

**ACCESS INEQUITY,
HEALTH INSURANCE AND
THE ROLE OF SUPPLY FACTORS**

**Meliyanni Johar, Retno Pujisubekti, Prastuti Soewondo,
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Access Inequity, Health Insurance and the Role Of Supply Factors

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ABSTRACT

Given the improvement in health indicators and health facilities worldwide, inequity in access to health services is one of the most pertinent and relevant issues for health policy and public health. This paper analyses the extent of the access inequities to various health care services in Indonesia, in conjunction with its recent rapid move towards universal social health insurance (SHI). The sample is derived from individuals in the national socio-economic data, SUSENAS, years 2011-2016. We find that only access to outpatient care at public health centres is pro-poor whilst access to other types of health care is pro-rich. The expansion of SHI reduces the extent of the pro-rich access by weakening the relationship between utilisation and a household's economic status. Despite wider coverage, however, the poor were still disadvantaged in the health care market. Progress towards universal coverage, supply-side improvements, pro-poor insurance schemes and policies that can stimulate economic growth may further reduce the wealth-related access gaps to health services.

JEL: I11, I13, I18

Keywords: access inequity, inequity decomposition, health insurance, Indonesia

Table of Contents

1. Introduction	1-3
2. Health inequity	4-6
3. Data	6-8
4. Results	8-19
5. Conclusion	20-21
References	22-23
Appendixes	24-39

List of Figures

Figure 1: Health care utilisation across wealth quintiles	8
Figure 2: The concentration curves of various types of health care	9
Figure 3: Concentration indices of various types of health care pre- and post-JKN	10
Figure 4: Contributions of various determinants to access inequity pre- and post-JKN by remoteness	17
Figure 5: Oaxaca- Blinder type decomposition for change in access inequity pre- and post-JKN by remoteness	18
Figure 6: Sources of changing elasticities of access determinants pre- and post-JKN by remoteness	19

List of Tables

Table 1: Concentration indices of various types of health care pre- and post-JKN	11
Table 2: Contributions of various determinants to access inequity pre- and post-JKN	12-13
Table 3: Oaxaca- Blinder type decomposition for change in access inequity pre- and post-JKN	16

1. Introduction

Given the improvement in health indicators and facilities worldwide, health inequity is one of the most pertinent and relevant issues for health policy and public health. In most countries, the main concept of the health care system is egalitarian: health care is allocated according to an individual's health need, and should be dissociated from the ability to pay for this care. Equity in health care use usually refers to horizontal equity, which is a situation where, on average, people with the same health needs receive a similar treatment, irrespective of their other characteristics, including income. However, many studies have found that, while health care needs are concentrated among the poor, health care use is concentrated among the rich (Van Doorslaer and Masseria, 2004; Van Doorslaer et al., 2000, 2004). Income inequity is showed as a major cause for this mismatch between health care need and use of health care. However, even if all the financial barriers to accessing health care are eliminated, health care utilisation might still be unequal due to other factors such as unbalanced distribution of health infrastructure and different progress of infrastructure development in different areas. The aim of this paper is to quantify the role of various factors in explaining inequity in access to health care services in Indonesia. The results will provide valuable inputs to health policymakers about the contribution of each factor to the access inequity, hence revealing which factor(s) to target to effectively narrow the gap in access.

Despite many attempts to improve health measures, including the introduction of various social health insurance schemes to encourage health care utilisation since the early 1990s, Indonesia's vital health statistics are still lagging behind those of neighbouring countries. For instance, life expectancy in Indonesia is under 69 years old whilst life expectancies in Malaysia and Thailand have reached 75 years old (World Bank Statistics, 2017). Likewise, maternal and child mortality are still very high, especially for the poor. A report by the UNICEF show that children of the poorest households have an under-five mortality rate that is more than twice as high as that of households in the wealthiest quintile (UNICEF, 2012). It is further suggested that the major cause of this disparity in child mortality rate according to income status is because wealthier households have better access to health care facilities, especially skilled birth attendance. Geographic differences are also substantial. For instance, the under-five mortality rate found in West Sulawesi, Maluku and West Nusa Tenggara is more than 4 times higher than that in Central Java and Yogyakarta (UNICEF, 2012).

There has been a plethora of studies examining the association between socio-economic disparities and health care utilisation. Xie et al (2014) assess socioeconomic-related inequity in health service utilisation among patients with non-communicable diseases in China. They find that pro-rich inequity in health services among these patients was more severe than that in the average population. Inequity is greater in inpatient services compared to outpatient services, despite the fact that these chronically-ill patients are likely to require hospitalisation. Inequity in socio-economic status explains about 71%

of the inequity in outpatient services and 108% of the inequity in inpatient services. Bonfrer et al (2014) conduct a cross-country study using data from 18 Sub-Saharan Africa countries. They find that considerable pro-rich inequities in health care use exist in almost all countries studied, and that wealth is the single most important driver of the access inequity in 12 out of the 18 countries, accounting for more than half of the total inequity in the use of care. Other studies which have shown that households' economic status makes by far the greatest pro-rich contribution in inequity in access to care include Saito et al (2016), Elwell-Sutton et al (2013), Bago d'Uva et al (2009), Leung et al (2009), Lu et al (2007) and Doorslaer et al (2004). Even in countries with universal health system, studies have found evidence of income-based discrimination. Using data from New South Wales, Australia, Johar et al (2013) find that richer patients have shorter waiting times for non-urgent (elective) procedures than poorer patients. In Canada, Veugelers and Yip (2003) find that people with lower socioeconomic background used more family physician and hospital services but the use of specialist services is more frequent by the richer. In Estonia, Habicht and Knust (2005) also show evidence for access barrier according to geographical, financial and information factors.

Other studies have investigated whether pro-poor public programs can reduce the inequity in access to health care. Using data from the Philippines, Paredes (2016) finds that the local pro-poor program did not have large impact on inequity in maternal care utilisation, and facility deliveries remain pro-rich. Women who received complete antenatal care services also remained to be concentrated among the rich. The study concludes that household income is the most important contributor to the resulting inequities in health services use, followed by maternal education. Quayyum et al (2013) assess the impact of a community-based intervention in rural areas of Bangladesh on utilisation and equity of maternity services. They find that not only the intervention has a positive effect on maternal care utilisation, it also has a positive effect on equity. Utilisations of most antenatal services, home delivery by trained providers and delivery at public facilities have become more pro-poor over time.

In this study, we investigate the extent of inequity in access to health services in Indonesia, the fourth most populous nation in the world, with over 257 million individuals. We use 6 years of the national socio-economic data (SUSENAS) to the latest collection year in 2016. Decomposition analysis is employed to quantify the contribution of various determining factors to the access inequity: health care needs (as proxied by age and sex interactions and reported health problems), non-health household conditions (household head characteristics, wealth), availability of health insurance, geographical factors (rural/ urban, region indicators, village socio-economic index) and readiness of health supply factors (accessibility of primary, secondary and maternal health facilities). Almost all past studies do not have information about health facilities where the individuals reside. Hence the influences of other determinants may be confounded by their correlation with the health supply factors. In this study, we extend the literature by linking SUSENAS data with local facility data, which includes health care

facilities, at the village level. This would allow us to quantify directly the influence of unequal distribution of health infrastructure to the inequity in access to health care.

In addition, we exploit the introduction of the national health insurance program, *Jaminan Kesehatan Nasional* (JKN), in 2014 to examine whether a nation-wide demand-side expansion program has reduced the inequity in access to care. JKN creates an integrated health system with the objective to provide equal, comprehensive basic health care to all Indonesians. This means removing barrier to accessing health care due to financial constraints and reducing the incidence of very high medical spending, which may lead into impoverishment. Under JKN, all existing social health insurance (SHI) schemes (e.g., *Jamsostek*, *Askes*, *Jamkesmas*, *Jampersal*, *Jamkesda*, etc) are merged into one under a single-payer insurance administrator, *Badan Penyelenggara Jaminan Sosial - Kesehatan* (BPJS-K). SHI schemes that are targeted for the poor (*Jamkesmas* and *Jamkesda*) are now known as *Penerima Bantuan Iuran* (PBI). JKN can be accepted at both public facilities and participating private facilities, which are growing in number. In 2017, JKN has reached 70% of the population and is set on target to reach all 257 million citizens by 2019. JKN has been found to have a positive impact on health care consumption (Johar et al., 2017).

The concentration index (CI) is used as a measure of the degree of inequity. In the absence of inequity, CI is 0. At the national level, we find that CI is negative for outpatient care at public primary facilities (*puskesmas*), suggesting that access to outpatient care at these facilities is pro-poor. In contrast, CIs for outpatient care at private clinics and at hospitals are all positive indicating that accesses to outpatient treatments at these facilities are pro-rich. For inpatient care, we find that CI is very close to 0 at public hospital and positive at private hospital. However, there is significant difference in access to public hospital beds in urban and rural areas. Inpatient care at public hospitals is pro-poor in urban areas whilst it is pro-rich in rural areas. In any case, the biggest contributor to pro-rich access is households' economic status (wealth), whilst its biggest counter factor is pro-poor health care needs (age-related frailty). Health infrastructure only has a relatively minor role. The introduction of JKN weakens the relationship between utilisation and households' economic status, thereby reducing the size of the access gap for most health services. The most notable change is with regards to outpatient care at private clinics; its CI is more than halved. With JKN, social health insurance (SHI) has wider coverage, which is pro-poor, however, because SHI members also have higher use of almost all health services, its overall contribution is pro-rich to the access inequity. The distribution of PBI on the other hand is less pro-poor post-JKN, and PBI beneficiaries are less likely to use private facilities. There is no evidence that distribution of health infrastructure is more pro-poor post-JKN.

2. Health inequity

The standard measure of the degree of income-related inequity is the concentration index (CI). Let C_y be the concentration index for health care utilisation y . C_y is calculated as twice the covariance between y and the fractional rank of a unit in an economic advantage or income distribution r , $\text{cov}(y, r)$, weighted by μ , the mean of y :

$$(1) C_y = 2\text{cov}(y, r)/\mu.$$

C_y lies between -1 and 1 , and is zero when there is no income-related inequity in health care utilisation. When $C_y < 0$, the poor are more likely to use health care (pro-poor) whilst a CI larger than 0 indicates that utilisation is biased towards the richer (pro-rich).

Wagstaff et al (2003) show that the concentration index of any health outcome can be decomposed into the contributions of individual factors into the income-related health inequity, in which the contribution of each factor is the product of the sensitivity of the health outcome with respect to that factor and the degree of income-related inequity in that factor. In this case, the health outcome of interest is health care utilisation y . Suppose that y can be written as a linear additive equation of its determinants as follow:

$$(2) y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \varepsilon,$$

where α is the intercept, x_1 to x_5 denote the vectors of determinants (in order: health care need, individual non-health factors, health insurance availability, geographical location and health supply factors), β_1 to β_5 are its corresponding coefficients and ε is the error term. C_y therefore can be written as:

$$(3) C_y = (\beta_1 \bar{x}_1/\mu)C_1 + (\beta_2 \bar{x}_2/\mu)C_2 + (\beta_3 \bar{x}_3/\mu)C_3 + (\beta_4 \bar{x}_4/\mu)C_4 + (\beta_5 \bar{x}_5/\mu)C_5 + GC_\varepsilon/\mu,$$

where \bar{x}_h ($h = 1,2,3,4,5$) is the mean of various measures in the vector x_h , C_h is the CI for x_h and GC_ε/μ is the generalised CI for the error term, which cannot be estimated. The CI for a given determinant C_h is measured in the similar as C_y :

$$(4) C_h = 2\text{cov}(x_h, r)/\mu$$

where $\text{cov}(x_h, r)$ is the covariance between the determinant x_h and the fractional rank r of the unit individual in the income distribution.

Given that the generalised concentration index for the error term cannot be estimated, it is regarded as the residual component, measuring the source of access gap that cannot be explained by observed differences between poor and rich households. Therefore, the explained inequity is given by:

$$(5) C_y = (\beta_1 \bar{x}_1/\mu)C_1 + (\beta_2 \bar{x}_2/\mu)C_2 + (\beta_3 \bar{x}_3/\mu)C_3 + (\beta_4 \bar{x}_4/\mu)C_4 + (\beta_5 \bar{x}_5/\mu)C_5.$$

Hence, the CI of health care utilisation, C_y , is a weighted sum of the CIs of its determinants x_h , with the weights $\beta_h \bar{x}_h / \mu$ being the elasticity of y with respect to x_h , evaluated at the sample mean of y . Notice that in relation to the contribution of health insurance, $(\beta_3 \bar{x}_3 / \mu) C_3$, we expect to be positive for social health insurance that is targeted for the poor (i.e., its CI is negative) as an effort to boost their health care utilisation (i.e., its marginal effect on y is negative).

To test the stability of C_y in the face of a demand-expansion by JKN, we augment Equation (3) using Oaxaca-Blinder (1973) style decomposition. Let $\theta_h = \beta_h \bar{x}_h / \mu$ such that Equation (3) can be written shortly as $C_y = \sum_h \theta_h C_h + GC_\varepsilon / \mu$, and let t and $t - 1$ indicate period pre- and post-JKN, respectively. Then the change in C_y between the two periods ΔC_y can be written as:

$$(6) \quad \Delta C_y = \sum_h \theta_{ht} (C_{ht} - C_{ht-1}) + \sum_h C_{ht-1} (\theta_{ht} - \theta_{ht-1}) + \Delta (GC_{\varepsilon t} / \mu_t).$$

That is, the change in income-related inequity in access to health care can be decomposed into changes in the income-related inequity of its determinants $(C_{ht} - C_{ht-1})$ and changes in the elasticity of health care utilisation with respect to these determinants $(\theta_{ht} - \theta_{ht-1})$. Now consider the case of PBI (SHI that is targeted for the poor). If JKN's outreach to the poor is wider, $C_{pbi,t} - C_{pbi,t-1} < 0$, so the sign of the first term in Equation (6) would depend on the sign of $\theta_{pbi,t}$. For instance, if PBI beneficiaries are more likely to obtain treatment than uninsured households then $\theta_{pbi,t} > 0$ and $\theta_{pbi,t} (C_{pbi,t} - C_{pbi,t-1}) < 0$. Meanwhile, the second term is negative if the propensity to seek care increases post-JKN ($\theta_{pbi,t} - \theta_{pbi,t-1} > 0$) since $C_{pbi,t-1} < 0$.

However, Wagstaff et al (2003) argue that (6) conceals the changes within the elasticity θ_h ; it might be the case that ΔC_y is driven by the change in the mean of determinant \bar{x}_h rather than be driven by the change in the relationship between y and x_h . This is important to distinguish because for example, in the case of PBI, there are more PBI beneficiaries post-JKN ($\bar{x}_{pbi,t} > \bar{x}_{pbi,t-1}$), increasing the elasticities θ_{pbi} even without any change in β_{pbi} . Wagstaff et al (2003) therefore suggest using a linear approximation to ΔC_y to further decompose Equation (6) to five different components:

$$(7) \quad \Delta C_y \approx -\frac{C_y}{\mu} (\alpha_t - \alpha_{t-1}) + \sum_h \frac{\bar{x}_h}{\mu} (C_h - C_y) (\beta_{ht} - \beta_{ht-1}) + \sum_h \frac{\beta_h}{\mu} (C_h - C_y) (\bar{x}_{ht} - \bar{x}_{ht-1}) + \sum_h \frac{\beta_h \bar{x}_h}{\mu} (C_{ht} - C_{ht-1}) + \left(\frac{GC_{\varepsilon t}}{\mu_t} - \frac{GC_{\varepsilon t-1}}{\mu_{t-1}} \right),$$

where α is the constant term in the regression capturing the reduction in access inequity due to an equal increase in health care utilisation by everybody. The second and third terms state that the effect of the change in β_h and \bar{x}_h , respectively, on ΔC_y depends on whether x_h is more or less equally distributed than y ; that is, whether $C_h - C_y$ is positive or negative. Because of this relative inequity term, the second and third terms may not exactly add up to the changing elasticities (first term) in Equation (6). When

x_h increases, there are two operating effects. Suppose that $C_y > 0$, $C_h > 0$ and $\beta_h > 0$. First, an increase in x_h will increase C_y since the existing inequity in x_h generates more inequity in C_y . Second, the increase in x_h , all else constant, will also increase μ , which in turn lowers the inequity in y . So the net effect will depend on whether the inequity in x_h is stronger or weaker than the inequity in y . Finally, the fourth term in Equation (7) gives the effect of the rising inequity in x_h on inequity in C_y . This is the same with the second term in Equation (6).

In addition to C_y , we also calculate the horizontal equity (HI) index, which measures the extent of income-related inequity by subtracting the absolute contributions of health need factors (C_1) from C_y . HI ranges between -2 and 2. A positive (negative) HI indicates pro-rich (pro-poor) inequity: higher share of health care use by richer (poorer) units than their share of health needs.

3. Data

The data is derived from the national socio-economic survey, SUSENAS, years 2011-2016, conducted by Statistic Indonesia (BPS). This is a repeated cross-section survey every one to two years across all Indonesian provinces. The last wave involves about 300,000 households and 1.1 million individuals. The health care utilisation variable is a binary variable which takes a value of 1 if a household member seeks at least one health treatment in a given period. We distinguish outpatient and inpatient care at public, private or traditional providers. In total, we have 6 health care utilisation measures of interest: (i) outpatient care at public primary care center (*puskesmas*) in the past 30 days; (ii) outpatient care at public hospital in the past 30 days; (iii) outpatient care at private clinic in the past 30 days; (iv) outpatient care at private hospitals in the past 30 days; (v) inpatient care at public hospitals in the past twelve months; and (vi) inpatient care at private hospitals in the past twelve months.

As a measure of a household's economic status, we use wealth index. Typically, total consumption per capita, not wealth, is used as a measure of a household's income or economic advantage. The total consumption in turn is derived from total expenditure as self-reported income in a voluntary survey is often unreliable (e.g., due to underreporting). However, the expenditure variable in SUSENAS does not reflect earned income, as it is a composite total of households' own, out-of-pocket expenditure and the contribution of other payers. This means that households with high total expenditure may be those who rely heavily on external economic assistance, such as government subsidies and bank loans, to finance their purchases. More detail appraisal of the expenditure variable in SUSENAS can be found in Johar et al. (2017). For this reason, we use wealth as an alternative measure of economic status. A wealth index is derived from the first component of a principal component analysis with regressors including ownership of motor vehicle, house and other valuable goods, as well as housing characteristics (e.g.,

type of flooring and roofing, utility connections, etc).¹ The index is calculated from the full sample of SUSENAS households with population frequency weight by year to represent the wealth distribution at the national level in any given year.

There are four sets of utilisation determinants: health care needs, non-health factors, health insurance, geographical location and local health infrastructure. To capture individuals' health care needs, we consider any reported health symptoms in the past four weeks, the number of missing days due to illness in the past four weeks and interaction terms of sex and age. For age, we also include age squared and age cubed to allow flexible changes in health care needs throughout life-cycle; health care needs tend to be high at young age, decreasing during working age and increasing again at old age. For other non-health factors, we use marital status, education, age and sex of the household head, and wealth quintiles. Insurance indicators include private health insurance membership, coverage by social health insurance schemes through formal sector employment (SHI), beneficiaries of targeted health insurance for the poor (i.e., the *Penerima Bantuan Iuran* (PBI)), and those with both social and private health insurance. Note that SHI members are not the poorest section of the population as they include government officials, military members, employees of state enterprises and institutions, and employees of private companies. PBI members on the other hand are principally poor and near-poor households by local/state government's definition. Geographical differences are captured by urban and rural distinction and dummy variables for provinces. There are 34 provinces across Indonesian islands and the population density across these provinces varies greatly. For instance, over 55% of the population lives on Java, which is only the fifth largest island in Indonesia, making it the most populous island in the world. Accordingly, economic development stage also varies greatly across provinces. Lastly, information about local infrastructure is derived from village-level (*kabupaten*) data in *Potensi Desa* data, PODES 2011 and PODES 2014. Because PODES data are only available for two years, we assume supply-side factors are relatively stable during 2011-2013 and 2014-2016.² To capture the state of the local health infrastructure, we use accessibility to primary care providers (public health centers (*puskesmas*), doctors' clinics and mobile health facilities), hospitals (public and private) and specialised care facilities (maternal hospital, village midwives and child and mother health post (*posyandu*)). Our accessibility

¹ We acknowledge that our wealth variable may be inaccurate as well as a measure of economic status of the household as there is lack of information on the share of ownership of each asset. Nevertheless, compared to total consumption that includes subsidies, gifts, social transfers and loans, this measure may be more reflective of a household's economic position. Further, it is perhaps likely less likely that all asset components are still on high-level of mortgage (e.g., high credit risk limits successful borrowing) whilst a household can satisfy most of its needs from various social assistances.

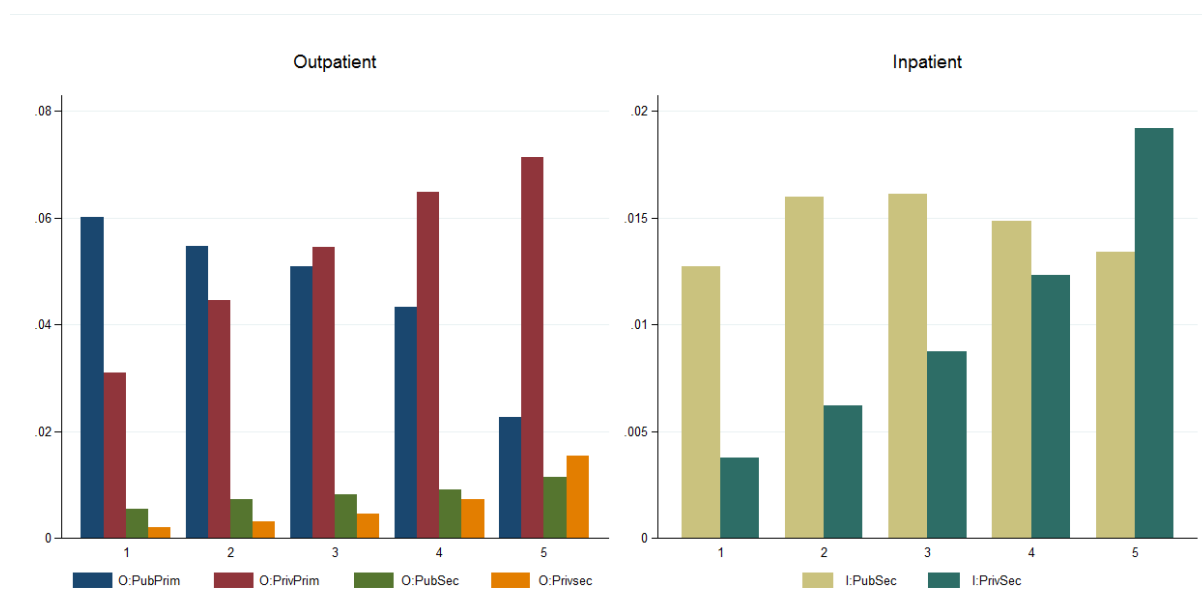
² Note that this does rule out the possibility of increasing supply between pre- and post-JKN period. We only assume that within each era, supply is relatively constant. In fact, supply-side program of the Ministry of Health such as *Nusantara Sehat* which deploys a team of health professionals to rural, remote and border areas only start in 2015. Meanwhile, there is no large-scale initiative to increase medical degree enrolment in the country during the entire study period.

variables take into account the location of the facility (i.e., within the village or not) as well as the easiness to reach the facility. We also include a village development index, derived from the first component of a principal component analysis with inputs including the availability of a post office, modern market, banks, strong telephone signal, asphalt road, garbage collection system, piped water, etc.

4. Results

Figure 1 shows health care utilisation rates of various types of care by wealth quintiles. The utilisation rate of outpatient treatment at public primary facilities (O:PubPrim), mainly health centers or *puskesmas*, is decreasing in wealth whilst the opposite is true for outpatient treatment at private primary facilities (O:PrivPrim), mainly doctors' clinics. Outpatient care at secondary facilities (hospitals) also shows strong positive correlation with wealth, especially at private hospitals (O:PrivSec). For inpatient care, hospitalisation at private hospital (I:Priv) shows very strong positive correlation with wealth while hospitalisation at public hospital (I:Pub) is relatively equally spread across wealth quintiles.

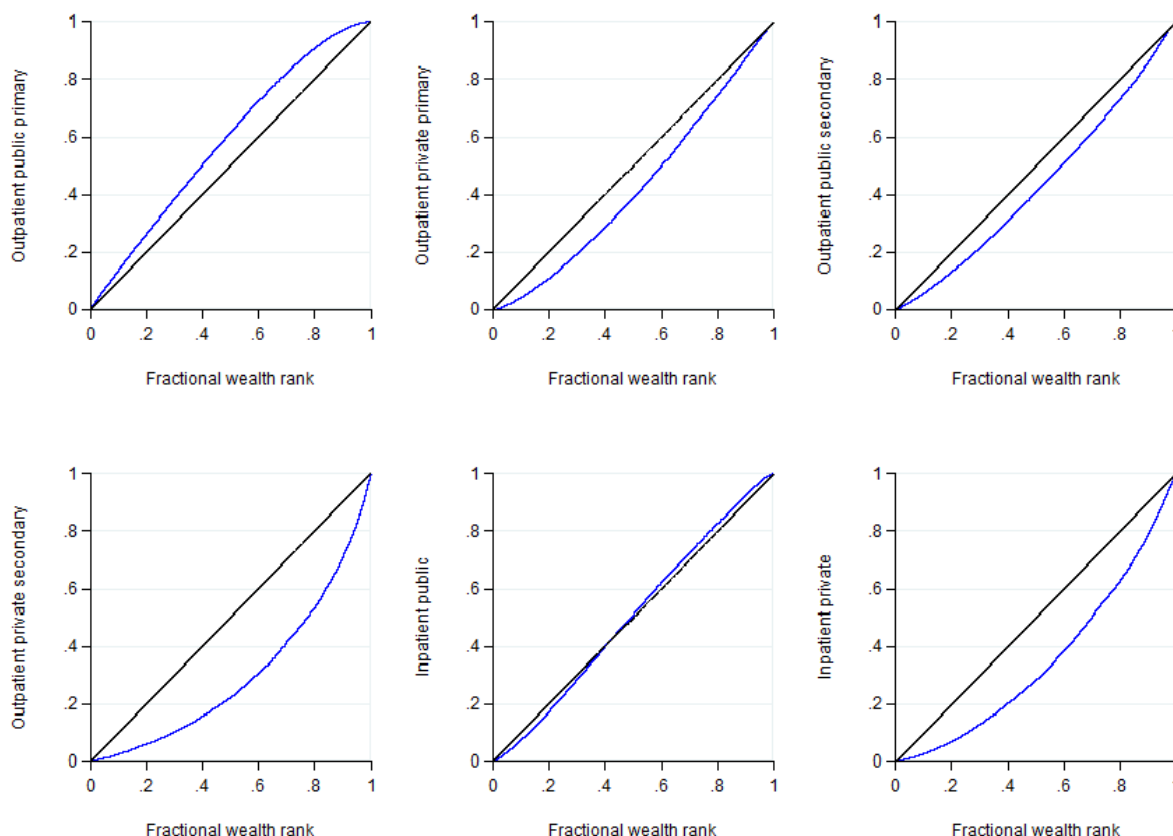
Figure 1: Health care utilisation across wealth quintiles



Note: y-axis plots utilisation rate of various types of health care from pooled SUSENAS 2011-2016, weighted by population frequency weight. Each utilisation variable is a binary variable. 'PubPrim' and 'PrivPrim' denote public primary care facility (*puskesmas*) and private primary care facility (doctors' clinics), respectively. 'PubSec' and 'PrivSec' denote public and private secondary care facility (hospital), respectively. The wealth quintiles are computed by year at the household-level, using population frequency weight, before pooling the six years of data. 'O' and 'I' denote outpatient and inpatient care, respectively. 'PubPrim' and 'PrivPrim' denote public primary care facility (*puskesmas*) and private primary care facility (doctors' clinics), respectively. 'PubSec' and 'PrivSec' denote public and private secondary care facility (hospital), respectively.

Figure 2 plots a series of concentration curves to illustrate access inequities to various types of health care in the overall population during 2011-2016. The concentration curves plot the cumulative distribution of each type of care as a function of the cumulative distribution of the population ranked by its wealth. A 45-degree line represents the line of equity, in which health care utilisation is independent of wealth. A concentration curve that lies below (above) the 45-degree line indicates a situation in which the use of that particular health service is more concentrated among the wealthier (poorer) of the population or “pro-rich” (“pro-poor”). The further is the concentration curve from the 45-degree line, the greater is the extent of the access inequity. Figure 2 reveals that only access to outpatient care at *puskesmas* is pro-poor whilst access to other types of health care is pro-rich. The greatest inequities are observed for services at private hospitals.

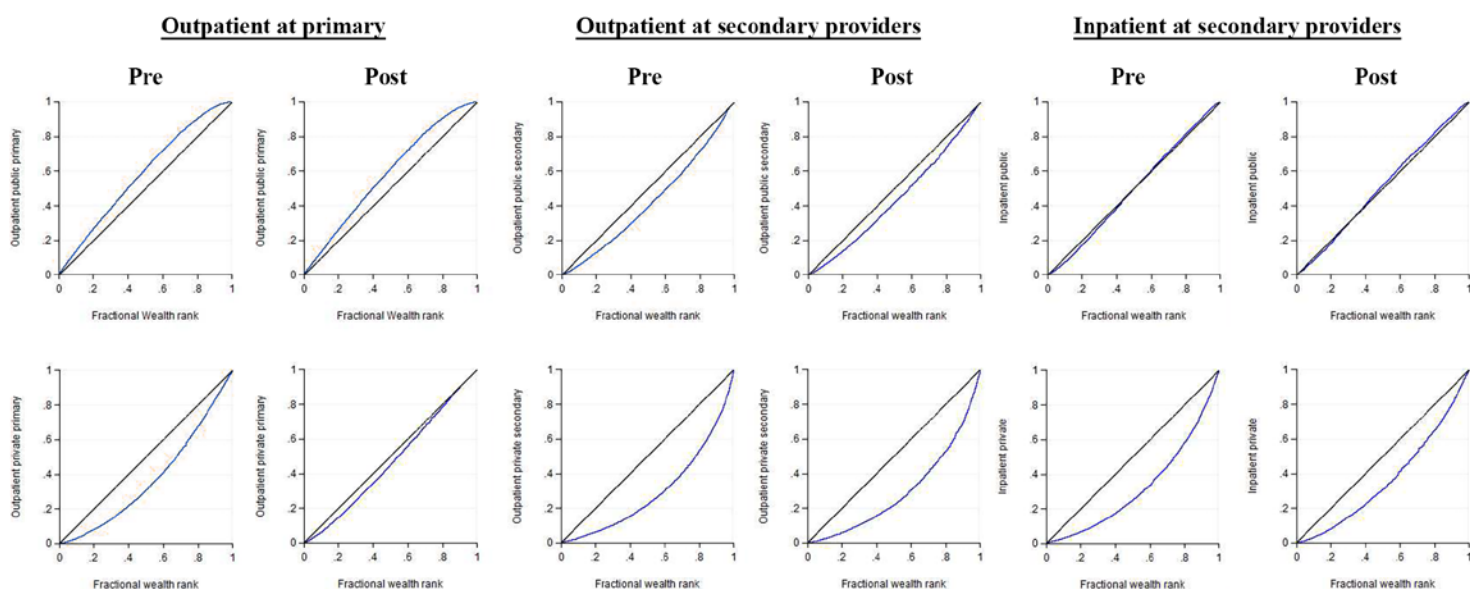
Figure 2: The concentration curves of various types of health care



Note: y-axis plots the cumulative density of a health care use by individuals ranked from the least wealthy to the wealthiest, weighted by population frequency weight, from pooled SUSENAS 2011-2016. The wealth quintiles are computed by year at the household-level, using population frequency weight, before pooling the six years of data.

Figure 3 shows the concentration curves before (pre-) and after (post-) the introduction of JKN. We define 2011-2013 as the pre-JKN period and 2015-2016 as the post-JKN period. Year 2014 is excluded because SUSENAS 2014 was fielded at four points in 2014: March, June, September and December, which means that the bulk of inpatient utilisations for households interviewed in March and June would include utilisation in the second half of 2013, before JKN was introduced. We observe that, post-JKN, almost all concentration curves that lie under the line of equity have moved closer to the line of equity, indicating that, access to these services have become more pro-poor than before. The shift is particularly apparent for outpatient care at private clinics. Outpatient care at *puskesmas* has remained pro-poor.

Figure 3: Concentration indices of various types of health care pre- and post-JKN



Note: y-axis plots the cumulative density of a health care use by individuals ranked from the least wealthy to the wealthiest, weighted by population frequency weight. Pre-JKN uses data from pooled SUSENAS 2011-2013 and post-JKN uses data from pooled SUSENAS 2015-2016. The wealth quintiles are computed by year at the household-level, using population frequency weight, before creating the pooled data. The concentration index (CI) for each year and each type of health care is computed using population frequency weight. All concentration indices are statistically significant at any conventional significance level.

Table 1, under the heading of ‘Overall’, summarises the pictures in Figure 3 through the change in CIs pre- and post-JKN. The CI measures the distance between the line of equity to the concentration curve. Pre-JKN, outpatient care at *puskesmas* has a negative CI, as it is pro-poor. Outpatient care at public hospitals and services at private facilities have positive CIs, as they are pro-rich. Inpatient care at public hospitals has a CI that is very close to 0. Post-JKN, the CIs for outpatient care at *puskesmas* and private hospitals have remained unchanged, whilst the CIs for outpatient care at private doctor’s clinics and public hospitals and inpatient care at private hospitals fall, although remain positive. The marked fall in the CI for private doctor’s clinics may capture the substantial growth in the number of private clinics

accepting JKN patients. Access to inpatient care at public hospitals turns slightly pro-poor. Some of these improvements support JKN as a pro-poor program that is positively associated with a reduction in wealth-related inequity in access to health care. The rest of Table 1 reproduces the results for urban and rural samples. It reveals that the CI for inpatient care at public hospitals has different signs in urban and rural areas: the CI is negative in urban areas (access is pro-poor) and positive in rural areas (access is pro-rich), giving an aggregate picture of no inequity (CI close to 0). Except for services at *puskesmas*, the fall in CIs are found larger in urban than in rural areas.

Table 1: Concentration indices of various types of health care pre- and post-JKN

	Overall		Urban		Rural	
	Pre	Post	Pre	Post	Pre	Post
O: public primary	-0.176	-0.176	-0.261	-0.256	-0.127	-0.133
(t-statistics)	(-114.1)	(-97.55)	(-107.3)	(-91.56)	(-64.14)	(-56.47)
O: private primary	0.264	0.071	0.135	0.017	0.277	0.142
(t-statistics)	(160.5)	(50.98)	(61.03)	(8.20)	(104.4)	(76.35)
O: public secondary	0.153	0.124	0.063	0.045	0.116	0.119
(t-statistics)	(40.88)	(33.15)	(12.29)	(8.57)	(20.25)	(21.33)
O: private secondary	0.407	0.407	0.326	0.339	0.280	0.285
(t-statistics)	(97.59)	(98.62)	(61.69)	(64.78)	(36.34)	(37.53)
I: public	0.009	-0.018	-0.076	-0.085	0.083	0.056
(t-statistics)	(3.02)	(-6.43)	(-16.87)	(-19.71)	(21.24)	(15.26)
I: private	0.353	0.268	0.278	0.199	0.301	0.256
(t-statistics)	(94.31)	(87.21)	(56.06)	(47.32)	(48.55)	(53.63)
Sample size	3,332,383	2,207,463	1,402,945	1,894,697	1,929,438	1,264,122

Note: ‘O’ and ‘I’ denote outpatient and inpatient care, respectively. Pre-JKN pooled data from SUSENAS 2011-2013 and Post-JKN pooled data from SUSENAS 2015-2016. The concentration index for each type of health care is computed using population frequency weight. All concentration indices are statistically significant at any conventional significance level.

Table 2 shows how various determinants contribute to access inequities (Equation (3)). For conciseness, we report only the contribution of each determinant’s inequity to the access inequity and keep the full results, including the elasticity and concentration index of each determinant in Appendix. For outpatient care at *puskesmas*, we find that the biggest contributors to its pro-poor access in both pre- and post-JKN periods are pro-poor health care needs, driven by age factor, wealth, households’ earning ability indicators (age and education of household head), distribution PBI and availability of maternal health facilities. For wealth and households’ earning ability indicators, their contributions are pro-poor because these economic variables are positively related with wealth ($CI > 0$) but well-off individuals are less likely to go to *puskesmas* to obtain health care (elasticity < 0). Counteracting the pro-poor factors are pro-rich remoteness, local village development unobserved factors. The latter may capture supply disadvantages such as overcrowding, forcing prioritisation of patients that disfavours the poor.

Table 2: Contributions of various determinants to access inequity pre- and post-JKN

	O: public primary		O: private primary		O: public secondary		O: private secondary		I: public		I: private	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health needs												
Age	-0.1790	-0.2082	-0.0974	-0.2165	0.0151	0.0529	-0.1274	-0.1152	-0.0848	-0.1704	-0.1726	-0.3584
Male	-0.0015	-0.0013	0.0000	-0.0009	-0.0023	-0.0019	-0.0030	-0.0008	-0.0046	-0.0071	-0.0062	-0.0094
# sick days	-0.0171	-0.0159	-0.0211	-0.0179	-0.0421	-0.0446	-0.0314	-0.0338	-0.0271	-0.0226	-0.0222	-0.0166
Non-health												
Age of household head	-0.0769	-0.0968	-0.0407	-0.1021	0.0928	0.1204	0.0318	0.0579	0.0404	0.0217	0.0573	0.0608
Male household head	-0.0037	-0.0021	-0.0055	-0.0017	-0.0034	-0.0038	-0.0075	-0.0078	-0.0037	-0.0011	-0.0073	-0.0029
Wealth quintile	-0.2953	-0.3541	0.5764	0.2617	0.3323	0.2454	0.6517	0.5704	0.2500	0.0862	0.7370	0.5267
Education of household head	-0.0433	-0.0353	0.0131	-0.0197	0.1148	0.0722	0.1212	0.1122	0.0316	-0.0073	0.0841	0.0143
Married	0.0017	0.0014	0.0017	0.0023	0.0001	-0.0005	0.0023	0.0027	0.0035	0.0056	0.0056	0.0117
Divorced/separated	-0.0001	-0.0001	-0.0001	-0.0001	0.0002	0.0001	-0.0001	0.0000	-0.0003	-0.0004	-0.0004	-0.0007
Widowed	-0.0010	-0.0006	-0.0008	-0.0006	0.0005	0.0004	-0.0002	0.0007	-0.0015	-0.0013	-0.0020	-0.0024
Insurance												
SHI non PBI	-0.0129	0.0122	0.0149	-0.0009	0.0311	0.1116	0.0290	0.0713	0.0147	0.0740	0.0307	0.0494
PBI	-0.0459	-0.0662	0.0100	0.0144	-0.0431	-0.0568	-0.0015	0.0079	-0.0648	-0.0575	-0.0047	0.0010
Private	-0.0043	-0.0047	0.0032	0.0010	-0.0033	0.0009	0.0210	0.0510	-0.0001	-0.0007	0.0163	0.0198
SHI/PBI and private	0.0042	-0.0008	0.0021	0.0004	0.0050	0.0010	0.0107	0.0107	0.0059	0.0004	0.0068	0.0058
Geo												
Rural	0.0324	0.0291	0.0683	-0.0179	0.0969	0.0666	0.0248	0.0211	0.0472	0.0287	0.0206	0.0089
Village development index	0.0567	0.0883	-0.0125	-0.0689	0.0158	-0.0156	0.1459	0.1129	-0.0914	-0.0942	0.0590	0.0494
Health infrastructure												
Primary	0.0015	0.0044	-0.0017	0.0012	-0.0038	-0.0051	-0.0048	0.0010	0.0045	0.0029	-0.0045	-0.0010
Secondary	0.0148	-0.0009	0.0083	0.0171	0.0083	0.0056	-0.0029	0.0131	0.0243	0.0073	0.0243	0.0288
Maternal	-0.0134	-0.0073	-0.0020	0.0043	-0.0057	-0.0039	-0.0163	-0.0224	0.0106	0.0142	-0.0041	-0.0127
Province FE	-0.0023	-0.0023	-0.0027	-0.0014	-0.0142	-0.0105	-0.0177	-0.0128	-0.0088	-0.0059	-0.0143	-0.0071
Total observed	-0.5855	-0.6612	0.5134	-0.1462	0.5950	0.5342	0.8257	0.8396	0.1455	-0.1271	0.8034	0.3655

Other unobserved	0.4099	0.4853	-0.2491	0.2175	-0.4423	-0.4101	-0.4192	-0.4324	-0.1366	0.1090	-0.4500	-0.0972
Total	-0.1756	-0.1759	0.2643	0.0713	0.1527	0.1242	0.4065	0.4072	0.0089	-0.0181	0.3534	0.2683
HI (Total – Health needs)	0.0220	0.0495	0.3829	0.3067	0.1820	0.1178	0.5683	0.5570	0.1253	0.1819	0.5543	0.6526

Note: 'O' and 'I' denote outpatient and inpatient care, respectively. Pre-JKN pooled data from SUSENAS 2011-2013 and Post-JKN pooled data from SUSENAS 2015-2016. The sample size for pre- and post-JKN period is 3,332,383 and 2,207,463, respectively. For age and sex, their marginal effects are computed taking into account higher power of age and age-sex interaction terms.

For outpatient care at private doctors' clinics, the bulk of its pro-rich access in both pre- and post-JKN periods is caused by pro-rich wealth, PBI and availability of hospitals. The contribution of PBI is pro-rich because PBI is negatively correlated with wealth ($CI < 0$) and PBI beneficiaries have lower likelihood to seek care at private clinics (elasticity < 0). In the pre-JKN period, remoteness and SHI also has large pro-rich contribution. On the other hand, health care needs and local village development are pro-poor in both periods. Unobserved factors were pro-poor pre-JKN but turned pro-rich post-JKN. This may reflect depletion of excess capacity or other supply advantages in areas where rich people use many health services (e.g., greater health technology investments, greater price competition, etc), which formerly allow extension of services to poorer patients.

Pro-rich access to outpatient cares at public and private hospitals are driven by pro-rich wealth, households' earning ability, SHI and remoteness. For outpatient care at private hospitals, pro-rich private health insurance membership and village development also explain the pro-rich access. Unobserved factors are pro-poor in both periods.

For inpatient care, the contributors to its pro-rich access in both public and private hospitals are pro-rich wealth, households' earning ability, SHI, remoteness and availability of hospitals. At public hospitals, the counteracting factors are pro-poor health care needs, PBI and local economic development.³ The last two results are interesting as they may suggest that some form of targeted health insurance like PBI and policies that stimulate local economic growth can be used to reduce wealth-related inequity in access to inpatient care at public hospitals. Unobserved factors are pro-poor pre-JKN and pro-rich post-JKN. At private hospitals, village development and private health insurance add to pro-rich access. Meanwhile, unobservables are pro-poor in both periods.

The last row of Table 2 reports the horizontal index (HI) of each type of health care. Since distribution of health care needs is pro-poor (the poor tend to be more prone to illness), HIs tend to be bigger than CIs, indicating that access inequities are more pro-rich when health care needs are taken into account. That is, for a given health care need, the rich makes greater use of formal health services than the poor.⁴ For outpatient care at *puskesmas*, we find that HI is positive suggesting that the pro-poorness of health care needs explains the bulk of its pro-poor access.

Table 3 shows changes in the roles of access determinants pre- and post-JKN, and how far these changes were due to changes in elasticities rather than changes in inequities (Equation (6)). We find that in most cases, it is the changing elasticities (Δelas) rather than changing inequities (Δcon) that accounts for the

³ The measure for this is derived from the first component of a principal component analysis with inputs including the availability of a post office, modern market, banks, strong telephone signal, asphalt road, garbage collection system, piped water, etc in the village. Villages are then ranked based on their first component, then assigned to quintiles.

⁴ HI however does not capture the tendency for the poor to have lower health knowledge and awareness to seek care.

bulk of the change in access inequities. In particular, there are big drops in the elasticities (propensity of use and/or mean) of wealth and households' earning ability indicators as they become less pro-rich or more pro-poor. Except for access to *puskemas*, there are also reductions in the elasticities of remoteness and local village development. These effects make access more pro-poor. An exception relates to health care needs. The correlation between health care needs, mainly age, and wealth (CI) is stronger post-JKN, resulting in Δcon that is pro-poor for most services, as they are less likely to be used by older individuals. For SHI, Δcon and $\Delta elas$ of SHI have counteracting effects with the latter being the dominant effect. $\Delta con < 0$ indicates that the distribution of SHI becomes more pro-poor post-JKN. Since we have separated out PBI from SHI, this effect may capture enrolments by informal sector workers and employers of private companies, which previously opt-out from state insurance. However, the total effect is still contributing to pro-rich access gap because propensity to seek care SHI members, who are relatively well-off ($CI > 0$), have also increased considerably ($\Delta elas > 0$). Utilisation of doctors' clinics is an exception, as SHI members are less likely to visit this facility post-JKN. For PBI, $\Delta elas < 0$ at public facilities and $\Delta elas > 0$ at private facilities. Because PBI has a negative CI (i.e., PBI is negatively related to wealth), $\Delta elas > 0$ suggests that PBI beneficiaries are increasingly less likely to obtain outpatient care at private facilities. This result may indicate that, unlike SHI members who are accessing various health services, PBI beneficiaries may still be restricted in access to private facilities. With regards to the changing roles of unobserved factors, they are mostly pro-rich, which is not inconsistent with the story that they capture supply-side advantages or disadvantages; as the demand for health care by the poorer expands, supply advantages are spread more thinly whilst supply disadvantages force prioritisation given to the better-off patients.

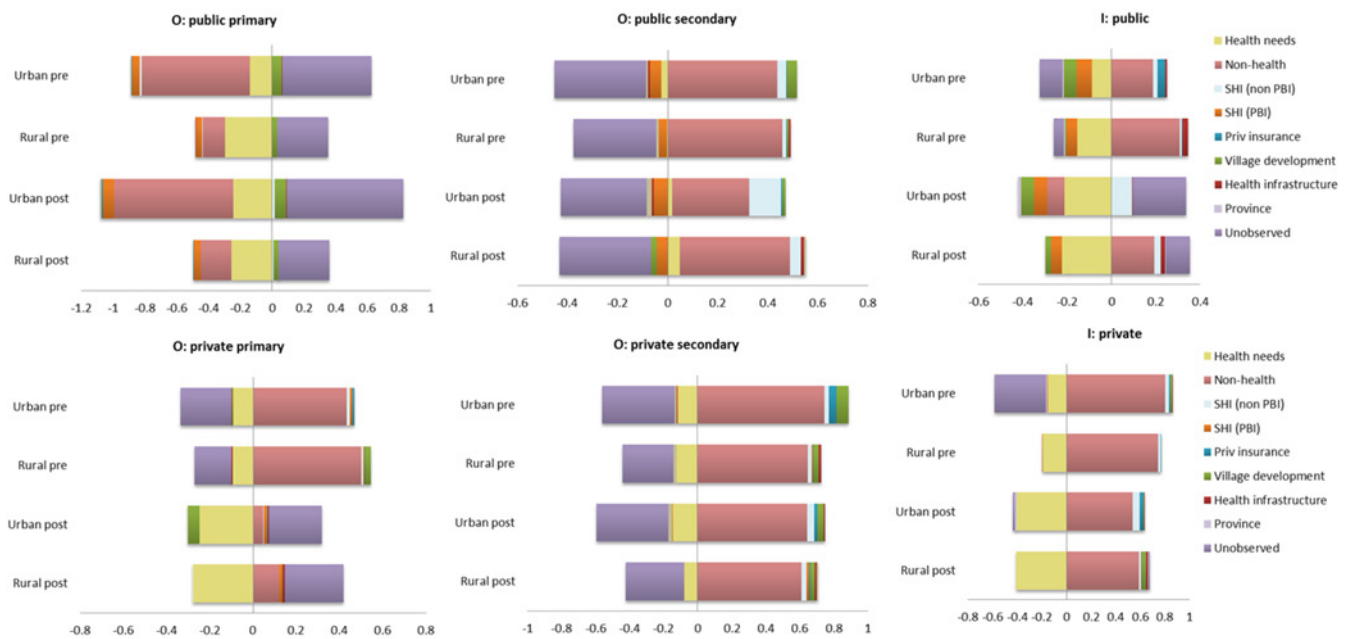
Table 3: Oaxaca-Blinder type decomposition for change in access inequity pre- and post-JKN

	O: public primary		O: private primary		O: public secondary		O: private secondary		I: public		I: private	
	Acon	Delas	Acon	Delas	Acon	Delas	Acon	Delas	Acon	Delas	Acon	Delas
Health needs												
Age	-0.0665	0.0373	-0.0692	-0.0499	0.0169	0.0209	-0.0368	0.0490	-0.0544	-0.0312	-0.1145	-0.0712
Male	-0.0003	0.0006	-0.0002	-0.0007	-0.0005	0.0009	-0.0002	0.0024	-0.0017	-0.0008	-0.0023	-0.0009
# sick days	0.0026	-0.0015	0.0030	0.0002	0.0074	-0.0099	0.0056	-0.0080	0.0037	0.0008	0.0027	0.0029
Non health												
Age of household head	-0.0231	0.0032	-0.0243	-0.0371	0.0287	-0.0011	0.0138	0.0123	0.0052	-0.0239	0.0145	-0.0110
Male household head	0.0003	0.0014	0.0002	0.0035	0.0005	-0.0010	0.0011	-0.0014	0.0001	0.0025	0.0004	0.0040
Wealth quantile	-0.0004	-0.0583	0.0003	-0.3150	0.0003	-0.0872	0.0007	-0.0820	0.0001	-0.1639	0.0006	-0.2109
Educ of household head	0.0026	0.0053	0.0015	-0.0342	-0.0054	-0.0372	-0.0084	-0.0006	0.0005	-0.0394	-0.0011	-0.0687
Married	0.0005	-0.0008	0.0009	-0.0003	-0.0002	-0.0004	0.0010	-0.0007	0.0022	-0.0001	0.0046	0.0015
Divorced/separated	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0002	0.0000	0.0000	0.0000	-0.0001	0.0000	-0.0003
Widowed	0.0001	0.0002	0.0001	0.0000	-0.0001	0.0000	-0.0001	0.0010	0.0003	-0.0001	0.0005	-0.0010
Insurance												
SHI (non PBI)	-0.0069	0.0321	0.0005	-0.0163	-0.0636	0.1440	-0.0406	0.0829	-0.0422	0.1016	-0.0282	0.0468
PBI	0.0091	-0.0294	-0.0020	0.0063	0.0078	-0.0215	-0.0011	0.0105	0.0079	-0.0006	-0.0001	0.0059
Private	-0.0021	0.0018	0.0004	-0.0027	0.0004	0.0038	0.0234	0.0066	-0.0003	-0.0002	0.0091	-0.0055
SHI/PBI and private	-0.0005	-0.0044	0.0003	-0.0020	0.0006	-0.0046	0.0067	-0.0067	0.0003	-0.0058	0.0036	-0.0047
Geo												
Rural	-0.0029	-0.0004	0.0018	-0.0879	-0.0067	-0.0236	-0.0021	-0.0016	-0.0029	-0.0156	-0.0009	-0.0107
Village dev index	-0.0035	0.0351	0.0027	-0.0591	0.0006	-0.0320	-0.0044	-0.0286	0.0037	-0.0064	-0.0019	-0.0076
Health infrastructure												
Primary	-0.0007	0.0035	-0.0002	0.0031	0.0008	-0.0020	-0.0002	0.0060	-0.0005	-0.0011	0.0002	0.0033
Secondary	0.0002	-0.0159	-0.0032	0.0120	-0.0010	-0.0016	-0.0024	0.0184	-0.0014	-0.0155	-0.0053	0.0099
Maternal	0.0010	0.0052	-0.0006	0.0070	0.0005	0.0012	0.0030	-0.0091	-0.0019	0.0055	0.0017	-0.0104

Note: see note underneath Table 2. Acon and Delas correspond to the first and second term of Equation (6), respectively.

As there are likely to be significant differences in urban and rural areas (Table 1), we repeat the above decomposition exercises for urban and rural sample, separately. Figures 5-6 summarise the results. Figure 5 shows the sources of access inequities in each area pre- and post-JKN. Most observable variables contribute in the same direction to access inequities in rural and urban areas. However, health insurance variables have larger roles in urban areas. Recall that inpatient care at public hospitals is pro-poor in urban areas but pro-rich in rural areas (Table 2). Figure 4 shows that the pro-rich access in rural areas is due to strong pro-rich non-health (economic) factors that are unmatched by pro-poor health needs and PBI distribution. Post-JKN, there are also pro-rich push to access to rural public hospital beds by unobservables.

Figure 4: Contributions of various determinants to access inequity pre- and post-JKN by remoteness

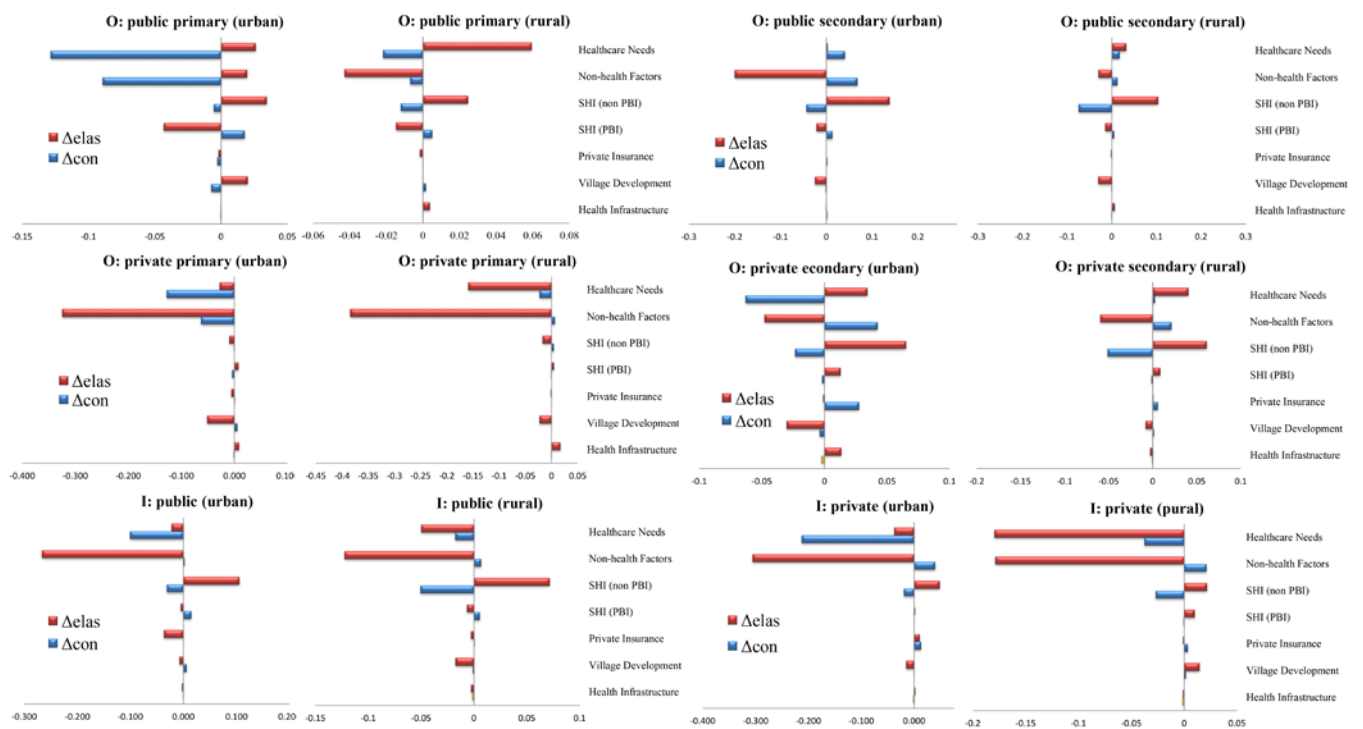


Note: each section of each bar shows the contribution of a given (group of) determinant on access inequity to that particular health service according to Equation (3). Pre-JKN uses data from pooled SUSENAS 2011-2013 and post-JKN uses data from pooled SUSENAS 2015-2016.

Figure 5 shows that, as with the overall sample, in both areas, most changes are driven by changing elasticities, more so than by changing inequities of access determinants. The large pro-poor push due to falling Δ_{con} of health care needs we saw earlier in the overall sample occurs in urban areas. This is driven by a considerable increase in the CI of age in urban areas while older individuals are less likely to visit health facilities than the young. Differently, in rural areas, pro-poor Δ_{elas} of health care needs is dominant in reducing pro-rich access to private clinics and inpatient care. Except at urban *puskesmas*, falling elasticities of non-health factors make access to health care more pro-poor. In urban *puskesmas*,

on other hand, the falling contribution of non-health factors is due to pro-poor Δcon . CIs of non-health factors in urban areas increase significantly resulting in large pro-poor Δcon because the better-off in these areas are very unlikely to visit *puskesmas* (large negative elasticity). More pro-poor distribution of SHI ($\Delta\text{con} < 0$) has larger counteracting effect to Δelas in rural areas. We also observe urban-rural differences in the contributions of health infrastructure to access inequity to outpatient care at private hospitals and village development to access inequity at private hospitals.

Figure 5: Oaxaca- Blinder type decomposition for change in access inequity pre- and post-JKN by remoteness



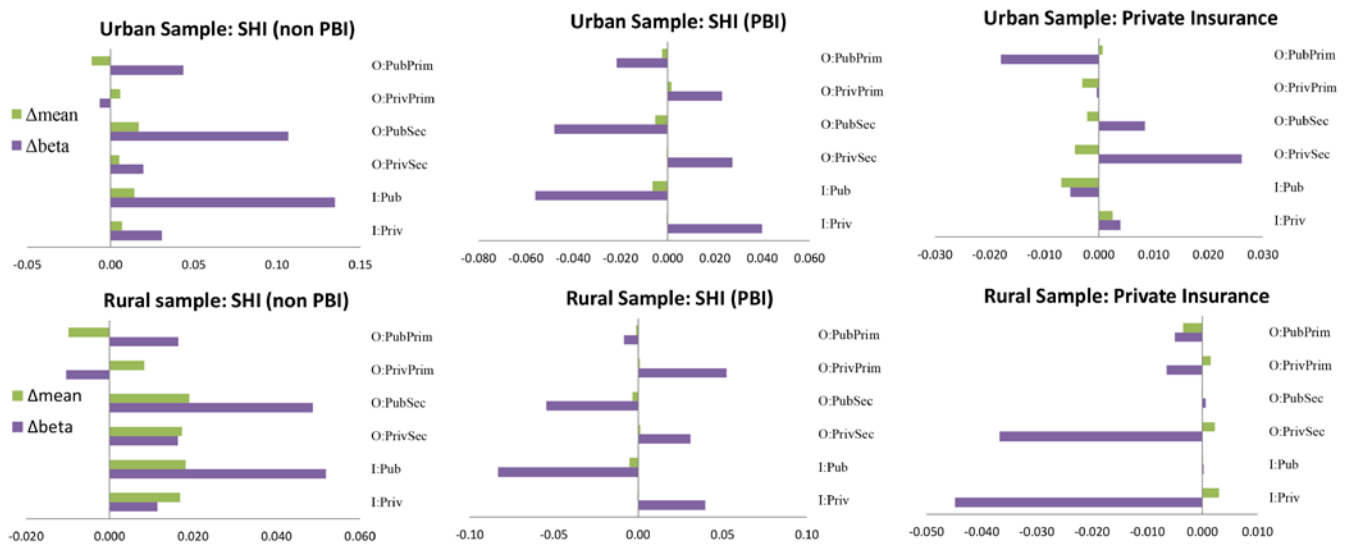
Note: each bar shows the extent of the change in access inequity that is due to changing elasticity and changing inequity of a given determinant according to Equation (6). Pre-JKN uses data from pooled SUSENAS 2011-2013 and post-JKN uses data from pooled SUSENAS 2015-2016.

As insurance is our key variables, we further investigate whether their changing elasticities post-JKN are driven by a real change in the propensity of health care use (Δbeta), rather than the implication of a mere change in their prevalence (Δmean). We use the three-way decomposition in Equation (7). From the summary statistics, we know that there are more individuals covered by SHI and PBI post-JKN, whilst private health insurance membership falls. The implication of these changing insurance rates to access inequities however depends on whether utilisation is increasing in that particular insurance variable and whether that insurance is more or less unequally distributed than utilisation itself. For SHI that is always more pro-rich than utilisation, Δmean will be positive (pro-rich) for health services that

tend to be used by SHI members. On the other hand, for PBI that is always more pro-poor than utilisation, Δmean will be positive for services that are less likely to be used by PBI beneficiaries. Δbeta reflects the relationship between insurance and utilisation. For SHI, $\Delta\text{beta}>0$ indicates that SHI members are increasingly more likely to use that particular health care services than before, whilst for PBI, $\Delta\text{beta}>0$ indicates that PBI beneficiaries are increasingly less to use that health care services than before.

Figure 6 provides a graphical representation of the results. In both urban and rural areas, Δbeta of SHI is positive and dominant, except for outpatient care at doctors' clinics, indicating that utilisation has become more sensitive to SHI status post-JKN. For PBI, in both areas, almost all Δelas are driven by Δmean : propensity to use public care increases whilst propensity to use private care falls. For private insurance, in urban areas, falling insurance rate has pro-poor contributions to most care, while Δbeta is also pro-poor for access to *puskesmas* services and public beds. In rural areas, Δbeta is pro-poor for all primary care and services at private hospitals, suggesting that privately insured individuals are increasingly less likely to use these services. A possible explanation for this may be that the smaller private insurance pool (from 4.6% of the sample pre-JKN to 0.5% post-JKN) consists of relatively healthy, wealthy individuals who need less medical attention.

Figure 6: Sources of changing elasticities of access determinants pre- and post-JKN by remoteness



Note: each bar shows the extent of the change in access inequality to a given health care that is due to changing elasticity is driven by changing mean and changing beta of a given insurance variable (Equation (7)). Pre-JKN uses data from pooled SUSENAS 2011-2013 and post-JKN uses data from pooled SUSENAS 2015-2016.

5. Conclusion

This paper has examined the extent of access inequities of various health care in Indonesia during 2011-2016. Access to outpatient care at public primary facilities, mainly *puskesmas*, is pro-poor, while access to most other types of health care is pro-rich. Access to inpatient care at public hospitals is nearly universal at the national level but this masks significant variation according to geographical location. Inpatient care at public hospitals in urban areas is pro-poor whilst it is pro-rich in rural areas. Pro-rich access is driven by pro-rich non-health factors, mainly households' economic status, geographical factors and non-targeted health insurance (SHI). Counteracting these factors are pro-poor health care needs. Inequities in local village development, health infrastructure, targeted health insurance (PBI) and unobservable factors have different contributions to access inequity depending on the type of care. Village development has pro-rich contributions on access to *puskesmas* services, while health infrastructure has pro-rich contributions to inpatient care, especially in rural areas. On the other hand, pro-poor PBI has pro-poor contributions on access to all health services at public facilities, and unobservables have pro-poor contributions on access to outpatient care at hospitals and private hospital beds.

With the introduction of JKN in 2014, which increases the aggregate health insurance rate, access to most health care services is still pro-rich but they become less pro-rich or more pro-poor than before. The biggest changes are observed for access to outpatient care at private clinics and inpatient care at private hospitals. Urban areas see bigger changes. The primary driver of this pro-poor movement is much weaker association between households' economic status and utilisation. This effect is consistent with the rationale of insurance as a consumption-smoothing mechanism; that is, the expansion of health insurance due to JKN lowers the incidence of a household having to pay very expensive medical bill in the event of an adverse health shock. Some of this pro-poor movement however is being counteracted by increasing propensity of utilisation by SHI members, except for services at private clinics. While SHI's distribution is more pro-poor post-JKN, SHI is still positively related to wealth so an increased utilisation by SHI members has pro-rich effect. For PBI, we find that PBI beneficiaries have higher propensity to use public facilities but lower propensity to use private facilities. We also observe changing roles of unobservable factors in explaining access inequity of private clinics and public hospital beds. Pre-JKN, unobservables have pro-poor contributions to access to these services but they turn pro-rich post-JKN.

Even with the introduction of JKN, there are still critical challenges in the Indonesian health care system that prevent it from being pro-poor, such lack of supply-side readiness, limited public investments in health infrastructure, human resource constraints and pharmaceutical maldistribution to rural and remote areas. Part of the unobservable factors may also capture the tendency for poorer households to

have lower health knowledge and awareness to seek medical care. Furthermore, while JKN may have covered most of formal sector workers, it has yet to reach more of those in informal sector.

Our results have several policy implications. First, while accesses to most health services in Indonesia are still favouring the wealthier, JKN has helped to reduce the size of the access gaps. Hence, as we move towards universal coverage, we may expect further reduction in access gap. Second, there may be wider scope to further improve access inequity in rural areas. Hitherto, bigger reductions in access gaps were observed in urban areas. Some policies may need to be specifically tailored to be more effective in rural areas. Third, policymakers need to ensure that distribution of targeted program (PBI) is pro-poor, since we find evidence that it becomes less pro-poor post-JKN. Fourth, we find no evidence that the distribution of health infrastructure has become more equal post-JKN. To serve more patients, improvements need to take place in both the physical quantity of health facilities and the adequacy of health personnel and equipment. Finally, policies that encourage economic growth in general may help to further reduce the existing pro-rich access inequity by increasing households' economic position.

References

- Bago d'Uva T, Jones AM, Van Doorslaer E. 2009. Measurement of horizontal inequity in health care utilisation using European panel data. *Journal of Health Economics* 28: 280–289.
- Bonfrer I, Van De Poel E, Grimm M, Van Doorslaer E. 2014. Does the distribution of healthcare utilization match needs in Africa? *Health Policy and Planning* 29: 921–937.
- Doorslaer EV, Koolman X, Jones AM. 2004. Explaining income-related inequalities in doctor utilisation in Europe. *Health Economics* 13: 629–647.
- Elwell-Sutton TM, Jiang CQ, Zhang WS, et al. 2013. Inequality and inequity in access to health care and treatment for chronic conditions in China: the Guangzhou Biobank Cohort Study. *Health Policy and Planning* 28: 467–479.
- Habicht, J. and Kunst, A.E. (2005). Social Inequalities in Health Care Services Utilization After Eight Years of Health Care Reforms: A Cross-sectional Study of Estonia, 1999. *Social Science & Medicine* 60: 777–787.
- Hotchkiss DR, Godha D, Do M. 2014. Expansion in the private sector provision of institutional delivery services and horizontal equity: evidence from Nepal and Bangladesh. *Health Policy Planning* 29(Suppl 1): i12–i19.
- Johar, M., Jones, G., Keane, M., Savage, E., Stavrunova, O. 2013. Discrimination In A Universal Health Care System: Explaining Socioeconomic Waiting Time Gaps. *Journal of Health Economics* 32(1): 181-194.
- Kakwani N, Wagstaff A, Van Doorslaer E. 1997. Socioeconomic inequalities in health: measurement, computation, and statistical inference. *Journal of Econometrics* 77: 87–103.
- Koolman X, Van Doorslaer E. 2004. On the interpretation of a concentration index of inequality. *Health Economics* 13: 649–656.
- Leung GM, Tin KY, O'Donnell O. 2009. Redistribution or horizontal equity in Hong Kong's mixed public–private health system: a policy conundrum. *Health Economics* 18: 37–54.
- Liu GG, Zhao Z, Cai R., Yamada T, Yamada T. 2002. Equity in health care access to: assessing the urban health insurance reform in China. *Social Science & Medicine* 55: 1779–1794.
- Lu JR, Leung GM, Kwon S, Tin KYK, Van Doorslaer E, O'Donnell O. 2007. Horizontal equity in health care utilization evidence from three high-income Asian economies. *Social Science & Medicine* 64: 199–212.
- O'Donnell O, Van Doorsslaer E, Wagstaff A, Lindelow M. 2008. *Analyzing Health Equity Using Household Survey Data: A Guide to Techniques and Their Implementation*. World Bank Publications.
- Paredes, K.P.P., 2016. Inequality in the use of maternal and child health services in the Philippines: do pro-poor health policies result in more equitable use of services?. *International Journal for Equity in Health*, 15(1), p.181.

Quayyum, Z., Khan, M.N.U., Quayyum, T., Nasreen, H.E., Chowdhury, M. and Ensor, T., 2013. "Can community level interventions have an impact on equity and utilization of maternal health care"– Evidence from rural Bangladesh. *International journal for equity in health*, 12(1), p.22.

Saito, E., Gilmour, S., Yoneoka, D., Gautam, G.S., Rahman, M.M., Shrestha, P.K. and Shibuya, K., 2016. Inequality and inequity in healthcare utilization in urban Nepal: a cross-sectional observational study. *Health policy and planning*, 31(7), pp.817-824.

UNICEF. 2012. Issue Briefs: Maternal and child health. Available from https://www.unicef.org/indonesia/A5- E_Issue_Brief_Maternal_REV.pdf

Van Doorslaer E, Masseria C. 2004. Income-Related Inequality in the Use of Medical Care in 21 OECD Countries. OECD.

Van Doorslaer E, Wagstaff A, Van Der Burg H, et al. 2000. Equity in the delivery of health care in Europe and the US. *Journal of Health Economics* 19: 553.

Veugelers, P.J. and Yip, A.M., 2003. Socioeconomic disparities in health care use: Does universal coverage reduce inequalities in health? *Journal of Epidemiology and Community Health*, 57(6), pp.424-428.

Wagstaff A, Van Doorslaer E. 2000. Measuring and testing for inequity in the delivery of health care. *Journal of Human Resources* 35: 716–733.

Wagstaff, A., van Doorslaer, E., Watanabe, N. 2003. On Decomposing the Causes of Health Sector Inequalities, with an Application to Malnutrition Inequalities in Vietnam. *Journal of Econometrics* 112(1): 219–27.

Xie, E., 2009. Income-related Inequality of Health and Health Care Utilization. *Economic Research Journal*, 2, pp.92-105.

APPENDIX

Detailed results

1. ALLSAMPLE: Detailed results

	Mean		Concentration Index		O: Public Primary Coefficients		O: Public Primary Elasticity		O: Private Primary Coefficients		O: Private Primary Elasticity	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health needs												
Age	27.8926	28.3973	0.1909	0.2805	-0.0069	-0.0059	-0.9376	-0.7422	-0.0040	-0.0108	-0.5105	-0.7719
Male	0.5063	0.5062	-0.0100	-0.0132	0.0030	0.0012	0.1503	0.0951	0.0002	0.0037	-0.0007	0.0675
# sick days	0.7325	0.8398	-0.0853	-0.0732	0.0120	0.0126	0.2001	0.2178	0.0129	0.0246	0.2476	0.2453
Non-health												
Age of household head	47.116	47.741	0.2257	0.2963	-0.0003	-0.0003	-0.3408	-0.3266	-0.0001	-0.0006	-0.1802	-0.3446
Male household head	0.9121	0.9078	0.0367	0.0323	-0.0049	-0.0035	-0.1016	-0.0645	-0.0062	-0.0049	-0.1490	-0.0528
Wealth quantile	3.1205	3.1055	0.7959	0.7969	-0.0052	-0.0070	-0.3710	-0.4443	0.0088	0.0089	0.7242	0.3285
Education of household head	2.1247	2.2020	0.2598	0.2417	-0.0034	-0.0032	-0.1665	-0.1459	0.0009	-0.0031	0.0503	-0.0815
Married	0.4653	0.4656	0.0115	0.0189	0.0138	0.0076	0.1458	0.0731	0.0123	0.0220	0.1500	0.1218
Divorced/separated	0.0116	0.0127	-0.0671	-0.0676	0.0055	0.0055	0.0014	0.0015	0.0068	0.0124	0.0021	0.0019
Widowed	0.0379	0.0378	-0.0722	-0.0591	0.0153	0.0133	0.0132	0.0104	0.0109	0.0231	0.0108	0.0104
Insurance												
SHI (non PBI)	0.1266	0.2277	0.6108	0.3890	-0.0074	0.0067	-0.0212	0.0313	0.0073	-0.0008	0.0244	-0.0022
PBI	0.2652	0.2861	-0.4157	-0.3655	0.0183	0.0308	0.1105	0.1812	-0.0035	-0.0116	-0.0241	-0.0393
Private	0.0450	0.0158	0.3821	0.7060	-0.0111	-0.0204	-0.0113	-0.0066	0.0071	0.0072	0.0085	0.0014
SHI/PBI and private	0.0222	0.0035	0.2726	0.7287	0.0303	-0.0145	0.0153	-0.0010	0.0132	0.0134	0.0077	0.0006
Geo												
Rural	0.4951	0.4870	-0.5976	-0.5428	-0.0048	-0.0053	-0.0542	-0.0535	-0.0088	0.0057	-0.1142	0.0329
Village development index	1.3803	1.8461	0.2001	0.1925	0.0090	0.0121	0.2832	0.4585	-0.0017	-0.0163	-0.0624	-0.3577
Health infrastructure												
Primary	0.8143	0.8428	0.0347	0.0301	0.0023	0.0084	0.0433	0.1450	-0.0023	0.0039	-0.0494	0.0387
Secondary	0.8064	0.8350	0.0537	0.0453	0.0151	-0.0012	0.2760	-0.0202	0.0073	0.0380	0.1537	0.3772
Maternal	0.9360	0.9423	0.0248	0.0218	-0.0255	-0.0171	-0.5419	-0.3324	-0.0034	0.0177	-0.0825	0.1986

ALL SAMPLE: Detailed results (continued)

	O: Public Secondary		O: Public Secondary		O: Private Secondary		O: Private Secondary	
	Coefficients		Elasticity		Coefficients		Elasticity	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health needs								
Age	-0.0006	-0.0006	0.0792	0.1887	-0.0009	-0.0007	-0.6672	-0.4106
Male	0.0016	0.0014	0.2332	0.1449	0.0017	-0.0002	0.3002	-0.0008
# sick days	0.0049	0.0079	0.4942	0.6103	0.0029	0.0049	0.3682	0.4622
Non-health								
Age of household head	0.0001	0.0001	0.4113	0.4063	0.0000	0.0000	0.1408	0.1953
Male household head	-0.0007	-0.0014	-0.0918	-0.1184	-0.0013	-0.0024	-0.2042	-0.2427
Wealth quantile	0.0010	0.0011	0.4176	0.3080	0.0015	0.0021	0.8188	0.7157
Education of household head	0.0015	0.0015	0.4417	0.2986	0.0013	0.0019	0.4666	0.4642
Married	0.0001	-0.0006	0.0072	-0.0254	0.0025	0.0027	0.1989	0.1405
Divorced/separated	-0.0021	-0.0007	-0.0033	-0.0008	0.0004	0.0005	0.0009	0.0007
Widowed	-0.0013	-0.0021	-0.0067	-0.0072	0.0004	-0.0026	0.0024	-0.0111
Insurance								
SHI (non PBI)	0.0029	0.0137	0.0510	0.2868	0.0022	0.0072	0.0475	0.1832
PBI	0.0028	0.0059	0.1037	0.1553	0.0001	-0.0007	0.0035	-0.0216
Private	-0.0014	0.0009	-0.0085	0.0013	0.0070	0.0406	0.0548	0.0722
SHI/PBI and private	0.0059	0.0041	0.0183	0.0013	0.0102	0.0372	0.0393	0.0146
Geo								
Rural	-0.0024	-0.0027	-0.1621	-0.1226	-0.0005	-0.0007	-0.0415	-0.0388
Village development index	0.0004	-0.0005	0.0788	-0.0812	0.0031	0.0028	0.7293	0.5865
Health infrastructure								
Primary	-0.0010	-0.0022	-0.1094	-0.1682	-0.0010	0.0004	-0.1397	0.0342
Secondary	0.0014	0.0016	0.1539	0.1232	-0.0004	0.0031	-0.0548	0.2881
Maternal	-0.0018	-0.0021	-0.2296	-0.1792	-0.0041	-0.0097	-0.6565	-1.0257

ALL SAMPLE: Detailed results (continued)

	I: Public		I: Public		I: Private		I: Private	
	Coefficients		Elasticity		Coefficients		Elasticity	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health needs								
Age	-0.0015	-0.0007	-0.4441	-0.6074	-0.0013	-0.0033	-0.9043	-1.2776
Male	0.0044	0.0084	0.4589	0.5357	0.0036	0.0082	0.6173	0.7118
# sick days	0.0050	0.0072	0.3174	0.3084	0.0025	0.0044	0.5159	0.2265
Non-health								
Age of household head	0.0000	0.0000	0.1791	0.0732	0.0000	0.0001	0.2539	0.2052
Male household head	-0.0013	-0.0007	-0.1018	-0.0331	-0.0016	-0.0016	-0.1985	-0.0907
Wealth quantile	0.0012	0.0007	0.3141	0.1082	0.0021	0.0034	0.9259	0.6609
Education of household head	0.0007	-0.0003	0.1217	-0.0301	0.0011	0.0004	0.3237	0.0592
Married	0.0075	0.0124	0.3018	0.2951	0.0074	0.0215	0.4836	0.6185
Divorced/separated	0.0041	0.0085	0.0041	0.0055	0.0036	0.0131	0.0059	0.0103
Widowed	0.0065	0.0116	0.0212	0.0224	0.0051	0.0172	0.0272	0.0404
Insurance								
SHI (non PBI)	0.0022	0.0163	0.0241	0.1904	0.0028	0.0090	0.0503	0.1269
PBI	0.0068	0.0107	0.1559	0.1572	0.0003	-0.0002	0.0114	-0.0027
Private	-0.0001	-0.0012	-0.0004	-0.0009	0.0068	0.0287	0.0425	0.0281
SHI/PBI and private	0.0114	0.0033	0.0218	0.0006	0.0081	0.0366	0.0250	0.0079
Geo								
Rural	-0.0019	-0.0021	-0.0790	-0.0529	-0.0005	-0.0005	-0.0344	-0.0165
Village development index	-0.0039	-0.0052	-0.4570	-0.4893	0.0015	0.0022	0.2947	0.2566
Health infrastructure								
Primary	0.0018	0.0023	0.1294	0.0978	-0.0011	-0.0006	-0.1287	-0.0333
Secondary	0.0065	0.0038	0.4514	0.1622	0.0024	0.0123	0.4514	0.6357
Maternal	0.0053	0.0134	0.4267	0.6490	-0.0013	-0.0100	-0.1640	-0.5820

2. URBAN: Contributions of various determinants to access inequity pre- and post-JKN

	O: Public Primary		O: Private primary		O: Public secondary		O: Private secondary		I: Public		I: Private	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health needs												
Age	-0.1225	-0.2255	-0.0703	-0.2240	0.0223	0.0708	-0.0822	-0.1114	-0.0518	-0.1743	-0.1199	-0.3697
Male	-0.0035	-0.0016	-0.0001	-0.0015	-0.0047	-0.0020	-0.0056	0.0019	-0.0095	-0.0111	-0.0113	-0.0155
# sick days	-0.0159	-0.0173	-0.0207	-0.0210	-0.0414	-0.0498	-0.0310	-0.0380	-0.0276	-0.0269	-0.0219	-0.0186
Non-health												
Age of household head	-0.0543	-0.1378	-0.0330	-0.1354	0.0504	0.1302	0.0111	0.0511	0.0144	-0.0009	0.0255	0.0264
Male household head	-0.0080	-0.0027	-0.0109	-0.0020	-0.0059	-0.0071	-0.0151	-0.0175	-0.0063	-0.0008	-0.0176	-0.0061
Wealth quintile	-0.5202	-0.5360	0.4838	0.2211	0.2809	0.0926	0.6097	0.5671	0.1504	-0.0625	0.6797	0.4898
Education of household head	-0.0960	-0.0723	-0.0045	-0.0372	0.1137	0.0849	0.1354	0.1325	0.0293	-0.0157	0.0998	0.0205
Married	0.0012	0.0010	0.0014	0.0020	-0.0001	-0.0008	0.0019	0.0028	0.0029	0.0055	0.0052	0.0116
Divorced/separated	-0.0001	-0.0002	-0.0003	-0.0003	0.0005	0.0002	-0.0002	-0.0002	-0.0004	-0.0007	-0.0008	-0.0013
Widowed	-0.0013	-0.0008	-0.0013	-0.0007	0.0008	0.0007	-0.0007	0.0006	-0.0021	-0.0015	-0.0032	-0.0032
Insurance												
SHI non PBI	-0.0129	0.0161	0.0141	0.0034	0.0342	0.1282	0.0275	0.0690	0.0181	0.0920	0.0284	0.0571
PBI	-0.0476	-0.0733	0.0125	0.0162	-0.0466	-0.0549	-0.0026	0.0081	-0.0701	-0.0607	-0.0033	-0.0016
Private	-0.0070	-0.0070	0.0045	0.0018	-0.0045	0.0029	0.0296	0.0596	0.0001	-0.0000	0.0243	0.0260
SHI/PBI and private	0.0039	-0.0008	0.0027	0.0005	0.0068	0.0019	0.0161	0.0124	0.0074	0.0008	0.0102	0.0073
Geo												
Village development index	0.0612	0.0738	-0.0057	-0.0519	0.0404	0.0140	0.0710	0.0372	-0.0553	-0.0572	0.0175	0.0233
Health infrastructure												
Primary	-0.0006	0.0021	-0.0024	-0.0013	-0.0014	-0.0007	-0.0020	0.0046	0.0013	0.0015	-0.0050	-0.0028
Secondary	0.0054	0.0023	-0.0003	0.0068	-0.0044	-0.0043	0.0018	0.0064	0.0044	0.0009	0.0107	0.0106
Maternal	-0.0030	-0.0033	0.0005	-0.0005	-0.0030	-0.0024	-0.0035	-0.0038	0.0006	0.0004	-0.0003	-0.0024
Province FE	-0.0018	-0.0059	-0.0022	-0.0032	-0.0087	-0.0210	-0.0037	-0.0212	-0.0063	-0.0144	-0.0078	-0.0014
Total observed	-0.8228	-0.9891	0.3684	-0.2273	0.4296	0.3834	0.7523	0.7612	-0.0005	-0.3257	0.7102	0.2379

Other unobserved	0.5628	0.7334	-0.2334	0.2448	-0.3666	-0.3386	-0.4268	-0.4220	-0.0752	0.2404	-0.4323	-0.0392
Total	-0.2600	-0.2557	0.1350	0.0175	0.0630	0.0448	0.3255	0.3392	-0.0757	-0.0853	0.2779	0.1986
HI (Total – Health needs)	-0.1182	-0.0114	0.2261	0.2640	0.0868	0.0258	0.4443	0.4868	0.0132	0.1270	0.4310	0.6023

3. URBAN: Oaxaca-Blinder type decomposition for change in access inequity pre- and post-JKN

	O: Public Primary		O: Private Primary		O: Public Secondary		O: Private Secondary		I: Public		I: Private	
	Δ con	Δ elas	Δ con	Δ elas	Δ con	Δ elas	Δ con	Δ elas	Δ con	Δ elas	Δ con	Δ elas
Health needs												
Age	-0.1284	0.0254	-0.1275	-0.0261	0.0403	0.0082	-0.0634	0.0342	-0.0992	-0.0233	-0.2105	-0.0394
Male	-0.0003	0.0021	-0.0003	-0.0011	-0.0003	0.0031	0.0003	0.0072	-0.0018	0.0003	-0.0025	-0.0016
# sick days	0.0001	-0.0014	0.0002	-0.0005	0.0002	-0.0089	0.0002	-0.0072	0.0001	0.0006	0.0001	0.0033
Non-health												
Age of household head	-0.0783	-0.0052	-0.0769	-0.0255	0.0740	0.0059	0.0290	0.0110	-0.0005	-0.0148	0.0150	-0.0141
Male household head	0.0007	0.0046	0.0005	0.0083	0.0019	-0.0031	0.0047	-0.0071	0.0002	0.0053	0.0016	0.0098
Wealth quantile	-0.0203	0.0045	0.0084	-0.2711	0.0035	-0.1918	0.0215	-0.0641	-0.0024	-0.2105	0.0185	-0.2085
Education of household head	0.0076	0.0161	0.0039	-0.0367	-0.0089	-0.0198	-0.0140	0.0111	0.0017	-0.0467	-0.0022	-0.0770
Married	0.0005	-0.0007	0.0009	-0.0003	-0.0004	-0.0003	0.0013	-0.0004	0.0025	0.0001	0.0053	0.0012
Divorced/separated	0.0000	-0.0001	0.0000	0.0000	0.0000	-0.0004	0.0000	0.0000	0.0000	-0.0003	-0.0001	-0.0004
Widowed	0.0003	0.0002	0.0003	0.0004	-0.0003	0.0002	-0.0002	0.0015	0.0006	0.0000	0.0012	-0.0012
Insurance												
SHI (non PBI)	-0.0055	0.0344	-0.0012	-0.0094	-0.0436	0.1376	-0.0235	0.0650	-0.0313	0.1052	-0.0194	0.0481
PBI	0.0177	-0.0433	-0.0039	0.0076	0.0132	-0.0216	-0.0020	0.0127	0.0146	-0.0052	0.0004	0.0013
Private	-0.0025	0.0025	0.0006	-0.0033	0.0010	0.0064	0.0210	0.0091	0.0000	-0.0001	0.0091	-0.0075
SHI/PBI and private	-0.0004	-0.0043	0.0003	-0.0025	0.0010	-0.0059	0.0065	-0.0102	0.0004	-0.0070	0.0038	-0.0067
Geo												
Village development index	-0.0074	0.0200	0.0052	-0.0514	-0.0014	-0.0250	-0.0037	-0.0301	0.0057	-0.0076	-0.0023	0.0081
Health infrastructure												
Primary	-0.0006	0.0033	0.0004	0.0006	0.0002	0.0004	-0.0014	0.0080	-0.0005	0.0006	0.0008	0.0014
Secondary	-0.0007	-0.0025	-0.0021	0.0091	0.0013	-0.0012	-0.0020	0.0066	-0.0003	-0.0032	-0.0032	0.0031
Maternal	0.0008	-0.0011	0.0001	-0.0011	0.0006	0.0000	0.0009	-0.0012	-0.0001	-0.0001	0.0006	-0.0026

4. URBAN: Detailed results

	Mean		Concentration Index		O: Public Primary Coefficients		O: Public Primary Elasticity		O: Private Primary Coefficients		O: Private Primary Elasticity	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health needs												
Age	28.0374	28.5067	0.1229	0.2855	-0.0071	-0.0058	-0.9962	-0.7899	-0.0058	-0.0111	-0.5720	-0.7847
Male	0.5050	0.5051	-0.0180	-0.0216	0.0039	-0.0005	0.1917	0.0735	0.0004	0.0044	0.0081	0.0712
# sick days	0.6627	0.7927	-0.0916	-0.0913	0.0109	0.0112	0.1735	0.1891	0.0173	0.0248	0.2254	0.2306
Non-health												
Age of household head	47.4177	47.9402	0.1386	0.3208	-0.0003	-0.0004	-0.3919	-0.4296	-0.0003	-0.0007	-0.2384	-0.4220
Male household head	0.9041	0.8994	0.0820	0.0647	-0.0045	-0.0022	-0.0978	-0.0416	-0.0075	-0.0030	-0.1334	-0.0316
Wealth quantile	3.8269	3.7367	0.6373	0.6624	-0.0089	-0.0102	-0.8163	-0.8093	0.0101	0.0076	0.7591	0.3337
Education of household head	2.3815	2.4424	0.2867	0.2594	-0.0059	-0.0054	-0.3348	-0.2787	-0.0003	-0.0050	-0.0157	-0.1436
Married	0.4547	0.4558	0.0101	0.0186	0.0110	0.0055	0.1203	0.0533	0.0155	0.0200	0.1389	0.1072
Divorced/separated	0.0121	0.0134	-0.1063	-0.1119	0.0029	0.0053	0.0008	0.0015	0.0104	0.0151	0.0025	0.0022
Widowed	0.0371	0.0384	-0.0986	-0.0724	0.0151	0.0142	0.0135	0.0115	0.0185	0.0214	0.0135	0.0096
Insurance												
SHI (non PBI)	0.1938	0.3050	0.4790	0.3575	-0.0058	0.0070	-0.0268	0.0450	0.0077	0.0027	0.0293	0.0096
PBI	0.2022	0.2225	-0.4956	-0.3994	0.0198	0.0389	0.0961	0.1835	-0.0063	-0.0155	-0.0252	-0.0405
Private	0.0610	0.0270	0.4331	0.6682	-0.0110	-0.0183	-0.0162	-0.0104	0.0086	0.0086	0.0103	0.0027
SHI/PBI and private	0.0273	0.0059	0.3329	0.6970	0.0181	-0.0091	0.0118	-0.0011	0.0153	0.0113	0.0082	0.0008
Geo												
Village development index	1.7581	2.2314	0.1285	0.1168	0.0113	0.0133	0.4764	0.6321	-0.0013	-0.0170	-0.0444	-0.4442
Health infrastructure												
Primary	0.8733	0.8967	0.0175	0.0135	-0.0016	0.0080	-0.0335	0.1530	-0.0078	-0.0094	-0.1343	-0.0990
Secondary	0.8969	0.9124	0.0182	0.0139	0.0138	0.0084	0.2970	0.1623	-0.0009	0.0453	-0.0166	0.4856
Maternal	0.9722	0.9746	0.0049	0.0039	-0.0264	-0.0407	-0.6148	-0.8411	0.0052	-0.0105	0.0987	-0.1197

URBAN: Detailed results (continued)

	O: Public Secondary Coefficients		O: Public Secondary Elasticity		O: Private Secondary Coefficients		O: Private Secondary Elasticity	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	Health needs							
Age	-0.0007	-0.0005	0.1814	0.2479	-0.0013	-0.0009	-0.6686	-0.3904
Male	0.0023	0.0008	0.2606	0.0906	0.0026	-0.0015	0.3130	-0.0874
# sick days	0.0062	0.0090	0.4523	0.5460	0.0044	0.0068	0.3378	0.4162
Non-health								
Age of household head	0.0001	0.0001	0.3634	0.4060	0.0000	0.0000	0.0798	0.1592
Male household head	-0.0007	-0.0016	-0.0716	-0.1090	-0.0017	-0.0039	-0.1840	-0.2708
Wealth quantile	0.0011	0.0005	0.4408	0.1399	0.0021	0.0030	0.9567	0.8562
Education of household head	0.0015	0.0018	0.3964	0.3272	0.0017	0.0027	0.4721	0.5109
Married	-0.0003	-0.0012	-0.0141	-0.0417	0.0035	0.0043	0.1847	0.1498
Divorced/separated	-0.0038	-0.0016	-0.0050	-0.0015	0.0012	0.0013	0.0017	0.0013
Widowed	-0.0019	-0.0034	-0.0077	-0.0098	0.0016	-0.0028	0.0067	-0.0084
Insurance								
SHI (non PBI)	0.0034	0.0154	0.0714	0.3588	0.0025	0.0082	0.0573	0.1930
PBI	0.0042	0.0081	0.0939	0.1375	0.0002	-0.0012	0.0053	-0.0203
Private	-0.0015	0.0021	-0.0103	0.0044	0.0096	0.0430	0.0684	0.0892
SHI/PBI and private	0.0068	0.0060	0.0204	0.0027	0.0152	0.0394	0.0483	0.0178
Geo								
Village development index	0.0016	0.0007	0.3141	0.1196	0.0027	0.0019	0.5530	0.3187
Health infrastructure								
Primary	-0.0008	-0.0008	-0.0778	-0.0555	-0.0011	0.0050	-0.1141	0.3423
Secondary	-0.0025	-0.0044	-0.2415	-0.3069	0.0009	0.0066	0.0976	0.4602
Maternal	-0.0057	-0.0083	-0.6064	-0.6140	-0.0063	-0.0129	-0.7167	-0.9677

URBAN: Detailed results (continued)

	I: Public Coefficients		I: Public Elasticity		I: Private Coefficients		I: Private Elasticity	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health needs								
Age	-0.0017	-0.0028	-0.4213	-0.6105	-0.0017	-0.0041	-0.9749	-1.2951
Male	0.0052	0.0077	0.5301	0.5158	0.0048	0.0101	0.6260	0.7172
# sick days	0.0054	0.0071	0.3010	0.2948	0.0035	0.0052	0.2394	0.2034
Non-health								
Age of household head	0.0000	0.0000	0.1040	-0.0029	0.0000	0.0000	0.1839	0.0824
Male household head	-0.0010	-0.0003	-0.0764	-0.0118	-0.0023	-0.0022	-0.2147	-0.0949
Wealth quantile	0.0007	-0.0005	0.2359	-0.0944	0.0027	0.0040	1.0666	0.7394
Education of household head	0.0005	-0.0005	0.1021	-0.0607	0.0014	0.0007	0.3480	0.0792
Married	0.0075	0.0124	0.2849	0.2941	0.0110	0.0281	0.5117	0.6261
Divorced/separated	0.0034	0.0088	0.0035	0.0059	0.0062	0.0182	0.0077	0.0115
Widowed	0.0067	0.0107	0.0209	0.0213	0.0086	0.0237	0.0327	0.0445
Insurance								
SHI (non PBI)	0.0023	0.0162	0.0378	0.2575	0.0030	0.0107	0.0592	0.1596
PBI	0.0083	0.0131	0.1414	0.1519	0.0003	0.0004	0.0066	0.0040
Private	0.0000	-0.0000	0.0001	0.0000	0.0090	0.0294	0.0562	0.0388
SHI/PBI and private	0.0097	0.0036	0.0222	0.0011	0.0109	0.0364	0.0306	0.0104
Geo								
Village development index	-0.0029	-0.0042	-0.4310	-0.4901	0.0008	0.0018	0.1366	0.1995
Health infrastructure								
Primary	0.0010	0.0024	0.0750	0.1116	-0.0032	-0.0047	-0.2831	-0.2060
Secondary	0.0032	0.0014	0.2435	0.0679	0.0064	0.0170	0.5855	0.7579
Maternal	0.0015	0.0018	0.1232	0.0929	-0.0007	-0.0127	-0.0656	-0.6054

5. RURAL: Contributions of various determinants to access inequity pre- and post-JKN

	O: Public Primary		O: Private Primary		O: Public Secondary		O: Private Secondary		I: Public		I: Private	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health needs												
Age	-0.2816	-0.2460	-0.0764	-0.2640	0.0309	0.0787	-0.0966	-0.0541	-0.1354	-0.2067	-0.1736	-0.3952
Male	-0.0004	-0.0006	0.0000	-0.0003	-0.0006	-0.0013	-0.0008	-0.0015	-0.0012	-0.0030	-0.0018	-0.0037
# sick days	-0.0124	-0.0101	-0.0164	-0.0107	-0.0317	-0.0295	-0.0260	-0.0250	-0.0186	-0.0132	-0.0171	-0.0111
Non-health												
Age of household head	-0.0697	-0.0554	-0.0223	-0.0769	0.1211	0.1083	0.0397	0.0555	0.0724	0.0441	0.0948	0.1182
Male household head	-0.0078	-0.0073	-0.0137	-0.0062	-0.0094	-0.0095	-0.0192	-0.0096	-0.0100	-0.0045	-0.0115	-0.0074
Wealth quintile	-0.0841	-0.1410	0.5057	0.2013	0.2729	0.3052	0.5901	0.5372	0.2067	0.1339	0.6238	0.4501
Education of household head	0.0118	0.0075	0.0267	-0.0016	0.0748	0.0394	0.0310	0.0244	0.0252	0.0053	0.0233	0.0010
Married	0.0083	0.0047	0.0048	0.0068	-0.0008	-0.0021	0.0047	-0.0001	0.0153	0.0147	0.0168	0.0291
Divorced/separated	-0.0001	-0.0001	0.0000	-0.0001	0.0001	0.0001	0.0002	0.0002	-0.0003	-0.0003	-0.0001	-0.0005
Widowed	-0.0006	-0.0005	0.0001	-0.0006	0.0006	0.0005	0.0012	0.0016	-0.0010	-0.0011	-0.0004	-0.0015
Insurance												
SHI non PBI	-0.0054	0.0072	0.0100	-0.0026	0.0155	0.0442	0.0209	0.0306	0.0091	0.0301	0.0217	0.0161
PBI	-0.0345	-0.0444	0.0060	0.0095	-0.0333	-0.0432	0.0075	0.0142	-0.0488	-0.0420	-0.0033	0.0060
Private	-0.0006	-0.0001	0.0007	0.0004	-0.0001	0.0006	0.0012	0.0064	0.0004	0.0002	0.0014	0.0034
SHI/PBI and private	0.0023	-0.0001	0.0008	0.0003	0.0018	0.0001	0.0011	0.0021	0.0026	0.0003	0.0013	0.0017
Geo												
Village development index	0.0301	0.0317	0.0274	0.0047	0.0086	-0.0231	0.0329	0.0263	-0.0060	-0.0247	0.0145	0.0306
Health infrastructure												
Primary	0.0011	0.0040	-0.0008	0.0009	-0.0035	-0.0047	-0.0008	-0.0001	0.0030	0.0004	0.0033	0.0036
Secondary	0.0078	-0.0037	0.0015	0.0051	0.0220	0.0184	0.0158	0.0178	0.0145	0.0038	0.0122	0.0257
Maternal	-0.0127	-0.0002	-0.0059	0.0048	-0.0115	-0.0015	-0.0027	-0.0091	0.0068	0.0156	0.0056	-0.0109
Province FE	-0.0014	0.0009	-0.0025	0.0006	-0.0119	0.0010	-0.0215	0.0103	-0.0060	0.0002	-0.0139	0.0082
Total observed	-0.4500	-0.4534	0.4456	-0.1285	0.4455	0.0056	0.5787	0.6273	0.1293	-0.0523	0.5971	0.2592

Other unobserved	0.3233	0.3208	-0.1689	0.2702	-0.3295	-0.3668	-0.2992	-0.3420	-0.0459	0.1085	-0.2965	0.0082
Total	-0.1266	-0.1326	0.2767	0.1417	0.1160	0.1192	0.2795	0.2852	0.0834	0.0562	0.3006	0.2675
HI (Total – Health needs)	0.1677	0.1241	0.3695	0.4168	0.1174	0.0714	0.4029	0.3658	0.2386	0.2791	0.4931	0.6775

6. RURAL: Oaxaca-Blinder type decomposition for change in access inequity pre- and post-JKN

	O: Public Primary		O: Private Primary		O: Public Secondary		O: Private Secondary		I: Public		I: Private	
	Δ con	Δ elas	Δ con	Δ elas	Δ con	Δ elas	Δ con	Δ elas	Δ con	Δ elas	Δ con	Δ elas
Health needs												
Age	-0.0249	0.0605	-0.0268	-0.1608	0.0080	0.0398	-0.0055	0.0479	-0.0210	-0.0503	-0.0401	-0.1815
Male	-0.0003	0.0000	-0.0001	-0.0002	-0.0006	-0.0002	-0.0006	0.0000	-0.0013	-0.0006	-0.0016	-0.0003
# sick days	0.0035	-0.0012	0.0035	0.0019	0.0102	-0.0080	0.0086	-0.0077	0.0046	0.0007	0.0039	0.0021
Non-health												
Age of household head	-0.0011	0.0154	-0.0016	-0.0530	0.0022	-0.0151	0.0011	0.0147	0.0009	-0.0291	0.0024	0.0209
Male household head	-0.0003	0.0009	-0.0002	0.0078	-0.0004	0.0003	-0.0004	0.0100	-0.0002	0.0057	-0.0003	0.0043
Wealth quantile	-0.0055	-0.0514	0.0079	-0.3123	0.0119	0.0204	0.0210	-0.0739	0.0052	-0.0780	0.0176	-0.1913
Education of household head	-0.0002	-0.0040	0.0000	-0.0283	-0.0012	-0.0343	-0.0008	-0.0058	-0.0002	-0.0198	0.0000	-0.0222
Married	0.0002	-0.0039	0.0003	0.0017	-0.0001	-0.0013	0.0000	-0.0048	0.0007	-0.0013	0.0014	0.0109
Divorced/separated	0.0000	0.0000	0.0000	-0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000	-0.0004
Widowed	0.0000	0.0002	0.0000	-0.0006	0.0000	-0.0001	0.0000	0.0004	0.0000	-0.0001	0.0000	-0.0010
Insurance												
SHI (non PBI)	-0.0121	0.0246	0.0043	-0.0168	-0.0742	0.1029	-0.0515	0.0612	-0.0506	0.0716	-0.0270	0.0214
PBI	0.0049	-0.0148	-0.0011	0.0046	0.0048	-0.0147	-0.0016	0.0084	0.0046	-0.0066	-0.0007	0.0100
Private	0.0000	0.0006	0.0002	-0.0006	0.0004	0.0003	0.0041	0.0012	0.0001	-0.0003	0.0022	-0.0001
SHI/PBI and private	-0.0001	-0.0023	0.0002	-0.0007	0.0001	-0.0017	0.0016	-0.0006	0.0002	-0.0026	0.0013	-0.0009
Geo												
Village development index	0.0000	0.0000	0.0002	-0.0229	-0.0012	-0.0304	0.0014	-0.0080	-0.0013	-0.0174	0.0016	0.0144
Health infrastructure												
Primary	-0.0002	0.0031	0.0000	0.0017	0.0002	-0.0013	0.0000	0.0007	0.0000	-0.0025	-0.0002	0.0005
Secondary	0.0003	-0.0119	-0.0004	0.0041	-0.0015	-0.0020	-0.0015	0.0035	-0.0003	-0.0103	-0.0021	0.0157
Maternal	0.0000	0.0125	-0.0004	0.0111	0.0001	0.0099	0.0007	-0.0071	-0.0012	0.0100	0.0009	-0.0174

7. RURAL: Detailed results

	Mean		Concentration Index		O: Public Primary Coefficients		O: Public Primary Elasticity		O: Private Primary Coefficients		O: Private Primary Elasticity	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health needs												
Age	27.7448	28.2821	0.3152	0.3508	-0.0068	-0.7013	-0.8933	-0.7013	-0.0021	-0.0106	-0.2425	-0.7528
Male	0.5075	0.5074	-0.0031	-0.0053	0.0022	0.1168	0.1195	0.1168	0.0002	0.0030	-0.0035	0.0653
# sick days	0.8036	0.8894	-0.0554	-0.0412	0.0129	0.2446	0.2954	0.2446	0.0092	0.0244	0.5724	0.2606
Non-health												
Age of household head	46.8077	47.5297	0.2852	0.2912	-0.0002	-0.1903	-0.2444	-0.1903	0.0000	-0.0005	-0.0782	-0.2640
Male household head	0.9202	0.9167	0.0734	0.0763	-0.0054	-0.0952	-0.1070	-0.0952	-0.0051	-0.0073	-0.1872	-0.0811
Wealth quantile	2.4000	2.4498	0.6887	0.7168	-0.0024	-0.1967	-0.1220	-0.1967	0.0077	0.0095	0.7343	0.2809
Education of household head	1.8627	1.9489	0.1405	0.1362	0.0021	0.0550	0.0837	0.0550	0.0026	-0.0005	0.1902	-0.0114
Married	0.4761	0.4760	0.0494	0.0519	0.0164	0.0899	0.1687	0.0899	0.0051	0.0228	0.0970	0.1308
Divorced/separated	0.0110	0.0120	-0.0668	-0.0694	0.0079	0.0013	0.0019	0.0013	0.0003	0.0082	0.0001	0.0012
Widowed	0.0387	0.0393	-0.0505	-0.0507	0.0150	0.0095	0.0125	0.0095	-0.0008	0.0230	-0.0013	0.0109
Insurance												
SHI (non PBI)	0.0580	0.1464	0.6132	0.2288	-0.0070	0.0314	-0.0087	0.0314	0.0070	-0.0063	0.0162	-0.0112
PBI	0.3294	0.3531	-0.2862	-0.2577	0.0170	0.1723	0.1207	0.1723	-0.0016	-0.0087	-0.0208	-0.0369
Private	0.0287	0.0041	0.1512	0.4081	-0.0068	-0.0002	-0.0042	-0.0002	0.0043	0.0189	0.0049	0.0009
SHI/PBI and private	0.0170	0.0010	0.1179	0.5193	0.0528	-0.0002	0.0194	-0.0002	0.0097	0.0507	0.0066	0.0006
Geo												
Village development index	0.9949	1.4403	0.0762	0.0804	0.0184	0.3949	0.3950	0.3949	0.0091	0.0034	0.3597	0.0588
Health infrastructure												
Primary	0.7541	0.7861	0.0243	0.0234	0.0028	0.1729	0.0452	0.1729	-0.0010	0.0042	-0.0313	0.0397
Secondary	0.7141	0.7536	0.0466	0.0430	0.0109	-0.0869	0.1673	-0.0869	0.0011	0.0132	0.0315	0.1195
Maternal	0.8991	0.9083	0.0304	0.0282	-0.0216	-0.0073	-0.4186	-0.0073	-0.0054	0.0155	-0.1951	0.1695

RURAL: Detailed results (continued)

	O: Public Secondary		O: Public Secondary		O: Private Secondary		O: Private Secondary	
	Coefficients		Elasticity		Coefficients		Elasticity	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health needs								
Age	-0.0004	-0.0006	0.0979	0.2242	-0.0003	-0.0005	-0.3064	-0.1543
Male	0.0009	0.0021	0.1813	0.2420	0.0007	0.0011	0.2693	0.2718
# sick days	0.0038	0.0069	0.5724	0.7170	0.0017	0.0031	0.4686	0.6073
Non-health								
Age of household head	0.0000	0.0001	0.4247	0.3719	0.0000	0.0000	0.1391	0.1906
Male household head	-0.0007	-0.0012	-0.1284	-0.1245	-0.0008	-0.0006	-0.2614	-0.1257
Wealth quantile	0.0009	0.0015	0.3962	0.4258	0.0010	0.0014	0.8567	0.7495
Education of household head	0.0015	0.0013	0.5327	0.2888	0.0003	0.0004	0.2209	0.1794
Married	-0.0002	-0.0007	-0.0155	-0.0410	0.0006	0.0000	0.0956	-0.0023
Divorced/separated	-0.0007	-0.0007	-0.0015	-0.0010	-0.0009	-0.0011	-0.0033	-0.0029
Widowed	-0.0016	-0.0021	-0.0116	-0.0095	-0.0017	-0.0037	-0.0231	-0.0315
Insurance								
SHI (non PBI)	0.0023	0.0112	0.0253	0.1931	0.0017	0.0042	0.0340	0.1339
PBI	0.0019	0.0040	0.1164	0.1676	-0.0002	-0.0007	-0.0261	-0.0553
Private	-0.0001	0.0031	-0.0004	0.0015	0.0008	0.0178	0.0079	0.0158
SHI/PBI and private	0.0047	0.0023	0.0151	0.0003	0.0015	0.0178	0.0089	0.0039
Geo								
Village development index	0.0006	-0.0017	0.1126	-0.2869	0.0013	0.0010	0.4321	0.3273
Health infrastructure								
Primary	-0.0010	-0.0022	-0.1441	-0.1994	-0.0001	0.0000	-0.0328	-0.0058
Secondary	0.0035	0.0048	0.4720	0.4280	0.0014	0.0025	0.3385	0.4137
Maternal	-0.0022	-0.0005	-0.3788	-0.0532	-0.0003	-0.0016	-0.0878	-0.3220

RURAL: Detailed results (continued)

	I: Public Coefficients		I: Public Elasticity		I: Private Coefficients		I: Private Elasticity	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health needs								
Age	-0.0014	-0.0032	-0.4297	-0.5891	-0.0007	-0.0023	-0.5507	-1.1266
Male	0.0036	0.0092	0.3798	0.5612	0.0023	0.0061	0.5831	0.6902
# sick days	0.0047	0.0072	0.3352	0.3218	0.0017	0.0036	0.3093	0.2705
Non-health								
Age of household head	0.0001	0.0001	0.2537	0.1516	0.0000	0.0001	0.3325	0.4059
Male household head	-0.0017	-0.0013	-0.1360	-0.0586	-0.0008	-0.0012	-0.1562	-0.0976
Wealth quantile	0.0014	0.0015	0.3002	0.1869	0.0017	0.0030	0.9058	0.6280
Education of household head	0.0011	0.0004	0.1793	0.0386	0.0004	0.0000	0.1657	0.0075
Married	0.0074	0.0118	0.3095	0.2841	0.0032	0.0137	0.3402	0.5599
Divorced/separated	0.0045	0.0074	0.0044	0.0045	0.0005	0.0069	0.0012	0.0071
Widowed	0.0059	0.0112	0.0201	0.0222	0.0010	0.0086	0.0084	0.0291
Insurance								
SHI (non PBI)	0.0029	0.0178	0.0149	0.1317	0.0028	0.0056	0.0355	0.0703
PBI	0.0059	0.0091	0.1706	0.1935	0.0002	-0.0008	0.0114	-0.0234
Private	0.0010	0.0028	0.0026	0.0006	0.0014	0.0242	0.0092	0.0084
SHI/PBI and private	0.0150	0.0116	0.0224	0.0006	0.0028	0.0367	0.0106	0.0032
Geo								
Village development index	-0.0009	-0.0042	-0.0785	-0.3076	0.0009	0.0031	0.1910	0.3805
Health infrastructure								
Primary	0.0018	0.0005	0.1214	0.0191	0.0008	0.0023	0.1356	0.1553
Secondary	0.0049	0.0024	0.3114	0.0895	0.0017	0.0093	0.2612	0.5972
Maternal	0.0028	0.0121	0.2252	0.5553	0.0009	-0.0050	0.1856	-0.3875

8. Three-way decomposition results

ALL

	O: Public Primary			O: Private Primary			O: Public Secondary		
	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon
Insurance									
SHI (non PBI)	0.0099	-0.0133	-0.0069	0.0105	0.0068	0.0005	0.0199	0.0186	-0.0636
PBI	0.0014	-0.0021	0.0091	-0.0050	0.0013	-0.0020	0.0125	-0.0047	0.0078
Private	0.0114	0.0041	-0.0021	0.0009	-0.0006	0.0004	0.0134	0.0013	0.0004
SHI/PBI and private	-0.0051	-0.0058	-0.0005	0.0000	-0.0001	0.0003	0.0000	-0.0018	0.0006
	O: Private Secondary			I: Public			I: Private		
	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon
Insurance									
SHI (non PBI)	0.0101	0.0077	-0.0406	0.0224	0.0149	-0.0422	0.0095	0.0104	-0.0282
PBI	0.0070	-0.0002	-0.0011	0.0059	-0.0067	0.0079	0.0223	-0.0007	-0.0001
Private	0.0000	0.0009	0.0234	0.0170	0.0001	-0.0003	0.0003	-0.0008	0.0091
SHI/PBI and private	-0.0006	0.0044	0.0067	-0.0008	-0.0062	0.0003	-0.0010	0.0017	0.0036

URBAN

	O: Public Primary			O: Private Primary			O: Public Secondary		
	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon
Insurance									
SHI (non PBI)	0.0437	-0.0113	-0.0055	-0.0066	0.0058	-0.0012	0.1069	0.0170	-0.0436
PBI	-0.0217	-0.0023	0.0177	0.0230	0.0016	-0.0039	-0.0480	-0.0053	0.0132
Private	-0.0073	0.0063	-0.0025	0.0000	-0.0017	0.0006	0.0091	0.0021	0.0010
SHI/PBI and private	-0.0105	-0.0055	-0.0004	-0.0004	-0.0013	0.0003	-0.0007	-0.0043	0.0010
	O: Private Secondary			I: Public			I: Private		
	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon
Insurance									
SHI (non PBI)	0.0197	0.0050	-0.0235	0.1345	0.0145	-0.0313	0.0309	0.0068	-0.0614
PBI	0.0273	-0.0004	-0.0020	-0.0559	-0.0066	0.0146	-0.0007	-0.0005	0.0001
Private	0.0256	-0.0041	0.0210	-0.0002	-0.0001	0.0000	0.0001	0.0012	0.0100
SHI/PBI and private	0.0006	-0.0003	0.0065	-0.0050	-0.0068	0.0004	0.0039	0.0018	0.0042

RURAL

	O: Public Primary			O: private primary			O: Public Secondary		
	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon
Insurance									
SHI (non PBI)	0.0164	-0.0099	-0.0121	-0.0104	0.0083	0.0043	0.0487	0.0191	-0.0742
PBI	-0.0085	-0.0014	0.0049	0.0524	0.0008	-0.0011	-0.0545	-0.0034	0.0048
Private	0.0008	0.0010	0.0000	-0.0021	0.0005	0.0002	0.0006	0.0000	0.0004
SHI/PBI and private	-0.0058	-0.0045	-0.0001	-0.0044	0.0010	0.0002	0.0000	0.0000	0.0001
	O: private secondary			I: Public			I: Private		
	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon	$\Delta\beta$	Δmean	Δcon
Insurance									
SHI (non PBI)	0.0164	0.0173	-0.0515	0.0518	0.0182	-0.0506	0.0114	0.0169	-0.0614
PBI	0.0309	0.0011	-0.0016	-0.0832	-0.0053	0.0055	0.0398	-0.0005	0.0001
Private	-0.0214	0.0009	0.0041	0.0002	-0.0001	0.0001	-0.0216	0.0012	0.0100
SHI/PBI and private	-0.0153	0.0014	0.0016	0.0000	0.0002	0.0002	-0.0233	0.0018	0.0042

Given the improvement in health indicators and health facilities worldwide, inequity in access to health services is one of the most pertinent and relevant issues for health policy and public health. This paper analyses the extent of the access inequities to various health care services in Indonesia, in conjunction with its recent rapid move towards universal social health insurance (SHI). The sample is derived from individuals in the national socio-economic data, SUSENAS, years 2011-2016. We find that only access to outpatient care at public health centres is pro-poor whilst access to other types of health care is pro-rich. The expansion of SHI reduces the extent of the pro-rich access by weakening the relationship between utilisation and a household's economic status. Despite wider coverage, however, the poor were still disadvantaged in the health care market. Progress towards universal coverage, supply-side improvements, pro-poor insurance schemes and policies that can stimulate economic growth may further reduce the wealth-related access gaps to health services.



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