesehatan No. 3 Tahun 2019 tentang petunjuk teknis dana alokasi khusus non fisik bidang kesehatan*). Jakarta: Ministry of Health.
- Ministry of Health, Government of Indonesia. 2019a. "National Report of Basic Health Research 2018" (*Laporan Nasional Riskesdas 2018*). Jakarta: Ministry of Health.
- Ministry of National Development Planning. 2015. "Health sector review consolidated report 2014." Jakarta: Ministry of National Development Planning.
- Naheed, A., V. Haldane, T.H. Jafar, N. Chakma, and H. Legido-Quigley. 2018. "Patient pathways and perceptions of hypertension treatment, management, and control in rural Bangladesh: a qualitative study." *Patient Prefer Adherence* 14 (12): 1437-1449.
- Sakai, R., G. Fink, H. Kumamaru, and I. Kawachi. 2016. "The Impact of Pediatrician Supply on Child Health Outcomes: Longitudinal Evidence from Japan." *Health Services Research* 51 (2): 530-49.
- Sari, I.D., H. Hendarwan, and R. Halim. 2019. "The evaluation of Nusantara Sehat program using Nusantara Sehat Public Health Index." *Health Science Journal of Indonesia* 10 (1): 41-50.
- Sousa, A., M.R. Dal Poz, and C. Boschi-Pinto. 2013. "Reducing Inequities in Neonatal Mortality through Adequate Supply of Health Workers: Evidence from Newborn Health in Brazil." *PLoS One* 8 (9).
- The National Team for the Acceleration of Poverty Reduction (TNP2K). 2019a. "Nusantara Sehat team-based deployment for comprehensive primary health care: how does NS program influence interprofessional collaborative practice and perception of primary health care career in left-behind areas in Indonesia." Jakarta: TNP2K.
- The National Team for the Acceleration of Poverty Reduction (TNP2K). 2019b. "Nusantara Sehat evaluation study at the Puskesmas level." Jakarta: TNP2K.

White, K., M. Small, R. Frederic, G. Joseph, R. Bateau, and T. Kershaw. 2006. "Health Seeking Behavior Among Pregnant Women in Rural Haiti." *Health Care for Women International* 27 (9): 822-838.

Xavier, M.O., B. Del-Ponte, and I.S. Santos. 2018. "Epidemiology of smoking in the rural area of a medium-sized city in Southern Brazil." *Rural Health Supplement* 52 (1).

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ISBN 978-602-275-203-5

