

# INSPECTING PRIMARY HEALTHCARE CENTERS IN REMOTE AREAS: FACILITIES, ACTIVITIES, AND FINANCES

*Menilik Puskesmas di Daerah Tertinggal: Kepatutan, Kegiatan, dan Keuangan*

Prastuti Soewondo<sup>1</sup>, Meliyanni Johar<sup>2</sup>, \*Retno Pujisubekti<sup>3</sup>, Halimah<sup>4</sup>, Dwi Oktiana Irawati<sup>5</sup>

<sup>1,2,3,4,5</sup>Team for Health Insurance Policy, National Team for the Acceleration of Poverty Reduction, Indonesia

<sup>1</sup>Faculty of Public Health, University of Indonesia, Indonesia

\*Correspondence: retno.pujisubekti@tnp2k.go.id

## ABSTRACT

**Background:** Progress towards health-for-all must be supported by quality health facilities that are available to everyone. However, health care facilities in remote and underdeveloped areas, borderland, and outlying islands or Daerah Terpencil, Tertinggal, Perbatasan dan Kepulauan (DTPK) are facing some constraints to have access to health coverage.

**Aim:** This study aimed to provide a comprehensive picture of the readiness of primary healthcare centers or puskesmas as the main provider of primary health services located in remote areas.

**Methods:** Observations were taken from 18 primary healthcare centers in locations that had been identified by the government as remote and underdeveloped areas, borderland, and outlying islands in 3 provinces: Bengkulu, Nusa Tenggara Timur (East Nusa Tenggara), and South Sulawesi.

**Results:** The findings reveal that many facilities in primary healthcare centers are still insufficient. In particular, roads to primary healthcare centers are in poor physical conditions, operational hours are too short, and doctors and lab technicians are unavailable. The good news is that primary healthcare centers have managed to run many indoor and outdoor activities, such as health education classes and detection of priority diseases in the community. Regarding primary healthcare centers' finances, they largely depend on public funding to support their increasing expenses to provide health services, pay worker salaries, and run indoor and outdoor activities.

**Conclusions:** Overall, some constraints faced by the primary healthcare centers in DTPK include difficult access to facilities and temporary health personnel. All of this information provides valuable inputs to policymakers in building a health infrastructure and human resources for health in DTPK.

**Keywords:** Remote area, Human resources for health, Primary healthcare center.

## ABSTRAK

**Latar Belakang:** Pencapaian kesehatan semesta perlu didukung oleh fasilitas kesehatan yang memadai di seluruh daerah. Namun, fasilitas pelayanan kesehatan di Daerah Terpencil, Tertinggal, Perbatasan dan Kepulauan (DTPK) memiliki kendala dalam mewujudkan akses cakupan kesehatan.

**Tujuan:** Kajian ini bertujuan untuk memberikan gambaran yang komprehensif akan kesiapan puskesmas sebagai penyelenggara pelayanan kesehatan primer di daerah tertinggal.

**Metode:** Observasi diambil di 18 puskesmas di lokasi yang telah digolongkan pemerintah sebagai Daerah Terpencil, Tertinggal, Perbatasan dan Kepulauan (DTPK) di 3 provinsi, yakni Bengkulu, Nusa Tenggara Timur, dan Sulawesi Selatan.

**Hasil:** Hasil kajian menunjukkan bahwa fasilitas dan sumber daya manusia untuk kesehatan di Puskesmas di DTPK masih kurang: kondisi jalan ke puskesmas kurang memadai, waktu pelayanan terlalu singkat, dan ketidakhadiran dokter, apoteker dan tenaga ahli laboratorium. Bagusnya, kegiatan puskesmas sudah mencakup dalam dan luar gedung seperti pelacakan kasus penyakit-penyakit prioritas dan penggalangan program penyuluhan kesehatan. Dari segi keuangan, puskesmas mengandalkan dana publik untuk membiayai kegiatan pelayanan, sumber daya manusia, serta aktivitas dalam dan luar gedung mereka yang cenderung meningkat.

**Kesimpulan:** Secara keseluruhan, beberapa kendala yang dihadapi oleh puskesmas di DTPK adalah sulitnya akses fasilitas dan tenaga kesehatan yang sementara. Semua informasi ini kiranya dapat menjadi acuan bagi para pembuat kebijakan dalam membangun sumber daya dan infrastruktur kesehatan di daerah tertinggal.

**Kata kunci:** Desa tertinggal, Sumber Daya Manusia untuk kesehatan, Puskesmas.

**Received: 27 September 2018**

**Accepted: 2 January 2019**

**Published: 15 April 2019**

## INTRODUCTION

A primary healthcare center or *puskesmas* is the first-level (primary) health facility under the district health office that is responsible for the health of the people living in its jurisdiction. As a primary health facility, primary healthcare center is where patients and health personnel often meet for the first time and interact with each other to consult about health problems, check vital health conditions, receive medications, and obtain useful health information, health-enhancing tips, and referrals to complementary health services. Primary healthcare centers also act as a gatekeeper to higher-level facilities, such as hospitals and specialised clinics. In 2017, 9,825 primary healthcare centers operated throughout the country (Kurniawan, Yudianto, Hardhana, and Siswanti, 2018) with at least one primary healthcare center in every district.

In this study, conditions of primary healthcare centers in remote areas are analyzed through a number of pertinent questions. Are primary healthcare centers in these areas sufficiently equipped to meet the primary care needs of the people living in their territory? Have they managed to reach everyone through their outdoor activities? Alternatively, do they make any effort at all to engage with the local community? How are their finances over the last few months? Is there any significant increase in primary healthcare centers' revenues or expenses? The answers to all of these questions are valuable inputs to policymakers in enabling the provision of high-quality primary healthcare, especially in remote areas, where the private health sector tends to be unprofitable, and the health of the residents relies heavily on the readiness of the public sector.

There is a dearth of published, scientific literature on primary healthcare centers. The few existing studies have limited scope, only sampling patients from 1-3 primary healthcare centers to investigate patient satisfaction regarding the services they received. Utama, Lestari, and Ikmaluhakim (2017) conducted a study in Primary Healthcare Center of Ngagel Rejo in Surabaya that could handle up to 100 patients a day. Their study found that patient satisfaction was quite low regarding the cleanliness and comfort of the waiting room and the responsiveness of staff at registration desks. At other primary healthcare centers, Biyanda *et al.* (2017) found that patients were quite satisfied at facility conditions, but they were dissatisfied with how doctors handled their health complaints, who were judged to be lacking in compassion, empathy, accuracy, and attention to detail. An important consideration is that if a patient has a bad experience in primary healthcare centers, this in turn may discourage repeat visits (Afifah, 2017). Apriyanto, Kuntjoro, and Lazuardi (2013) interviewed 111 patients in 3 primary healthcare centers in Singkawang, West Kalimantan, and found that patients awarded a score of approximately 2.5 (from a 5-point scale) for every dimension of services they required. These dimensions ranged from the quality of the health services in general to the punctuality of operating hours. Different from the previous three studies, Djauhari MA. (2010) investigated important inputs that contributed to the provision of high-quality

services in primary healthcare centers. He discovered that financial input was the most critical input, followed by the structure of bureaucracy, the availability of health resources, and finally, communication. There are more student dissertations and articles about specific programs in primary healthcare centers, but they are not published in scholarly journals (see for example Vondewi, 2010; Putra, 2012). To the best of our knowledge, there has not been any literature pertaining to primary healthcare centers in remote areas.

Perhaps the three closest studies to ours are Sagala *et al.*, (2016), Husain *et al.*, (2006), and Suharmiati *et al.*, (2012). Sagala, Trisnantoro, and Padmawati (2016) inspected the provision of health services at Kepulauan Anambas, one of the so-called remote and underdeveloped areas, borderland, and outlying islands, or *Daerah Terpencil, Tertinggal, Perbatasan dan Kepulauan* (DTPK) in Riau province, but they focused on a hospital. Husain (2006) use data from primary healthcare centers and auxiliary primary healthcare centers or *puskesmas pembantu* (*Pustu*) in the survey of Indonesian family's life aspects or *Survei Aspek Kehidupan Keluarga Indonesia* (*Sakerti*) fielded in 13 provinces. Comparing conditions of primary healthcare centers in rural and urban areas, the study found that doctor availability in urban primary healthcare centers was much higher than that in rural ones, especially in Java, Bali, and the Sumatra islands. However, the availability of paramedics in rural primary healthcare centers had been quite good. While this study highlights the geographical differences in human resources for health, it is far from being comprehensive. Further, the *Sakerti* data used in the study are quite old, being collated almost two decades ago.

More recently, Suharmiati, Handayani, and Kristiana (2012) and Suharmiati, Laksono, and Astuti (2013) collected data from a primary healthcare center in Sajingan Besar, a remote area in West Kalimantan Province, to investigate factors that influence access to the facilities. They found that the availability of human resources for health was severely lacking, so primary healthcare centers could not run many activities, especially outdoor activities. Medical equipment, medical supplies, and drugs supply were also restricted. In terms of patient access to primary healthcare centers, they found that transportation was the biggest hurdle. However, the findings of this study were only based on the experience of one primary healthcare center. It would be interesting to inspect several centers in remote areas and cover many more dimensions of service provision, not just human resources for health and access barriers for patients.

In this study, the researchers visited 18 primary healthcare centers in the target locations of National Health or *Nusantara Sehat* (NS) program, initiated by Ministry of Health Indonesia. A team of health personnel consisting of doctors, dentists, nurses, public health experts, environmental health experts, lab technicians, nutritionists, and pharmacists went to areas deemed as remote and underdeveloped areas, borderland, and outlying island that are lacking in human resources for health. At these facilities, the researchers interviewed the

heads of these primary healthcare centers to obtain information about their facility conditions, activities inside and outside of the buildings, and changes to their finances in recent months.

Our inspection found that access to primary care in the remote and underdeveloped areas, borderland, and outlying islands was still challenging, with roads to primary healthcare centers often in poor physical conditions (for example, many potholes, rocky, and not asphalted). Further, there were no permanent doctors and a lack of laboratory facilities inside primary healthcare centers (or lab technicians) to conduct blood tests. With regards to activities conducted by primary healthcare centers, the researchers found that most had been quite active with their outdoor programs, engaging in preventive and promotive activities, such as detecting cases of priority diseases (for example hypertension, diarrhea, and malnourishment in young children) in the community and running health education classes. Primary healthcare centers also initiate and oversee monthly integrated health service posts (*Posyandu*), integrated village NCD prevention posts for elderly (*Posbindu Lanjut Usia/Lansia*), and integrated village NCD prevention posts for non-communicable diseases (*Posbindu PTM/Penyakit Tidak Menular*). Finally, concerning financial conditions, the

researchers found that both income and expenses had increased, and very few spent money on the refurbishment of facilities.

## METHOD

The researchers undertook a qualitative study through an in-depth interview in primary healthcare center-level. The primary healthcare centers were chosen based on a purposive sampling technique. The researchers developed the survey instruments (in Indonesian language) covering activities in primary healthcare centers, patient volumes, the facilities inside, availability of necessary medical equipment and medical supplies, human resources for health, indoor and outdoor activities, and changes to their revenues and expenses in the last few months. This information would inform us about three dimensions of primary healthcare centers' conditions: the level (or quality) of facilities inside and around the primary healthcare centers building, currently running activities, and changes in finances in recent months. The researchers pilot-tested the survey instrument on a number of primary healthcare centers' personnel in a DTPK in Lampung province (nearest to Jakarta), and revised their survey instruments accordingly.

Table 1. Locations and Informants of Sampled Primary healthcare Centers.

Province	District	Area Size (km <sup>2</sup> )	#Villages	# People	Informants
Bengkulu	Sekayun	79.00	11	6,968	Head of Administration
	Ketenong	63.09	8	4,840	Head of Primary healthcare center
	Tanjung Harapan	24.30	10	11,451	Head of Primary healthcare center
	Pagar Jati	70.00	10	5,892	Acting Head of Primary healthcare center
	Taba Teret	96.00	7	5,696	Head of Administration
	Taba Lagan	50.00	9	7,029	Head of Administration
South Sulawesi	Kondodewata	196.74	17	30,691	Head Midwife
	Rampi	156.56	7	3,134	Head of Primary healthcare center
	Latimojong	NA	12	26,819	Head of Administration
	Walenrang Barat	NA	6	10,716	Head of Primary healthcare center
	Bittuang	134.47	13	19,550	Head of Primary healthcare center
	Rano	166.02	6	6,119	General Practitioner
East Nusa Tenggara (NTT)	Ngalupulo	106.47	13	13,169	Head of Primary healthcare center
	Watuneso	46.79	12	8,613	Head of Primary healthcare center
	Iteng	138.00	10	16,671	Head of Administration
	Beamese	226.10	7	9,681	Acting Head of Primary healthcare center
	Ranggu	30.44	8	8,713	Head of Operation
	Pacar	63.50	12	14,066	Head of Primary healthcare center

With the available budget, the researchers chose DTPKs in three provinces, which cover West to East Indonesia: Bengkulu, South Sulawesi, and East Nusa Tenggara. It is well-documented that health conditions and health supply levels vary significantly across Indonesian regions, with East Indonesia faring the worst compared to other regions (Kurniawan, Yudianto, Hardhana, and Siswanti, 2018; Worldbank, Inspecting Public Health...

2018). The data collection received ethical approval from Gajah Mada University (REF No. KE/FK/0510/EC/2018) and an implementation permit from the Vice President Office of the Executive Secretary of the National Team for the Acceleration of Poverty Reduction.

In each province, 6 DTPK districts were visited, with one primary healthcare center per district,

giving a total of 18. These primary healthcare centers cover 6 to 17 villages, with populations of between 3,000 and 30,000 (Ministry of Health of the Republic Indonesia, 2017b, 2017c, 2017d). Compared to other primary healthcare centers in the districts, they have a relatively tolerable communication infrastructure (paved roads, internet connection, and electricity) to allow a smooth data collection process. In addition, they have many households living in their catchment area (territory), enabling a more accurate picture of the various services provided by primary healthcare centers. The main information sources of this study were mostly the Heads of primary healthcare centers, who are likely to be the most knowledgeable regarding the conditions and activities inside the facility and their outreach programs to local communities. When the Head of primary healthcare center was not available, the Head of Administration, Head of Operation, Acting Head, or a senior health worker in-charge became the informant. The interview was led by experienced interviewers using tablets, and each interview lasted for approximately 1.5 hours. Table 1 reports the districts of the sampled primary healthcare centers and the informant at each primary healthcare center.

## RESULTS AND DISCUSSION

Table 2 presents the facilities in primary healthcare centers, which include operating hours, ease of access for patients, level of human resources for health, available rooms, and adequacy of medical equipment and medical supplies. The researchers

reported findings from all primary healthcare centers in the sample (and by province) to highlight the regional variations in health supply.

Ten primary healthcare centers in the sample have beds for inpatient (Inpatient primary healthcare centers), and eight primary healthcare centers have no beds for non-inpatient (Outpatient primary healthcare centers). Half of the primary healthcare centers with inpatient beds are located in NTT. In Bengkulu, only one out of the six primary healthcare centers visited can provide inpatient services.

All primary healthcare centers in the sample are open Monday to Saturday. Four are also open on Sundays, of which three have beds. The operating duration is 4–6 hours a day, from 7.00-8.00 am to 12.00-14.00 pm. This format applies in most primary healthcare centers throughout the country, not just those located in DTPK. Most patients use a private vehicle or public motorbike to reach primary healthcare centers. However, the roads to primary healthcare centers are often in poor physical conditions: not asphalted, full of potholes, flooded, and rocky. Further, many patients need to traverse rivers (12 primary healthcare centers) and valleys (15 primary healthcare centers) to reach primary healthcare centers. On average, it takes patients 99 minutes to reach primary healthcare centers, but for some the travel time can reach 6 hours (primary healthcare centers in Rampi, South Sulawesi). These access barriers reflect conditions at DTPKs that are remote with an inferior transportation infrastructure.

Table 2. Operating Hours, Human Resources, and Amenities in 18 primary healthcare centers by Province.

	Bengkulu	NTT	South Sulawesi	Total
<b># Primary healthcare centers</b>	6	6	6	18
<b># Inpatient primary health care centers</b>	1	5	4	10
<b>Operating hours</b>				
# Open Monday-Saturday	6	6	6	18
# Open Sunday	1	2	1	4
Average duration (Monday-Thursday)	5.8 hours	5.1 hours	5.9 hours	5.58 hours
Average duration (Friday)	3.9 hours	3.1 hours	5.2 hours	4.04 hours
Average duration (Saturday)	4.8 hours	3.8 hours	5.6 hours	4.75 hours
<b>Mode of arrival</b>	Private	Public	Public	Private
<b>Average transport cost</b>	Rp.13,000	Rp.29,000	Rp.104,100	Rp.51,000
<b>Average travel time</b>	43 minutes	140 minutes	143 minutes	99 minutes
<b>Average per Primary healthcare center</b>				
General Practitioner (GP)	1.5	0.5	0.67	0.89
Dentist	0.33	0.33	0.5	0.39
Nurse	10.8	22.3	8.8	14
Midwife	15.3	22.7	14.2	17.4
Pharmacist	0.67	1.17	0.5	0.78
Nutritionist	0.33	2	1	1.11
Public health expert	1.67	0.83	1	1.17
Environmental health expert	0	1.67	1	0.89
Lab technician	0	1.17	0	0.39
<b>Average # consultation rooms</b>	3.33	5.17	3.33	3.94
<b># with a storage room for drugs</b>	6	6	4	16
<b># with a laboratory</b>	2	5	3	10
<b># with availability "none"/ "very poor"</b>				
Variety of drugs	2	0	0	2
Medical supplies	1	0	0	1
Medical equipment	3	0	1	4



The average of primary healthcare centers in the sample has 0.89 general practitioners (GPs), 0.39 dentists, 14 nurses, and 17 midwives. Having less than one doctor in a primary healthcare center means that some have no permanent doctor. The researchers identified five primary healthcare centers (three in NTT, and two in South Sulawesi) that do not have a permanent GP, and 11 that do not have a permanent dentist. This falls short of the minimum standard human resources for health according to the Ministry of Health's decree or *Permenkes* number 75 year 2014 (75/2014) about primary healthcare centers, which states that for remote and very remote areas there should be one GP in an outpatient primary healthcare center, two GPs in an inpatient primary healthcare center, and one dentist at every outpatient primary healthcare center and outpatient primary healthcare center (Ministry of Health of the Republic Indonesia, 2014b). The absence of a doctor may in turn discourage people from seeking health treatment in primary healthcare centers, minding that reaching them is not easy for many, especially for those who live far away. The minimum standard also sets the minimum of five nurses and four midwives in an outpatient primary healthcare center, and eight nurses and seven midwives in an inpatient primary healthcare center (Ministry of Health of the Republic Indonesia, 2014b).

Similarly, the unavailability of a pharmacist and a lab technician in primary healthcare centers means they cannot dispense doctor prescriptions or conduct blood tests. According to the Ministry of Health's Decree Number 75/2014, there should be a lab technician, pharmacist, public health expert, and environmental health expert at each outpatient primary healthcare center and inpatient primary healthcare center, a nutritionist in every outpatient primary healthcare center, and two nutritionists at every inpatient primary healthcare center (Ministry of Health of the Republic Indonesia, 2014b).

Most primary healthcare centers in the sample have at least three consultation rooms and a room to store drugs (16 primary healthcare centers). However, only 10 have a functioning laboratory, two have a laboratory that is in a poor physical condition, while eight have no laboratory. The availability of medical equipment (such as stethoscopes, thermometers, body scales, and sphygmomanometers to measure blood pressure), and medical supplies (such as cotton balls, syringes, and medical plasters) appears to have been quite good. Very few primary healthcare centers in the sample report that these medical essentials are either unavailable or only available in deplorable condition. There are also very few complaints about the variety of drugs supplied to primary healthcare centers.

Table 3 presents activities in primary healthcare centers. It reveals that 15 out of the 18 primary healthcare centers in the sample have used computers to conduct administrative tasks and keep patient records. Moreover, it indicates that despite being located in DTPK, primary healthcare centers are still striving for efficiency and committed to having accurate records pertaining to their patients and activities. This finding should ease many speculations that administrative data in primary healthcare centers in remote or rural areas are messy and very

unreliable. Policymakers can already use their records to oversee their daily activities, human resources, finances, services provided to publicly-insured patients, and to track the prevalence of common diseases in the community. The use of computer systems also aids regular monitoring and evaluation process.

In one month, primary healthcare centers provides 481 outpatient cases and 12 inpatient cases (in ten inpatient primary healthcare centers), or approximately 25 patients per day. Outside the DTPK area, a typical primary healthcare center may receive 90–100 patients per day (Rizcarachmakurnia, Wigati, and Sriatmi, 2017; Utama, Lestari, and Ikmaluhakim, 2017). Further, there are more female than male patients. This trend is also observed elsewhere (Rahmayanti and Ariguntar, 2017). Almost 70% of cases are provided to contribution beneficiaries (*Penerima Bantuan Iuran/PBI*), whose insurance premiums are paid by the government. In bigger cities, there may be more general patients who are paying “out-of-pocket”, but the majority of patients are covered by public insurance (PT Iconesia Solusi Prioritas, 2016). Primary healthcare centers in DTPK can handle most presentations, with approximately 6% referral rates to higher-level health facilities (hospitals). Aside from cases requiring more advanced medical treatment, referrals may also be caused by a shortage of medicine, inadequate medical equipment, and practical distance to the nearest higher-level facility (Alawi, Junadi and Latifah, 2017). The most common health problems presented are acute and communicable diseases. Twelve primary healthcare centers report upper respiratory tract infection (ISPA) as the disease with the highest volume. This finding is also found elsewhere, not in just primary healthcare centers in DTPK ( Afifah, 2017; Firnanda N, Junaid and Jafriati, 2017; Rahmayanti and Ariguntar, 2017; Vensya, Budijanto, Soenardi, and Titi Aryati, 2014). Besides ISPA, primary healthcare centers also observe many cases of chronic diseases, especially hypertension and chronic digestive disorders (Rahmayanti and Ariguntar, 2017). Indeed, the prevalence of chronic diseases is predicted to increase in the coming decades in accordance with an aging population and lifestyle shifts toward sedentary lifestyle and unhealthy diets (Institute for Health Metrics and Evaluation, 2018; Vensya, Budijanto, Soenardi, and Titi Aryati, 2014).

All primary healthcare centers in the sample have run health education classes, with topics including the promotion of clean and healthy lifestyles (such as the habit of washing hands with soap before eating and preparing meals, staying active every day, smoking cessation, and having a diet containing plenty of fruits and vegetables). These classes also include an introduction to symptoms, causes, and treatments of common diseases, and mother and children health-related information such as antenatal care, common problems during pregnancy, exclusive breastfeeding in the first six months, and the benefits of immunisation. The most frequently run classes are on the promotion of clean and healthy lifestyles and their links with the prevention of communicable diseases such as diarrhea and tuberculosis, and their effect on children's health. As awareness about health

increases, people may be more likely to visit primary healthcare centers to obtain health treatment, medical advice, or regular health check-ups (Napirah, Rahman and Tony, 2016). Among the three provinces in the sample, primary healthcare centers in Eastern Nusa Tenggara appear to be the most active with their education classes.

Most primary healthcare centers in the sample have extended their reach outdoors to the local community, to detect the prevalence of priority diseases such as hypertension, tuberculosis, and malnourishment in young children. The most intensely monitored health problems are hypertension, malnourishment (stunting and wasting) in children under five years old, and receipt of complete primary immunisation. As with the case of education classes, outdoor detection programs are run most intensively by primary healthcare centers in NTT.

Primary healthcare centers are responsible for forming and overseeing *posyandu* in their catchment area. The average primary healthcare centers in the sample oversees 16 active *posyandu*, which are run

monthly. Most primary healthcare centers also have initiated monthly *posbindu lansia*, and *posbindu PTM*.

These findings about outdoor activities in the primary healthcare centers are different to findings in Suharmiati, Handayani, and Kristiana (2012). Their study found that the lack of health workers in primary healthcare centers prevented them from conducting outdoor activities. One potential explanation for this could be because the catchment area of most primary healthcare centers in our sample, compared to the catchment area of the ones in their study, is much wider while its population is small and sparsely distributed.

To elicit information about financial positions, the informants were asked whether (in comparison to the past three months) income, absorption of funds, and expenses had increased (and by how much), remained stable, or had decreased (and by how much). Because changes tend to be polarized towards the extremes (increased or decreased significantly), the researchers pooled together answers of increased (“>”) and decreased (“<”). Table 4 presents the results of this question.

Table 3. Activities in the Primary healthcare Centers.

	Bengkulu	NTT	South Sulawesi	Total
<b># Primary healthcare centers</b>	6	6	6	18
<b># with computerised administrative system</b>	4	6	5	15
<b>Average case (monthly<sup>^</sup>)</b>				
Outpatient females	134.5	471.8	257.9	288.1
Outpatient males	155.4	239.4	185.0	193.3
Outpatient total	274.6	711.2	448.3	481.3
Inpatient females	5.7	11.7	5.3	7.9
Inpatient males	5.0	4.8	2.7	3.8
Inpatient total	10.7	16.4	8.1	11.7
Outpatient PBIs	250.3	467.3	253.4	337.9
Inpatient PBIs	6.3	8.2	6.6	7.3
<b>Average referral rates (%)</b>	0.09	0.04	0.05	0.06
<b>Average % cases from PBI</b>	0.62	0.69	0.73	0.68
<b>Cases with the highest volume 1</b>	ISPA	ISPA	ISPA	ISPA
<b>Cases with the highest volume 2</b>	Hypertension	Musculoskeletal	Digestive	Hypertension
<b>Cases with the highest volume 3</b>	Digestive	Digestive	Hypertension	Digestive
<b># can handle all cases</b>	5	6	5	16
<b># with education classes</b>				
Diarrhea and clean and healthy lifestyle	5	6	5	16
Habit of hand washing at school	5	5	3	13
Introduction about hypertension	6	6	5	17
Introduction about tuberculosis	5	5	3	13
Importance of exclusive breastfeeding	6	6	5	17
Information on children's health	5	6	5	16
<b># with outdoor detection programs</b>				
Hypertension	5	6	5	16
Tuberculosis	5	6	4	15
Under-5 malnutrition	4	5	4	13
<b>Average active Posyandu</b>	11.2	23.3	15.2	16.6
<b># with Posbindu PTM</b>	6	4	4	14
<b># with Posbindu Lansia</b>	5	6	1	12

Notes: # number of observations ^ monthly average is obtained from quarterly data divided by three.

In the last three months, 14 out of the 18 primary healthcare centers in the sample report received increased funding from the central government through Health Operational Grants or *Bantuan Operasional Kesehatan* (BOK). Funding from public insurance (JKN capitation fund) increased in six primary healthcare centers, while revenues from

out-of-pocket patients in most primary healthcare centers were relatively stable or in decline. This trend reflects increases in the number of publicly-insured patients in primary healthcare centers, which in turn reduces the number of general patients. As such, this trend also suggests that they are increasingly

dependent on public funding as their primary income source.

Absorption of funds essentially follows from the increased funding. For instance, the BOK fund is absorbed by increases in daily operational activities following the provision of higher patient volume. Further, workloads increase with more patients presenting in primary healthcare centers. This situation has been echoed by the Ministry of Health (Ministry of Health of the Republic Indonesia, 2017a).

Thirteen of the 18 primary healthcare centers in the sample report increased expenses for medical service provisions, whilst only seven reported increased expenses for paying health personnel. With capitation funding, it is imperative to re-adjust workers' compensation given the increases in patient volume (Ramdani, Setiawati and Herawati, 2016; KOMPAK, 2017). Ten primary healthcare centers reported increased expenses due to increases in indoor activities, and 12 reported increased expenses due to outdoor activities. Only three primary healthcare centers increased spending on building facilities; most provided either a 'not relevant' or 'do not know' answer to this question.

In conclusion, several shortcomings in facilities need urgent attention. For instance, short

operating hours or early closing time (12.00 am) renders obtaining treatment infeasible for many. This includes patients who work long hours without sick permits or leave, such as many blue-collar workers and farmers. Primary healthcare centers may consider running an afternoon session, for example opening again at 14.30 pm to 17.30 pm (PT Iconesia Solusi Prioritas, 2016). Similar complaints have also been documented by Apriyanto (2016) and Juliansyah (2013), who discuss primary healthcare centers' roles in giving the best service to patients. Indeed, Syarif, Wahono, and Khoirul ABS (2017) found that conditions related to facilities are the most influential aspect of their performance from the perspective of the patients, because these conditions indicate "assurance" that they can provide the best health service possible. Meanwhile, inconvenient access may discourage people to go and seek treatment (Radito, 2014). Amenities in primary healthcare centers must be clean, tidy, and inviting so that more people are willing to come for health check-ups and for obtaining appropriate health treatment when sick. For those who live far away, mobile primary healthcare centers may be run more frequently, ensuring those who live far away can also receive appropriate health treatment.

Table 4. Financial Condition of Primary healthcare Centers.

	Bengkulu			NTT			South Sulawesi			Do not know/Not applicable	Total		
# Primary healthcare centers	6			6			6				18		
Compared with 3 months ago	<	=	>	<	=	>	<	=	>		<	=	>
# income													
BOK fund	0	1	4	0	0	6	0	1	4	2	0	2	14
JKN capitation fund	1	2	1	1	1	2	0	1	3	6	2	4	6
General patients	1	2	1	1	1	2	1	3	0	6	3	6	3
# absorption of fund													
BOK fund	0	1	3	1	2	3	0	1	3	4	1	4	9
JKN capitation fund	0	2	1	1	2	3	0	1	3	5	1	5	7
# expenses													
Medical service provision	0	1	4	1	1	4	0	1	5	1	1	3	13
Health professionals	0	2	3	1	2	2	1	0	2	5	2	4	7
Operational indoor	1	0	4	0	1	5	1	2	1	4	2	2	10
Outdoor activities	0	1	4	0	1	4	0	1	4	3	0	3	12
Facility refurbishment	0	1	1	2	0	1	0	0	1	14	0	1	3

Notes: total primary healthcare centers may be less than 18 because of 'not applicable' and 'do not know' answers. '<' denotes decreased a little or a lot; '=' denotes do not change/ stable; '>' denotes increased a little or a lot.

The absences of a doctor in primary healthcare centers can also demotivate people in pursuing health services. At the national level, there is an average of 1.83 GPs and 0.73 dentists per primary healthcare center (Kurniawan, Yudianto, Hardhana, and Siswanti, 2018). In our sample, there are only 0.89 GPs and 0.39 dentists per primary healthcare center. This is below the standard minimum human resources for health in primary healthcare centers in remote and very remote areas set by the Ministry of Health (2014b). It also falls short of the number of GPs and dentists in primary

healthcare centers in the city of Ambon, Maluku Province, in Eastern Indonesia, which have already had a GP and a dentist for the past 10 years (Corputty, Kusnanto and Lazuardi. Lutfan, 2013). Sometimes, nurses and midwives become substitutes for doctors. There are more nurses and midwives per primary healthcare centers in our sample (an average of 17 nurses and 14 midwives) than reported at the national-level (an average of 15 nurses and 12 midwives) (Kurniawan, Yudianto, Hardhana, and Siswanti, 2018). However, given that our sample is located in DTPK, primary healthcare centers in DTPK

also tend to have a (much) wider catchment area than elsewhere; hence, more nurses and midwives are needed to fill village health posts or *poskesdes* and village maternity clinics or *polindes*.

In terms of activities, primary healthcare centers in our sampled DTPK have performed quite well, with full activities from indoor to outdoor activities including initiations of health education classes, outdoor detection of diseases in the community, and maintenance of active *posyandu* and *posbindu*. Outdoor activities in particular can enhance health service utilization, by informing more people about the availability of universal public health insurance and the wide variety of free health services available in primary healthcare centers (Restiyani, Fitriyah and Astrikan, 2013).

To ensure that DTPK communities have access to high-quality primary care, immediate policies can be directed towards improving facilities in primary healthcare centers. Initially, this would involve liaising with the district health office to fix access to primary healthcare centers and recruit GPs, and providing lab technicians and pharmacists (Harian Nasional, 2017). As patient volume increases, the health professional to patient ratio decreases, which can have a negative impact on the quality of services. For instance, Abdul Gani Hasan (2017) calculated that the shortage of a doctor can cause patients to receive less than two minutes of consultation time. The local community may help refurbish primary healthcare centers by coordinating act together (*gotong royong*) for paving roads, repainting, and cleaning. To improve the quality of activities run by primary healthcare centers, educational programs must be designed creatively and innovatively. Moreover, running a health education class that is poorly attended is a waste of resources. For example, a small incentive (such as a souvenir) may be used to attract a wider audience. Primary healthcare centers may also liaise with the district health office to bring additional resources (Listiana, Suryoputro and Sriatmi, 2018). Health messages must also be conveyed in a simple, comprehensive manner, ensuring they can be implemented at home. Primary healthcare centers appear to have little incentive to upgrade their buildings. The researchers welcome the Ministry of Health's recent commitment to build more primary healthcare centers and renovate run-down ones in DTPK before 2019 (Ramadhan, 2018).

In the long-term, policies should focus on the recruitment and retention of health personnel in DTPK. This begins by building altruism and morale among medical students serving in remote areas, and by providing incentives for medical graduates to work in DTPK. Attractive remuneration packages may also be designed to attract more experienced health personnel.

## CONCLUSION

A primary healthcare center is where patients establish their first contact with a health professional. As such, a primary healthcare center also presents opportunities for health personnel to detect diseases and provide appropriate health treatments to those who are sick or at high risk of developing health problems. Findings from our study reveal that primary

care in primary healthcare centers in DTPK is still lacking, with inconvenient access to facilities and absences of permanent doctors, pharmacists, and lab technicians. Nevertheless, primary healthcare centers have, thus far, managed to handle the vast majority of presentations, which are mainly acute health complaints and non-communicable diseases. However, as disease profiles begin to shift towards non-communicable diseases, primary healthcare centers may no longer be able to operate successfully without a permanent doctor. In terms of activities, primary healthcare centers in DTPK have been quite successful in interacting with their local communities through their preventive, promotive programs. Finally, on a financial matter, while primary healthcare centers receive more funding to cater for increases in volume and daily operational activities, very few use this additional funding to refurbish their facilities.

## CONFLICT OF INTEREST

The authors declare that they have no conflict of interests.

## REFERENCES

- Achdani, M. (2017) *Libatkan Pemda Dalam Pembangunan Puskesmas*, *Harian Nasional*. Available at: <http://harnas.co/2017/08/24/libatkan-pemda-dalam-pembangunan-puskesmas> (Accessed: 20 November 2018).
- Afifah, K. (2017) *Hubungan mutu pelayanan kesehatan dengan minat kunjungan ulang pasien di puskesmas Cangkringan Sleman*. Sekolah Tinggi Ilmu Kesehatan Jenderal Achmad Yani Yogyakarta. Available at: <http://repository.unjaya.ac.id/2255/2/KUNIK>.
- Alawi, M., Junadi, P. and Latifah, S. N. (2017) 'Analisis Faktor-Faktor yang Berhubungan dengan Tingginya Rujukan Kasus Non Spesialistik Pasien Jaminan Kesehatan Nasional pada Puskesmas di Kabupaten Sukabumi Tahun 2015', *Jurnal Ekonomi Kesehatan Indonesia*, 2(1), pp. 17–23. Available at: <http://journal.fkm.ui.ac.id/jurnal-eki/article/view/1954/645>.
- Apriyanto, D. (2015) 'Pengukuran Kinerja Puskesmas Dalam Rangka Peningkatan Layanan Kesehatan Masyarakat', *Jurnal Ilmu Sosial*, 14(2), pp. 46–62. doi: <https://doi.org/10.14710/jis.14.2.2015>.
- Apriyanto, R. H., Kuntjoro, T. and Lazuardi, L. (2013) 'Implementasi Kebijakan Subsidi Pelayanan Kesehatan Dasar terhadap Kualitas Pelayanan Puskesmas di Kota Singkawang', *Jurnal Kebijakan Kesehatan Indonesia*, 2(4), pp. 180–188. doi: 10.22146/jkki.v2i4.3202.
- Corputty, L. S., Kusnanto, H. and Lazuardi, L. (2013) 'Dampak Kebijakan Pelayanan Kesehatan Gratis Terhadap Kepuasan Pasien Dalam Menerima Pelayanan Kesehatan Puskesmas Di Kota Ambon', *Jurnal Kebijakan Kesehatan Indonesia*, 2(2), pp. 95–104. doi: 10.22146/jkki.v2i2.3220.
- Djauhari, M. A. (2010) 'Pengaruh Implementasi Kebijakan Perimbangan Keuangan Terhadap



- Kualitas Pelayanan Puskesmas: Studi Kasus Kota Banjar Propinsi Jawa Barat', *Sosiohumaniora*, 12(1), pp. 25–38. doi: 10.24198/sosiohumaniora.v12i1.5438.
- Eninurkhatyun, B., Suryoputro, A. and Fatmasari, E. Y. (2017) 'Analisis Tingkat Kepuasan Pasien Terhadap Kualitas Pelayanan Rawat Jalan di Puskesmas Duren dan Puskesmas Bergas Kabupaten Semarang Tahun 2017', *Jurnal Kesehatan Masyarakat*, 5(4), pp. 33–42. doi: <https://ejournal3.undip.ac.id/index.php/jkm/article/view/18314>.
- Firnanda N, Junaid and Jafriati (2017) 'Analisis spasial kejadian penyakit infeksi saluran pernapasan akut (ISPA) pada balita di kelurahan Puwatu tahun 2017', *Jurnal Ilmiah Mahasiswa Kesehatan Masyarakat*, 2(7), pp. 1–7. Available at: <http://ojs.uho.ac.id/index.php/JIMKESMAS/article/view/3430/2585>.
- Gunawan, I. (2018) *Penyakit ISPA Masih Jadi Penyakit Terbanyak di Wilayah Kecamatan Cikampek, Pojok Jabar*. Available at: <https://jabar.pojoksatu.id/pantura/2018/07/14/penyakit-ispa-masih-jadi-penyakit-terbanyak-di-wilayah-kecamatan-cikampek/> (Accessed: 14 November 2018).
- Hardhana, B., Yudianto and Soenardi, T. (2017) *Data dan Informasi Profil Kesehatan Indonesia 2016, Pusat Data dan Informasi Kementerian Kesehatan RI*. Jakarta. doi: 10.11607/ijp.4244.
- Hasan, A. G. and Adisasmito, W. B. B. (2017) 'Analisis Kebijakan Pemanfaatan Dana Kapitasi JKN Pada FKTP Puskesmas Di Kabupaten Bogor Tahun 2016', *Jurnal Kebijakan Kesehatan Indonesia*, 6(3), pp. 127–137. doi: 10.22146/jkki.v6i3.29658.
- Husain, I. (2006) *Kualitas dan Kuantitas Tenaga Kesehatan Puskesmas, Studi Distribusi Desa-Kota dan Regional Analisis Data SAKERTI 2000*. Available at: [http://kebijakankesehatanindonesia.net/sites/default/files/file/SDM/Artikel/--Kualitas\\_dan\\_Kuantitas\\_Tenaga\\_Kesehatan\\_Puskesmas.pdf](http://kebijakankesehatanindonesia.net/sites/default/files/file/SDM/Artikel/--Kualitas_dan_Kuantitas_Tenaga_Kesehatan_Puskesmas.pdf).
- Institute for Health Metrics and Evaluation (2018) 'New study: Indonesia faces a "double burden" of persistent communicable diseases and increasing non-communicable diseases', *IHME Measuring What Matters*. Available at: [https://www.eurekalert.org/pub\\_releases/2018-06/ifhm-nsi062718.php](https://www.eurekalert.org/pub_releases/2018-06/ifhm-nsi062718.php) (Accessed: 15 August 2018).
- Juliansyah, E. (2012) 'Efektivitas Pelayanan Kesehatan Di Puskesmas', *JIANA (Jurnal Ilmu Administrasi Negara)*, 12(1), pp. 40–50. Available at: <https://ejournal.unri.ac.id/index.php/JIANA/issue/view/117>.
- KOMPAK (2017) 'Kondisi Pembiayaan dan Tantangan Sumber Daya Manusia Saat ini di Puskesmas', *Ringkasan Kebijakan*. Available at: <http://kompak.or.id/userfiles/publication/report/brief-puskesmas-11291.pdf>.
- Kurniawan, R. et al. (2018) *Profil Kesehatan Indonesia Tahun 2017*. Jakarta. Available at: <http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/profil-kesehatan-indonesia-2017.pdf>.
- Listiana, N., Suryoputro, A. and Sriatmi, A. (2018) 'Analisis Penyebab Rendahnya Kinerja Organisasi di Puskesmas Candilama Kota Semarang', *Jurnal Kesehatan Masyarakat (e-journal)*, 6(1), pp. 49–56. Available at: <https://ejournal3.undip.ac.id/index.php/jkm/article/viewFile/19833/18751>.
- Ministry of Health of the Republic Indonesia (2014a) *Profil Kesehatan Indonesia Tahun 2013*. Jakarta. Available at: <http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/profil-kesehatan-indonesia-2013.pdf>.
- Ministry of Health of the Republic Indonesia (2014b) *Standar Ketenagaan Puskesmas Permenkes 75 Tahun 2014*. Jakarta. Available at: <https://www.scribd.com/doc/289645780/Standar-Ketenagaan-Puskesmas-Permenkes>.
- Ministry of Health of the Republic Indonesia (2017a) *Data dan Informasi Profil Kesehatan Indonesia 2016, Kementerian Kesehatan RI*. doi: 10.11607/ijp.4244.
- Ministry of Health of the Republic Indonesia (2017b) *Data Dasar Puskesmas Bengkulu 2016*. Jakarta. Available at: [http://www.depkes.go.id/resources/download/pusdatin/data-dasar-puskesmas/2016/07/Data Dasar Puskesmas Bengkulu 2016.pdf](http://www.depkes.go.id/resources/download/pusdatin/data-dasar-puskesmas/2016/07>Data%20Dasar%20Puskesmas%20Bengkulu%202016.pdf).
- Ministry of Health of the Republic Indonesia (2017c) *Data Dasar Puskesmas NTT 2016*. Jakarta. Available at: [http://www.depkes.go.id/resources/download/pusdatin/data-dasar-Puskesmas/2016/19/Data Dasar Puskesmas NTT 2016.pdf](http://www.depkes.go.id/resources/download/pusdatin/data-dasar-Puskesmas/2016/19>Data%20Dasar%20Puskesmas%20NTT%202016.pdf).
- Ministry of Health of the Republic Indonesia (2017d) *Data Dasar Puskesmas Sulawesi Selatan 2016*. Jakarta. Available at: [http://www.depkes.go.id/resources/download/pusdatin/data-dasar-puskesmas/2016/27/Data Dasar Puskesmas Sulsel 2016.pdf](http://www.depkes.go.id/resources/download/pusdatin/data-dasar-puskesmas/2016/27/Data%20Dasar%20Puskesmas%20Sulsel%202016.pdf).
- Ministry of Health of the Republic Indonesia (2018) *Profil Kesehatan Indonesia Tahun 2017*. Jakarta. Available at: <http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/profil-kesehatan-indonesia-2017.pdf>.
- Napirah, M. R., Rahman, A. and Tony, A. (2016) 'Faktor-Faktor Yang Berhubungan Dengan Pemanfaatan Pelayanan Kesehatan Di Wilayah Kerja Puskesmas Tambarana Kecamatan Poso Pesisir Utara Kabupaten Poso', *Jurnal Pengembangan Kota*, 4(1), pp. 29–39. doi: 10.14710/jpk.4.1.29-39.
- Nugroho P, Pramono LA and Miharja L (2015) 'Hypertension and Kidney Dysfunction in Adult Population in Indonesia', *Journal of Hypertension*, 33, p. e43. doi: 10.1097/01.hjh.0000469882.58487.af.
- PT Iconesia Solusi Prioritas (2017) *Laporan Survei Kepuasan Masyarakat Terhadap Pelayanan Kesehatan Kota Surabaya Tahun 2016*. Surabaya. Available at: <http://organisasi.surabaya.go.id/home/file/pelayanan publik/Laporan IKM Kesehatan>

- 2017.pdf.
- Putra, T. W. (2012) *Implementasi Program Kesehatan Gratis (Studi Kasus Puskesmas Batua Makassar)*. Hasanudin University. Available at: <http://repository.unhas.ac.id/handle/123456789/1745>.
- Radito, T. (2014) 'Analisis Pengaruh Kualitas Pelayanan Dan Fasilitas Kesehatan Terhadap Kepuasan Pasien Puskesmas', *Jurnal Ilmu Manajemen*, 11(2), pp. 1–26. doi: 10.21831/jim.v11i2.11753.
- Rahmayanti, N. S. and Ariguntar, T. (2017) 'Karakteristik Responden dalam Penggunaan Jaminan Kesehatan Pada Era BPJS di Puskesmas Cisoka Kabupaten Tangerang Januari-Agustus 2015', *Jurnal Medicoeticolegal dan Manajemen Rumah Sakit*, 6(1), pp. 61–65. doi: 10.18196/jmmr.6128.
- Ramadhan, A. (2018) *260 Puskesmas berstandar nasional akan dibangun pemerintah.*, *Antara Sumbang*. Available at: <https://sumbar.antaranews.com/berita/224291/260-puskesmas-berstandar-nasional-akan-dibangun-pemerintah> (Accessed: 4 November 2018).
- Ramdani, A. H., Setiawati, E. P. and Herawati, D. M. D. (2016) 'Persepsi Dokter Puskesmas di Kota Bandung terhadap Implementasi Sistem Jaminan Kesehatan Nasional', *Jurnal Sistem Kesehatan*, 1(4), pp. 171–178. doi: <https://doi.org/10.24198/jsk.v1i4.12804>.
- Restiyani, P., Fitriyah and Astrika, L. (2013) 'Aksesibilitas masyarakat miskin dalam memperoleh pelayanan kesehatan (Studi Kasus di Kawasan Kampung Tambak Mulyo Kelurahan Tanjung Mas Semarang)', *Journal of Politic and Government Studies*, 2(3), pp. 1–13. Available at: <https://ejournal3.undip.ac.id/index.php/jpgs/article/view/2982>.
- Rizcarachmakurnia, N., Wigati, P. A. and Satriatmi, A. (2017) 'Analisis beban kerja dan kebutuhan tenaga perawat di Puskesmas Poncol Kota Semarang', *Jurnal kesehatan masyarakat*, 5(3), pp. 26–33. Available at: <https://ejournal3.undip.ac.id/index.php/jkm/article/view/17163>.
- Sagala, I., Trisnantoro, L. and Padmawati, R. S. (2016) 'The implementation of nhip policy by the public health care providers in the District of Anambas islands', *Jurnal Kebijakan Kesehatan Indonesia*, 5(3), pp. 115–121. doi: 10.22146/jkki.v5i3.30651.
- Suharmiati, Handayani, L. and Kristiana, L. (2012) 'Faktor-Faktor Yang Mempengaruhi Keterjangkauan Pelayanan Kesehatan Di Puskesmas Daerah Terpencil Perbatasan Di Kabupaten Sambas (Studi Kasus Puskesmas Sajingan Besar)', *Buletin Penelitian Sistem Kesehatan*, 15(3), pp. 223–231. Available at: <http://ejournal.litbang.depkes.go.id/index.php/hsr/article/view/2996>.
- Suharmiati, Laksono, A. D. and Astuti, W. D. (2013) 'Review Kebijakan tentang Pelayanan Kesehatan Puskesmas di Daerah Terpencil Perbatasan', *Buletin Penelitian Sistem Kesehatan*, 16(2), pp. 109–116. Available at: <http://ejournal.litbang.depkes.go.id/index.php/hsr/article/view/3299/3291>.
- Syarif, M., Wahono, B. and Khoirul ABS, M. (2017) 'Pengaruh mutu pelayanan terhadap tingkat kepuasan pasien (Studi kasus Puskesmas Kecamatan Pragaan Sumenep Jawa Timur)', *Jurnal Ilmu Riset Manajemen*, 6(5), pp. 34–50. Available at: <http://riset.unisma.ac.id/index.php/jrm/article/view/502>.
- Utama, W., Lestari, W. and Ikmaluhakim, D. R. (2017) 'Pengukuran Kepuasan Pasien Terhadap Pelayanan Puskesmas Dengan Metode Servqual (Studi Kasus: Puskesmas Ngagel Rejo Surabaya)', in *Proceeding SENDI\_U*. Available at: [https://www.unisbank.ac.id/ojs/index.php/sendi\\_u/article/view/5036](https://www.unisbank.ac.id/ojs/index.php/sendi_u/article/view/5036).
- Vensya, S. et al. (2014) *Profil Kesehatan Indonesia Tahun 2013*. Jakarta. Available at: <http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/profil-kesehatan-indonesia-2013.pdf>.
- Vondewi, R. (2010) *Analisa Dan Perancangan Sistem Informasi Puskesmas ( Studi Kasus: Puskesmas Rawat Inap Simpang Tiga Pekanbaru)*. Universitas Islam Negeri Sultan Syarif Kasim Riau. Available at: [http://repository.uin-suska.ac.id/372/1/2010\\_201102.pdf](http://repository.uin-suska.ac.id/372/1/2010_201102.pdf).
- Worldbank (2018) *Program for Results (PforR) Indonesia-Supporting Primary healthcare Reform -- I-SPHERE*. Available at: <http://documents.worldbank.org/curated/en/722581527068052303/Final-Technical-Assessment-Indonesia-Supporting-Primary-Health-Care-Reform-P164277.docx>.