



Indonesia's Health Labor Market:

a descriptive analysis



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Key Messages

- Indonesia faces a critical shortage of absolute health workers and relative shortages in general practitioners, medical specialists, and dentists, as well as regional inequalities in the distribution of health workers.
- Compensation greatly influences whether individuals are likely to enter and stay in the health care labor market, including choice of specialty and location of service.
- Health workers in the public sector make less or on par with workers with similar educational backgrounds from other sectors. Private sector wages are no more attractive, as health workers earn less than public sector workers in 21 out of 34 provinces.
- Unlike restrictive government regulations governing the hiring and compensation practices of public health care workers, BPJS has the authority to determine its own contracting arrangements with both public and private sector workers.
- The government is currently considering major health financing reforms, particularly to capitation and performance-based financing – how BPJS finances primary health care.
- As the largest source of financing for frontline healthcare facilities, BPJS can help attract more health care professionals to work in primary care settings – especially in the private sector – by increasing the per capita base rate of JKN capitation payments.
- To strengthen the purchasing role of BPJS and simplify public financial management and administrative processes, public sector supply-side financing could be transferred to and accounted for under the capitation rate, with public and private providers receiving the same rate for the same services. Alternatively, if public providers continue to receive separate supply side financing, the differential private sector capitation rate must be set to account for the cost of delivering the basic benefit package. However, this option diminishes the ability of BPJS to act as a strategic purchaser.
- However, any increase in capitation base rate should also come with an increase in value for money. Therefore, the government should also consider refining the performance-based component of the capitation to better incentivize improvements in the quality of care.
- Alongside financial reforms, processes to measure performance should also be introduced. Not only would this allow BPJS to better manage its provider network, but it would fill an important gap in public reporting and comparative benchmarking on issues of quality.
- Beyond introducing financial and non-financial incentives to attract additional health workers and/or incentivize existing health workers to perform better, the Ministry of Health may also want to consider alternative service delivery models such as task shifting, mobile health clinics and digital health technologies to reach remote and under-resourced areas.

Introduction

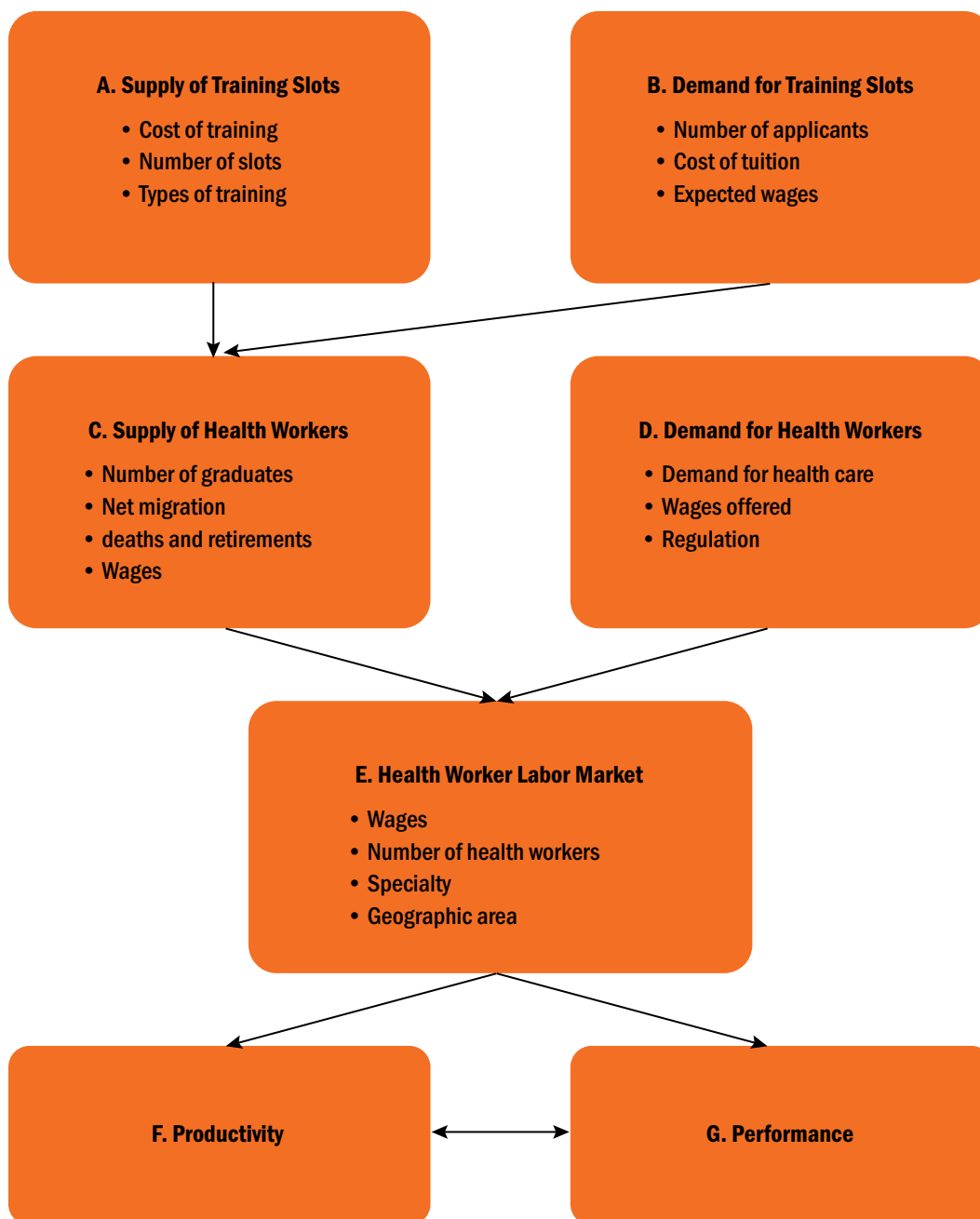
To reach universal health coverage (UHC) and achieve the ambitions of the sustainable development goals (SDG), a sufficient supply of health workers is needed to ensure access to quality health services. In Indonesia, this means increasing the number, skill mix, and distribution of human resources in health (HRH). Most countries face either absolute and/or relative shortages of health workers. Absolute shortages refer to health workers not being available in the necessary numbers. Relative shortages refer to inadequate mix of health cadres and/or distributional imbalances so that providers are not available where they are needed most. Indonesia faces both – a critical shortage of absolute health workers and relative shortages in general practitioners (GPs), medical specialists, and dentists, as well as regional inequalities in the distribution of health workers.

Strategies aimed at strengthening service delivery will need to address the production, retention, and distribution of HRH. Countries have applied different strategies to increase the supply and retention of HRH, especially primary health care (PHC) workers. These range from curriculum reform in medical schools and training to introducing new and alternative cadres of health workers, introducing monetary and non-monetary incentives for rural and PHC practice, and regulatory measures to force workers to practice at specific areas or levels of the service delivery ladder. Knowing which strategy(ies) to pursue should be informed by supportive analytics to better understand whether health worker shortages are due to insufficient numbers, unattractive wages, poor work environment, limited opportunities for career progression including continuing education, or other factors – enabling more targeted policy action.

This report approaches HRH from a descriptive health labor market (HLM) perspective. It draws on an integrated framework used by [Scheffler et al., 2016](#). However, data limitations narrowed the scope of the analysis to the items listed in boxes e, f, and g in Figure 1 – on wages, the number of health workers, specialty, geographic area, productivity, and performance. In particular, it reviews the regulatory and remuneration policies of health workers to better understand the context in which the demand for health workers determines HLM wages and benefits. As wage rates largely determine the choice to become a health worker, the specialty, the sector (public or private), and the location of practice, the report looks at how the wages of health workers compare to the average wage of Indonesians and what the wage differential is between the public and private health sector. The report also looks at the flexibility of wage rates to determine how easy policy interventions may address any market imbalances.

While a complete picture of HLM should also include supply side factors and health worker productivity and performance measures, data availability is a noted constraint. Nevertheless, findings from a [2014 World Bank report](#) that focused on the production of HRH workers in IDN and subsequent reports in [2017](#) and [2018](#) that focused on the quality of HRH are reflected in this report (Anderson, Meliala, Marzoeke, & Pambudi, 2014) (World Bank, 2018).

Figure 1. An integrated health labor market framework



Note: HLM = Health Labor Market.

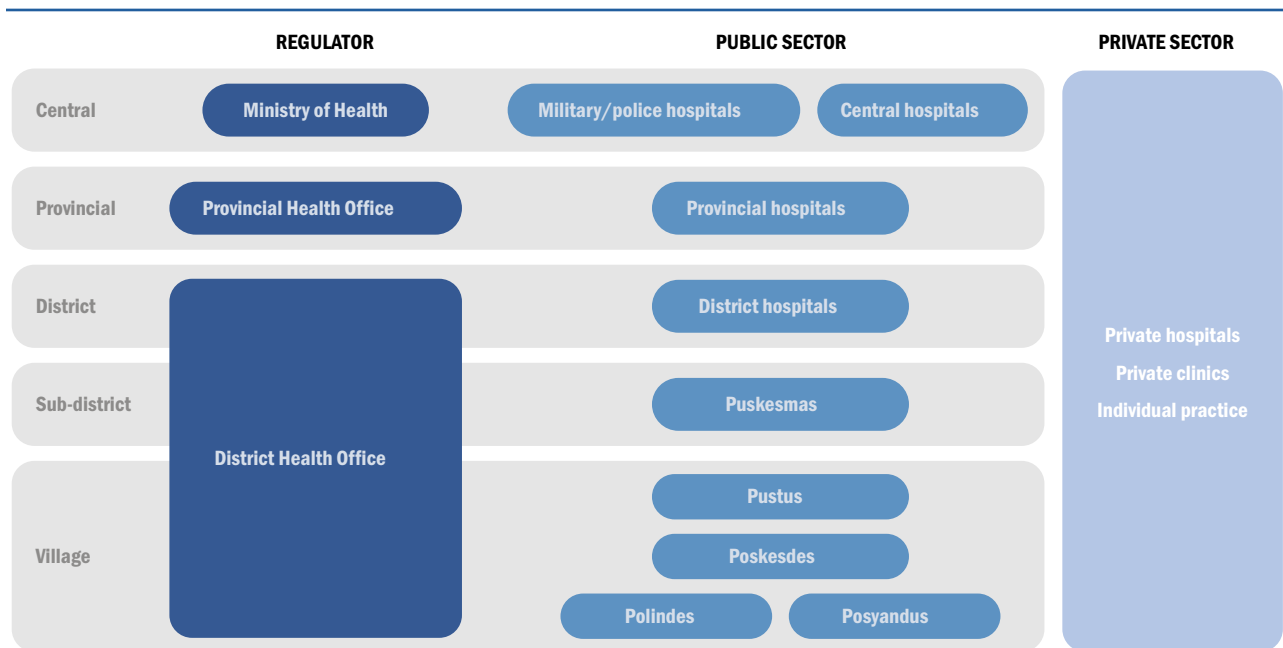
Source: Scheffler, R., Herbst, C., Lemiere, C., & Campbell, J. (2016). *Health labor market analyses in low- and middle-income countries: an evidence-based approach*. Washington, DC: World Bank.

Background

HRH Context

Indonesia has an extensive public-private service delivery model to serve a population of over 270 million people across over 17,000 islands (Figure 2). Following decentralization in 1999, Indonesia transferred the bulk of health care delivery to district and village governments.¹ Facilities at the district level and above provide secondary and tertiary care (~1,000 public and 1,700 private hospitals). Sub-district and village facilities offer preventive, promotive, and basic primary health care through its Public Primary Health Centers or *Pusat Kesehatan Masyarakat (puskesmas)* (~10,000)—the backbone of the public health system.² They are generally staffed with a GP, nurses, midwives, and a nutritionist. It is estimated that there are also ~9,025 private primary care clinics and ~7,000 individual private physicians. At the village level, village health posts (*poskesdes*), often the home of the village midwife, act as *puskesmas* satellites bringing maternal and child health-related services closer to the community. Finally, integrated health service posts (*posyandus*) are organized by village governments to provide a form of community-based health care. They are run by voluntary community health workers (*kadres*). While the public sector is dominant in the provision of inpatient services, two-thirds of outpatient care is provided by private primary care clinics, individual practices, and pharmacies.

Figure 2. Indonesia has a mixed model of public-private provision of health care services.



Source: Adapted from World Bank (2016).

Note: The public primary health care system also includes *pustus* for outreach activities in remote regions and *polindes* for village level delivery posts.

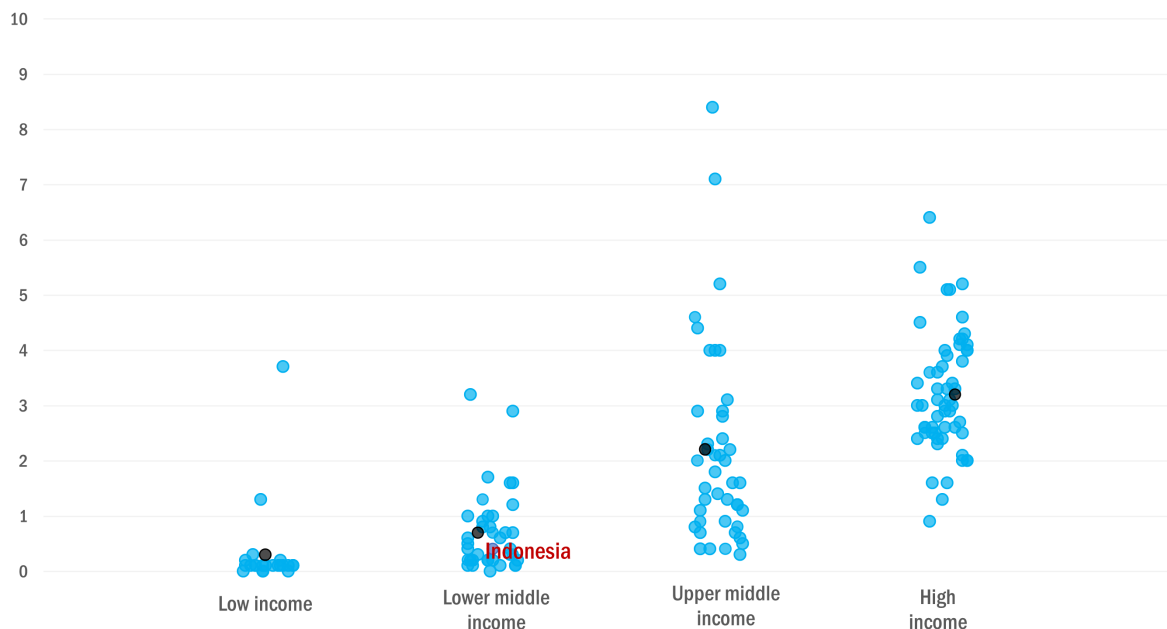
¹ Indonesia is divided into 34 provinces, 514 regencies and cities, 7,252 districts, and over 83,000 villages.

² Puskesmas serve a catchment area of 25,000–30,000 individuals.

Indonesia suffers from a critical shortage of health care workers compared to global and Indonesian benchmarks. The WHO estimates that at least 2.5 medical staff (0.5 for physicians, 1.3 for nurses and 0.5 for midwives) per 1,000 people are needed to provide adequate coverage (80%) with primary care interventions. Alternatively, the SDG index threshold is 4.45 physicians, midwives, and nurses per 1,000 people for UHC and SDG fulfilment. The Ministry of Health (MOH) in Indonesia has its own targets of 1 physician and 2 nurses per 1,000 population. However, with 0.20 doctors, 0.86 midwives, and 1.41 nurses per 1,000 population Indonesia does not meet any of the recommended benchmarks – WHO, SDG, or Indonesian – for number of health care workers (Figure 3).

Figure 3. Indonesia suffers from a critical shortage of GPs.

Physicians per 1,000 people
Average per income level in black

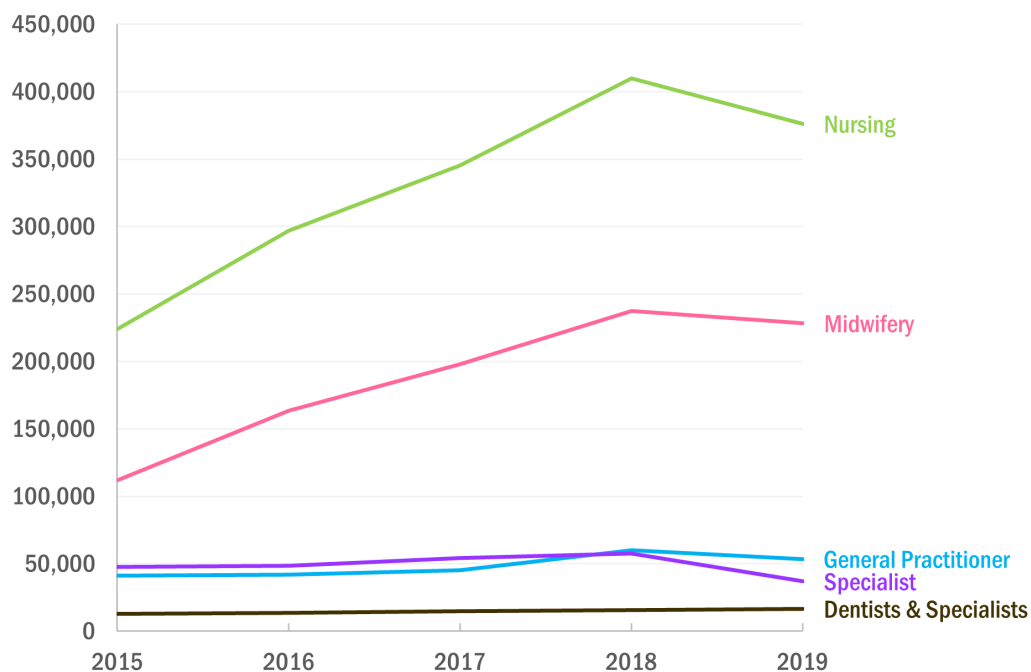


Source: World Development Indicators, World Health Organization, Most recent year available, last updated 02/16/2021. For Indonesia, Badan PPSDM Kesehatan, 2019.

Despite the dramatic increase in health care demand since the introduction of Jaminan Kesehatan Nasional (JKN) – Indonesia’s National Health Insurance – in 2014, this was not met by a commensurate increase in HRH. *Badan Penyelenggaraan Jaminan Sosial-Kesehatan* or BPJS-K – the National Health Insurance Agency rapidly expanded coverage to 220 million people or 82% of the population. Since 2014, outpatient utilization at primary-level health care facilities increased by 288 percent, and at advanced-level referral health facilities/hospitals by 94 percent. Inpatient utilization also increased but more modestly, with growth rates of 20 percent and 31 percent at primary care and hospital levels respectively.³ While the availability of HRH (doctors, midwives, and nurses) has improved overall from 1.88 per 1,000 population in 2013 to 2.51 per 1,000 population in 2018, growth was driven by primarily by the increase in the number of nurses (68%) and midwives (104.3%). The growth of GPs and dentists has stagnated while the number of medical specialists decreased by 22.8%. In 2019, the MOH administrative data reported 1,244,162 HRH – 53,510 GPs, 16,550 dentists, 36,938 specialists, 228,278 midwives and 376,136 nurses among others.

Figure 4. HRH growth was driven by the increase in nurses and midwives who make up 56% of total health workforce.

Number of health personnel (2015-2019)

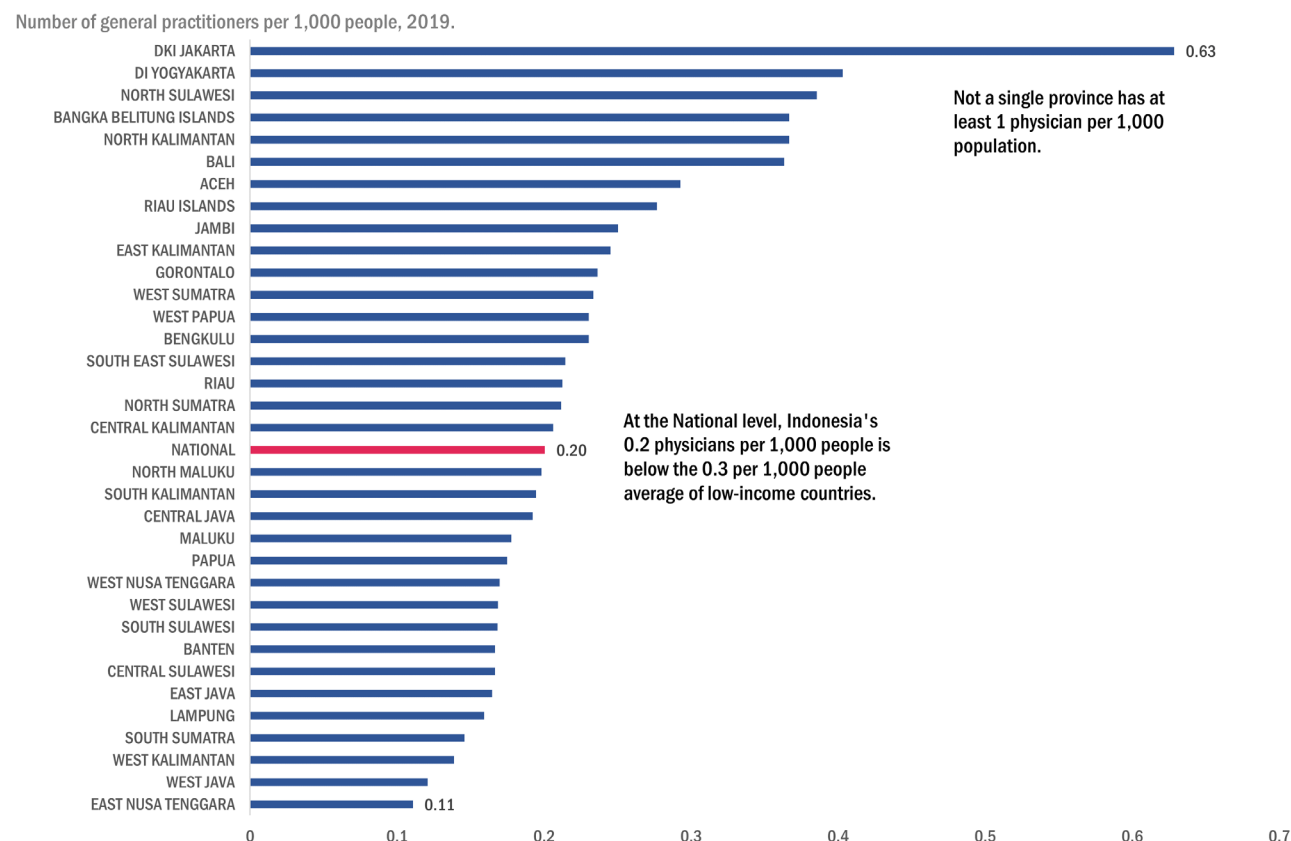


Source: Badan PPSDM Kesehatan.

³ BPJS-K. 2018. "JKN Statistics Yearbook."

The distribution of health workers is also a challenge with wide variations across provinces. The MOH has also set facility minimum staffing requirements for puskesmas of 1 physician, 5 nurses, and 4 midwives for every regular *puskesmas* (Annex 1). Not a single province had at least 1 physician per 1,000 population (Figure 5). Midwives and nurses fared much better with 20/34 provinces having at least 1 midwife per 1,000 population and 32/34 provinces having at least 1 nurse per 1,000 population (Annexes 2 and 3).

Figure 5. DKI Jakarta has 5.7 times more doctors per 1,000 population than East Nusa Tenggara.



Source: MOH, Badan PPSDM Kesehatan 2019.

Financing for HRH

The MOH's hiring strategy allows health personnel to be hired as either permanent or temporary staff. Permanent staff are civil servants (*Pegawai Negeri Sipil* or PNS); they are hired by central and local governments who have a mandate to provide health care personnel to publicly owned facilities. They receive salaries paid by central (*Anggaran Pendapatan Belanja Nasional* or APBN) and regional budgets (*Anggaran Pendapatan Belanja Daerah* or APBD). Temporary staff (*Pegawai Pemerintah dengan Perjanjian Kontrak* or PPPK) can be contracted by the MOH using APBN or local health offices using APBD. In addition, temporary staff may also be contracted by:

- a. public facilities with the financial autonomy to hire medical staff (Badan Layanan Umum/BLU and Badan Layanan Umum Daerah/BLUD)⁴ using operational health funds (i.e., APBN, *Biaya Operasional Kesehatan* or BOK, BPJS-K, APBD or other BLUD revenue);
- b. private facilities using operational health funds (i.e., user fees and/or BPJS-K funds);

Box 1. An overview of the MOH's Nusantara Sehat program.

In 2015, the MOH launched the Healthy Archipelago (*Nusantara Sehat*) program to deploy health workers on special assignments to fill *puskesmas* workforce gaps in targeted locations for priority programs (i.e., stunting, maternal and child health).

The goals of the *Nusantara Sehat Program* are to (i) provide and integrate health services in remote areas; (ii) reduce the maldistribution of healthcare services; (iii) tailor service delivery to local needs (iv) increase retention of health personnel on duty; (v) meet the needs of health personnel; (vi) empower communities; and (vii) improve maternal and child health, nutrition, and communicable and non-communicable disease outcomes.

The *Nusantara Sehat program* has two deployment strategies: (i) team-based special assignments consisting of doctors, dentists, nurses, midwives, lab support technicians, and support personnel (e.g., nutritionists, environmental and public health specialists, pharmacists) based on local need; and (ii) individual health worker special assignment.

In 2015, 120 *Puskesmas* from 44 remote areas were chosen as the initial deployment sites. By 2020, 800 *Nusantara Sehat* teams had been deployed, comprising 4,588 health staff, to 578 *puskesmas* covering 187 districts in 29 provinces. In 2020, placement for the NS team was reduced from the targeted 100 to 33 teams due to the COVID-19 pandemic. Preliminary findings from a forthcoming study on the impact of the *Nusantara Sehat program* found that there has been some improvement in the coverage of health indicators, in particular antenatal care visits, exclusive breastfeeding, provision of iron and folic acid, and family planning services.

Source: World Bank (2021). Background paper: Indonesia's Nusantara Sehat Team-based Program.

⁴ The majority of *puskesmas* are nonBLUD and they cannot hire medical staff.

- c. the MOH as part of medical specialist deployment program (*Pendayagunaan Dokter Spesialis* or PGDS) using APBN, APBD, and hospital operational funds; or
- d. the MOH as part of a special assignment mechanism (*Nusantara Sehat program*) using APBN, APBD and *puskemas* BOK (Box 1).

Table 1. Monthly salary of health personnel excluding regional or remote area benefits and share of capitation allowance allowed for top-ups (in IDR, 2019).

Starting rank	Health personnel	Education	Civil servant (PNS)			Nusantara sehat
			Base salary (assuming 0 years in grade)	Functional Allowance	Base salary + functional allowance	Total salary
3B	GP/Dentist	Bachelor (S1)	2,688,500	4,595,150	7,283,650	5,766,000 - 14,424,000
2C	Midwife	Diploma (D3)	2,301,800	3,134,250	5,436,050	4,567,000 - 6,654,000
2D		Diploma (D4)	2,579,400	3,915,950	6,495,350	4,981,000 - 8,498,000
3A		Bachelor (S1)	2,579,400	3,915,950	6,495,350	4,981,000 - 8,498,000
3B		Bachelor (S2)	2,688,500	3,915,950	6,604,450	n/a
2C	Nurse	Diploma (D3)	2,301,800	3,134,250	5,436,050	4,567,000 - 6,654,000
3A		Bachelor (S1)	2,579,400	3,915,950	6,495,350	4,981,000 - 8,498,000
3B		Bachelor (S2)	2,688,500	3,915,950	6,604,450	n/a
3B		Specialist nurse (S1 + Professional education)				5,316,000 - 10,316,000
2D	Environmental Health	Diploma (D4)	2,579,400	3,915,950	6,495,350	4,981,000 - 8,498,000
2C	Nutritionist	Diploma (D3)	2,301,800	3,134,250	5,436,050	4,567,000 - 6,654,000
3A		Bachelor (S1)	2,579,400	3,915,950	6,495,350	4,981,000 - 8,498,000
3B		S1 + Professional education	2,688,500	3,915,950	6,604,450	5,316,000 - 10,316,000
3B		Bachelor (S2)	2,688,500	3,915,950	6,604,450	n/a
3B		Medical Nutrition Specialist	2,688,500	5,079,200	7,767,700	5,316,000 - 10,316,000
2C	Health analyst	Diploma (D3)	2,301,800	3,134,250	5,436,050	4,567,000 - 6,654,000
3A		Bachelor (S1)	2,579,400	3,915,950	6,495,350	4,981,000 - 8,498,000
3A	Pharmacist	Bachelor (S1)	2,579,400	3,915,950	6,495,350	4,981,000 - 8,498,000
3B		S1 + professional education	2,688,500	3,915,950	6,604,450	5,316,000 - 10,316,000
3A	Public health	Bachelor (S1)	2,579,400	3,915,950	6,495,350	4,981,000 - 8,498,000
3B		Bachelor (S2)	2,688,500	3,915,950	6,604,450	4,981,000 - 8,498,000

Notes: There are four classes starting from Class I to IV. Within classes I, II, and III there are four grades (A to D). Class IV has 5 grades (A to E). Structural positions in the MOH or Department of Health range from Class III D to Class IV E. Each additional year of experience leads to a 3.15% increase in salary regardless of Class. Changing grades (e.g., from A to B) leads to a 4.23% increase in salary regardless of Class.

Sources: Attachment to the Government Regulation of the Republic of Indonesia No. 15/2019 Regarding the Eighteenth Amendment to Government Regulation No. 7/1977 Concerning Employee Salary Regulations for Civil Servants. Ministry of Health Regulation No. 73/2013 on General Functional Structure at MOH; Attachment to the Regulation of the President of the Republic of Indonesia No. 127/2018 on Employee Performance Allowance Within the MOH.

Health workers receive income from various sources of revenue. Civil servants are paid a base salary according to a set of civil service laws and regulations (Annex 4). The base salary follows a single scale system. Employees at the same rank receive the same base salary. The base salary is combined with a functional allowance based on the type of job (e.g., doctor, nurse, etc.), a family allowance,⁵ and supplements.⁶ In addition to this combination scale system, health personnel's take-home pay may be supplemented by regional cash benefits, in-kind benefits (e.g., accommodation), and a share of the capitation⁷ allowance that is distributed to primary health care facilities for JKN members. In the public sector, each primary health care facility contracted with BPJS-K is allowed to use up to 60% of their capitation budget to top up salaries⁸ (Annex 5). PPPK employees receive the same salary as civil servants of the same rank except they do not receive the same benefits. *Nusantara Sehat* participants receive a monthly salary that is higher than the amount for civil servants of the same level but similar incentives and accommodation (Table 1). In contrast, private sector workers receive income primarily from BPJS-K and user fees for services not covered under JKN.

Core data on HRH is not available in Indonesia. First, there is no consolidated database on HRH working in the public and private sectors. Directorate General of Health Workforce MOH collects administrative data on the number and distribution of HRH by district and facility type but only in the public sector. BPS carries out a village census (PODES) every 10 years collecting information on profession in public and private sectors but the level of granularity of health workers is limited and is not tied to facility. Second, Indonesia's National Health Accounts does not collect information on HR spending. Budget data does not provide health expenditures by economic classification making it difficult to identify health spending on wages/salaries versus non-wage recurrent health expenditures. While central and subnational budgets and expenditure data would capture salary spending on civil servants, government employees, and nusantara sehat participants it would not include the substantial regional cash allowances, BPJS-K capitation top-ups, or user fees they receive; they also do not capture the private sector. Instead, ad-hoc health facility surveys with health financing modules and the twice a year labor survey (SAKERNAS) provide the best sources for estimating HRH wages. However, the quality of health financing data from health facility surveys is often suspect and SAKERNAS does not distinguish HRH income by type of provider, source of financing, or type of contract.

⁵ 5% of the base salary for a wife and 2% of base salary for children under 18 years up to 3 children.

⁶ Supplements include a rice allowance, income tax allowance, office travel allowance, and holiday bonus (*Idul Fitri*).

⁷ Under capitation, providers are paid a fixed amount for each individual enrolled/assigned to their practice for a certain period to provide a stipulated set of services. In Indonesia, the capitation amount ranges between IDR 3,000 and IDR 6,000 per member per month for public facilities and between IDR 8,000 and IDR 10,000 per member per month for private clinics.

⁸ Capitation top-ups are distributed to puskesmas staff based on a complex points formula. Points depend on attendance, type, and length of employment, whether they also hold an administrative role, and whether they are the person responsible for the program.

Findings from Wage Analysis

How does the wage of health workers compare to minimum wage regulations and Indonesians in other sectors?

The following section uses data from a 2016 quantitative service delivery survey (QSDS) and from 2019 SAKERNAS to gain a better understanding of the wage profile of health workers. Table 2 summarizes wage data from various sources.

According to Sakernas data, the average monthly wage of health workers is between 1.4 and 1.9 times higher than the national monthly minimum wage in Indonesia of IDR 2,455,662 (USD 171) (Table 2). However, the average monthly wage of health personnel with education like entry level nurses and midwives is below the provincial minimum monthly wage in 5 provinces – Sulawesi Tenggara, Sulawesi Barat, Sumatera Selatan, Sulawesi Selatan, and Aceh. There are also wide variations across provinces with health personnel in DKI Jakarta earning more than twice the national average and four times more than health workers in Sulawesi Tenggara (Figure 6).

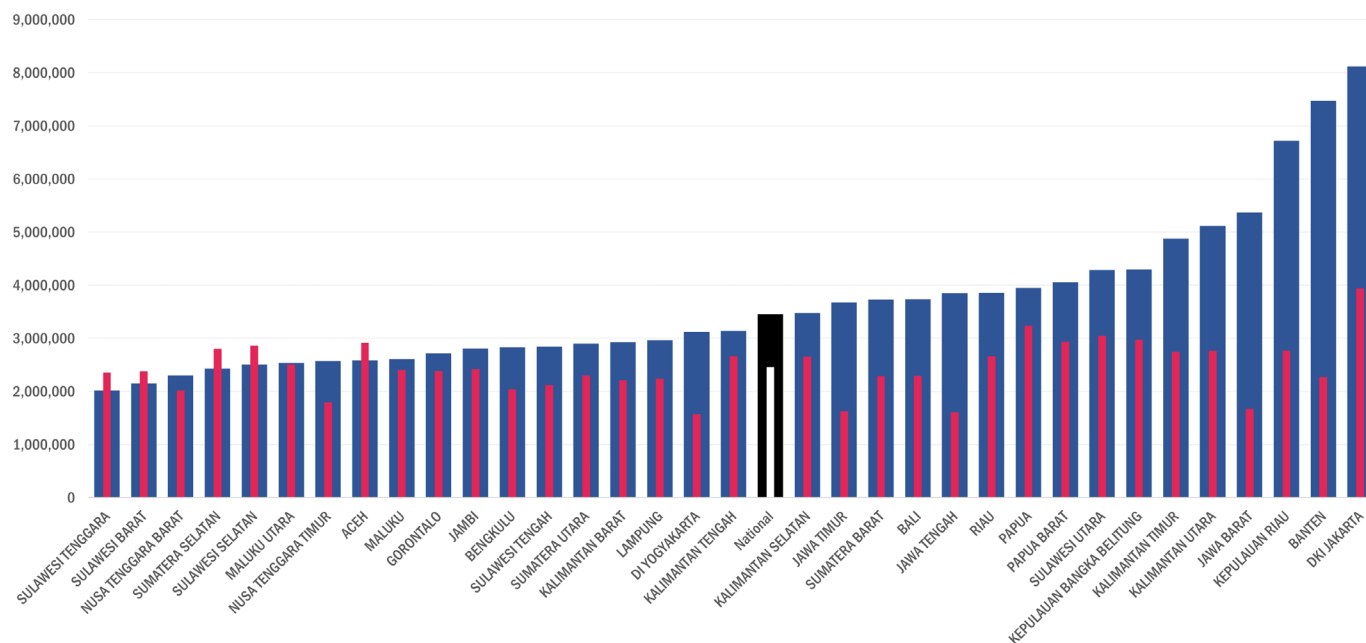
Table 2. Summary of HRH monthly wage from various sources.

	SAKERNAS (2019)*	QSDS (2015)	HRH regulations (2019)
Public doctors	IDR 4,209,047 USD 294	IDR 5,967,500 USD 417	IDR 7,283,650 USD 509
Private doctors	IDR 4,776,023 USD 333	IDR 7,800,000 USD 545	N/A
Public Nurses	IDR 3,383,928 USD 236	IDR 4,479,800 USD 313	IDR 5,436,050 USD 380
Public midwives		IDR 4,400,000 USD 307	
Private nurses	IDR 3,671,030 USD 256	-	N/A
Private midwives		-	N/A

Note: * As SAKERNAS does not distinguish between provider type, health workers with education level of D3 and above was taken as a proxy for salary of entry level nurses and midwives and D4 and above as a proxy for doctors. N/A=not applicable; '-' no data.

Figure 6. HRH earn significantly more than the minimum wage DKI Jakarta, Banten, Kepulauan Riau, and Jawa Barat.

Average monthly salary for D3 and above (public and private) versus monthly minimum wage across provinces in IDR, 2019.



Note: D3 and above is the equivalent of entry level for midwife and nurse.
Source: SAKERNAS, 2019.

Health workers make less or on par with workers with similar educational backgrounds from other sectors. HRH with an educational background like entry level nurses and midwives (D3) make 1.3 less than the average monthly wage of D3 workers in other sectors of IDR 3,649,150 (USD 255). In contrast, health workers with an educational background like doctors (D4 and above) make 1.1 times more than the average monthly wage of D4+ workers of IDR 4,074,780 (USD 285).

The average monthly wage of public health workers is also significantly lower compared to what would be expected based on the civil servant legislation. According to SAKERNAS data, HRH workers earn 1.7 times lower than civil servant doctors and 1.6 times lower for entry level nurses or midwives than what is reported by the civil servant legislation (Tables 1 and 2). However, as SAKERNAS is not able to distinguish between provider type, a higher proportion of nurses, midwives, and/or entry level positions may be driving down the overall wage of health personnel reported in the labor survey.

The 2016 QSDS reports higher wages than what is reported by SAKERNAS but still lower than what would be expected based on the civil servant legislation (Annex 6). The median monthly wage for public sector doctors, nurses, and midwives at puskesmas was IDR 5,967,500 (USD 417), IDR 4,479,800 (USD 313)⁹ and IDR 4,400,000 (USD 307) respectively. While these numbers are still lower than what each of these cadres would be expected to make based on HRH regulations, they are closer than the SAKERNAS data.

⁹ A recent study also reported the median salary of nurses around IDR 4,185,000 or USD 300 (Efendi, et al., 2022).

How does the wage of health workers differ between the public and private sector?

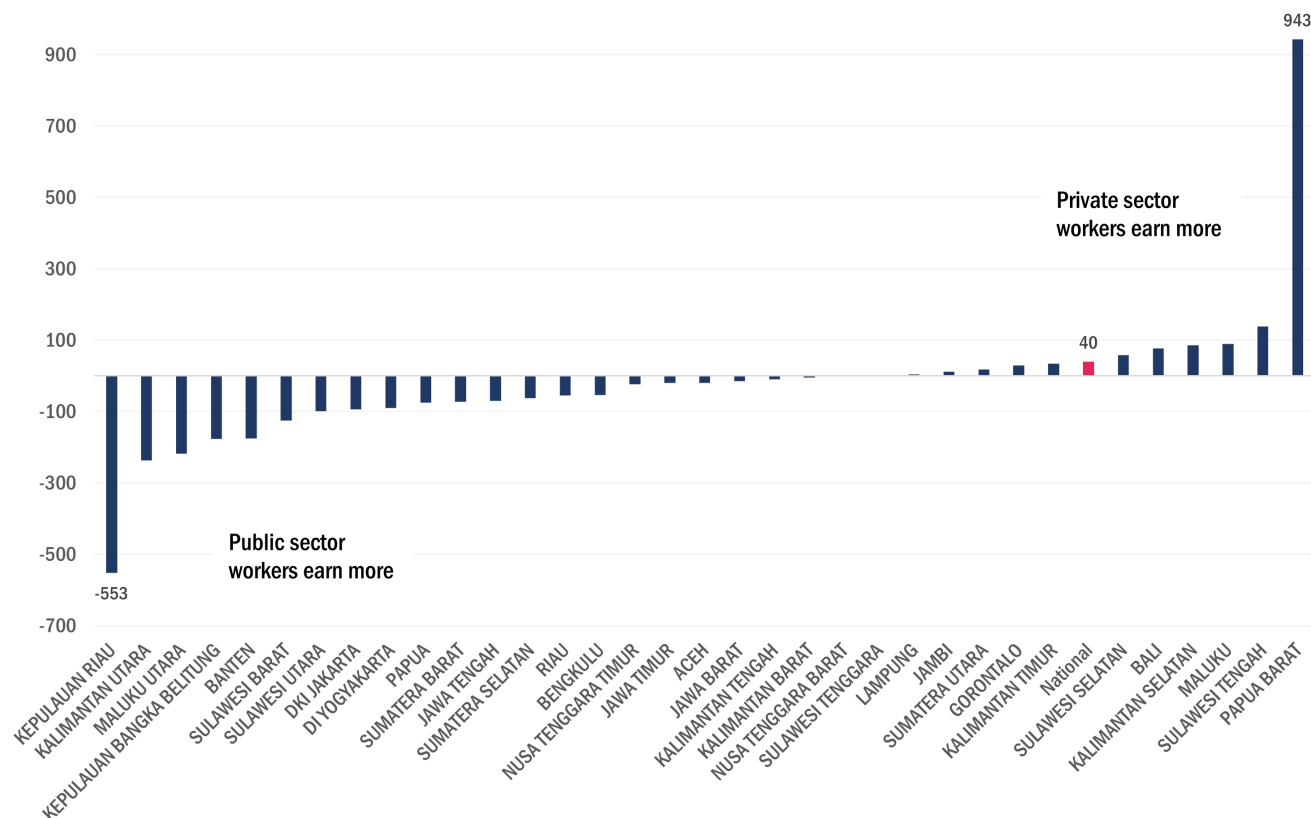
At the national level, private sector health workers earn more than public, although this masks wide variations.

According to *Sakernas* data, private health workers earn 1.1 times more than public health workers. However, in 21 out of 34 provinces the monthly wage of private sector health workers is less than in the public sector (Figure 7). Similarly, based on QSDS data, median monthly income is only 1.3 times higher among private sector doctors compared with puskesmas doctors.

The QSDS also revealed that private providers do not seem to be operating in areas with low public density where they can fill a gap in provision but rather operate in the same areas as dual practice providers. Dual practice – a policy whereby providers are allowed to practice in both public and private practices – has been allowed in Indonesia since 1997. Given the low pay of civil servants it was considered essential to recruit and retain public sector professionals, especially in remote rural areas (Gonzalez, Montes-Rojas, & Pal, 2020). Slightly over 60% of *puskesmas* doctors have another health-related practice – the main reasons given for dual practice is the need to obtain additional income (52.8%) and gain additional experience (12.8%). On the flip side, 55% of private primary care doctors said they also worked in the public sector echoing the reasons cited by their public sector colleagues.

Figure 7. Public sector workers earn more than private sector workers in most provinces.

Average monthly wage difference between public and private health workers (D4 and above) in USD, 2019.



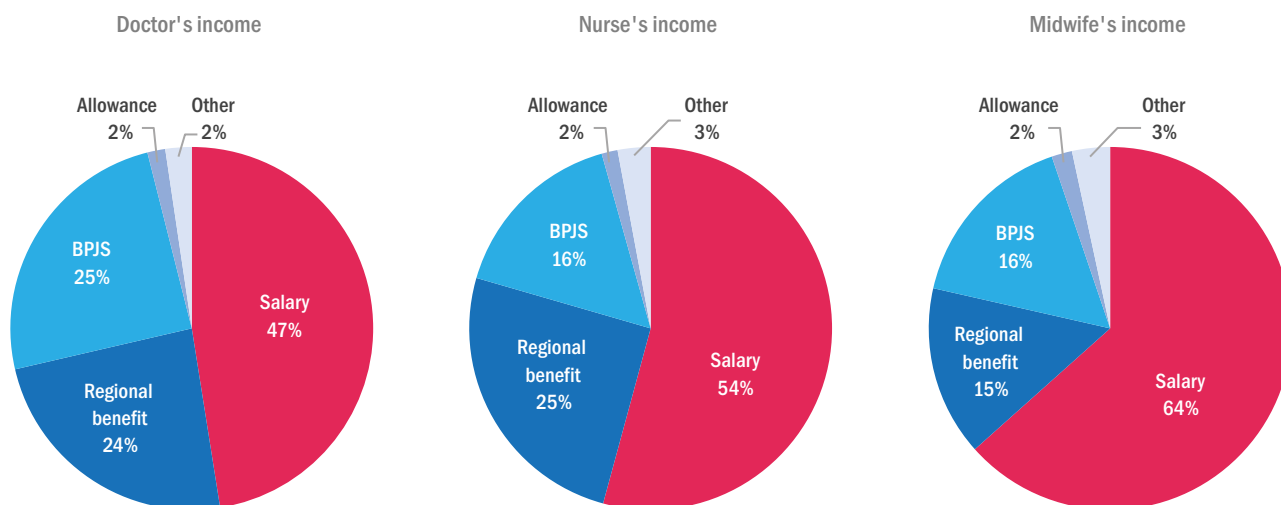
Source: SAKERNAS, 2019.

While salary accounts for the bulk of public health workers' income, regional benefits and BPJS payments made up nearly half of doctors', a third of midwives', and over 40% of nurses' income (Figure 8). In 2013, BPJS income accounted for only 4% of doctor income but with the rapid expansion of JKN coverage, by 2015 it accounted for 25%. The share of BPJS financing is likely larger now after 8 years of JKN implementation.

In contrast, BPJS income made up 100 percent of reported income among private doctors sampled in 2015. Private primary care providers do not receive additional supply side resources (BOK) or in-kind medical equipment, medicines, and testing supplies. That means that capitation payments need to not only account for their salary but also their operating expenses. Capitation payment to private clinics is 40% higher than to puskesmas but it is unclear whether that is enough to cover salaries, treatment costs, and operating expenses as the benefit package covered by capitation was never costed nor was it based on whether facilities could provide all services.

Figure 8. Regional benefits and BPJS payments are a significant source of public health workers' income.

Composition of income by source, public sector health workers only, 2015



Source: QSDS 2016.

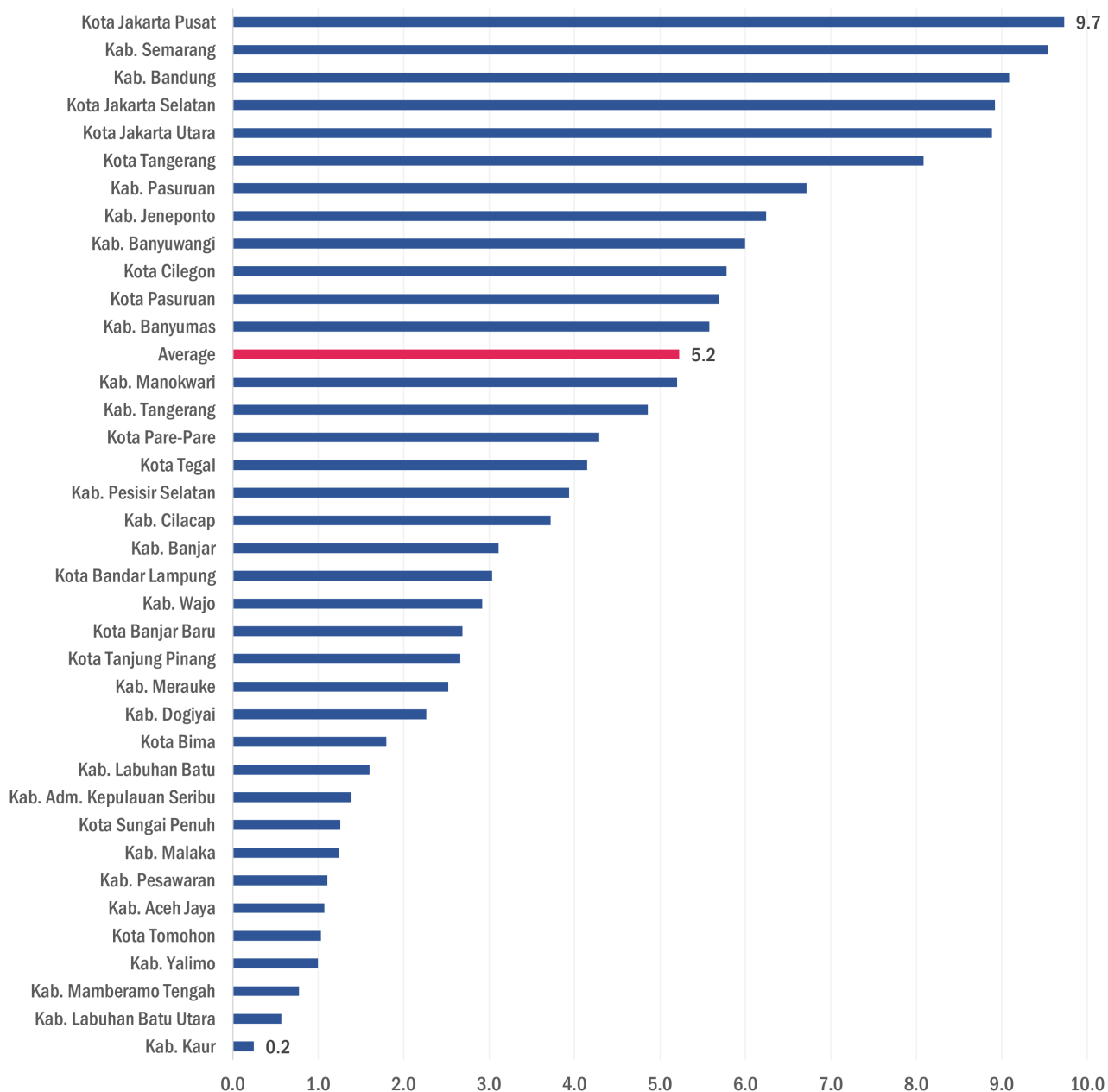
What is known about HRH productivity and competence?

Based on 2016 QSDS findings, health workers see on average 5.2 patients a day, though HRH productivity varies widely across districts between 9.7 in Kota Jakarta Pusat and 0.2 in Kab Kaur (Figure 9). Caseload is a standard measure of provider effort or workload. It combines information on inputs (e.g., number of providers or hours/days worked) and outputs (e.g., number of services provided, or patients seen). There are no established global benchmarks on caseload as it is often difficult to interpret. Findings could be affected by many supply side issues (e.g., the over- or under-supply of HRH, absenteeism rates, the number of patients registered to a primary health care facility, the availability of drugs and equipment, the functionality of facilities, the service provision responsibilities of different cadres, provider motivation) or by demand side issues (e.g., a preference for different provider types or settings, the disease burden, the affordability of

care, the distance to facilities, or the perceived quality of care). In OECD countries GPs see on average between 11 to 30 patients a day. Still, it is an important productivity measure, and it is suggested that caseload be benchmarked within country against past performance or the average facility to help with resource allocation and HRH and facility planning exercises.

Figure 9. A third of districts see less than 2 patients a day.

Average caseload (number of visits/number of health workers) per day in *puskesmas* across districts, 2015.



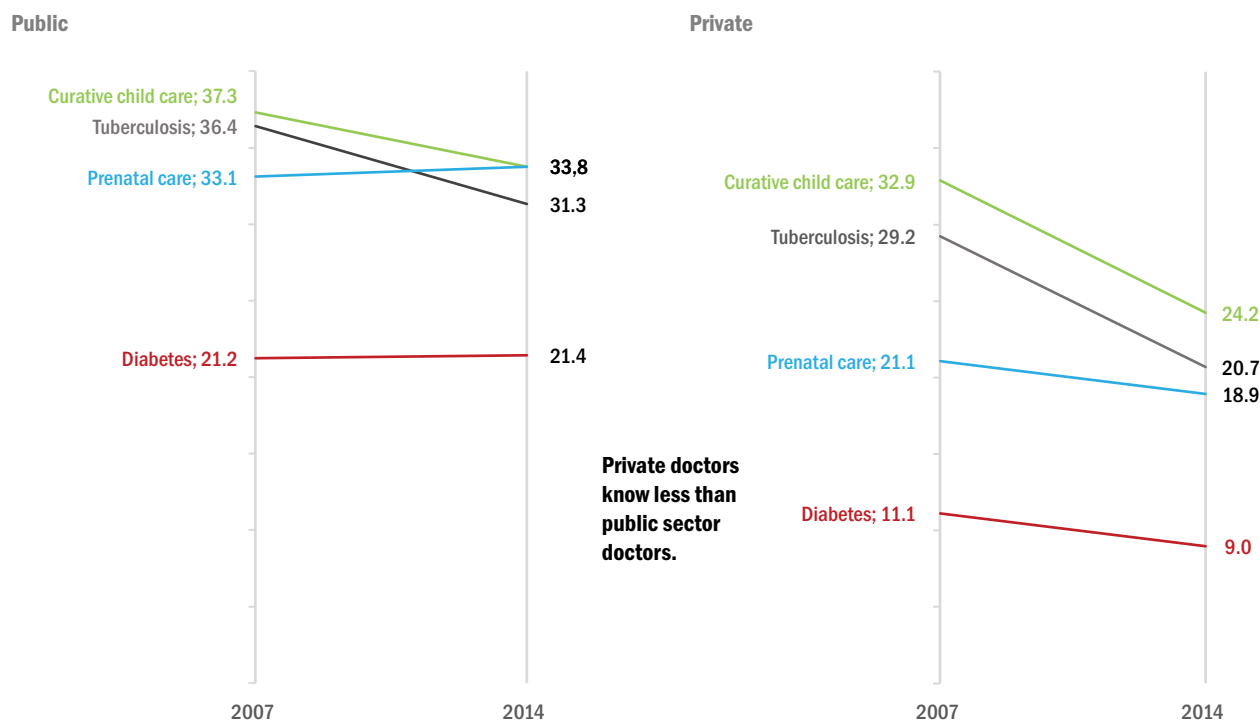
Source: Indonesia QSDS, 2016

The QSDS also found that 26% and 31% of the doctors on the sampled *puskesmas*' payrolls in urban and rural areas respectively were not available at the facility on the day of the survey. Another measure of productivity is absenteeism. Evidence indicates that absence rates of 25% among health workers is common across many low- and middle-income countries. Upon deeper analysis, the Indonesia survey found that most of those absences were found to be "absent with cause" and there were no unauthorized absences. There is no information available to explore whether remaining staff were adequate to deal with patient volume or whether absences – legitimate or otherwise – affected patient demand.

Providers asked/recommended only a third of medical history questions, diagnostic tests, and treatments deemed essential for diagnosis and treatment of common conditions (Figure 10). As a result, healthcare providers often struggle to diagnose common conditions and, consequently, provide appropriate care. For example, blood and urine tests—essential for diagnosing high-risk pregnancies— were done in only 47.6 percent and 38.7 percent of antenatal care (ANC) visits, respectively. And less than half of the mothers received counseling on danger signs during postnatal care. Of the over 700 thousand active TB cases in Indonesia in 2019, 72% were diagnosed, 52% initiated treatment, and only 34% were successfully treated. In 2014, more than 11 million adults were thought to have diabetes in Indonesia. Of those, only an estimated 21% of people with diabetes were diagnosed, 20% were treated, and only 7% had their diabetes under control (Stein, et al., 2020) (Hafez, Harimurti, & Martin-Hughes, 2020) (Baharuddin, et al., 2019) (BKKBN, BPS, MOH, and ICF, 2017).

Figure 10. Provider knowledge is low and decreasing.

Percent of medical history question asked, laboratory tests/exams recommended, and treatment suggested by provider based on a list of items deemed essential for responding to each clinical vignette scenario.



Source: Indonesia Family Life Survey 2007 and 2014.

Discussion

This study looked at the regulatory and remuneration policies of health workers to better understand the value proposition of working in the health sector from a HLM wages and benefits perspective. It found that while government regulations offer competitive salaries and benefits on paper, actual wages for public sector workers as reported by Sakernas and QSDS data fall short of what would be expected based on the legislation. In reality, health workers make less or on par with workers with similar educational backgrounds from other sectors. This is likely due to the various types of hiring contracts that regional governments/facilities use to hire staff and the discretionary nature of regional allowances. Indonesia has also had a zero-growth policy for civil services for many years, with no exception for medical doctors. This has constrained the number of health workers hired through attractive civil servant contracts. Private sector wages are no more attractive, as health workers earn less than public sector workers in 21 out of 34 provinces.

JKN offers a powerful financial incentive to increase the take-home pay of health workers and attract additional workers to the HLM. Compensation greatly influences whether individuals are likely to enter and stay in the health care labor market, including choice of specialty and location of service. However, unlike restrictive government regulations governing the hiring and compensation practices of public health care workers, BPJS has the authority to determine its own contracting arrangements with both public and private sector workers. As the quasi-autonomous strategic purchaser of health care services, it should have greater flexibility to determine how much it pays the providers within its network – both public and private providers. Therefore, unlike civil servant salaries that are relatively inflexible and regional benefits or top-ups that are at the discretion of local governments, capitation is the more flexible source to increase the take-home pay of providers. It also has the potential to attract more private sector providers to work in primary health care settings.

As the largest source of financing for frontline healthcare facilities, BPJS can help attract more health care professionals to work in primary care settings – especially in the private sector – by increasing the per capita base rate of JKN capitation payments. The government is currently considering major health financing reforms, particularly to capitation and performance-based financing. To adequately account for the structural differences between public and private providers, it should consider costing the primary care benefit package – i.e., salary, treatment, and operating costs of all 144 services meant to be provided under capitation. To strengthen the purchasing role of BPJS and simplify public financial management and administrative processes, public sector supply-side financing could be transferred to and accounted for under the capitation rate, with public and private providers receiving the same rate for the same services. Alternatively, if public providers continue to receive separate supply side financing, the differential private sector capitation rate must be set to account for the cost of delivering the basic benefit package. However, this option diminishes the ability of BPJS to act as a strategic purchaser.

However, the increase in capitation should also come with an increase in value for money. In 2016, a performance-based component to capitation payments at the primary care level was introduced (known as *Kapitasi Berbasis Komitmen* or KBK) where capitation payments could be deducted if targets on three performance indicators are not met (Annex 7). However, currently the choice of indicators does not strongly incentivize improvements in service delivery. Fifty percent of the KBK score is determined by an indicator – non-specialistic referral rate – that over 92% of puskesmas and 96% of clinics already achieve. An additional 40% of the KBK score focuses on contract rate, not the content or quality of care received during each visit. Only 10% of the KBK score relates to quality – the percent of patients who have their diabetes and hypertension under control. In addition, the value of the deduction is small – up to a maximum of 5% for private clinics and 15% of puskesmas.. A review of performance-based schemes found that payment incentives were generally at least be 10% of income (Kovacs, Powell-Jackson, Kristensen, Singh, & Borghi, 2020). However, the deduction applied to puskesmas is on salary top-ups and operating expenses as public sector health workers receive their full salary from central and/or regional budgets.

The GOI should consider refining the KBK design to better incentivize improvements in the quality of care.

- a. First, incentivizing indicators that are already achieved will do little to improve the quality of care at primary care facilities. Instead, introducing additional indicators that capture some of the health system’s main challenges around maternal mortality, tuberculosis, and nutrition would be more appropriate. For example, indicators that incentivize blood and urine tests during ANC visits will help identify high-risk pregnancies early on for better case management.
- b. Second, the choice of indicators should also be easy to capture and within providers’ control. For example, instead of incentivizing the percent of patients who have their diabetes and hypertension under control – measures that rely on many outside factors – ensuring that all who meet screening criteria are screened for diabetes and hypertension addresses an important shortcoming in the care for diabetes and hypertension – i.e., low awareness and diagnosis. It is also within the control of providers and can be easily measured through primary care claims systems available at all PHC facilities that collect information on age and risk factors¹⁰
- c. Third, contingent upon the revisions to the base per capita,¹¹ which should first secure a minimum operating budget for PHC facilities to deliver the primary care benefit package, the value of the KBK penalty could be increased. However, it should be recognized that improvements in BPJS’ claims management system and contracting could equally incentivize behavior through denial of claims for noncompliance with clinical protocols. Regardless, both rely on strong monitoring and evaluation and quality data.

Alongside financial reforms, processes to measure performance should also be introduced. Not only would this allow BPJS to better manage its provider network, but it would also fill an important gap in public reporting and comparative benchmarking on issues of quality. Currently, there is no systematic standardized mechanism to collect and report on quality. While there are several nation-wide surveys that cover service quality such as the Basic Health Survey (*Riskesdas*) and the Healthcare Facility Census (*Rifaskes*), they are carried out every 5 and 8 years respectively. Real-time performance data on quality indicators is limited (Asia Pacific Observatory on Health Systems, 2017). Developing a standardized digital assessment protocol with tracer indicators to assess quality at the facility level (Table 3) would provide valuable information

¹⁰ All adults over age 45 without risk factors should be screened according to national guidelines on diabetes (PMK 603/2020). In addition, those with risk factors should also be screened (e.g., a body mass index above 23kg/m2 or pregnant women)

¹¹ If the concern about increasing the value of the penalty would compromise service delivery, the more appropriate solution would be to adjust the per capita base rate to ensure minimum revenue.

Table 3. Example indicators or items that could be included in a quality protocol/checklist:

- Availability of staff by function/specialty
- Availability of diagnostic testing supplies for tracer conditions
- Availability of tracer equipment
- Availability of essential drugs
- Drug stock-outs
- Expired drugs
- Daily caseload
- Referral rate
- Number of outreach visits/households or patients reached
- Bed occupancy rate
- Average length of stay
- Adverse drug events
- Central-line associated blood stream infections
- Hospital acquired pressure ulcers
- Preventable readmissions/readmission rate
- Share of deliveries that are c-sections



for policy makers to assess service readiness, better allocate resources, and target training and capacity building activities to lagging facilities. The protocol could be implemented at regular intervals by trained assessors using dedicated budgets, thus institutionalizing quality monitoring processes. Provincial and district health budget transfers (e.g., BOK) could be made contingent on carrying out and reporting these activities. Performance-based BOK transfers are already under discussion in the MOH.

Beyond introducing financial and non-financial incentives to attract additional health workers and/or incentivize existing health workers to perform better, the MOH may also want to consider alternative service delivery models. Traditionally, PHC was organized around GPs, often in single practice clinics. However, increasingly the use of allied health care professionals – medical assistants, clinical officers, licensed nurse practitioners, community health workers – allows for **greater task shifting and substitution** of GPs with nurses, nurse practitioners, and physician assistants. The GOI may want to explore revising the training curriculum of nurses to allow them to perform a broader range of tasks given their higher availability. **Mobile health clinics** also offer alternatives to deploying and maintaining health care workers in remote or rural areas. Studies show that financial resources are often not enough to attract HRH in remote areas (Efendi et al. 2015). A variety of push and pull factors have been known to influence health workers' decision to take up posts in remote locations (Annex 8) (Maeda & Araujo, 2013). Finally, the COVID-19 pandemic heralded the potential of **digital health technologies**. Many countries turned to telemedicine to maintain access to health services during COVID-19 lockdowns.

A simulation exercise of various service delivery models could explore how the health sector could add capacity and coverage to the system without adding new resources by redeploying existing personnel more optimally. For example, using information on health care personnel, patient utilization, population density, and health care facility location, the model could suggest optimal service delivery models (e.g., status quo, telemedicine, mobile clinic, etc.,) to achieve stated health system goals.

Finally, it is essential to develop HRH data sets that move beyond the number and distribution of health workers to more comprehensive datasets to better inform HRH policy (World Health Organization, 2021). This may entail refining existing data collection instruments, increasing the scope or frequency of surveys, and/or investing in information systems to digitize and integrate the reporting of key administrative data. For example,

- a. Directorate General of Health Workforce MOH administrative data could be expanded to include data on private sector workers from BPJS-K or licensing databases kept by regional governments. They should also consider capturing measures on worker productivity and performance that are currently only collected and analyzed infrequently by health facility surveys (see earlier recommendation regarding introducing processes to collect and monitor measures on quality of care);
- b. National health accounts or standardized chart of accounts should consider reporting health expenditures by economic classification and source of funds; and
- c. Sakernas data could be refined to allow distinguishing the type of provider (e.g., doctor, nurse, midwife) – a simple change that would yield timely and valuable insights on the HLM.

References

- Anderson, I., Meliala, A., Marzoeqi, P., & Pambudi, E. (2014). *The production, distribution, and performance of physicians, nurses, and midwives in Indonesia: an update*. Washington, DC: World Bank.
- Asia Pacific Observatory on Health Systems. (2017). *The Republic of Indonesia Health System Review*. New Delhi: WHO.
- Baharuddin, M., Amelia, D., Suhowatsky, S., Kusuma, A., Suhargono, M., & Eng, B. (2019). Maternal death reviews: a retrospective case series of 90 hospital-based maternal deaths in 11 hospitals in Indonesia. *Int J Gynecol Obstet*, 59-64.
- BKKBN, BPS, MOH, and ICF. (2017). *Indonesia Demographic Health Survey*. Jakarta: BKKBN, BPS, MOH, and ICF.
- Efendi, F., Aurizki, G. E., Auwalin, I., Kurniati, A., Astari, L. D., Puspitasari, I. T., & Chong, M. C. (2022). The paradox of surplus and shortage: a policy analysis of nursing labor markets in Indonesia. *Journal of Multidisciplinary Healthcare*, 627-639.
- Gonzalez, P., Montes-Rojas, G., & Pal, S. (2020). *Dual practice of health workers: Evidence from Indonesia*.
- Hafez, R., Harimurti, P., & Martin-Hughes, R. (2020). *Tuberculosis in Indonesia*. Washington, DC: World Bank.
- Indonesian Ministry of Health. (2019). *Badan PPSDM*.
- Indonesian Ministry of Health. (n.d.). Regulation No. 21/2016.
- Indonesian Ministry of Health. (n.d.). Regulation No. 75/2014.
- Kovacs, R., Powell-Jackson, T., Kristensen, S., Singh, N., & Borghi, J. (2020). How are pay-for-performance schemes in healthcare designed in low- and middle-income countries? Typology and systematic literature review. *BMC Health Services Research*, 20, 291.
- Maeda, A., & Araujo, E. (2013). *How to recruit and retain health workers in rural and remote areas in developing countries*. Washington, DC: World Bank.
- Republic of Indonesia. (n.d.). Government regulation No. 15/2019.
- Republic of Indonesia. (n.d.). No.127/2018.
- Republic of Indonesia. (n.d.). No.73/2013.
- Republic of Indonesia. (n.d.). Regulation No. 7/1977.
- Republic of Indonesia. (n.d.). Regulation No.15/2019.
- Scheffler, R., Herbst, C., Lemiere, C., & Campbell, J. (2016). *Health labor market analyses in low- and middle-income countries: an evidence-based approach*. Washington, DC: World Bank .
- Statistics Indonesia. (2019). *National Labour Force Survey (SAKERNAS)*.
- Stein, D., Sudharsanan, N., Dewi, S., Manne-Goehler, J., Witloelar, F., & Geldsetzer, P. (2020). Change in clinical knowledge of diabetes among primary healthcare providers in Indonesia: repeated cross-sectional survey of 5105 primary healthcare facilities. *BMJ Open Diab Res Care*.
- Tijdens, K., de Vries, D., & Steinmetz, S. (2013). Health workforce remuneration: comparing wage levels, ranking, and dispersion of 16 occupational groups in 20 countries. *Human Resources for Health*, 11.
- UGM and MOH. (2019). *National Quality Policy and Strategy (NQPS)*. Jakarta: Center for Health Policy and Management and The Directorate of Healthcare Quality and Accreditation.
- World Bank. (2016). *Quantitative service delivery survey (QSDS)*.
- World Bank. (2018). *Is Indonesia ready to serve? An analysis of Indonesia's primary health care supply-side readiness*. Jakarta: World Bank.
- World Bank. (2021). *Background paper:Indonesia's Nusantara Sehat team-based program*. Jakarta.
- World Bank. (2022). *World Development Indicators*. Washington, DC: World Bank.
- World Health Organization. (2021). *Health labour market analysis guidebook*. Geneva: World Health Organization.

Annex 1. Minimum staffing norms at *puskesmas*.

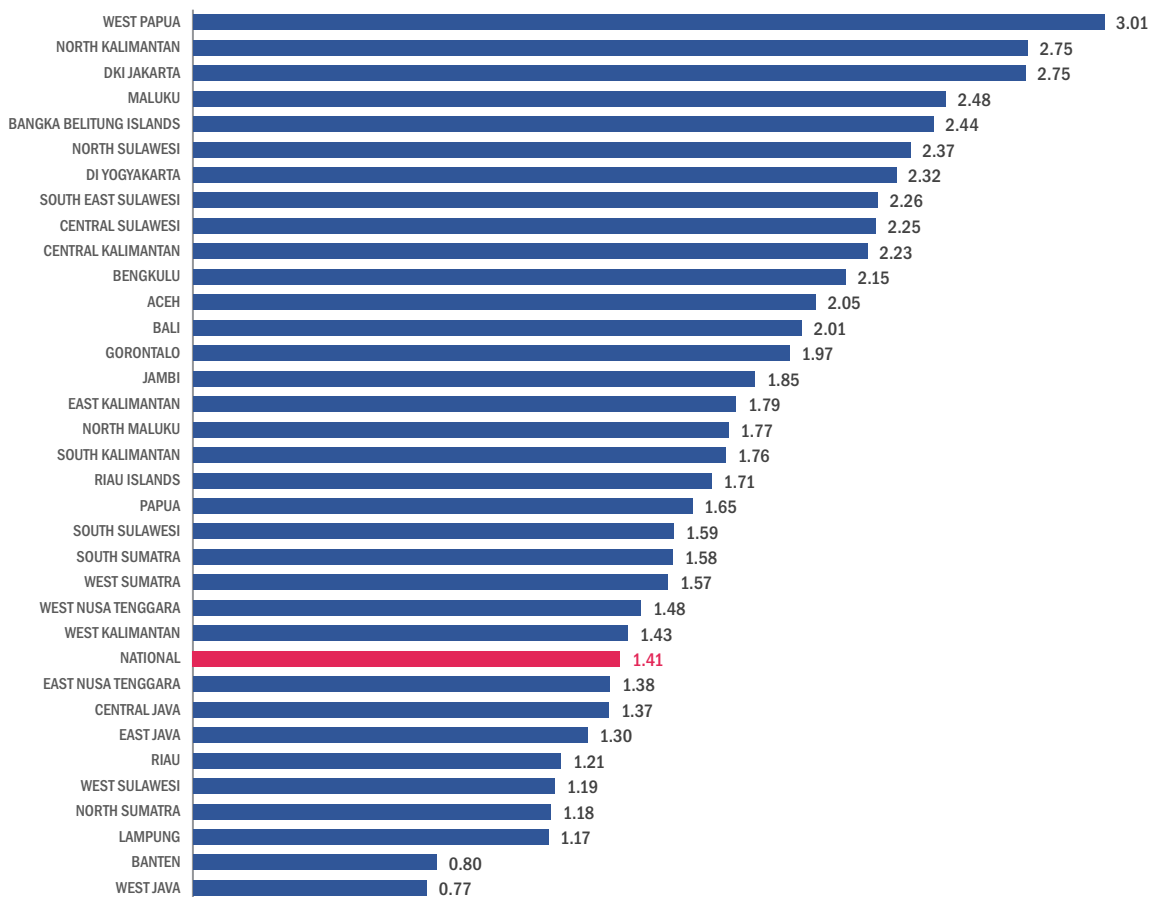
No	Health Worker	Urban Puskesmas		Rural Puskesmas		Puskesmas in Remote and Very Remote Areas	
		Without Beds	With Beds	Without Beds	With Beds	Without Beds	With Beds
1.	Physician or Primary Health Care Physician	1	2	1	2	1	2
2.	Dentist	1	1	1	1	1	1
3.	Nurse	5	8	5	8	5	8
4.	Midwife	4	7	4	7	4	7
5.	Public Health	1	1	1	1	1	1
6.	Sanitarian	1	1	1	1	1	1
7.	Laboratory Technician	1	1	1	1	1	1
8.	Nutritionist	1	2	1	2	1	2
9.	Pharmacist	1	2	1	1	1	1
10.	Administration	3	3	2	2	2	2
11.	Pekarya	2	2	1	1	1	1
TOTAL		21	30	19	27	19	27

Source: Ministry of Health Regulation No. 75/2014.

Note: Pekarya is a high-school graduate who is recruited to assist any other *puskesmas* staff.

Annex 2. Number of nurses per 1,000 people per province, Indonesia 2019.

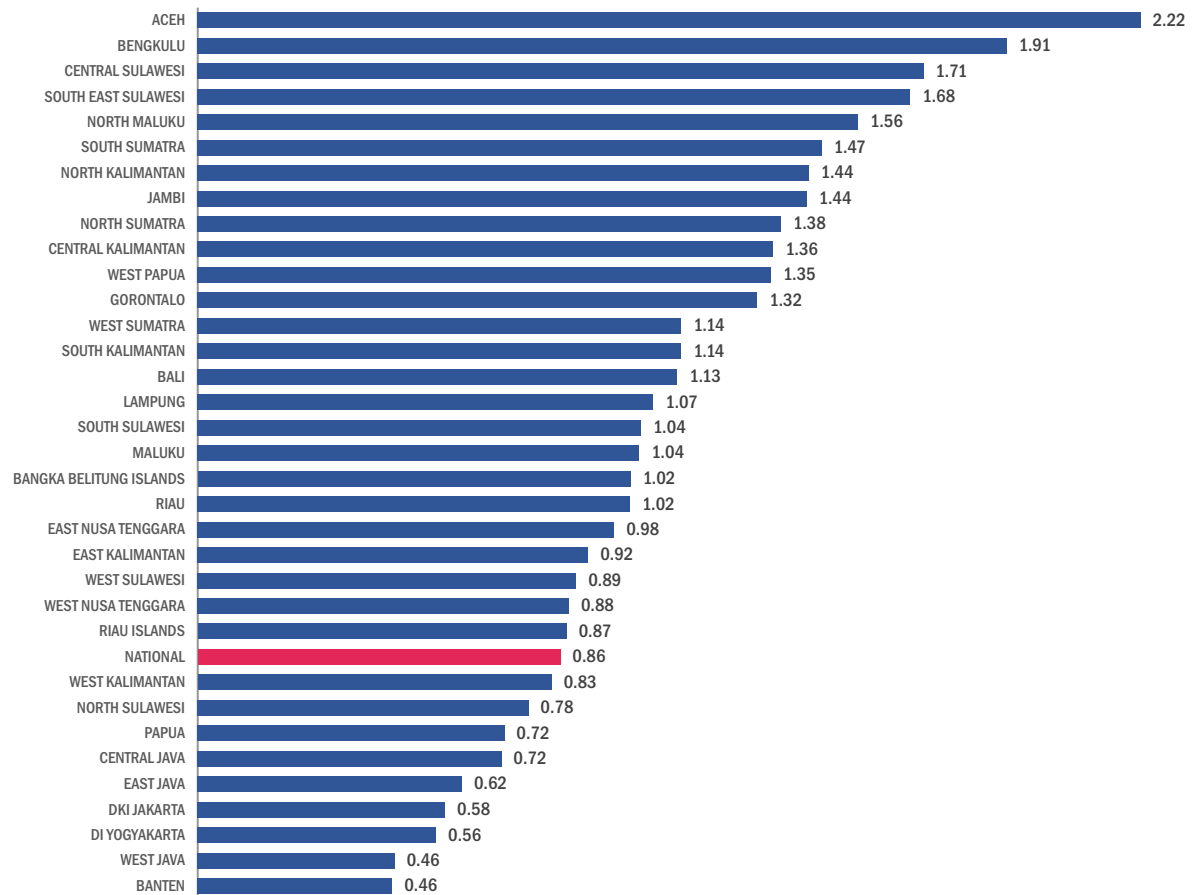
Nurses per 1,000 people per province, Indonesia 2019.



Source: MOH, Badan PPSDM Kesehatan 2019.

Annex 3. Number of midwives per 1,000 people per province, Indonesia 2019.

Midwives per 1,000 people per province, Indonesia 2019.



Source: MOH, Badan PPSDM Kesehatan 2019.

Annex 4. Monthly salary of civil servants in Indonesia.

MKG Masa Kerja Golongan Time In Grade	GOLONGAN I (Class I)				GOLONGAN II (Class II)				GOLONGAN III (Class III)				GOLONGAN IV (Class IV)				
	Ruangan (Room)				Ruangan (Room)				Ruangan (Room)				Ruangan (Room)				
	A Juru Muda Junior Clerk	B Juru Muda Tingkat I Class Junior Clerk	C Juru Clerk	D Juru Tingkat I First Class Clerk	A Pengatur Muda Junior Super- visor	B Pengatur Muda Tingkat I Class Junior Supervisor	C Pengatur Supervisor	D Pengatur Tingkat I Junior Super- visor	A Penata Muda Junior Super- intendant	B Penata Muda Tingkat I Class Junior Superinten- dent	C Penata Superinten- dent	D Penata Tingkat I First Class Superin- tendent	A Pembina Administrator	B Pembina Tingkat I First Class Administrator	C Pembina Utama Muda Junior Admin- istrator	D Pembina Uta- ma Muda Middle Admin- istrator	E Pembina Utama Senior Admin- istrator
0	1.560.800				2.022.200				2.579.400	2.688.500	2.802.300	2.920.800	3.044.300	3.173.100	3.307.300	3.447.200	3.593.100
1					2.054.100				2.660.700	2.773.200	2.890.500	3.012.800	3.140.200	3.273.100	3.411.500	3.555.800	3.706.200
2	1.610.000				2.118.800	2.208.400	2.301.800	2.339.200	2.744.500	2.860.500	2.981.500	3.107.700	3.239.100	3.376.100	3.518.900	3.667.800	3.822.900
3	1.660.700	1.704.500	1.776.600	1.851.800	2.185.500	2.277.900	2.374.300	2.474.700	2.830.900	2.950.600	3.075.500	3.205.500	3.341.100	3.482.500	3.629.800	3.783.300	3.943.300
4	1.660.700	1.758.200	1.832.600	1.910.100	2.185.500	2.277.900	2.374.300	2.474.700	2.830.900	2.950.600	3.075.500	3.205.500	3.341.100	3.482.500	3.629.800	3.783.300	3.943.300
5					2.185.500	2.277.900	2.374.300	2.474.700	2.830.900	2.950.600	3.075.500	3.205.500	3.341.100	3.482.500	3.629.800	3.783.300	3.943.300
6	1.713.000				2.254.300	2.349.700	2.449.100	2.552.700	2.920.100	3.043.600	3.172.300	3.306.500	3.446.400	3.592.100	3.744.100	3.902.500	4.067.500
7					2.254.300	2.349.700	2.449.100	2.552.700	2.920.100	3.043.600	3.172.300	3.306.500	3.446.400	3.592.100	3.744.100	3.902.500	4.067.500
8	1.766.900				2.325.300	2.423.700	2.526.200	2.633.100	3.012.000	3.139.400	3.272.200	3.410.600	3.554.900	3.705.300	3.862.000	4.025.400	4.199.700
9					2.325.300	2.423.700	2.526.200	2.633.100	3.012.000	3.139.400	3.272.200	3.410.600	3.554.900	3.705.300	3.862.000	4.025.400	4.199.700
10	1.822.600				2.398.600	2.500.000	2.605.800	2.716.000	3.106.900	3.238.300	3.375.300	3.518.100	3.666.900	3.822.000	3.983.600	4.152.200	4.327.800
11					2.398.600	2.500.000	2.605.800	2.716.000	3.106.900	3.238.300	3.375.300	3.518.100	3.666.900	3.822.000	3.983.600	4.152.200	4.327.800
12	1.880.000				2.474.100	2.578.800	2.687.800	2.801.500	3.204.700	3.340.300	3.481.600	3.628.900	3.782.400	3.942.400	4.109.100	4.282.900	4.464.100
13					2.474.100	2.578.800	2.687.800	2.801.500	3.204.700	3.340.300	3.481.600	3.628.900	3.782.400	3.942.400	4.109.100	4.282.900	4.464.100
14	1.939.200				2.552.000	2.660.000	2.772.500	2.889.800	3.305.700	3.445.500	3.591.200	3.743.100	3.901.500	4.066.500	4.238.500	4.417.800	4.604.700
15					2.552.000	2.660.000	2.772.500	2.889.800	3.305.700	3.445.500	3.591.200	3.743.100	3.901.500	4.066.500	4.238.500	4.417.800	4.604.700
16	2.000.300				2.632.400	2.743.800	2.859.800	2.980.800	3.409.800	3.554.000	3.704.300	3.861.000	4.024.400	4.194.600	4.372.000	4.557.000	4.749.700
17					2.632.400	2.743.800	2.859.800	2.980.800	3.409.800	3.554.000	3.704.300	3.861.000	4.024.400	4.194.600	4.372.000	4.557.000	4.749.700
18	2.063.300				2.715.300	2.830.200	2.949.900	3.074.700	3.517.200	3.665.900	3.821.000	3.982.600	4.151.100	4.326.700	4.509.700	4.700.500	4.899.300
19					2.715.300	2.830.200	2.949.900	3.074.700	3.517.200	3.665.900	3.821.000	3.982.600	4.151.100	4.326.700	4.509.700	4.700.500	4.899.300
20	2.128.300				2.800.800	2.919.300	3.042.800	3.171.500	3.627.900	3.781.400	3.941.400	4.108.100	4.281.800	4.463.000	4.651.800	4.848.500	5.053.600
21					2.800.800	2.919.300	3.042.800	3.171.500	3.627.900	3.781.400	3.941.400	4.108.100	4.281.800	4.463.000	4.651.800	4.848.500	5.053.600
22	2.195.300				2.889.100	3.011.300	3.138.600	3.271.400	3.742.200	3.900.500	4.065.500	4.237.500	4.416.700	4.603.500	4.798.300	5.001.200	5.212.800
23					2.889.100	3.011.300	3.138.600	3.271.400	3.742.200	3.900.500	4.065.500	4.237.500	4.416.700	4.603.500	4.798.300	5.001.200	5.212.800
24	2.264.400				2.980.000	3.106.100	3.237.500	3.374.400	3.860.100	4.023.300	4.193.500	4.370.900	4.555.800	4.748.500	4.949.400	5.158.700	5.377.000
25					2.980.000	3.106.100	3.237.500	3.374.400	3.860.100	4.023.300	4.193.500	4.370.900	4.555.800	4.748.500	4.949.400	5.158.700	5.377.000
26	2.335.800				3.073.900	3.203.900	3.339.400	3.480.700	3.981.600	4.150.100	4.325.600	4.508.600	4.699.300	4.898.100	5.105.300	5.321.200	5.546.300
27					3.073.900	3.203.900	3.339.400	3.480.700	3.981.600	4.150.100	4.325.600	4.508.600	4.699.300	4.898.100	5.105.300	5.321.200	5.546.300
28					3.170.700	3.304.800	3.444.600	3.590.300	4.107.000	4.280.800	4.461.800	4.650.600	4.847.300	5.052.300	5.266.100	5.488.800	5.721.000
29					3.170.700	3.304.800	3.444.600	3.590.300	4.107.000	4.280.800	4.461.800	4.650.600	4.847.300	5.052.300	5.266.100	5.488.800	5.721.000
30					3.270.600	3.408.900	3.553.100	3.703.400	4.236.400	4.415.600	4.602.400	4.797.000	5.000.000	5.211.500	5.431.900	5.661.700	5.901.200
31					3.270.600	3.408.900	3.553.100	3.703.400	4.236.400	4.415.600	4.602.400	4.797.000	5.000.000	5.211.500	5.431.900	5.661.700	5.901.200
32					3.373.600	3.516.300	3.665.000	3.820.000									
33					3.373.600	3.516.300	3.665.000	3.820.000									

Notes: Midwives salary ranges from Class 2C to Class 3C. Working doctors range from Class 3B to 3C. Structural positions in the MOH or Department of Health range from Class 3D/Class 4 to Class 4E. Each additional year of experience leads to a 3.15% increase in salary regardless of Class. Changing grades (e.g., from A to B) leads to a 4.23% increase in salary regardless of Class.

Source: Attachment to the Government Regulation of the Republic of Indonesia No. 15 Year 2019 Regarding the Eighteenth Amendment to Government Regulation No. 7 Year 1977 Concerning Employee Salary Regulations for Civil Servants.

Annex 5. The formula for the distribution of capitation funds to staff is driven primarily by seniority.

$$\frac{\% \text{ of attendances} \times \left[\text{Type of employment} + \text{Length of employment} + \text{Dual role Administrative} + \text{PIC Program} \right]}{\text{Total Point}} \times \text{Amount of Capitation Allocated to Medical Services}$$

Percentage of attendance [Range 0-100%]	Type of employment	Length of employment	Dual role in an administrative responsibility	Person responsible (PIC) for program
<ul style="list-style-type: none"> One point per one-day attended The percentage of attendance is a result from number of attendances divided by number of working days in each month Late attendances which accumulated to 7-hours implied to minus 1 point in days attended. Maximum sick leave/ business leave are 3 days in each working day 	<ul style="list-style-type: none"> Doctor: score 150 Pharmacist/Nurse: score 100 Medical staff with a minimum of bachelor's degree or equal: score 80 Medical staff with a minimum of diploma degree: score 60 Non-medical staff with a minimum diploma degree: score 50 Non-medical staff with a degree lower than diploma: score 50 	<ul style="list-style-type: none"> 5-10 years: score 5 11-15 years: score 10 16-20 years: score 15 21-25 years: score 20 More than 25 years: score 25 	<ul style="list-style-type: none"> Head of FKTP: additional score 100 Treasurer of JKN: additional score 50 Head of administration: additional score 30 Person in charge of financial administration: additional score 30 	Additional score 10

Source: Ministry of Health Decree No. 21/2016.

Annex 6. Monthly health worker income in IDR, 2015.

Facility Type	HCW Type		Salary	Regional benefit	BPJS	Allowance	Other	Total
Puskesmas	Doctor	N	201	200	200	201	202	200
		Mean	3,118,295	1,567,105	1,620,641	104,521	153,953	6,568,169
		Median	3,000,000	1,000,000	1,300,000	0	0	5,967,500
		Min	1,250,000	0	0	0	0	2,300,000
		Max	10,500,000	14,000,000	11,000,000	1,350,000	5,200,000	17,900,000
	Midwife	N	210	209	210	211	216	206
		Mean	2,914,014	697,012	746,035	83,999	155,690	4,620,042
		Median	2,895,000	522,500	600,000	0	0	4,400,000
		Min	500,000	0	0	0	0	950,000
		Max	5,967,000	5,000,000	3,600,000	1,000,000	5,000,000	9,100,000
	Nurse	N	115	116	117	117	118	114
		Mean	2,683,631	1,250,112	799,812	70,637	144,887	4,945,191
		Median	2,700,000	900,000	600,000	0	0	4,479,800
		Min	600,000	0	0	0	0	900,000
		Max	4,674,400	7,000,000	4,900,000	800,000	5,400,000	12,800,000
Private	Doctor	N	NA	NA	107	NA	NA	105
		Mean			7,502,907			13,000,000
		Median			3,600,000			7,800,000
		Min			0			0
		Max			40,000,000			53,400,000

Source: Indonesia QSDS, 2016.

Annex 7. Performance based capitation design (KBK).

KBK indicators

1. Contact rate > 150 contacts per 1,000 people per month
2. Referral rate for non-specialistic services < 2%
3. Controlled Prolanis – i.e. > 5 % of diabetes and hypertension patients have their condition under control.

Indicator a	Weight b	Rating c	Description d	KBK score e=bc	Total KBK score	Capitation received	
						Puskesmas	Clinic
Contact rate	40%	4	>=150%	1,5	1 - <2	85%	95%
		3	>145 -<150%	1,2	2 - <3	90%	96%
		2	>140 - 145 %	0,8	3 - <4	95%	97%
		1	<=140%	0,4	4 - <5	100%	100%
Referral rate	50%	4	<=2%	2			
		3	>2-2,5%	1,5			
		2	>2,5-3%	1			
		1	>3%	0,5			
Controlled Prolanis	10%	4	>=5%	0,4			
		3	4% -<5%	0,3			
		2	3%-<4%	0,2			
		1	<3%	0,1			

Annex 8. Factors influencing recruitment and retention of health workers in rural areas.

PULL FACTORS	PUSH FACTORS
Adequate availability of equipment and supplies	The feeling of “professional isolation.”
Opportunities for professional development and practice knowledge acquired while training	Inadequate working conditions (lack of equipment and supplies)
Intrinsic motivation to help the poor and those in underserved areas	Inadequate family support (schools for children and spouse employment opportunities)
Having rural background (origin)	Safety and security
Community appreciation toward health workers	Lack of basic infrastructure (roads, and transport)
Monetary incentives and other incentives, such as opportunities for training and scholarships	

Source: Maeda & Araujo, 2013

