This brief summarizes findings from a study in Indonesia on how national health insurance (NHI) coverage and the supply-side readiness (SSR) of providers influence out-of-pocket (OOP) payments, as well as how that relationship changes across the different provinces of Indonesia. In addition to reviewing the study findings, this brief also offers policy recommendations for how the Government of Indonesia can improve both its demand-side and supply-side financing to expand affordable access to high-quality health care across all its islands. This study was conducted by ThinkWell under the Strategic Purchasing for Primary Health Care (SP4PHC) project, supported by the Bill & Melinda Gates Foundation.

**JKN as a Tool to Achieve Universal Health Coverage**

Indonesia established their NHI scheme, *Jaminan Kesehatan Nasional* (JKN), in 2014 as a vehicle to make progress towards the goal of universal health coverage (UHC). By 2019, the scheme covered 84% of the Indonesian population (*Kementerian Kesehatan* 2019). However, enrollment of its large informal sector into this social health insurance scheme has proven to be difficult. Of all informal workers, 40% are uninsured, 37% are enrolled in the JKN’s subsidized or *Penerima Bantuan Iuran* (PBI) group, and 14% in the non-PBI, or non-subsidized group. The remaining 9% belong to other types of insurance, like private and local insurance.

On an aggregate level, OOP payments as a share of total health expenditure dropped quite noticeably after JKN was implemented, from 48.5% in 2014 to 32% in 2020 (*Kementerian Kesehatan* 2021). A study conducted by ThinkWell in early 2021 also revealed that JKN households pay 39% less OOP compared to uninsured households, and JKN members are 34% more likely to not pay any OOP when visiting a health facility (Maulana et al. 2021).

This effect is more pronounced in the rural, eastern parts of Indonesia, where JKN households are 53% less likely to pay OOP than uninsured households.

In terms of where patients are covered, the JKN scheme automatically contracts with public facilities but must set up contracts with private facilities, which can be challenging. In 2019, there were 12,125 private primary health care (PHC) facilities in JKN’s network, which represents 18.8% of all the private PHC clinics nationwide. In contrast, JKN had contracted 1,542, or 84.2%, of private hospitals nationwide.¹ In the public sector, 11,273 *Puskesmas*, or public PHC facilities, as well as 917 public hospitals, contract automatically with JKN. In 2020, the number of private PHC facilities contracted to JKN decreased to 11,670, and private hospitals increased slightly to 1,576.

Many of these private providers seem not to be joining JKN due to its burdensome administrative, contracting, and claims processes, as well as perceived low reimbursement rates. For instance, private midwives, who play a substantial role for family planning (FP) and maternal and newborn health (MNH) services in the country, face these barriers and are also forced to partner with local

¹ PHC Population was taken from the 2019 Health Facility Research Survey (Risfaskes). The hospital population was taken from the 2019 Indonesia Health Profile. Data on contracted facilities were taken from the BPJS-K annual report
Puskesmas or contracted clinics to join and get paid by JKN (Wilopo, Wahdi, Thabran, and Pattnaik 2020). Because of this, only 5.9% of private midwives were contracted by JKN in 2019.

While JKN coverage is increasing, access to health care services varies widely across Indonesia (Prabhakaran, Dutta, Fagan, and Ginivan 2019). By law, each sub-district should have at least one Puskesmas (Peraturan Menteri Kesehatan 2014). However, for many reasons—including the varying fiscal capacities of districts—this often is not the case. In 2018, 430 sub-districts, mostly in the rural eastern provinces, did not have any Puskesmas at all (Benotti, Hirschhorn, Sugiyarso, and Ahmad 2020). Moreover, households in rural areas often face difficulties in accessing care because there are few private providers in these areas, because they are reluctant to invest in low-density population areas. The population is denser in urban areas, and they thus have many more private providers. Due to more competition, providers are often willing to invest in quality care in these areas. As a result, there is more per capita utilization in the urban, western provinces of the country compared to the rural east, largely due to access to more facilities (Laksono, Wulandari, and Soedirham 2019). In turn, western provinces see better health outcomes compared to their eastern counterparts (Suparmi, Nambiar, Trihono, and Hosseinpoor 2018).

On the supply side, another challenge is the quality of delivery in health facilities across the country. Annually, the MOH evaluates the performance of Puskesmas in providing health services, both for curative and public health services, a mechanism called Penilaian Kinerja Puskesmas (PKP). The less developed eastern regions had the lowest PKP scores, such as Maluku-Papua where only 23% of Puskesmas obtained a score of excellent, on a grading system of “excellent,” “decent,” and “poor” (Badan Penelitian dan Pengembangan Kesehatan 2019). A recent review of the quality of antenatal care (ANC) and child curative services found weak scores for public and private services in both urban and rural areas (Mahendracontin, Trinantrora, Lestyadewi et al. 2017). Patients also face long waiting times at Puskesmas, making access to care even more challenging for those who visit from long distances (Ekawati, Claramita, Hort et al. 2017).

Each province in Indonesia has a unique combination of JKN coverage and SSR; this study aims to depict how these factors seem to influence how much Indonesians pay OOP for their health care. This study aims to show how this relationship changes geographically across the country. In an Indonesian health system without unlimited access to funds for health, this analysis hopes to inform active policy discussions on where investments could be targeted to achieve the most impact.

**METHODS**

We used data from the National Socio-Economic Survey (Susenas) in 2018 and 2019 to calculate household OOP health spending and JKN coverage at the province level. This dataset is nationally representative and can be disaggregated down to the city and district levels, and provides information about households, such as socioeconomic status and demographic indicators—including those related to health—while also covering household consumption and expenditure (Johar et al. 2018).

**JKN coverage is calculated at the household level.** In the dataset, the definition of a JKN household is one where JKN covers all household members. Meanwhile, a household’s OOP payment was defined as when at least one household member has experienced outpatient or inpatient service in their annual health spending. Households that never access outpatient or inpatient care were excluded from the analysis. Additionally, households’ OOP payments were analyzed as the average share of total OOP health spending to total non-food expenditures in each province.

**To capture multiple indicators that characterize SSR in the health sector, the team developed a composite index at the province level.** Readiness generally refers to the overall quantity of providers and their structural quality. Thus, the index consists of two main pillars: physical readiness and non-physical readiness (Figure 1 below). The first pillar describes the availability of health facilities, categorized into seven types of providers, with quality being measured on whether the facility is accredited and contracted with JKN. The second pillar tracks the availability of human resources for health (HRH) and information technology (IT) system utilization for health services. Ideally, health
facilities would have data on all these nested indicators that comprise the composite index, but we did not have access to this data. Nationally representative data on human resources, along with other operational aspects for each health facility, were not available. The indicators used in the analysis originate from the Health Facility Research Survey (Risfaskes) in 2019 and the Indonesian Health Profile Report (Profil Kesehatan Indonesia) from 2018 to 2019. Risfaskes is a nationally conducted survey by the Ministry of Health’s Research and Development unit across all Puskesmas and district health offices in Indonesia. The survey samples health facilities (e.g., clinics, hospitals, pharmacies, labs, private midwives) to ask for information regarding institutional status, the availability of medical apparatus, workforce capacity, and other supply-side information.

The composite index framework was adapted from the World Health Organization’s (WHO) 2015 model but is limited to the data available for this study’s indicators (WHO 2015). The index is scaled between 0 to 100 and uses a minimum-maximum standardization function. This function aims to standardize each indicator so that it can be aggregated into a composite index. Additionally, weights were given to main pillars and sub-pillars by their relative importance. Public and private providers have the same weight (except labs and pharmacies) in the physical readiness pillar, showing that both institutions are equally important for access. Within the physical readiness pillar, public and private providers have the same weight (except labs and pharmacies), showing that both institutions are equally important for access.

Finally, the HRH pillar receives a higher weight than IT systems because human resources play a more sizeable, but not more significant, role in structural quality. These weights were determined through expert consultation.

**JKN COVERAGE**

As seen in Figure 2 below, most provinces experienced a slight increase in JKN coverage from 2018 to 2019 (blue to green bars), but this was not universal. Six western provinces experienced a decrease in coverage, possibly due to an increase in premiums—which are reviewed every two years. Many independent members, including non-waged workers, likely stopped paying their JKN contribution due to the premium increase and, consequently, dropped out of the JKN system. The findings also revealed that people tended to stop
by BPJS-K. Although BPJS-K claimed that JKN coverage at the individual level was 83% in 2019, calculation using the 2019 Susenas data shows that coverage was closer to 63%. In addition, our estimation using BPJS-K sample data, which drops duplicates and inactive members, show that the coverage is around 70%. This inconsistency might be caused by duplicate counting in BPJS-K data. For instance, there are five provinces where the JKN coverage is above 100%, larger than the total population. On the other hand, survey data like Susenas might be underestimated due to respondent bias, caused by inaccurate responses from participants, when answering the survey. This situation should be validated using the upcoming 2020 census data.

**Figure 2. Changes in JKN coverage across Indonesian provinces, from 2018 to 2019**

Source: Susenas data 2018-2019

*JKN HH = all households members are JKN members

JKN coverage at the individual level is found to be inconsistent across various data sources. We compared three data sources to evaluate JKN coverage across provinces: the official report from Badan Penyelenggara Jaminan Sosial Kesehatan (BPJS-K) 2019, the 2019 Susenas dataset, as well as the publicly available JKN sample dataset produced
**SUPPLY-SIDE READINESS**

*Figure 3* depicts the disparities in facility readiness among provinces. SSR is calculated by accounting for the specific conditions of each province. Western provinces show a slightly higher SSR (lighter yellow and orange colors) compared to eastern ones (with more red). Higher SSR appears to occur in more developed provinces such as Jakarta (63), Bali (51), and Jawa Timur (42). Meanwhile, the index is lower (more red) among provinces without these urban centers. *Figure 3* also illustrates that SSR in Indonesia is still sub-optimal across the country, as only 4 out of 34 provinces have an SSR index above 30.

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2 The population and the number of sub-districts are normalized.
Figure 4 above shows that the availability of private health facilities drives high SSR index scores in the more developed provinces. In contrast, there are mainly government-owned health care providers in the less developed eastern areas. Scores for PHC centers in these areas are higher, which could signal that local district health offices invest more in these public facilities, especially as private facilities are limited in rural areas.

The index of non-physical readiness has a different pattern in each province. Figure 5 shows that Jakarta, Yogyakarta, Aceh, and Bali provinces have the highest index of both the availability of health workers and IT utilization. The urban Jawa Barat has a high score for IT utilization, but low HRH readiness, due to its low proportion of health workers compared to its large population. On the other hand, the rural West Papua has a high proportion of health workers but the lowest IT utilization.

Comparing Figures 4 and 5, there is still an imbalance between physical and non-physical readiness in several provinces. Yogyakarta, for example, has low physical readiness because the number of contracted facilities is still limited. However, it has high non-physical readiness since the province has a high proportion of health workers. Eastern provinces are not far behind the western ones in terms of non-physical readiness; however, physical readiness scores suggest that more health care facilities are needed in the region.

Improving these domains of SSR will likely be quite different in western versus eastern provinces. Physical readiness in urban provinces may be quicker to improve via JKN, which can contract and influence more existing private providers. On the other hand, improving physical readiness may prove more difficult in the rural provinces because there is less profit incentive for the private sector to build facilities. Thus, the government would likely need to invest in building public health facilities to improve their low physical readiness scores.

**Figure 4. Non-physical readiness component of the SSR Index, across provinces and facility type**

[Bar chart showing non-physical readiness scores across provinces and facility types, with data points for IT utilization and Human Resources.]

Source: Authors’ calculation, based on data from Profil Kesehatan Indonesia 2018-2019 and Risfaskes 2019
Source: Susenas data 2018-2019

HOW JKN COVERAGE AND SSR INFLUENCE OOP HEALTH SPENDING

JKN has contributed to a decrease in OOP payments since its implementation in 2014 (Tarigan and Suryati 2017). Figure 6 captures changes in average share of household OOP to total non-food expenditure across provinces from 2018 to 2019. We only calculated households with inpatient or outpatient records and excluded OOP spending on services outside the JKN benefit package, like non-prescribed drugs and traditional medication. Household OOP spending in most provinces decreased, while outpatient and inpatient utilization generally grew from 2018 to 2019. Only 4 out of 34 provinces experienced an increase in average household OOP payments: Sumatera Selatan, Kepulauan Riau, Yogyakarta, and Sulawesi Barat. Decreasing JKN coverage in Sumatera Selatan and Yogyakarta (see Figure 2) are most likely to cause the increasing average household OOP. While the JKN coverage in Sulawesi Barat and Kepulauan Riau increased, the increasing OOP is possibly due to a significant growth in inpatient utilization, by 34% and 24% respectively. Although JKN covers inpatient care, the quality of care at hospitals is not uniform—especially in the public sector—causing members to pay OOP to obtain perceived better service in the private sector (Kurniawan 2019).

A quadrant map (Figure 7 below) was created to depict the joint influence of JKN coverage and SSR on OOP health expenditure. Provinces were clustered into four quadrants based on their JKN coverage and SSR index, with SSR index on the x-axis and JKN coverage on the y-axis. The negative axes do not refer to the absolute values but signify that JKN coverage or the SSR index score is below the national level median. Thus, positive values signify that JKN coverage or the SSR index score is above the median. Quadrant B includes provinces with high JKN coverage and high SSR index (above the median level), while Quadrant D shows provinces with low scores on both axes. Finally, Quadrant A includes provinces with SSR index scores above the median and JKN coverage below the median, while the opposite applies for Quadrant C (see the labels on Figure 7).
Changes in average share of household OOP to total non-food expenditure between 2018 and 2019 for each province are captured in the parentheses next to each province name. Typically, provinces with reduced OOP health spending above the national average (-10.8%) have high JKN coverage or a high SSR index. In contrast, provinces with low JKN coverage or a low SSR index have slower OOP reduction, below the median level, and even OOP in some provinces are increasing. Several anomalies occur due to local traits.

Provinces with high coverage and readiness index scores (Quadrant B in Figure 7) are primarily in western and central Indonesia, which are more developed. The OOP expenditure reduction in these provinces is mainly above the national level, except for Kalimantan Selatan (-7%), Bali (-3%), Bangka-Belitung (-5%), and Yogyakarta (4%). Yogyakarta is the only province in this quadrant that experienced an increase in OOP payment, most likely because it saw a significant increase in uninsured households (13%) between 2018 and 2019. This is likely a result of invalid data on the PBI beneficiary list, causing PBI households that were previously subsidized by the national government to be dropped out of JKN participation (Riyandi 2019).

Quadrant A of Figure 7 depicts high JKN coverage but low SSR, which is a prominent characteristic of provinces in the eastern provinces. OOP expenditure reductions in this quadrant’s provinces are higher than the national average (-10.8%) because JKN coverage is high. These provinces have relatively low supply-side readiness scores primarily due to a lack of private clinics and hospitals. Still, accessibility of even public facilities is a challenge for many who live in these provinces. Due to issues

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*Note: We only calculated household with inpatient or outpatient record and excluded OOP spending on components outside JKN benefit package, like non-prescribed drugs and traditional medication.
like far distances and limited transport options, many people in these provinces will use private midwives who mostly are not contracted with JKN. This might explain why people still incur OOP in these provinces. Another factor that makes the OOP reduction larger than the national median is that the local governments in Papua and Papua Barat provide local health insurance, called Kartu Papua Sehat (KPS). In contrast, residents in Sulawesi Barat saw a high increase in OOP health spending (20%), possibly because there was a significant increase for inpatient care (32%) between 2018 and 2019. This was due to an increase in the number of PHC facilities that provide inpatient care, from only 45 in 2018 to 60 in 2019 (Kementerian Kesehatan 2020b).

**Quadrant C of Figure 7 depicts low JKN coverage but high SSR scores.** Well-developed provinces such as Jawa Timur, Bengkulu, Jambi, and Riau have higher OOP expenditure reductions than the national average. Surprisingly, Jawa Barat, one of Indonesia's most populous and resource-rich provinces, has lower OOP expenditure reduction than the national average. This may be attributed to low JKN coverage—and a wide availability of private providers who are not contracted with JKN. A study conducted in Jawa Barat also found that the local government allows residents to present letters stating that they are poor to obtain free health services (Djamhari et al. 2020). However, this financing scheme has more constraints compared to JKN because of certain local fiscal limitations, such as that it can only cover specific types of illness, limitation in the frequency of utilization, and can only be used in facilities owned by the local government. This might explain why there would still be OOP. In addition, local government regulations may vary by districts, but the letter generally applies for local residents not yet covered by JKN. Thus, there may be little incentive to enroll in JKN, which keeps coverage low.

Finally, **Quadrant D of Figure 7 captures provinces with low JKN coverage and low SSR index.** OOP reduction for these provinces is typically lower than the national average, except for Banten (-17%) and Nusa Tenggara Timur (-24%). Maluku, Sulawesi Tengah, Kalimantan Barat, and Nusa Tenggara Timur saw a decline in OOP payments. However, Nusa Tenggara Timur saw the highest reduction (-24%), possibly due to a decrease in uninsured households (-11%). In addition, calculation from the same Susenas data in Nusa Tenggara Timur suggests that the number of JKN members that use JKN for inpatient or outpatient care increased as much as 64%. In Sumatera Selatan (1%) and Kepulauan Riau

*Figure 8. Changes in share of household OOP to total non-food expenditure by wealth quintile, 2018-2019*

Source: Author’s calculation, based on data from Susenas 2018-2019 and SSR Index calculation (Figure 3)
(2%), residents saw slight increases in OOP health spending, which may signal a growing need for JKN coverage in those areas.

**Figure 8** above shows that there are disparities within provinces across wealth quintiles in OOP changes as a share of total non-food expenditure. This signals that households may have unequal knowledge and empowerment to access and use JKN benefits. Provinces in red boxes had large disparities in the OOP changes between the wealthiest and poorest quintiles and is significantly different from the provincial average. For example, residents in Sulawesi Barat in Quadrant A generally saw an increase in OOP health spending. However, its fourth quintile group experienced a reduction, whereas the first quintile—the poorest group—saw the highest increase in OOP payments. Additionally, residents in Kepulauan Riau in Quadrant D experienced wide variation in OOP changes from 2018 to 2019. The poorest quintile again saw the highest increase in OOP spending, although reasons for this might be different from those of Sulawesi Barat.

The characteristics and preferences of individuals within each wealth quintile group also impact their OOP spending on health care. The wealthy groups (Quintiles 4 and 5) have a high preference to avoid generic drugs (Mahendra et al. 2017); thus, their OOP health spending may not decrease as much as the poor (Tandon et al. 2016). The poor (Quintiles 1 and 2) benefit from their JKN utilization, especially in areas where SSR is sufficient. In places where JKN coverage is low but SSR is high, overall OOP payments are still lower than in areas where JKN coverage is higher. This observation further reinforces the idea that JKN coverage, along with good SSR, leads to higher OOP expenditure reduction.

**Policy Discussion**

Spatial heterogeneity for SSR and insurance coverage is unsurprising for an archipelagic nation such as Indonesia. Each province has unique populations and environments that influence how health resources are distributed and how populations consume health care. Understanding how changing SSR and demand-side coverage influence OOP health spending, especially among low-income populations, can help policymakers and planners target specific types of improvements in the areas that need it most.

While much of the attention lately is on expanding JKN coverage, significant gaps in coverage mean that the service delivery system is often not ready to respond to a greater demand for expanded coverage. This study found that provinces with high JKN coverage and stronger SSR have faster OOP health spending reduction when compared to the national average. Findings from this analysis suggest the following policy recommendations:

- **Health systems infrastructure (e.g., health facilities and workers) needs to be improved.** Provinces in Quadrant D with low SSR and low coverage typically have lower than average OOP reduction. The eastern provinces, which are mainly in Quadrant A, rely more on public PHC facilities due to the lack of private providers. Although their OOP reduction is higher than average, the rate of reduction is still below that of Quadrant B, which are more developed provinces such as Jakarta, Bali, and Yogyakarta. These provinces have the highest ratios of providers to population, driven by the growing private sector in those urban areas. Therefore, the government should incentivize the private sector to invest in the Eastern provinces, or public sector readiness needs to be strengthened.

- **JKN needs to attract and integrate the private sector into the larger health system.** While private hospitals are increasingly joining JKN, private PHC facilities and midwives are not, making residents depend on Puskesmas, especially in provinces in Quadrant A and C. These quadrants are also where the rate of OOP reduction is low. Increasing the number of private PHC facilities contracted with JKN could strengthen SSR and help increase the rate of OOP reduction. In areas where private facilities are widespread, they are popular sources of health care, and are substantial contributors of OOP payments and need to be corralled into JKN through more attractive rates and less burdensome administrative processes. Once contracted with JKN, these private PHC facilities and midwives should be better integrated with
other public and private providers. JKN can then use strategic purchasing mechanisms to purchase from the network and incentivize better quality and efficiency.

- **JKN coverage should be amplified while minimizing dropouts by members.** Six western provinces experienced a decrease in coverage, possibly due to an increase in premiums. However, two provinces—Sumatera Selatan and Yogyakarta—experienced a drop in coverage and an increase in OOP. For formal workers, JKN can be more aggressive in picking contributory fees from companies. JKN employment registration should be based on the family registry so that the employee’s family is automatically registered. Currently, employers self-register their employees. For informal PBI members, the largest dropouts are those subsidized by the local government. For this group, communication between local and central authorities and BPJS-K should be strengthened to mitigate this risk.

More attention should also be given to JKN coverage at the household level because households in which all members are enrolled in JKN make up only half of the population nationwide. Data management about JKN coverage should also be improved to avoid inconsistencies with nationally representative survey data, like Susenas.

- **There is an urgent need to increase public knowledge and awareness of JKN membership and its benefits package.** Figure 8 shows that there are disparities across wealth quintiles in OOP changes within provinces. More research into why specific quintiles experience these differential changes in OOP is needed. At the very least, the more people that are aware of their membership and what services they are entitled to, the more likely JKN will be utilized and OOP health spending will be reduced. Additionally, a better understanding of service procedures and administrative processes will make the JKN system less daunting and influence people to use JKN instead of paying OOP, which is currently the less complicated—but more expensive—option.

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