

ORIGINAL ARTICLE

Examining Equity in Healthcare Services Among Beneficiaries of The National Health Insurance Program in Indonesia: Evidence from National Survey

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ABSTRACT

Introduction: Equity is one of the most prominent health issues globally. Indonesia has been implementing national health insurance as a strategy toward Universal Health Coverage to expand health coverage without financial hardship to access health care services. The equity evaluation is needed after 5-years of implementation. This study aimed to describe healthcare equity among national health insurance beneficiaries. **Methods:** Cross-sectional data from National Socio-Economic Survey in Indonesia between 2014 and 2018 were used. To measure health care utilisation, we used outpatient visits and inpatient admission. A descriptive analysis was conducted, equity analysis using concentration index by region and economic status, and logistic regression to explore the factors determining health care utilisation. **Results:** The national outpatient and inpatient care concentration Index dropped from 0.042 to 0.021 and 0.199 to 0.118, respectively. The equity gap among regions also decreased over time. Outpatient care utilisation fluctuate between 13.3% to 17%, while inpatient care utilisation increased from 2.5% to 4.7% in 2018. Health complaints, non-subsidised health insurance scheme and high socioeconomic were factors determining outpatient and inpatient care utilisation. **Conclusion:** Equity of outpatient and inpatient care among health insurance beneficiaries improved. However, we found less equity in the inpatient care which concentrated on better-off groups.

Keywords: Equity, National Health Insurance, National Socio-Economic Survey, Universal Health Coverage, Utilisation

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INTRODUCTION

Equity in healthcare is defined as equal treatment for the exact medical needs regardless of personal background. Equity has become a concern for several countries in the last 25 years. Developed or developing, all countries have their healthcare equity problems (1).

Inequity to healthcare services causes an immense variety of health statuses. Health gaps are found between groups and regions. For instance: the life expectancy contrast between men and women (3.8 years) or between Yogyakarta and West Sulawesi (10 years) (2). In 2015, the Maternal Mortality Rate (MMR) in Indonesia was 305 per 100,000 live births, with an immense variation between the MMR in Java-Bali (247 per 100,000 live births) and Nusa Tenggara, Maluku, Papua (489 per 100,000 live births) (3). The availability of health facilities influences this gap.

Universal Health Coverage (UHC) has become a global and national policy to address this inequity. UHC pursues to expand health coverage without financial hardship. Indonesia has been implementing various strategies to achieve UHC, one of which is the national health insurance (Jaminan Kesehatan Nasional [JKN]) program. Since JKN was launched on January 1, 2014, many changes have been observed in the healthcare system in Indonesia. JKN are facing challenges due to limited health resources and unequal distribution of health facilities.

JKN members are divided into four schemes: 1) Subsidised scheme (PBI), 2) Formal worker scheme (PPU), 3) Informal sector worker (PBPU), and 4) Various (BP). Formal worker scheme, informal sector workers, and various are called non-subsidised scheme (non-PBI). JKN's main goal is to alleviate the burden for the poor in accessing healthcare, yet 1.6 million or 23% were benefiting from the non-subsidised beneficiaries. The incurred cost for informal sector worker beneficiaries is higher than subsidised beneficiaries. Moreover, a study found that of 197 non-subsidised beneficiaries, 70.5% were not paying the JKN bill on time for six months, and

they signed up for JKN because they suffered from some illnesses and as instructed by their health provider (4).

Indonesia is divided into five regions based on Indonesian Case Base Groups (INA-CBG) to accommodate drug and medical cost differences. Where in general region I comprises provinces that mostly developed area, mostly in Java Island to region V consists of developing provinces, in Eastern part of Indonesia. The growth of public hospitals from 2011 to 2019 was dominated in Region I, Java. The lowest public hospital growth occurred in Papua (5). Through the Health System Dashboard, Badan Pelayanan Jaminan Sosial (BPJS) Kesehatan 2015–2016 data shows that high health referrals to Java have been inflicted due to this phenomenon. The poor will have a burden to bear the indirect cost due to the unequal distribution of health facilities. Furthermore, prospective payment mechanisms for secondary care inflicted more advanced services in better-equipped service providers, usually located in urban areas. The JKN program is assumed to be mainly used for the better-off (6).

Previous research showed an inequity among Jamkesmas and Aceh Health Insurance beneficiaries in accessing healthcare, especially inpatient services (7,8). This research used regional data before implementing the national health insurance program. Therefore describing healthcare equity among the national health insurance beneficiaries in healthcare after JKN implementation is essential.

MATERIALS AND METHODS

A quantitative analysis was conducted from the secondary cross-sectional dataset. This study used secondary data from Survei Ekonomi Nasional Indonesia (SUSENAS) from 2014 to 2018. SUSENAS was conducted by the Central Statistics Agency (BPS). The unit of analysis in this study was the province and population household core for 2014 until 2018 using the individual core. The survey portrays data ranging from demographic descriptions to socioeconomic status, geographic, individual health status, and healthcare utilisation. Geographic area is divided into five regions based on INA-CBG: Region I comprises all provinces in Java Island; Region II consists of West Sumatera, South Sumatera, Riau, Lampung, Bali, NTB; Region III includes NAD, North Sumatera, Jambi, Riau, West Kalimantan, every provinces in Sulawesi Island; Region IV contains South Kalimantan and Central Kalimantan; Region V consists of Bangka Belitung, NTT, East Kalimantan, North Kalimantan, Maluku, North Maluku, West Papua, Papua.

Susenass obtains utilisation of inpatient and outpatient care by calculating the incidence of hospital admission (per year) and outpatient visit (per month) for every respondent. Health insurance beneficiaries were included in this study and detail of variables can be

seen in supplementary file. The number of respondents in 2014 were 532,362; 2015 were 531,862; 2016 were 588,927; 2017 were 621,591; and 2018 were 681,101. This research utilised outpatient and inpatient variables as dependent variables. Independent variables were age, sex, marital status, education, occupation, health status, health insurance ownership, socioeconomic status, and regional location. A descriptive analysis was conducted, including equity analysis, using concentration index (CI) and logistic regression to explore the factors that determine health care utilisation. Concentration index measures the distribution of inpatient and outpatient utilisation by region and economic status (divided by quintile). The ethics committee at Universitas Gadjah Mada has approved the ethical clearance ref. no: KE/FK/0471/EC/2020.

RESULTS

Characteristic of The Respondent

In general, JKN respondents were in the age group 30–44 years predominantly. The trend of health insurance beneficiaries in this age group is increasing every year. The highest was in the married group (50.1%), and the lowest was in the divorced group (1.4%). From 2014 to 2018, the number of JKN beneficiaries based on educational status in the elementary school category fluctuated; primary educational status was with the highest number compared to other groups, with the highest number in 2016 at 40.6%. Meanwhile, the lowest group participating in JKN was the university group in 2014 at 10.3%. Most of the JKN beneficiaries in this study were married. From employment status, 57.6% mainly stated that they had not worked in the past week, with the highest percentage in 2017. Meanwhile, 47.7% indicated that they worked during the last week, with the highest rate in 2016.

Socioeconomic status (wealth index and percapita expenditure) was highest in Quintile 4 in 2018, as much as 43,372,631 (38.3%) in the wealth index category. Per capita expenditure was quite similar to each Quintile with the highest as 22,637,264 (20%) in Quintile 4. A total of 17,813,501 (16.1%) outpatient services in the last month was high in 2016. Inpatient service utilisation in the past year was highest in 2018, with 5,306,457 (4.7%) utilisation. In 2018, the densest geographical area was in Region I (Java), with a total of 63,938,906 (56,5%).

The Utilisation of Inpatient and Outpatient Care Among JKN Beneficiaries

Horizontal equity in healthcare is defined by the average utilisation of healthcare in inpatient or outpatient setting. The highest outpatient care utilisation was in 2015 at 17% (standard deviation [SD] = 0.04%) and lowest in 2017 at 13.3% (SD = 0.03%). The highest inpatient care utilisation was in 2018 at 4.7% (SD = 0.02%) and lowest

in 2014 at 2.4% (SD = 0.01%) (Fig 1).

Equity in Healthcare Utilisation Among JKN Beneficiaries

The CI measures equity in health services (9). A CI that is close to zero indicates a low gap in health service utilisation. A positive value indicates that health service utilisation tends to be more concentrated in high socioeconomic groups. However, a negative value indicates more concentrated health service utilisation in low socioeconomic groups. Measurement results with index concentrations in this study can be seen in Fig 2 and 3.

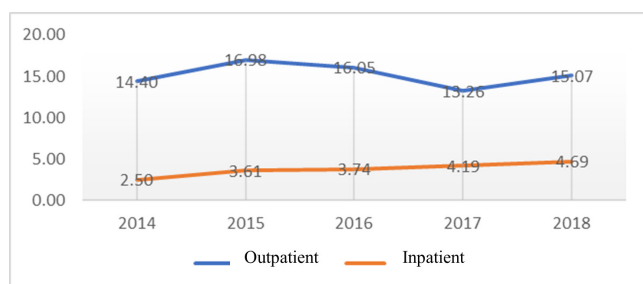


Figure 1: The Utilisation of Outpatient and Inpatient Care Among JKN Beneficiaries in 2014–2018

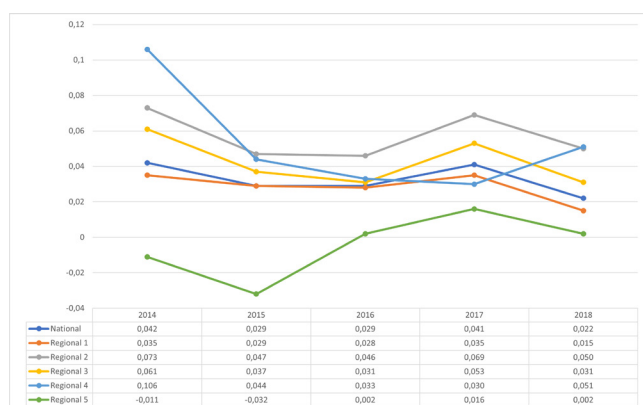


Figure 2: Concentration Index of Outpatient Utilisation by Region in 2014–2018

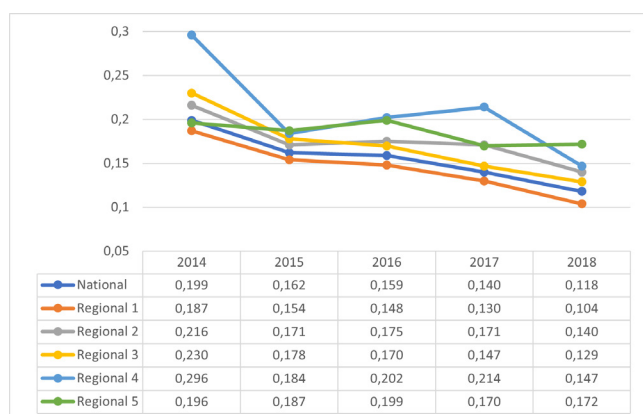


Figure 3: Concentration Index of Inpatient Utilisation by Region in 2014–2018

Figure 2 shows that the Concentration Index (CI) tends to fluctuate every year from 2014 to 2018. However, the equity condition of the national outpatient services is getting better. If analysed by region, the condition of Region IV (South Kalimantan and Central Kalimantan) equity is still high with a CI of 0.106 in 2014, a decline was observed the following year after the JKN program was running, and the CI became 0.051 in 2018, which is getting closer to equality. In Region V, the CI value was below the national figure at the beginning of the implementation of the JKN program. The CI of -0.011 in 2014 continued until 2015. This condition occurred since the ability of the poor to utilize health services, especially outpatients, was getting better at the beginning of the JKN program, and at the time of data analysis, the number of patients suffering from illness was also high, resulting in a decreased CI in Region V, but the gap with other regions was still quite high.

Figure 3 shows equity measurement in inpatient services. CI tends to decrease every year at the national level, meaning that equity at the national level is getting closer to equality with the CI 0.199 in 2014, to 0.118 in 2018. At the beginning of the JKN implementation in 2014, a gap was still observed in health services, especially inpatient care, with the highest in Region IV (Kalimantan) with a CI of 0.296. The CI rate fluctuates annually and the figure is still above the national figure. The lowest was in Region I (Banten, DKI Jakarta, Yogyakarta, West Java, Central Java, and East Java), with the 2014 CI equity values of 0.187 and 0.104 in 2018, which is below the national figure. The average difference in CI for each region is 0.01–0.03, and the gap that occurs is a condition that must be addressed in each region by making efforts for each region to approach equity.

Bivariate Analysis on Healthcare Utilisation Ratio

Bivariate analysis of this study used logistic regression by measuring odds ratio (OR). The result is presented in Tables I and II.

Almost all predisposing (age, gender, and marital status), enabling (education, occupation, health complaints, and health insurance ownership), socioeconomic, and geographic factors had a significant impact, and they were statistically significant ($p < 0.001$). These variables could increase the utilisation of outpatient care ($p < 0.001$). Respondents with symptom of illness in the past month had a 38.38 higher probability ($p < 0.001$) to increase outpatient care utilisation compared to those who are asymptomatic.

A significant relationship ($p < 0.001$) was found between socioeconomic factors and inpatient care utilisation. In 2014, Quintile 5, or the better-off group based on the wealth index had a 1.85 times ($p < 0.001$) higher probability and had 2.666 times ($p < 0.001$) higher likelihood of inpatient care utilisation based on percapita expenditure compared to the inferior group.

Table I: Bivariate Analysis on Outpatient Care Utilisation Rate in 2014–2018

Variable	Outpatient				
	2014	2015	2016	2017	2018
Predisposing Factor					
<i>Age, years</i>					
0–5	Ref	Ref	Ref	Ref	Ref
6–16	0.378*** (0.007)	0.445*** (0.008)	0.442*** (0.009)	0.422*** (0.009)	0.389*** (0.007)
17–29	0.286*** (0.006)	0.265*** (0.006)	0.237*** (0.005)	0.244*** (0.006)	0.237*** (0.005)
30–44	0.436*** (0.008)	0.405*** (0.007)	0.366*** (0.007)	0.356*** (0.007)	0.335*** (0.006)
45–59	0.728*** (0.013)	0.714*** (0.013)	0.658*** (0.012)	0.664*** (0.013)	0.626*** (0.011)
≥60	1.218*** (0.023)	1.250*** (0.024)	1.210*** (0.024)	1.204*** (0.025)	1.134*** (0.021)
<i>Sex</i>					
Male	Ref	Ref	Ref	Ref	Ref
Female	1.134*** (0.012)	1.146*** (0.011)	1.156*** (0.011)	1.203*** (0.012)	1.272*** (0.012)
<i>Marital Status</i>					
Single	Ref	Ref	Ref	Ref	Ref
Married	1.202*** (0.014)	1.199*** (0.012)	1.165*** (0.012)	1.175*** (0.013)	1.187*** (0.012)
Divorced	1.223*** (0.054)	1.373*** (0.054)	1.291*** (0.052)	1.223*** (0.050)	1.376*** (0.050)
Widowed	2.464*** (0.049)	2.578*** (0.048)	2.702*** (0.049)	2.672*** (0.050)	2.651*** (0.046)
Enabling Factor					
<i>Education Status</i>					
Illiterate	Ref	Ref	Ref	Ref	Ref
Primary	0.909*** (0.014)	0.885*** (0.013)	0.836*** (0.011)	0.859*** (0.013)	0.867*** (0.012)
Secondary	0.921*** (0.017)	0.892*** (0.015)	0.890*** (0.020)	0.859*** (0.016)	0.862*** (0.014)
Higher Secondary	0.861*** (0.014)	0.832*** (0.013)	0.818*** (0.013)	0.812*** (0.013)	0.794*** (0.011)
Graduate	0.752*** (0.017)	0.772*** (0.015)	0.753*** (0.014)	0.817*** (0.017)	0.744*** (0.014)
<i>Occupation</i>					
Unemployed	Ref	Ref	Ref	Ref	Ref
Employee	0.820*** (0.009)	0.756*** (0.007)	0.719*** (0.007)	0.684*** (0.007)	0.668*** (0.006)
<i>Health Symptoms (past month)</i>					
No	Ref	Ref	Ref	Ref	Ref
Yes	23.970*** (0.311)	34.126*** (0.435)	38.425*** (0.501)	32.660*** (0.423)	24.009*** (0.284)
<i>Health Insurance Type</i>					
Non-Subsidised scheme	Ref	Ref	Ref	Ref	Ref
Subsidised scheme	1.088*** (0.013)	0.980*** (0.010)	1.002 (0.010)	0.940*** (0.011)	0.963*** (0.010)
Socioeconomic Factor					
<i>Wealth Index</i>					
Quintile 1	Ref	Ref	Ref	Ref	Ref
Quintile 2	1.128*** (0.018)	1.011 (0.015)	0.969** (0.015)	1.049*** (0.018)	1.104*** (0.016)
Quintile 3	1.161*** (0.019)	1.023 (0.016)	0.987 (0.015)	1.060*** (0.017)	1.017 (0.015)
Quintile 4	1.162*** (0.019)	0.971* (0.015)	0.985 (0.015)	1.046*** (0.015)	1.045*** (0.014)
Quintile 5	1.050*** (0.018)	0.880*** (0.014)	0.908*** (0.014)	0.936*** (0.018)	0.912*** (0.016)
<i>Percapita Expenditure</i>					
Quintile 1	Ref	Ref	Ref	Ref	Ref
Quintile 2	1.202*** (0.020)	1.112*** (0.017)	1.152*** (0.018)	1.127*** (0.019)	1.081*** (0.016)
Quintile 3	1.265*** (0.021)	1.175*** (0.018)	1.171*** (0.018)	1.195*** (0.020)	1.078*** (0.016)
Quintile 4	1.308*** (0.022)	1.189*** (0.018)	1.241*** (0.019)	1.269*** (0.021)	1.145*** (0.017)
Quintile 5	1.267*** (0.021)	1.193*** (0.018)	1.192*** (0.018)	1.261*** (0.021)	1.146*** (0.017)

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Table I: Bivariate Analysis on Outpatient Care Utilisation Rate in 2014–2018 (continued.....)

Variable	Outpatient				
	2014	2015	2016	2017	2018
Geographic Factor					
<i>Rural/Urban</i>					
Urban	Ref	Ref	Ref	Ref	Ref
Rural	1.008 (0.011)	0.944*** (0.009)	0.918*** (0.009)	0.939*** (0.010)	0.984* (0.009)
<i>Regional</i>					
Region 1	Ref	Ref	Ref	Ref	Ref
Region 2	0.981 (0.013)	0.852*** (0.011)	0.882*** (0.011)	0.829*** (0.011)	0.843*** (0.010)
Region 3	0.781*** (0.009)	0.744*** (0.008)	0.767*** (0.009)	0.759*** (0.009)	0.828*** (0.009)
Region 4	0.763*** (0.020)	0.866*** (0.020)	0.811*** (0.018)	0.767*** (0.019)	0.689*** (0.015)
Region 5	0.727*** (0.010)	0.749*** (0.010)	0.697*** (0.010)	0.721*** (0.010)	0.809*** (0.010)

* p < 0.05. ** p < 0.01. *** p < 0.001

Table II: Bivariate Analysis on Inpatient Care Utilisation Rate in 2014–2018

Variable	Inpatient				
	2014	2015	2016	2017	2018
Predisposing Factor					
<i>Age, years</i>					
0–5	Ref	Ref	Ref	Ref	Ref
6–16	0.435*** (0,022)	0.374*** (0,015)	0.391*** (0,016)	0.384*** (0,015)	0.333*** (0,011)
17–29	0.957 (0,043)	0.699*** (0,026)	0.707*** (0,027)	0.709*** (0,025)	0.701*** (0,021)
30–44	0.935 (0,040)	0.737*** (0,026)	0.722*** (0,026)	0.710*** (0,024)	0.654*** (0,019)
45–59	1.248*** (0,053)	0.944 (0,034)	0.941* (0,033)	0.846*** (0,028)	0.763*** (0,023)
≥60	1.980*** (0,087)	1.627*** (0,060)	1.597*** (0,058)	1.425*** (0,049)	1.318*** (0,041)
<i>Sex</i>					
Male	Ref	Ref	Ref	Ref	Ref
Female	1.325*** (0,030)	1.380*** (0,025)	1.391*** (0,025)	1.427*** (0,024)	1.613*** (0,024)
<i>Marital Status</i>					
Single	Ref	Ref	Ref	Ref	Ref
Married	2.153*** (0,056)	1.958*** (0,041)	2.002*** (0,041)	1.898*** (0,036)	2.015*** (0,034)
Divorced	1.611*** (0,147)	1.960*** (0,135)	1.714*** (0,122)	1.631*** (0,103)	1.674*** (0,097)
Widowed	2.599*** (0,113)	2.483*** (0,089)	2.729*** (0,090)	2.405*** (0,076)	2.422*** (0,072)
Enabling Factor					
<i>Education Status</i>					
Illiterate	Ref	Ref	Ref	Ref	Ref
Primary	0.909*** (0.014)	0.885*** (0.013)	0.836*** (0.011)	0.859*** (0.013)	0.867*** (0.012)
Secondary	0.921*** (0.017)	0.892*** (0.015)	0.890*** (0.020)	0.859*** (0.016)	0.862*** (0.014)
Higher Secondary	0.861*** (0.014)	0.832*** (0.013)	0.818*** (0.013)	0.812*** (0.013)	0.794*** (0.011)
Graduate	0.752*** (0.017)	0.772*** (0.015)	0.753*** (0.014)	0.817*** (0.017)	0.744*** (0.014)
<i>Occupation</i>					
Unemployed	Ref	Ref	Ref	Ref	Ref
Employee	0.812*** (0,019)	0.675*** (0,012)	0.678*** (0,012)	0.645*** (0,011)	0.624*** (0,010)
<i>Health Symptoms (past month)</i>					
No	Ref	Ref	Ref	Ref	Ref
Yes	4,260*** (0,098)	4,961*** (0,092)	5,364*** (0,096)	4,282*** (0,073)	3,950*** (0,062)
<i>Health Insurance Type</i>					
Non-Subsidised scheme	Ref	Ref	Ref	Ref	Ref
Subsidised scheme	0.701*** (0,016)	0.577*** (0,010)	0.673*** (0,012)	0.658*** (0,011)	0.633*** (0,010)

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Table II: Bivariate Analysis on Inpatient Care Utilisation Rate in 2014–2018 (continued.....)

Variable	Inpatient				
	2014	2015	2016	2017	2018
Socioeconomic Factor					
<i>Wealth Index</i>					
Quintile 1	Ref	Ref	Ref	Ref	Ref
Quintile 2	1,256*** (0,049)	1,147*** (0,036)	1,135*** (0,035)	1,255*** (0,036)	1,274*** (0,032)
Quintile 3	1,488*** (0,058)	1,371*** (0,043)	1,279*** (0,038)	1,283*** (0,034)	1,306*** (0,033)
Quintile 4	1,598*** (0,060)	1,540*** (0,047)	1,499*** (0,043)	1,462*** (0,036)	1,392*** (0,032)
Quintile 5	1,784*** (0,069)	1,496*** (0,046)	1,506*** (0,044)	1,587*** (0,047)	1,428*** (0,039)
<i>Percapita Expenditure</i>					
Quintile 1	Ref	Ref	Ref	Ref	Ref
Quintile 2	1,193*** (0,047)	1,185*** (0,038)	1,240*** (0,040)	1,220*** (0,036)	1,133*** (0,030)
Quintile 3	1,435*** (0,057)	1,476*** (0,046)	1,439*** (0,045)	1,414*** (0,040)	1,297*** (0,033)
Quintile 4	1,859*** (0,070)	1,783*** (0,053)	1,809*** (0,054)	1,669*** (0,046)	1,509*** (0,036)
Quintile 5	2,608*** (0,092)	2,211*** (0,063)	2,216*** (0,063)	2,066*** (0,055)	1,813*** (0,043)
Geographic Factor					
<i>Rural/Urban</i>					
Urban	Ref	Ref	Ref	Ref	Ref
Rural	0,742*** (0,017)	0,730*** (0,013)	0,763*** (0,013)	0,800*** (0,013)	0,846*** (0,012)
<i>Regional</i>					
Region 1	Ref	Ref	Ref	Ref	Ref
Region 2	0,927*** (0,028)	0,808*** (0,019)	0,787*** (0,018)	0,800*** (0,018)	0,861*** (0,017)
Region 3	0,828*** (0,021)	0,889*** (0,018)	0,921*** (0,018)	0,979*** (0,018)	1,051*** (0,017)
Region 4	0,670*** (0,041)	0,767*** (0,034)	0,883*** (0,035)	0,784*** (0,031)	0,740*** (0,026)
Region 5	0,752*** (0,023)	0,671*** (0,018)	0,676*** (0,018)	0,693*** (0,017)	0,769*** (0,017)

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

Multivariable Analysis on Healthcare Utilisation Ratio

Multivariable logistic regression was carried out to determine the most influential factor on the utilisation of outpatient and inpatient healthcare. Outpatient care utilisation had the highest adjusted OR (aOR) for symptomatic respondents in the past month. In 2014, respondents who reported any health complaints in the past month compared to those without health complaints had a significant probability of using outpatient care in the past month with an aOR of 23.84 ($p < 0.001$). These findings tend to be higher from 2015 until 2017. Inpatient care utilisation had a similar characteristic. Respondents who reported various health complaints in the past month had the highest aOR. aOR values were 23.84, 33.58, 36.17, 31.29, and 22.45 from 2014 to 2018, respectively ($p < 0.001$), which means that symptomatic respondents in the past month had a higher tendency to utilize inpatient care in the past year. Type of health insurance scheme also had a significant correlation with outpatient and inpatient care utilisation. In 2018, the aOR was 1.343 for outpatient care and 2.078 for inpatient care ($p < 0.001$), which implies that non-subsidised scheme ownership increased outpatient and inpatient care utilisation compared to subsidised scheme.

Percapita expenditure had a significant relationship with inpatient care utilisation. Quintiles 2 to 5 had a higher

probability of using inpatient care than Quintile 1. In 2014, the aOR of Quintiles 2 to 5 was 1.186, 1.413, 1.784, and 2.660, respectively ($p < 0.001$). This indicates that Quintile 5 (wealthy) had a higher probability of utilising inpatient care. This was comparable to outpatient care utilisation. Table III and IV present the multivariable analysis.

DISCUSSION

Healthcare in Indonesia has been making many adjustments since the establishment of JKN as a program toward UHC. JKN roadmap stated that Indonesia needs an action plan to develop health facilities to cover healthcare demands from JKN beneficiaries (10). This

Table III: Multivariable Analysis on Outpatient Care Utilisation Rate in 2014–2018

Variable	Outpatient				
	2014	2015	2016	2017	2018
Enabling Factors					
<i>Health Insurance Type</i>					
Non-Subsidised scheme	Ref	Ref	Ref	Ref	Ref
Subsidised scheme	1,037** (0,019)	0,928*** (0,015)	0,991 (0,014)	0,899*** (0,015)	0,902*** (0,013)
<i>Health Symptoms (Past Month)</i>					
No	Ref	Ref	Ref	Ref	Ref
Yes	23,355*** (0,319)	32,968*** (0,437)	36,500*** (0,498)	30,719*** (0,416)	22,411*** (0,279)
Socioeconomic Factor					
<i>Percapita Expenditure</i>					
Quintile 1	Ref	Ref	Ref	Ref	Ref
Quintile 2	1,285*** (0,026)	1,183*** (0,024)	1,208*** (0,025)	1,222*** (0,026)	1,168*** (0,022)
Quintile 3	1,390*** (0,029)	1,287*** (0,026)	1,283*** (0,027)	1,317*** (0,028)	1,222*** (0,023)
Quintile 4	1,582*** (0,035)	1,323*** (0,028)	1,433*** (0,030)	1,491*** (0,032)	1,331*** (0,025)
Quintile 5	1,740*** (0,042)	1,413*** (0,033)	1,421*** (0,032)	1,560*** (0,037)	1,457*** (0,030)

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

Table IV: Multivariable Analysis on Inpatient Care Utilisation Rate in 2014–2018

Variable	Inpatient				
	2014	2015	2016	2017	2018
Enabling Factors					
<i>Health Insurance Type</i>					
Non-Subsidised scheme	Ref	Ref	Ref	Ref	Ref
Subsidised scheme	1,104*** (0,035)	0,698*** (0,016)	0,817*** (0,017)	0,780*** (0,015)	0,713*** (0,013)
<i>Health Symptoms Past Month</i>					
No	Ref	Ref	Ref	Ref	Ref
Yes	1,104*** (0,035)	0,698*** (0,016)	0,817*** (0,017)	0,780*** (0,015)	0,713*** (0,013)
Socioeconomic Factor					
<i>Percapita Expenditure</i>					
Quintile 1	Ref	Ref	Ref	Ref	Ref
Quintile 2	1,170*** (0,047)	1,152*** (0,038)	1,206*** (0,040)	1,220*** (0,037)	1,133*** (0,031)
Quintile 3	1,00*** (0,057)	1,385*** (0,046)	1,387*** (0,045)	1,380*** (0,041)	1,280*** (0,034)
Quintile 4	1,845*** (0,075)	1,577*** (0,052)	1,718*** (0,055)	1,591*** (0,047)	1,427*** (0,037)
Quintile 5	2,570*** (0,113)	1,799*** (0,062)	1,988*** (0,067)	1,880*** (0,059)	1,650*** (0,046)

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

roadmap states that in 2014 JKN targeted 121.6 million coverage so that by 2019 Indonesia achieve 100% JKN coverage that is managed by the Health Insurance Administration Agency (BPJS Kesehatan) (10). This study shows increased JKN beneficiaries by 47.74% in 2014 to 60.63% in 2018. This growth is expected to increase the number of people that have access to healthcare based on their needs.

Apart from health insurance ownership, an increased in utilisation also was found after the JKN implementation. Outpatient care utilisation variedly increased, with the highest at 17% in 2015, and the lowest at 14.4% in 2014. Meanwhile, inpatient care utilisation rose from 2.4% in 2014 to 4.7%. This is in line with previous research results, which stated an increased outpatient care utilisation at the Puskesmas and outpatient care utilisation at the hospital by Jamkesmas beneficiaries in Aceh Barat (7). World Bank noted that individuals with health insurance are more likely to access health services than those without health insurance (11).

Increased inpatient and outpatient care utilisation is not always directly proportional to equity in healthcare. Nationally, a progressing inequity of outpatient and inpatient care utilisation has been observed since the JKN implementation in 2014. However, the regional level gaps still exist, especially in Region IV (South Kalimantan and Central Kalimantan) and Region V (Bangka Belitung, NTT, East Kalimantan, North Kalimantan, Maluku, North Maluku, Papua, West Papua). This study shows that equity has not been achieved in all regions, equity only achieved in certain areas mainly in urban or developing region. This finding was in accordance with several studies that suggested essential medical services for rural residents are not yet being adequately provided compared to those for urban residents even in the country under UHC systems resulting lower health utilisation in rural area (12). Equity in those regions can be improved by increasing the availability of essential medical services not only from government but also from private practitioner (13).

This study also found people who had symptoms in the past month in 2016 had a probability of 38.4 times for outpatient care utilisation and 5.1 times in 2016 for inpatient care. Lower health literacy leads to lower perceived health symptoms resulting lower health seeking behaviour and lower health utilisation (14). Innovation is needed to improve health literacy and to improve access in regional level especially in rural area, such as introducing telemedicine or mobile health services (15).

JKN aimed to provide comprehensive healthcare for all Indonesians (16). The previous study stated that access to outpatient care in primary public facilities, especially Puskesmas, tended to be used by the poor on the early to mid-implementation of JKN. Contrarily, access to other

types of health care, such as private doctors and inpatient care, was used mainly by the better-off (17). Health utilisation in 2014 to 2018 was similar to the above study. An apparent association was found in outpatient and inpatient care utilisation with quintile 1 and 5. Based on economic statuses, access to outpatient and inpatient care while JKN was implemented at the national level was approaching near equity. However, access to outpatient and inpatient care at the regional level is still far from equity. Having health insurance is not enough for low-income people to access health services (18), there is a need for additional social protection, such as reimbursement or cash transfer for direct (transport and accommodation) or non-direct (payroll deduction or job losses) non-medical cost. Nevertheless the regulation of this compensation's scheme is already defined but it is translated to deploying health workers to health facility in some rural area.

Susenas data could not calculate the frequency of health insurance utilisation, Susenas recorded the accessibility of outpatient utilisation for 1 month and inpatient utilisation for 1 year. Therefore, it generates in underestimate health services utilisation. Current study also did not compute the actual healthcare costs. Further study is needed to assess equity in health utilisation respective to health cost by using another national dataset such as BPJS claim and utilisation datasets.

CONCLUSION

This study analyses the healthcare equity among the national health insurance beneficiaries. At the national level, the equity trend among health insurance beneficiaries of outpatient and inpatient improved between 2014 to 2018. Equity gap among regions also narrowed. However, we found less equity in the inpatient care which concentrated on better-off groups. Inpatient utilisation increased almost double between 2014 and 2018. However, outpatient utilisation tends to fluctuate overtime. Health complaints, non-subsidised health insurance scheme, and high socioeconomic status had a significant impact on outpatient and inpatient care utilisation.

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