RESEARCH ARTICLE

REVISED National health insurance contribution to family planning program funding in Indonesia: A fund flow analysis [version 2; peer review: 2 approved, 1 approved with reservations, 1 not approved]

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Abstract

Background

Launched in 2014, Indonesia's national health insurance system (JKN) aimed to provide universal health coverage, including contraceptive services, to its population. We aim to evaluate the contribution of JKN to the overall spending for the family planning program in Indonesia.

Methods

Data from the Indonesian Demographic Health Survey, Survey on Financial Flows for Family Planning, Indonesia Motion Tracker Matrix, World Population Prospect, and Indonesian ministries' budget accountability reports were entered into the CastCost Contraceptive Projection Tool to define budgetary allocation and spending for the family planning program at the national level in 2019.

Results

Indonesia's family planning program in 2019 was financed mostly by

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the national budget (64.0%) and out-of-pocket payments (34.6%). There were three main ministries responsible for family planning financing: the National Population and Family Planning Board (BKKBN) (35.8%), the Ministry of Finance (26.2%), and the Ministry of Health (2.0%). Overall, JKN contributed less than 0.4% of the funding for family planning services in Indonesia in 2019. The majority of family planning spending was by public facilities (57.3%) as opposed to private facilities (28.6%).

Conclusion

JKN's contribution to funding Indonesia's family planning programs in 2019 was low and highlights a huge opportunity to expand these contributions. A coordinated effort should be conducted to identify possible opportunities to realign BKKBN and JKN roles in the family planning programs and lift barriers to accessing family planning services in public and private facilities. This includes a concerted effort to improve integration of private family planning providers into the JKN program.

Keywords
Family planning, national health insurance, health financing, Indonesia, universal health coverage, health budget, out-of-pocket payment, private facilities

article can be found at the end of the article.

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REVISED **Amendments from Version 1**

This version has some changes, as requested by the reviewers. First, we added new information to clarify the study's rationale. In the Introduction section, we added additional information to describe Indonesia's health system and family planning financing system to give the readers a more precise explanation. Second, several changes were made in the Methods and Results sections to provide a better operational definition used in this analysis. Additional percentages were added in the Results section to help the readers understand the presented data better. Finally, these changes were reflected in the changes made in the Discussion and Conclusion sections. All additional references used in this version have been added in the References.

Any further responses from the reviewers can be found at the end of the article

Introduction

In 2014, the Indonesian government launched *Jaminan Kesehatan Nasional* (JKN), a comprehensive national health insurance scheme, with the aim to provide universal health coverage (UHC) to its citizens. Deemed the largest single-payer scheme in the world, JKN, which is financed both by its member's premium and government subsidy, has covered almost 85% (229.5 million) of all Indonesian citizens by late 2021[1,2]. In addition to providing financial risk protection, JKN, which is managed by the Social Security Administering Body for Health – a separate ministerial-level agency from the Ministry of Health, aims to reduce health inequity and improve service access through reducing regressive payments, such as out-of-pocket (OOP) spending[1]. Several publications have reported that the implementation of JKN has significantly decreased household OOP spending when accessing health care[3–5], including for family planning (FP) services.

In addition to JKN, the Indonesian health system is characterized by two key features. The first is decentralization, which grants autonomy for district government to manage their health planning, financing, and healthcare services according to local needs[6]. The second feature is that healthcare services are delivered across both private and public primary health care (PHC) facilities and hospitals[7]. All public PHC facilities and hospitals are automatically contracted by JKN, but private health facilities need to be contracted by JKN before JKN members can access it without incurring OOP payments. Private midwives are the backbone of FP services in Indonesia, providing 41% of FP services. Yet, only 3% of private midwives received direct reimbursement from JKN by December 2021[8].

A lower-middle income country in Southeast Asia, Indonesia was previously seen as a global FP success story after it halved its total fertility rate (TFR) from 4.9 in 1976 to 2.5 in 2002[9]. Yet, Indonesia's FP progress has stagnated in recent decades as TFR remained the same and the modern contraceptive prevalence rate (mCPR) rate decreased slightly from 57.9% in 2012 to 57.1% in 2017 among married women[10]. This stagnation also coincides with the decentralization of the Indonesian health system in 2004, in which the influence of national agencies, including the National Population and Family Planning Board, *Badan Kependudukan dan Keluarga Berencana Nasional* (BKKBN), lessened compared to that of local agencies[11].

While there are several ministries and ministry-level agencies within the Indonesian government that contribute to FP efforts, BKKBN is the primary agency that is responsible for implementing FP programmes in Indonesia. BKKBN is responsible for the procurement of FP commodities and related consumables in Indonesia, which are then distributed to lower administrative levels. In addition to FP program, BKKBN also implemented reproductive health and family welfare programs, which formed three pillars of population control[12]. These three pillars must be considered when accounting for the financing for the FP program in Indonesia. However, BKKBN is not under the Ministry of Health and thus, its budget is separate. Other agencies also play significant roles, including the Ministry of Finance which finances FP separately and directly through two funding schemes called the Special Allocation Fund (*Dana Alokasi Khusus*) and the Family Planning Operational Fund (*Bantuan Operasional Keluarga Berencana*), while the Ministry of Health publishes clinical guidelines for FP services, and the Coordinating Ministry of Human Development and Cultural Affairs coordinates to ensure alignment in the overall FP program implementation in Indonesia.

Given that JKN streamlined the previously fragmented health insurance system and districts now often have different priority in their FP programs implementation[13], JKN was anticipated to further accelerate gains in FP as it includes comprehensive FP services in its benefit service package. In addition to being included as one of the targets in Sustainable Development Goals (SDGs) the inclusion of FP services within benefit service packages of national health insurance schemes have shown to be a cost-saving investment (i.e., prevention of more expensive complications) and results in positive health outcomes (i.e., reduction in unsafe abortions and maternal deaths)[14–16]. Individuals may access FP services at all public service delivery points or at private service delivery points that partner with JKN who is then responsible for reimbursing for FP service fees. Yet, studies have shown mixed findings; while recognizing certain subgroups who benefit from the scheme, such as poor individuals or those who use long-acting contraceptives, the implementation of JKN did not increase mCPR generally[10,11]. Several systematic reviews have shown that health insurance increases utilization of health services and improves health outcomes both in developed and developing countries[17–19]. Yet, existing evidence of the benefit of health insurance and funding specifically for family planning services remains limited.

In order to improve efficiency in funding FP in Indonesia as well as to address its stagnation in TFR and mCPR, it is important to assess the extent of JKN's contribution to FP funding, recognize funding duplication, and identify any funding gaps in FP programming. Financing for FP is mostly ring-fenced in the national budget and flows from different national

ministries, including BKKBN, the Ministry of Health, or directly from the Ministry of Finance to subnational governments (i.e., district BKKBN and local district health offices). Yet, no study has mapped out how funds for FP flow from the national level to the provider level and the contribution JKN makes to this. Thus, we aimed to examine JKN contributions to FP program funding in Indonesia. Findings from this study offer insight into Indonesia's experience with integrating FP programming into JKN which acts as evidence for other countries aiming to increase their FP indicator performance. Findings from this study may also yield information on financing and regulatory gaps to improve the design of an FP benefit package within a national health insurance scheme.

Methods

Data source

This paper used secondary data to construct the FP program fund flow for the fiscal year of 2019, including data from the ministries' budget accountability reports, the Indonesia Demography and Health Survey (IDHS)[20], the Survey on Financial Flows for Family Planning (RFIS), and the Motion Tracker: FP2020 Commitments Activity Report[21]. For our analysis, we define FP program as aiming to manage childbirth, the ideal age and spacing of childbirth, manage pregnancy, through promotion, protection, and assistance in accordance with reproductive rights utilizing modern contraceptive methods (i.e., condoms, pills, injectables, implants, intrauterine devices [IUDs], tubal ligation, and male sterilization)[22]. This includes budget line items needed to provide for FP services, such as commodity, personnel, program, and infrastructure. The 2019 World Population Prospect was used to calculate numbers of family planning users[23]. The year 2019 was deliberately chosen to avoid bias due to the coronavirus pandemic that started in March 2020 which shifted funding allocation for programs[24]. The CastCost Contraceptive Projection Tool developed by the Centers for Disease Control and Prevention (CDC) was used to produce the family planning spending data[25]. Briefly, the tool is user-friendly spreadsheet, which utilize data from Reproductive Health Surveys or Demographic and Health Surveys, designed to assist countries to estimate quantity of contraceptives' demand and need. A detailed description of the tool is given elsewhere[26].

Data analysis

Budget allocation for the 2019 fiscal year was abstracted from BKKBN, RFIS, the Motion Tracker, and the ministries' budget accountability reports. These reports provided information on the national budget for FP programming, its distribution through ministries and national agencies and further distribution to the lower administrative levels, as well as foreign donor and non-governmental organization (NGOs) contributions to FP programs in Indonesia.

For spending data, we first interpolated the population of Indonesia in 2019 using data from the 2019 World Population Prospect and the 2017 IDHS[20,23]. This calculation resulted in the number of women of reproductive age (WRA), proportion of WRA, and the annual rate of population increase.

We interpolated the projected mCPR in 2019 based on IDHS data from 1997, 2002, 2007, and 2017. The mCPR for each contraceptive method was generated using the same method. All data analysis was conducted using STATA 17. Additional information for sources of contraceptive supplies for each method in 2019 was estimated based on the percentage of current users of each method from 2017 IDHS (Table S1, Extended Data). These numbers were then used for CastCost calculation.

The unit cost for each FP method in the public sector was obtained based on the JKN reimbursement rate (for pills, condoms, IUDs, and implants) and the Indonesia Case Base Groups (for female and male sterilization). The unit cost for FP methods in the private sector was obtained through consultation with the Indonesia Midwives Association Yogyakarta Chapter. The couple-years of protection (CYP) conversion factor was obtained from USAID (see Table S2, *Extended data*)[27,28]. Further detailed steps for data analysis can be seen from Table 1.

Data visualization

An Excel spreadsheet was used to map the fund flow and create a family planning fund flow matrix. This paper used SankeyMATIC (https://sankeymatic.com/) to create a Sankey diagram to visualize the flow of funds.

Results

Indonesia demographic background in 2019

In accordance with current regulation in Indonesia, through BKKBN and JKN, the government is responsible for providing a free FP program for all married couples. Based on our analysis, it was interpolated that Indonesia had 72,783,702 WRA in 2019 (Table 2). This calculation was produced assuming that the annual rate of population increase was 1.06%. Considering that Indonesia's law stipulated that the FP program was intended for married couples, this calculation was based on the estimation that there were 52,331,482 married women in Indonesia in 2019. Using the IDHS data, the mCPR in 2019 was estimated at 64.2%, with injectables as the most common modern method used by married women in Indonesia.

Public Sector FP Program

Table 3 and Figure 1 shows that there are three main ministries responsible for family planning financing in Indonesia: the BKKBN (35.8%), the Ministry of Finance (26.2%), and the Ministry of Health (2.0%); thus, in 2019, Indonesia's FP program was supported mostly by the national budget (64.0%). Furthermore, the majority of family planning spending was at public facilities (57.3%) compared to private facilities (28.6%).

Around 86% of the total BKKBN budget was allocated for procurement, with 78% budget realization by the end of the fiscal year. Additionally, the BKKBN budget from the national to subnational level was shrinking due to portion of the allocated budget was not executed, cost to that may be utilized to conduct day-to-day operation of the BKKBN offices, and other cost that we were not able to capture in our analysis. For the

Table 1. Detailed steps taken to simulate the fund flow for family planning services in Indonesia, fiscal year 2019.

Step	Data Used	Description	Output
1	• Official data from BKKBN for fiscal year 2019 • Selected national reports on family planning funding	Sorting the data needed to simulate the fund flow based on the origin of the data	• State budget for family planning • Fund distribution through the ministries and agencies • Information on fund flow from the central government to the lower administrative levels
2	• World Population Prospect 2019 • 2017 IDHS	Projecting Indonesia population, particularly women of reproductive age, using interpolation	Table 2: • Number of women of reproductive age (WRA), • Annual rate of population increase, • % WRA in a union, and number of WRA in union
3	1997, 2002, 2007, 2012, and 2017 IDHS	Applying interpolation to project Indonesia mCPR for fiscal year 2019	Supplementary Table 1: CPR for 2019 for each method and mCPR for fiscal year 2019
4	2017 IDHS		Supplementary Table 1: Service distribution for family planning in Indonesia (public vs private)
5	• Indonesian Case Base Groups (INA-CBGs) • Stakeholder consultancy • Couple-Years of Protection (CYP)	Inputting the unit cost and CYP for each family planning method to calculate the spending for public and private sector using CastCost	Supplementary Table 2: Family planning spending for public and private sector
6	Output of step 1 and Supplementary Table 2	Creating matrices based on the result of Supplementary Table 1	Table 3
7	Table 3	Inputting the information to SankeyMATIC	Figure 1

Table 2. Projection of contraceptive needs in Indonesia in 2019 based on IDHS and UN World Population Prospect.

	Year of estimation	
	2017	2019
WRA Age 15-49	72,021,000	72,783,702.4
Annual Rate of Population Increase (%)	1.06	
% WRA in Union	71.90	
Number of WRA in Union	51,783,099	52,331,482
Prevalence by Method (%)		
Tubal ligation	3.8	3.8
Pills	12.1	11.9
IUD	4.7	4.0
Injectable	29	30.9
Condoms	2.5	2.6
Implant	4.7	4.2
Male Sterilization	0.2	0.2
Other modern methods	6.6	6.7
Contraceptive Prevalence Rate: Modern Methods (%)	63.6	64.2

Abbreviation: IDHS, Indonesian Demographic Health Survey; IUD, Intrauterine Device; WRA: Woman of Reproductive Age.

Table 3. Family planning fund flow matrix (in USD thousands) for 2019.

Institution(s)	National Budget/ Original Source [%]	Provincial-Level Budget [%]	District-Level Budget [%]	Estimated Expenditure for Public Sector [%]	Estimated Expenditure for Private Sector [%]
BKKBN	252,736 [35.76%]	225,967 [94.10%]	153,009 [43.11%]	153,009 [35.51%]	0 [0.00%]
Ministry of Health	14,160 [2.00%]	14,160 [5.90%]	14,160 [3.90%]	14,160 [3.29%]	0 [0.00%]
Ministry of Finance	185,111 [26.19%]	-*	185,111 [52.16%]	185,111 [42.96%]	0 [0.00%]
Other ministries	258 [0.00%]	-*	-*	258 [0.00%]	0 [0.00%]
JKN†	2,616 [0.37%]	-*	2,616 [0.73%]	28,198 [6.54%]	602 [0.30%]
UNFPA†‡	163 [0.00%]	-*	-*	163 [0.00%]	0 [0.00%]
Other NGOs†	7,259 [1.02%]	-*	-*	0 [0.00%]]	7,260 [3.59%]
Out-of-pocket Payment†	244,413 [34.58%]	-*	-*	49,988 [11.60%]	194,425 [96.11%]
Total	706,716 [100.00%]	240,127 [100.00%]	354,896 [100.00%]	430,887 [100.00%]	202,287 [100.00%]

Abbreviations: BKKBN, National Population and Family Planning Board; JKN, National Health Insurance; UNFPA: United Nations Population Fund; US$, US Dollar (1 US Dollar is approximately 14,000 Indonesian Rupiah in 2019); NGOs: Non-governmental organizations. *No fund was channelled through the specific level †Institution was not funded through national budget ‡For UNFPA, funding was distributed to BKKBN (US$56,071), the Ministry of Health (US$71,429), and the other ministries (US$35,714).

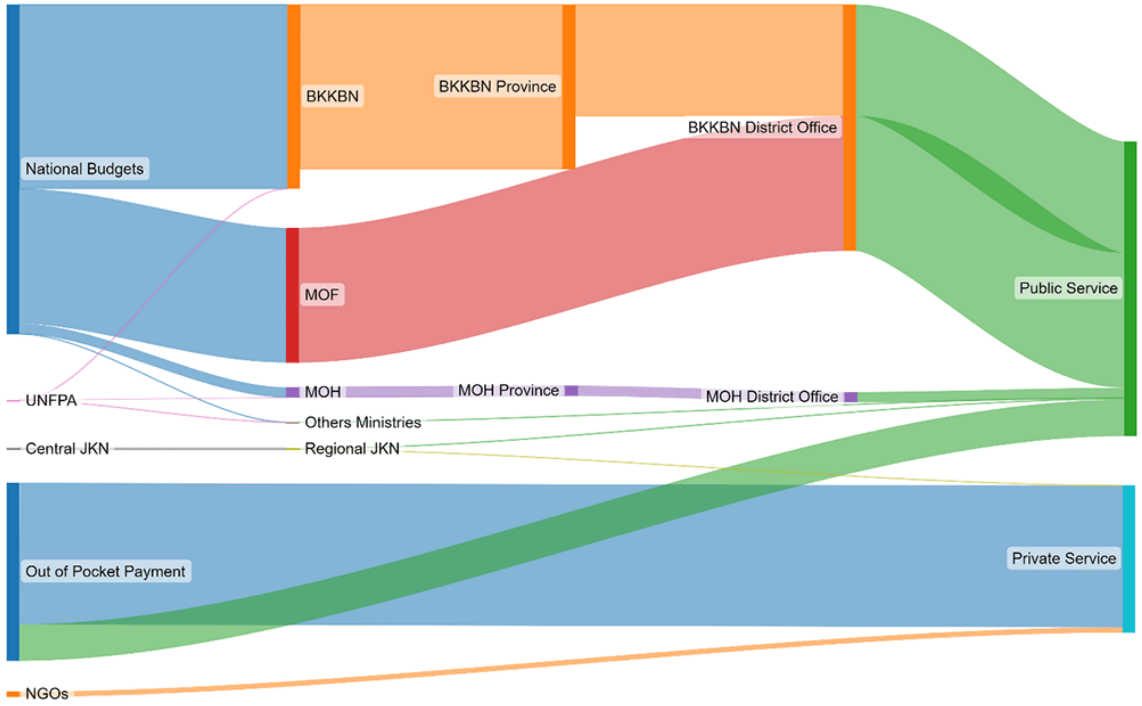

Figure 1. Indonesia family planning fund flow for 2019. Size of each flow corresponds to the overall share of all FP expenditures. Abbreviations: BKKBN, National Population and Family Planning Board; JKN: National Health Insurance; MOF: Ministry of Finance; MOH: Ministry of Health; UNFPA: United Nations Population Fund; NGOs: Non-governmental organizations.

Ministry of Finance, majority of the budget was used to support operationalizing FP programs (i.e., commodity distribution, personnel transportation cost, and demand generation activity).

In order to simplify the visualization, the JKN contribution for FP programming was included as public sector. The United Nations Population Fund (UNFPA) partnered with the Indonesian government in implementing numerous programs related to FP, therefore UNFPA contribution, unlike that of any other foreign donors and NGOs, was also considered public sector. Service fees for implants, IUDs, tubectomies, and vasectomies are reimbursed within the JKN scheme while other contraceptive methods (e.g., condoms and pills) were not included in this analysis as they are paid through JKN's capitation payment mechanism regardless of the service rendered. Almost all public sector budget allocation went to public sector health facilities except a small amount of money from JKN that was spent at JKN-contracted private health facilities.

In summary, 64.4% of the overall FP budget in Indonesia, which amounts to US$437 million or 5.66 billion Indonesian Rupiah, was allocated by the public sector in 2019. Around 77.9% of this budget went directly to FP services in the public sector while the remaining budget was allocated for staff salaries at the central and provincial levels.

Private Sector FP Program

OOP was the main funding source for family planning (34.6% of the overall FP budget in 2019) in the private sector followed by foreign donors and NGOs. Around 80% of all OOP went to the private sector, and the rest went to the public sector. All NGO funds, except those from UNFPA, were spent in the private sector.

JKN Contribution to FP Program

Our analysis showed that despite having been in effect for five years, JKN contributed less than 0.4% of funding for family planning services in Indonesia in 2019. Around 77% of this spending went to the public sector, while the rest was spent in the private sector.

Discussion

To the authors' best knowledge, this is the first study that dives into the details of how FP is funded in Indonesia. This study showed that JKN only contributes a sliver of funding to the provision of comprehensive FP services in Indonesia. Instead, the majority of FP services are funded primarily through the national government budget and OOP. Similar to the result from the Philippines[29], JKN's minimal contribution to overall funding of FP in Indonesia suggests low utilization of the scheme to reimburse FP services. Yet, a previous study in Indonesia that assessed a separate health card program targeting the poor found increased use of contraceptives among females eligible for the program, although this increase was in parallel with an expansion of FP services in public health facilities[30]. Other studies that have assessed links between insurance status under a UHC scheme and key FP outcomes in other settings found mixed findings. Among the poorest quintile of women in Latin America, insured women had a higher mCPR (16.5%) than uninsured women[31]. Yet, results from Indonesia, Ghana, and Kyrgyzstan have shown insurance status did not appear to influence mCPR among married women[10,32]. These mixed findings may be indicative of the important roles of public versus private FP providers, local sociocultural norms, and the arrangement of FP benefit packages within UHC schemes[32]. Hence, policymakers should recognize that the inclusion of an FP benefit package to a given UHC scheme alone does not guarantee improved FP outcomes, instead its arrangement should consider various local contexts.

Given BKKBN has contributed in a major way to the provision of FP in Indonesia, there may be a perverse incentive for BPJS to not expand JKN to comprehensively cover FP services. However, given there is still high OOP spending for FP services, especially from private providers who JKN is in a unique position to contract, it may necessitate a rethink of how FP is covered and paid for. While there is no global consensus on the acceptable level of OOP spending, especially for FP context, World Health Organization have defined OOP spending less than 20% of total health expenditures as an indicator of UHC[33]. The lack of coverage for FP services under JKN is largely due to most women's preference for private providers like midwives. The majority of FP providers in Indonesia are private sector, with 41% of all FP service provision delivered by private midwives; but approximately only 5% to 36% of private midwives are estimated to be contracted with JKN[34]. Previous study has showed that this is due to barriers that prohibit private midwives from fully benefiting from the JKN system[34]. These barriers include inability to directly contract with JKN and suboptimal reimbursement rates[35]; therefore, efforts to include more private providers under JKN with a better reimbursement system should be a priority.

Our previous qualitative study reported the perception that health care services under the JKN scheme are suboptimal, a preference to skip JKN's required paperwork or waiting lines, and a preference to access FP services from private providers out of JKN's network due to proximity as barriers among users[35]. Additionally, we found that the existence of FP operational assistance funds (government funding separate from JKN funnelled through BKKBN), which can also be used to reimburse FP, is the preferred alternative for private providers in claiming reimbursement for FP services[35].

It is interesting to note that our findings show that a portion (20.45%) of OOP in 2019 was spent in the public sector. Ideally, this should not happen as the law in Indonesia guarantees free FP services for all married couples, particularly at public service delivery points. While this study did not explore the clients' perspective when choosing health facilities at which to obtain FP services, previous studies show that access

(e.g., opening hours) and convenience (e.g., waiting time) were major factors in a client's choice of private service delivery points[35]. This includes choosing to pay OOP instead of using JKN at public service delivery points. Due to barriers to obtaining FP services using JKN, users may prefer to access public service delivery points as non-JKN patients (i.e., patients who pay OOP or without a referral from lower tier health facilities) instead of using JKN. As all service delivery points, especially hospitals, in Indonesia accept non-JKN patients, this option is seen as a shortcut for wealthier patients.

While Indonesia finances its FP program through several ministries or ministry-level agencies, the majority of FP services in the public sector are funded by the national budget through BKKBN and district BKKBN offices. We could not identify significant additional funding allocated by district governments through the district BKKBN which may be the result of decentralization in Indonesia since 2014. The lower administrative levels have prerogative on how they would like to organize their government, and, in some instances, the BKKBN subdistrict offices would be merged with other offices in line with local government's various commitments[36]. As a consequence, the budget for FP programming is often merged with other activities through this institutional integration.

Our study did not find any significant overlap in FP funding, which suggests that the existence of funding duplication is minimal in Indonesia. This shows that there is a clear delineation of each government body's function and role. Yet, as noted earlier, the existence of separate FP operational assistance funds that have less bureaucratic barriers for subnational units and public providers may contribute to the reduced utilization of JKN[35]. While such funding may help the provision of FP services on the ground, it is important for policymakers to evaluate both schemes to ensure maximum funding alignment.

The design of this study, which used multiple sources of data to construct the fund flow map, strengthens our estimates for each funding stream. Yet, there are several limitations to this study. First, this study specifically assessed affordability to access FP services, yet there are multiple established factors that also influenced utilization of FP services, including social acceptability, socioeconomic status, and commodity availability, which were not assessed[37–39]. Second, while we undertook a massive review to make sure that the data reconciliation could yield the highest quality data, we could not obtain any information from FP commodities manufacturers (e.g., sale and buyer data). Third, this study was not able to provide detailed calculations on spending due to BKKBN's expanded scope in population control[12], which integrated FP programs with reproductive health programs and family welfare programs. Fourth, we were also unable to provide disaggregated funding flows for each modern contraceptive method or line-item budget (i.e., commodity, personnel) in our analysis. Thus, we are unable to dissect each fund flow that was utilized by providers. Further studies should focus on breaking down how the budget is spent on FP to assess efficiency.

Conclusion

Our study underscores an opportunity to bolster the role of JKN, which currently contributes less than 0.4%, to Indonesia's FP program, especially as the country renews its pledge to the FP2030 Initiative[40]. The fact that a significant of FP services are paid for out-of-pocket (34.6%) suggests that barriers still exist for JKN members. To address this, a concerted effort from Government of Indonesia is needed to better align between BKKBN and JKN's roles in FP programs, and to eliminate barriers to accessing FP services in both public and private facilities. This may involve revising regulations to ensure a high-quality family program is accessible to all Indonesian married couples or integrate private FP service providers into the JKN program.

Data availability

Underlying data

Data used in this study are from the household and individual recode dataset of Indonesia in 2017, available from the Demographic and Health Survey (DHS) website. Access to the dataset requires registration and is granted only for legitimate research purposes. A guide for how to apply for dataset access is available at: https://dhsprogram.com/data/Access-Instructions.cfm.

Data was also abstracted from the Survey on Financial Flows for Family Planning (RFIS) (available at extended data link: https://doi.org/10.5281/zenodo.7813127), the Motion Tracker: FP2020 Commitments Activity Report (available at: https://www.motiontracker.org/sites/default/files/documents/TMT%20Activity%20Report%20Indonesia%20%28July%202020%29_Clean%20Version.pdf), and the 2019 World Population Prospect (available at: https://population.un.org/wpp/publications/files/wpp2019_highlights.pdf), and The CastCost Contraceptive Projection Tool (available at: https://archive.cdc.gov/#/details?url=https://www.cdc.gov/reproductivehealth/global/resources-tools/cast-cost/index.htm), thus is considered public domain data.

Extended data

Zenodo: Extended data for 'National Health Insurance Contribution to Family Planning Program Funding in Indonesia: A Fund Flow Analysis. https://doi.org/10.5281/zenodo.7813127[28].

This project contains the following extended data:

- Indonesian FP Fund Flow Extended Data 20230410.doc

Data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).

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Siripen Supakankunti
Chulalongkorn University, Bangkok, Bangkok, Thailand

Although the study method had disadvantages, this study addressed them in its limitations. However, limitations can affect the results, leading to conclusions. Another issue to be aware of is insurance. It is not the only factor that affects the effectiveness of FP. Other problems have also been studied, such as educational level, space of children, misconceptions about family planning, and awareness of family planning services that should be identified. Also, family planning educational messages should focus on the involvement of male partners in delivering the service and the benefits of family planning services, as it will help reduce misconceptions about family planning services.

What should the appropriate TFR rate be in Indonesia? This is important to set the target.

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
Partly

If applicable, is the statistical analysis and its interpretation appropriate?
Not applicable

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Health Financing, Health Policy, and Strategic Planning, LTC. Health Economics, Economic Evaluation.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Reviewer Report 10 April 2024

https://doi.org/10.21956/gatesopenres.16507.r36122

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Mark Blecher
National Treasury of South Africa, Pretoria, South Africa

The report is interesting, useful and concise and highlights the problem of inadequate funding for the family planning programme in Indonesia by the JLN insurance scheme.

I suggest a few small improvements:
i) Table 3 is not completely clear and requires some explanation
ii) It would be useful to show the unit costs per woman covered
iii) The article seems to model the target population as married women...what about unmarried women?
iv) It would be useful to cite some examples of countries with health insurance systems where the fund is a substantial funder of public health activities such as Thailand.
-It would be useful if some of the spending trends could have been presented using the classification and relevant axes of the system of National Health Accounts (WHO)
- Add to my comment in Table 3: For example it is unclear how row 1 BKKN should be read: How can National budget be $252 m, prov budget $225m, District budget $153m and expenditure $153m. What does this mean and how do these numbers relate to each other?
-Adding numbers into the useful figure 1 might help to explain the funding flows better
- Have the authors assessed what programme budget is required and what is the gap? For example through a costing exercise.

I am in full agreement with the conclusions of the study that JKN needs to support public heath functions such as FP more.

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Partly

If applicable, is the statistical analysis and its interpretation appropriate?
Partly

Are all the source data underlying the results available to ensure full reproducibility?
Partly

Are the conclusions drawn adequately supported by the results?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Health sector financing, public finance, health economics

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 05 March 2024

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Darius Erlangga
Department of Global Health and Development, London School of Hygiene and Tropical Medicine, London, UK

I have read the revisions, and I am satisfied with the authors' responses.

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Primary health care, health financing, access to care, financial protection, health econometrics

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 03 August 2023

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Darius Erlangga
Department of Global Health and Development, London School of Hygiene and Tropical Medicine, London, UK

What is the objective of showing Table 3? At the moment, Figure 1 shows a better job of showing the funding flows. Also, It is not clear if there is any link between columns in Table 3, ie any inter-dependence relationship among the three budgets and how you relate between overall budgets and 'estimated expenditure' for the public sector.

Ideally, I'd like to see the percentage numbers in Figure 1 to make it more informative. Also, please confirm in the text if the size of the 'flow' corresponds to the overall share of all FP expenditures. Please also indicate what you mean by funding flow. Do you only consider funding intended to pay for health services and commodities? Broadly speaking, funding for health workers to do the services should also be included if you don't indicate otherwise.

At the moment, the funding flows figure only shows the journey of each financing source to reach the facility. What would be more interesting is to show how this budget is spent. You might have done it in the text, but it needs to be more systematic, not ad hoc. Given that this is the bulk of the analysis (which is rather very descriptive) you need to spend more time critically appraising the data that you already collected.

Is there any reason why the national budget for BKKBN is getting smaller when it flows to the BKKBN District office? To where is the rest of the budget gone? You need to make it clearer

You mentioned that 86% total BKKBN budget was allocated for procurement. What about the others, e.g. MOF? MOF also allocated a sizeable share of money to Public Service.

We all need to step back and think about how to interpret these findings. The effect of health insurance on specific health outcomes will depend on whether the insurer intends to cover the related services. BPJS probably already realised that the FP programme has already been covered by BKKBN therefore they see no incentive to expand their funding into the FP programme as well. What's needed is a funding gap analysis to see where the JKN funding could be utilised to strengthen the FP programme without covering the same things as other funders (and avoid perverse incentives among the users and providers)

What if the BPJS also spend as much as BKKBN to cover the same services? Wouldn't it be considered as double-counting leading to inefficiency? This is why it is important in your analysis to dissect how each funding flow is utilised at facilities.

There is a debate in the global community on what is the acceptable level of OOP among patients because realistically it is unrealistic to expect everyone to spend zero given the rise of health burdens and more and more limited resources. Hence the use of catastrophic health expenditure to indicate the level of financial protection.

To add to the discussion of how to increase the mCPR, one needs to ask the question what is the biggest barrier to the effective use of FP? Is it really a financial barrier which then could be mitigated by expanding JKN's involvement in covering the said services? or other non-financial barriers, such as acceptability, accommodation, availability, etc.? Access to health services is not determined solely by its affordability but sometimes it can be the trigger. I apologise if the discussion about access might not be your main objective, but yet in the discussion you brought it up so I thought it would be fairer to bring in a broader discussion on access to care.

Is the work clearly and accurately presented and does it cite the current literature?
Partly

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Not applicable

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Primary health care, health financing, access to care, financial protection, health econometrics

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 29 Nov 2023

Amirah Wahdi

Point 1: What is the objective of showing Table 3? At the moment, Figure 1 shows a better job of showing the funding flows. Also, It is not clear if there is any link between columns in Table 3, ie any inter-dependence relationship among the three budgets and how you relate between overall budgets and 'estimated expenditure' for the public sector.
Response 1: The objective of showing Table 3 is to ensure that our study findings can be replicated or used for future reference that requires disaggregated numbers, since Figure 1 did not have any numbers to it. We have previously attempted to include USD numbers in Figure 1 directly, but it became more confusing due to the many numbers in Figure 1.

Point 2: Ideally, I'd like to see the percentage numbers in Figure 1 to make it more informative. Also, please confirm in the text if the size of the 'flow' corresponds to the overall share of all FP expenditures. Please also indicate what you mean by funding flow. Do you only consider funding intended to pay for health services and commodities? Broadly speaking, funding for health workers to do the services should also be included if you don't indicate otherwise.
Response 2: We thanked the Reviewer for this comment. Unfortunately, adding a percentage to each node could lead to a misleading conclusion since the percentage at each node will be the relative
summation at each node instead of the overall summation of funding flow. However, we agreed on the importance of reporting the proportion for the fund flow and therefore have added the percentage in Table 3.
We included the definition of the FP program in the Method section to define the FP funding flow further, this includes commodities and personnel costs (funding for health workers to do the service).

Point 3: At the moment, the funding flows figure only shows the journey of each financing source to reach the facility. What would be more interesting is to show how this budget is spent. You might have done it in the text, but it needs to be more systematic, not ad hoc. Given that this is the bulk of the analysis (which is rather very descriptive) you need to spend more time critically appraising the data that you already collected.
Response 3: We thanked the Reviewer for this suggestion. This study was not intended to explore how the budget was spent since we would need different data sources and methodologies to do that. As we added in the Discussion, that would be the next step from

this study, “Further studies should focus on breaking down how the budget is spent on FP to assess efficiency.”. Unfortunately, a limitation of utilizing the Sankey diagram is that we could not illustrate how the budget is spent at each node of the diagram, hence why we include further explanation of how the budget is spent in the text instead.

Point 4: Is there any reason why the national budget for BKKBN is getting smaller when it flows to the BKKBN District office? To where is the rest of the budget gone? You need to make it clearer
Response 4: We thanked the Reviewer for this question. The reason for the shrinking of the budget from the national level down to the sub-national level is due to multiple factors, which include (1) some of the national FP budgets were never executed and hence did not become an expenditure; (2) the use of the fund to pay the day-to-day operational cost of the BKKBN offices, and (3) other costs that we are not able to capture in this exercise. We have added these details in the Main Text accordingly.

Point 5: You mentioned that 86% total BKKBN budget was allocated for procurement. What about the others, e.g. MOF? MOF also allocated a sizeable share of money to Public Service.
Response 5: For the MOF, the majority MOF budget was allocated to provide operational support for the FP program, while MOH and JKN budgets do not majorly purchase commodities. We have added the following sentence: “For MOF, majority of the budget was used to support operationalizing FP programs (i.e., commodity distribution, personnel transportation cost, and demand generation activity).”

Point 6: We all need to step back and think about how to interpret these findings. The effect of health insurance on specific health outcomes will depend on whether the insurer intends to cover the related services. BPJS probably already realised that the FP programme has already been covered by BKKBN therefore, they see no incentive to expand their funding into the FP programme as well. What's needed is a funding gap analysis to see where the JKN funding could be utilised to strengthen the FP programme without covering the same things as other funders (and avoid perverse incentives among the users and providers)
Response 6: We thanked the Reviewer for this suggestion. We have added the following sentences in the Discussion section to incorporate the Reviewer’s suggestion: “Given BKKBN has contributed in a major way to the provision of FP in Indonesia, there may be a perverse incentive for BPJS not to expand JKN to cover FP services comprehensively. However, given there is still high OOP spending for FP services, especially from private providers who JKN is in a unique position to contract, it may necessitate a rethink of how FP is covered and paid for.”

Point 7: What if the BPJS also spend as much as BKKBN to cover the same services? Wouldn't it be considered as double-counting leading to inefficiency? This is why it is important in your analysis to dissect how each funding flow is utilised at facilities.
Response 7: As we mentioned in the Introduction, BKKBN and BPJS have different roles in delivering FP programs in Indonesia. BPJS can complement spending on procurement by BKKBN as it is within BPJS's responsibilities to cover the FP service cost (for example, reimbursement to the trained health workers for the services rendered). We do not expect their spending to be equal, but the considerable discrepancies in spending and the high OOP found in our study highlighted a gap in the FP program in Indonesia.

As noted by the Reviewer, we agreed that if BPJS and BKKBN ended up covering the same services, it would lead to inefficiency. In paragraph #6 of the Discussion section, we have noted the following: “Yet, as noted earlier, the existence of separate FP operational assistance funds that have less bureaucratic barriers for subnational units and public providers may contribute to the reduced utilization of JKN. While such funding may help the provision of FP services on the ground, it is important for policymakers to evaluate both schemes to ensure maximum funding alignment.”
Unfortunately, our analysis does not allow us to dissect each funding flow utilized at the the provider/facility level. We have added this to the limitation section accordingly.

Point 8: There is a debate in the global community on what is the acceptable level of OOP among patients because realistically it is unrealistic to expect everyone to spend zero given the rise of health burdens and more and more limited resources. Hence the use of catastrophic health expenditure to indicate the level of financial protection.
Response 8: We thanked the Reviewer for this comment. We have included the following sentences in the Discussion section to accommodate the Reviewer’s comment: “While there is no global consensus on the acceptable level of OOP spending, especially for FP context, World Health Organization have defined OOP spending as less than 20% of total health expenditures as an indicator of UHC.”

Point 9: To add to the discussion of how to increase the mCPR, one needs to ask the question what is the biggest barrier to the effective use of FP? Is it really a financial barrier which then could be mitigated by expanding JKN's involvement in covering the said services? or other non-financial barriers, such as acceptability, accommodation, availability, etc.? Access to health services is not determined solely by its affordability but sometimes it can be the trigger. I apologise if the discussion about access might not be your main objective, but yet in the discussion you brought it up so I thought it would be fairer to bring in a broader discussion on access to care.
Response 9: We agree with the Reviewer that access to health services, including FP services, is not determined solely by its affordability. We have included the following sentence to provide a more nuanced discussion as suggested by the Reviewer: “First, this study specifically assessed affordability to access FP services, yet there are multiple established factors that also influence the utilization of FP services, including social acceptability, socioeconomic status, and commodity availability, which were not assessed.”

Competing Interests: No competing interests were disclosed.

Reviewer Report 02 August 2023

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Lumbwe Chola
National Institute of Public Health, Oslo, Norway

Background

- Give a good reason or justification for why family planning should be funded through NHI.
- Explain better the roles of the various institutions/agencies. Is BKKBN under the Ministry of Health? If it is under the MOH, why is its budget considered to be separate?
- Include a brief description of the health system in Indonesia. There is need to provide a good picture of the Indonesian context

Methods

- Define FP and specify if only looking at modern contraception.
- What methods of contraception are considered? Give the percentage use of contraception methods (I see this was included in the results, but maybe it should be background?)
- Did the authors disaggregate funding for specific contraceptive methods? E.g. are condom campaigns (in HIV program) also considered in this analysis?
- I'd like to know more about CastCost – give a brief description in the main text – could also be great to add details in an annex. What is CastCost and what does it do?
    - And why is it being used for this analysis? The objective seems to state that authors are tracking FP expenditure, not estimating the costs of FP. Or did you set out to do the latter?
- Would be great to look at trends in FP financing before and after introduction of JKN if data is available.
- Also in relation to the above, what has been the overall trend in modern contraceptive use especially in the years before and after JKN.
- Make a distinction between cost, budget and expenditure – these seem to be used interchangeably.
    - Further, justify why budget allocations are being used to track FP funding.
- The authors have not given a clear enough picture of FP funding flows (or of health financing and funding in the overall health system) – the funding flow chart is not well explained and the reader is left with many questions.
    - First, how is the national budget allocated? Is this in a decentralized system? If funding is allocated to FP, is it ring-fenced or is it pooled with funding for other services? If the latter, how was FP funding identified?
- What specific line items are being considered – is it only commodities, or is expenditure on personnel and infrastructure included?
- How is the national health insurance agency financed? Is it independent of the MOH?

- Why is the Ministry of Finance included as a separate FP funder? Does MOF not give money to MOH? If the MOF funding is separate from MOH, please explain what sort of FP programs are being funded separately.

Results

- Authors make this statement in the results section:"there are three main ministries responsible for family planning financing in Indonesia: the BKKBN (35.8%), the Ministry of Finance (26.2%), and the Ministry of Health (2.0%)". Is BKKBN a ministry? See earlier comment about describing the roles of ministries and agencies.

- The discussion under the heading 'Public Sector FP Program' is about budget allocation and not expenditure. See earlier comment about giving clarity on budget vs expenditure.

- Private sector FP program: what is the size of the private sector? What is OOP being spent on, commodities? What are the top commodities?

- It is not clear why JKN funds only 0.4% of FP when FP it 'includes comprehensive FP services in its benefit service package' as stated by the authors.

Discussion

- The authors state "Similar to the result from the Philippines[22], JKN's minimal contribution to overall funding of FP in Indonesia suggests low utilization of the scheme to reimburse FP services." However, the cited article from the Philippines is on a slightly different topic and does not talk about Insurance contribution to FP funding, but gives the overall context of FP in the Philippines.

- "Yet, a previous study in Indonesia that assessed a separate health card program targeting the poor found increased use of contraceptives among females eligible for the program[23]". This is not entirely true the cited article actually almost states the opposite. Johar M actually states "the demand reinforcement was paralleled with an expansion of family planning services in the public health facilities…"; i.e. the health card has a minimal effect on service utilization.

- Some text in the discussion could have been given in the background section, e.g.:

  "The majority of FP providers in Indonesia are private sector, with 41% of all FP service provision delivered by private midwives; but approximately only 5% to 36% of private midwives are estimated to be contracted with JKN."

  This statement really does explain why it should not be a surprise that JKN funds a small portion of FP – because the majority of FP providers are in the private sector. Laying out this context earlier in the manuscript could give the reader a better understanding of the situation.

- In the discussion section, authors mention for the first time that a stakeholder consultation or situational analysis:

  "The stakeholder consultation conducted as a part of this analysis showed that this is due to barriers that prohibit private midwives from fully benefiting from the JKN system26."

This should be given in the methods section. Who was consulted and how? Were interviews conducted?

- Similarly, this could be mentioned earlier in the background section: "Our previous qualitative study reported the perception that health care services under the JKN scheme are suboptimal, a preference to skip JKN's required paperwork or waiting lines, and a preference to access FP services from private providers out of JKN's network due to proximity as barriers among users[27]"

- The much needed context on health financing and particularly provision of family planning services is given in the discussion section. In my opinion, this should come much earlier with a detailed discussion of the role of BKKBN. Please explain the role of BKKBN in the Indonesian health system, and the relationship between BKKBN, JKN and the private sector. An attempt is made to do this in the discussion section, but this also ends up being a little bit confusing

  "Indonesia finances its FP program through several ministries or ministry-level agencies, such as BKKBN, the Ministry of Finance, the Ministry of Health, the Ministry of Interior, the Coordinating Ministry for Human Development and Cultural Affairs, and the National Development Planning Agency; however, the majority of FP services in the public sector are funded by the national budget through BKKBN and district BKKBN offices through financing from the Ministry of Finance. We could not identify significant additional funding allocated by district governments through the district BKKBN which may be the result of decentralization in Indonesia since 2014. The lower administrative levels have prerogative on how they would like to organize their government, and, in some instances, the BKKBN subdistrict offices would be merged with other offices in line with local government's various commitments[28]. As a consequence, the budget for FP programming is often merged with other activities through this institutional integration."

Conclusion

- The conclusion is not really based on the authors findings, but rather speculative. The recommendations are also not solidly anchored on study results

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

Partly

Are sufficient details of methods and analysis provided to allow replication by others?

Partly

If applicable, is the statistical analysis and its interpretation appropriate?

Not applicable

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

No

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Health economics/health financing

I confirm that I have read this submission and believe that I have an appropriate level of expertise to state that I do not consider it to be of an acceptable scientific standard, for reasons outlined above.

Author Response 29 Nov 2023

Amirah Wahdi

Point 1: Background - Give a good reason or justification for why family planning should be funded through NHI.
Response 1: We thanked the Reviewer for this question. We added a sentence in the Introduction to provide the rationale: "In addition to being included as one of the targets in Sustainable Development Goals (SDGs the inclusion of FP services within benefit service packages of national health insurance schemes have shown to be a cost-saving investment (i.e., prevention of more expensive complications) and results in positive health outcomes (i.e., reduction in unsafe abortions and maternal deaths)"

Point 2: Background - Explain better the roles of the various institutions/agencies. Is BKKBN under the Ministry of Health? If it is under the MOH, why is its budget considered to be separate?
Response 2: BKKBN is not under the MOH, hence their budget is separate. We have further expanded the roles of various institutions/agencies in Indonesia that deal with FP in Indonesia in paragraph 4 of the Background section.

Point 3: Background - Include a brief description of the health system in Indonesia. There is a need to provide a good picture of the Indonesian context
Response 3: We have added a paragraph that briefly Indonesian health system (paragraph #2) in the Background section with the following elaboration:
"In addition to JKN, the Indonesian health system is characterized by two key features. The first is decentralization, which grants autonomy for district governments to manage their health planning, financing, and healthcare services according to local needs. The second feature is that healthcare services are delivered across both private and public primary health care (PHC) facilities and hospitals. All public primary health care (PHC) facilities and hospitals are automatically contracted by JKN, however private health facilities need to be contracted by JKN before JKN members can access it without incurring OOP payments. Private midwives are the backbone of FP services in Indonesia, with 41% of FP services provided by private midwives. Yet only 3% of private midwives received direct reimbursement from JKN by December 2021."

Point 4: Methods - Define FP and specify if only looking at modern contraception.
Response 4: The definition of FP has been added in the method section, which also specified that this study is only looking at modern contraception, with the following

elaboration: “For our analysis, we define the FP program as aiming to manage pregnancy and childbirth, the ideal age and spacing of childbirth through promotion, protection, and assistance in accordance with reproductive rights, utilizing modern contraceptive methods (i.e., condoms, pills, injectables, implants, intrauterine devices [IUDs], tubal ligation, and male sterilization). This includes whole budget line items needed to provide for FP services, such as commodities, personnel, and infrastructure.”

Point 5: Methods - What methods of contraception are considered? Give the percentage use of contraception methods (I see this was included in the results, but maybe it should be background?)
Response 5: A list of contraception methods has been provided in response to Point #4. The percentage use of each contraception method was included in the results as these numbers are calculated based on our study analysis. Hence it is part of the results of this study (not based on previous references or background information). However, we have provided Indonesia's overall modern contraceptive rate in the Background.

Point 6: Methods - Did the authors disaggregate funding for specific contraceptive methods? E.g., are condom campaigns (in HIV programs) also considered in this analysis?
Response 6: We could not disaggregate funding for a specific contraceptive method. We have added this as a limitation of this study with the following sentence: “Fourth, we were also unable to provide a disaggregated funding flow for each modern contraceptive methods or line-item budget (i.e. commodity, personnel) in our analysis,....”. Condom campaigns specific to the HIV program were included in this analysis since BKKBN is also responsible for the HIV prevention program through its ‘dual protection program.’

Point 7: Methods - I’d like to know more about CastCost – give a brief description in the main text – it could also be great to add details in an annex. What is CastCost, and what does it do? And why is it being used for this analysis? The objective seems to state that authors are tracking FP expenditure, not estimating the costs of FP. Or did you set out to do the latter?
Response 7: We have added further description about the CastCost tool in the Methods section as requested by the Reviewer: “Briefly, the tool is a user-friendly spreadsheet, which utilizes data from Reproductive Health Surveys or Demographic and Health Surveys, designed to assist countries in estimating the quantity of contraceptives' demand and need.”
More complete details about the CastCost tool are available directly on the CDC website, which we have referenced in the Main Text. Our objective is to track estimated FP expenditure. However, for the estimated FP expenditure to be tracked/calculated, CastCost required the cost of each contraceptive method to be inputted into the tool.

Point 8: Methods - It would be great to look at trends in FP financing before and after introduction of JKN if data is available.
Response 8: As we noted in the Discussion section, our study is the first to assess FP financing after introducing JKN comprehensively. Hence we are unaware of any other study that compares FP financing before and after JKN introduction.
However, we have referenced publications that examined the impact of JKN introduction to FP outcomes in the Introduction and Discussion sections, which found national health

insurance's status, while it may reduce out-of-pocket for accessing FP services, did not appear to influence mCPR among married women (Teplitskaya, 2018; Nasution, 2019).

Point 9: Methods - Also in relation to the above, what has been the overall trend in modern contraceptive use especially in the years before and after JKN.
Response 9: We thanked the Reviewer for this question. The overall trend for mCPR use has been relatively stagnant before and after JKN implementation (in 2014). We have elaborated on this in the Introduction section: "....the modern contraceptive prevalence rate (mCPR) rate decreased slightly from 57.9% in 2012 to 57.1% in 2017 among married women."

Point 10: Methods - Make a distinction between cost, budget and expenditure – these seem to be used interchangeably. Further, justify why budget allocations are being used to track FP funding.
Response 10: We thanked the Reviewer for this question. These three terms each refer to a different definition and therefore are not used interchangeably but have been used in accordance with the context.

- Cost: We used "(unit) cost" to refer amount of Rupiah/USD that is incurred to provide each modern contraceptive method to FP acceptors. This cost is required to be inputted into CastCost to allow tracking for FP funding services.
- Budget: We used "budget" to describe the amount of money that the government of Indonesia allocates for FP funding. To address the Reviewer's question, budget allocation is needed so our FP tracking funding analysis can provide a more complete picture (i.e., an end-to-end examination of how much budget is allocated for FP services to how much estimated funding is fully realized for FPs).
- Expenditure: We used "estimated expenditure" to describe the amount of money realized for FPs in the fiscal year 2019.

Point 11: Methods - The authors have not given a clear enough picture of FP funding flows (or of health financing and funding in the overall health system) – the funding flow chart is not well explained and the reader is left with many questions. First, how is the national budget allocated? Is this in a decentralized system? If funding is allocated to FP, is it ring-fenced or is it pooled with funding for other services? If the latter, how was FP funding identified?
Response 11: As mentioned in the Introduction section, Indonesia has a decentralized system. Funding for FP services is mostly ring-fenced. We have included the following elaboration to describe general FP funding flows in Indonesia: "Financing for FP is mostly ring-fenced in the national budget and flows from different national ministries, including BKKBN, the Ministry of Health, or directly from the Ministry of Finance to subnational governments (i.e., district BKKBN and local district health offices)"

Point 12: Methods - What specific line items are being considered – Are it only commodities, or is expenditure on personnel and infrastructure included?
Response 12: It includes commodities, personnel, and infrastructure to provide FP services. We further specified it in the Methods section: "This includes budget line items needed to provide for FP services, such as commodities, personnel, and infrastructure."

Point 13: Methods - How is the national health insurance agency financed? Is it

independent of the MOH?
Response 13: The national health insurance agency is financed by premiums and government subsidies. It is independent of the MOH.
We have included the following elaboration in the Introduction section: "Deemed the largest single-payer scheme in the world, JKN, which is financed both by its member's premium and government subsidy, has covered almost 85% (229.5 million) of all Indonesian citizens by late 2021. In addition to providing financial risk protection, JKN, which is managed by the Social Security Administering Body for Health – a separate ministerial-level agency from the Ministry of Health, aims to reduce health inequity and improve service access through reducing regressive payments, such as out-of-pocket (OOP) spending."

Point 14: Methods - Why is the Ministry of Finance included as a separate FP funder? Does MOF not give money to MOH? If the MOF funding is separate from MOH, please explain what sort of FP programs are being funded separately.
Response 14: The Ministry of Finance is included as a separate FP funder because it also pays directly for public service (instead of through MOH or BKKBN). This is primarily done through two separate funding schemes (called Special Allocation Fund*/Dana Alokasi Khusus* and Family Planning Operational Fund*/Bantuan Operasional Keluarga Berencana*) that flow directly from MOF through local government.
Thus, although MOH or BKKBN budgets are funded by the national budget (that is managed by MOF), the MOF budget for FP is a separate budget from the MOH budget (which may pay for infrastructure or personnel in public primary care facilities) or BKKBN budget (who may pay for FP commodities to be distributed to health care facilities).

Point 15: Results - Authors make this statement in the results section:"there are three main ministries responsible for family planning financing in Indonesia: the BKKBN (35.8%), the Ministry of Finance (26.2%), and the Ministry of Health (2.0%)". Is BKKBN a ministry? See the earlier comment about describing the roles of ministries and agencies.
Response 15: Yes, as mentioned in Response #2. BKKBN is a ministerial-level governmental institution. We have clarified this in the Introduction section.

Point 16: Results - The discussion under the heading 'Public Sector FP Program' is about budget allocation and not expenditure. See earlier comment about giving clarity on budget vs expenditure.
Response 16: As mentioned in Response #10, both terms refer to two different definitions. The budget was the amount of money that the government of Indonesia budgeted for FP services, while (estimated) expenditure refers to the estimated amount of money realized to provide the FP services.

Point 17: Results - Private sector FP program: what is the size of the private sector? What is OOP being spent on, commodities? What are the top commodities?
Response 17: We cannot establish the size of the private sector in our results as this is out of the scope of this paper. However, in the Introduction and Discussion sections, we referenced other studies that found that private providers deliver a significant proportion of FP services. In this study, we assessed how much FP funding went to private facilities (28.6%).
In the private sector, OOP is being spent on commodities, personnel, and other costs

related to PF services. Unfortunately, our analysis disallowed us to disaggregate OOP spending to specific line-item budgets or types of contraceptive methods. Hence we are not able to answer what OOP is mainly spent on. We have added this as a limitation in our study.

Point 18: Results - It is not clear why JKN funds only 0.4% of FP when FP it 'includes comprehensive FP services in its benefit service package' as stated by the authors.
Response 18: We thanked the Reviewer for this comment. These unfortunate findings are explained in the early part of the Discussion section, where we elaborate:

- "...JKN's minimal contribution to overall funding of FP in Indonesia suggests low utilization of the scheme to reimburse FP services",
- "the lack of coverage for FP services under JKN is largely due to most women's preference for private providers like midwives....; but approximately only 5% to 36% of private midwives are estimated to be contracted with JKN", and
- "perception that health care services under the JKN scheme are suboptimal, a preference to skip JKN's required paperwork or waiting lines".

Point 19: Discussion - The authors state "Similar to the result from the Philippines[22], JKN's minimal contribution to overall funding of FP in Indonesia suggests low utilization of the scheme to reimburse FP services." However, the cited article from the Philippines is on a slightly different topic and does not talk about Insurance contribution to FP funding, but gives the overall context of FP in the Philippines.
Response 19: Both countries are similar in the sense that, although FP is included in the benefit package of national health insurance, there is low utilization to use national health insurance to reimburse FP service.
The following is the excerpt from the cited articles from the Philippines (Page 6) that showed similarity with our findings in Indonesia: "Across the country, consistently low utilization of PhilHealth FP packages has been reported. The DOH noted that this may have risen from differing interpretations in implementing guidelines among patients and providers (DOH 2019). A 2018 study showed that despite having dedicated FP packages, integrating these services can still be challenging due to issues involving unauthorized fees, lack of capacity, and limited political will (Ross, Fagan, and Dutta 2018)."

Point 20: Discussion - "Yet, a previous study in Indonesia that assessed a separate health card program targeting the poor found increased use of contraceptives among females eligible for the program[23]". This is not entirely true the cited article actually almost states the opposite. Johar M actually states, "the demand reinforcement was paralleled with an expansion of family planning services in the public health facilities..."; i.e. the health card has a minimal effect on service utilization.
Response 20: We thanked the Reviewer for this information. As noted by Reviewer, the Johar M's article does point to "in general, households do not exploit the presence of a health card to increase health care utilisation". However, Johar M also makes further exceptions for contraceptive service utilization, where he noted there is a significant increase. The following two excerpts of Johar M further substantiate this:

- Result section: "The results are unsurprising given that the reinforcement to enroll is heightened by supply expansion in public facilities around 1997. The AER estimates suggest that eligible females take advantage of both health card coverage and the

supply expansion to start using contraception. This result is consistent with Jensen (1996), which finds that Indonesian women's contraceptive behaviour is highly sensitive to the presence of subsidised facilities. The results from the RAND HIE have also suggested that preventative-type services are particularly price-sensitive because preventative-care is a luxury good as opposed to a normal good and is highly substitutable."

- Conclusion section: "One area where the program has seemingly encouraged increased utilisation is in contraceptive take-up by eligible females in the households. In this case, however, the demand reinforcement was paralleled with an expansion of family planning services in the public health facilities."

To provide a more accurate description of Johar M study, we have revised the sentence to the following: "Yet, a previous study in Indonesia that assessed a separate health card program targeting the poor found increased use of contraceptives among females eligible for the program, although this increase was in parallel with an expansion of FP services in public health facilities"

Point 21: Discussion - Some text in the discussion could have been given in the background section, e.g.: "The majority of FP providers in Indonesia are private sector, with 41% of all FP service provision delivered by private midwives; but approximately only 5% to 36% of private midwives are estimated to be contracted with JKN." This statement really does explain why it should not be a surprise that JKN funds a small portion of FP – because the majority of FP providers are in the private sector. Laying out this context earlier in the manuscript could give the reader a better understanding of the situation.
Response 21: As suggested by the Reviewer, we have added details about private midwives within the paragraph that elaborated on the Indonesian health system (paragraph #2) in the Background section.

Point 22: Discussion - In the discussion section, authors mention for the first time that a stakeholder consultation or situational analysis: "The stakeholder consultation conducted as a part of this analysis showed that this is due to barriers that prohibit private midwives from fully benefiting from the JKN system26."
This should be given in the methods section. Who was consulted and how? Were interviews conducted?
Response 22: The stakeholder consultation or situational analysis referenced a previous (separate) study that we have conducted and is separate from this study. We apologize for this confusion; we have revised the sentence accordingly.

Point 23: Discussion - Similarly, this could be mentioned earlier in the background section: "Our previous qualitative study reported the perception that health care services under the JKN scheme are suboptimal, a preference to skip JKN's required paperwork or waiting lines, and a preference to access FP services from private providers out of JKN's network due to proximity as barriers among users[27]"
Response 23: We believe that this rationale elaborates on our study findings on why JKN's contribution is very small and should be a part of the Discussion section. We believed that including it in the Background would confuse the reader as that would imply we pre-judged that JKN's contribution to FP is small.

Point 24: Discussion - The much needed context on health financing and particularly provision of family planning services is given in the discussion section. In my opinion, this should come much earlier with a detailed discussion of the role of BKKBN. Please explain the role of BKKBN in the Indonesian health system, and the relationship between BKKBN, JKN and the private sector. An attempt is made to do this in the discussion section, but this also ends up being a little bit confusing
"Indonesia finances its FP program through several ministries or ministry-level agencies, such as BKKBN, the Ministry of Finance, the Ministry of Health, the Ministry of Interior, the Coordinating Ministry for Human Development and Cultural Affairs, and the National Development Planning Agency; however, the majority of FP services in the public sector are funded by the national budget through BKKBN and district BKKBN offices through financing from the Ministry of Finance. We could not identify significant additional funding allocated by district governments through the district BKKBN which may be the result of decentralization in Indonesia since 2014. The lower administrative levels have prerogative on how they would like to organize their government, and, in some instances, the BKKBN subdistrict offices would be merged with other offices in line with local government's various commitments[28]. As a consequence, the budget for FP programming is often merged with other activities through this institutional integration."
Response 24: We thanked the Reviewer for this suggestion. We have moved much of the needed context to the Background section. As mentioned in our responses #2 and #3, we also have explained the role of BKKBN in the Indonesian health system, along with other key stakeholders in the Indonesian health system.

Point 25: Conclusion - The conclusion is not really based on the authors findings, but rather speculative. The recommendations are also not solidly anchored on study results
Response 25: We thanked the Reviewer for this comment. We have revised the Conclusion section to the following:
"Our study underscores an opportunity to bolster the role of JKN, which currently contributes less than 0.4%, to Indonesia's FP program, especially as the country renews its pledge to the FP2030 Initiative40. The fact that a significant of FP services are paid for out-of-pocket (34.6%) suggests that barriers still exist for JKN members. To address this, a concerted effort from Government of Indonesia is needed to better align between BKKBN and JKN's roles in FP programs, and to eliminate barriers to accessing FP services in both public and private facilities. This may involve revising regulations to ensure a high-quality family program is accessible to all Indonesian married couples or integrate private FP service providers into the JKN program."

Competing Interests: No competing interests were disclosed.