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Factors Related to HIV AIDS Fund Expenditure 2010-2018 (NASA 2019 Data Analysis)

Faktor-Faktor yang Berhubungan dengan Pengeluaran Dana HIV AIDS Tahun 2010-2018 (Analisis Data NASA 2019)

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ABSTRACT
The prevalence rate of HIV/AIDS and various achievement targets are still challenges in HIV/AIDS intervention in Indonesia. Indonesia is required to map out the current resources and their allocation in dealing with HIV AIDS. The objective of this study is to know the distribution and the factors that related with the HIV/AIDS expenditure in the year 2010-2018. This study uses a correlation study design derived from the 2019 National AIDS Spending Assesment (NASA) report and other data sources. The results of the study show that the total expenditure on HIV/AIDS programs in 2017 was 143,053,754 USD and decreased to 107,680,959 USD in 2018. Of the total expenditure, about 60% each came from public funding, an increase of 30% over 10 years. There is a strong relationship between HIV expenditure and the variables of reported HIV cases, ARV coverage, GDP growth and health budget. Total domestic expenditure on HIV and the total health budget had the strongest relationship (R=0.885) with a contribution of 78.3% effect on the health budget (p=0.001). The availability of domestic funds is still limited and is dominated by the allocation of treatment. The high level of dependence on international funding especially on prevention means that the architecture of HIV/AIDS funding needs to be reorganized to protect the sustainability of HIV funding.

ABSTRAK
Tingkat prevalensi HIV/AIDS dan berbagai target capaian program masih menjadi tantangan penanggulangan HIV/AIDS di Indonesia. Indonesia perlu memetakan sumberdaya yang ada saat ini serta alokasinya dalam penanggulangan HIV AIDS. Tujuan penelitian ini adalah mengetahui distribusi dan faktor-faktor yang berhubungan dengan pengeluaran dana HIV/AIDS tahun 2010-2018. Penelitian ini menggunakan desain studi korelasi yang berasal dari laporan NASA 2019 serta sumber data lainnya. Hasil penelitian menunjukkan bahwa total pengeluaran program HIV/AIDS pada 2017 adalah 143,053,754 USD dan turun menjadi 107,680,959 USD di 2018. Dari total pengeluaran, masing-masing sekitar 60% berasal dari pendanaan publik, meningkat 30% selama 10 tahun. Terdapat hubungan yang kuat antara pengeluaran HIV dengan variabel kasus HIV terlapor, cakupan ARV, pertumbuhan GDP serta anggaran kesehatan. Total pengeluaran domestik HIV dan total anggaran kesehatan memiliki hubungan yang paling kuat (R=0.885) dengan kontribusi pengaruh anggaran kesehatan sebesar 78.3% (p=0.001). Ketersediaan dana domestik yang ada masih terbatas dan didominasi alokasi pengobatan. Tingkat ketergantungan yang tinggi pada pendanaan internasional khususnya pada pencegahan membuat arsitektur pendanaan HIV/AIDS perlu diatur ulang untuk melindungi keberlanjutan pendanaan HIV.

INTRODUCTION

Indonesia, with a population of around 230 million people, faces its own challenges related to the HIV pandemic. Since it was discovered in 1987, the cumulative number of HIV cases in Indonesia until December 31, 2018 reached 327,282 cases.[1] Similarly, the number of AIDS cases in December 2018 was 114,065 people.[2] The number of HIV cases found and reported is still far from the estimated number of HIV cases. It is estimated that there were 630,000 people living with HIV/AIDS (PLWHA) in 2018 which means that only 50% are currently being found.[3] In addition to the challenges in case finding, Indonesia also faces challenges in the treatment of Anti-Retroviral (ARV) drugs. Not all people diagnosed with HIV receive ARV therapy (about 70% have received ARV treatment and only 33% are receiving regular ARV treatment). The highest transmission of AIDS cases occurred through sexual intercourse (70.2%), injecting drug users (8.2%), homosexual relations (7%), and perinatally (2.9%).[4] The highest proportion of patients was found in the 25-49 year age group (69.6%), followed by the age group 20-29 years (15.6%), and the age group >49 years (8.3%). Currently, Indonesia is the only country in the Asia-Pacific region where the prevalence of HIV is still increasing and it is estimated that as many as 630,000 people were living with HIV AIDS in 2018.[1,2]

On the one hand, Indonesia has achieved the status of an upper-middle-income economy, as stated by the World Bank some time ago. This means that Indonesia which has a higher Gross National Index per capita (>3.630 USD) is no longer eligible to receive Global Fund support in HIV/AIDS control programs.[3]

Since 2004, UNAIDS has developed an instrument used to estimate the amount of spending on HIV/AIDS control in a country called the National AIDS Spending Assessment (NASA). NASA is an approach to identifying how much to spend on HIV/AIDS programs using international standard account codes. The results of this analysis are useful for comparing expenditures between countries, in addition to the specific goal that the estimation results meet the limits for standard activities of HIV/AIDS programs.[4,5] In addition, the results from NASA can be used to estimate gaps and future planning and budgeting related to the HIV/AIDS program response.[6,7] This research using the NASA method aims to analyze whether Indonesia can independently finance its HIV/AIDS control program in 2020.

MATERIAL AND METHOD

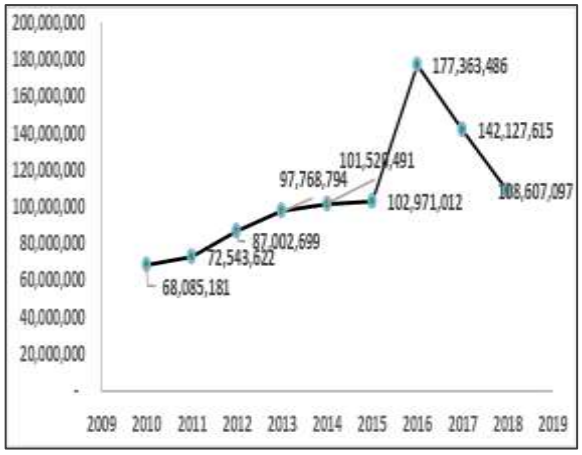
This research is an analytical research with a correlation study design. The data used are secondary data from the 2019 National AIDS Spending Assessment (NASA) and the Quarterly HIV AIDS report from the Indonesian Ministry of Health for case reports and ARV coverage. Exploration of health budget data sourced from the Indonesian Health Profile report. Finally, Gross Domestic Product (GDP) growth data is obtained from the official website of the World Bank.[5]

The NASA method is an approach to exploring information on HIV and AIDS program spending from various dimensions. The data collected in this study comes from data on main funding sources and data on program expenditures at the central level; data at the sub-national level, namely the provincial and district levels; as well as data from international and private partner institutions.

The data that has been obtained from these two sources are then performed with univariate analysis and bivariate analysis using linear regression analysis. The variable of the bivariate analysis is the total expenditure of HIV AIDS funds withReported HIV cases, ARV coverage, GDP growth and health budget. The time of the analysis is from 2010 to 2018.

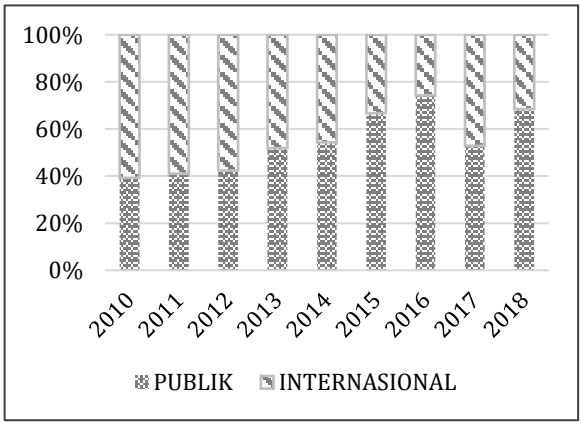
RESULT

Broadly speaking, spending on HIV AIDS programs in Indonesia increased from 2010 to 2016, this trend then declined in 2017-2018 (Figure 1). In 2017 the total expenditure on HIV AIDS in Indonesia was USD 142,126.615, a decrease compared to 2016 which was 177,363,486 and in 2018, this figure decreased again to USD 108,607,097. Overall, the contribution of the Indonesian government (or public funds) covering expenditures at the central and provincial/district/city levels in 2013 to 2018 accounted for more than half of the total funding (Figure 2).



Source: Secondary Data of NASA, 2019

Figure 1. Total HIV/AIDS Program Expenditure in Indonesia 2010-2018



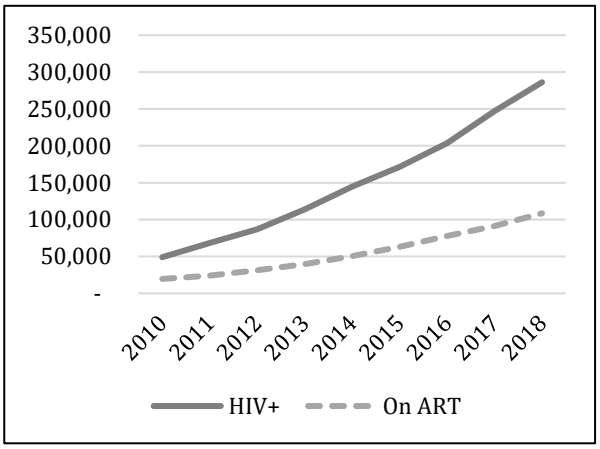
Source: Secondary Data of NASA, 2019

Figure 2. Expenditures on HIV/AIDS Programs in Indonesia in 2010-2018 Based on Funding Sources

Based on Table 1 Distribution of HIV/AIDS Program Expenditures by Program Category, Service Providers and Funding Sources in 2017-2018 shows the distribution of HIV/AIDS program expenditures by program category. Of all activities funded in 2017, expenditures for the category of care and treatment were the largest (67.89%); followed by spending on program management and administrative strengthening (12.53%); and HR incentives (5.34%). The least expenditure is 0.17% for vulnerable groups and orphans. Based on funding sources, funds from international partner institutions were used more for program management and administrative strengthening (36.16%) than for the category of treatment and care (17.4%). While the source of funds from the community is mostly used for the category of treatment and care (91.48%) than other programs. The proportion of public funding sources and international institutions according to service providers as users in 2018, it can be seen that most of the public funding sources are used by public service providers (99.98%) and only 0.02% is used by private service providers. Meanwhile, international funding sources are mostly used by public service providers (41.49%) (Table 1).

Figure 3 shows the number of reported HIV cases at the Ministry of Health and the number of PLWHA on ARV treatment in 2010, reported HIV cases were 49,027 cases and in 2018 the number of cases increased to 341,061 cases. Of this number 40% or 19,572 underwent ARV treatment in 2010 and 108,479 (38%) in 2018. Although it increases every year, ARV coverage tends to be constant at 35-40% of the total HIV positive.

As with the increase in HIV transmission from the domestic budget, the health budget increased from 2010 to 2018 (Table 2). In 2010, 25 trillion was allocated for health. In 2014, the budget doubled to 50 trillion and in 2018, the health budget was allocated 62 trillion, in the same table, we can see that GDP growth in Indonesia in general decreased slightly, in 2010, GDP in Indonesia experienced a growth of 6.22%, and in 2018, decreased to 5.17%.



Source: Secondary Data of NASA, 2019

Figure 3. Cases of HIV and People with HIV AIDS (PLWHA) in ARV Treatment

Based on the results of the correlation test, which can be seen in Table 3, the significance value for both total and domestic HIV expenditure variables with reported HIV cases, ARV coverage, GDP growth and health budget has a value smaller than 0.05. So, it can be concluded that there is a significant relationship between the two variables. Overall, the value of the relation coefficient is above 7, which means that there is a strong relationship between HIV expenditure and reported HIV cases, ARV coverage, GDP growth and health budget. Total domestic HIV expenditure and total health budget have a very strong relationship (R=0.885) with the contribution of the influence of the health budget of 78.3%.

Table 2. Indonesia's GDP Growth and Health Budget 2010-2018

Year	GDP Growth (%)	Health Budget (Million)
2010	6.22	25,274,804
2011	6.17	30,919,270
2012	6.03	33,293,456
2013	5.56	38,636,739
2014	5.01	50,335,789
2015	4.88	54,337,519
2016	5.03	65,662,593
2017	5.07	59,114,104
2018	5.17	61,864,479

Source: Secondary Data of World Bank, 2019 & Indonesia Health Profile, 2019

Table 1. Distribution of HIV/AIDS Program Expenditures by Program Category, Service Providers and Funding Sources (2017-2018)

Categories and Service Providers	Sources of Funding				Total	
	Public		International			
	USD	%	USD	%	USD	%
2017						
Prevention	2,916,105	3.97	7,523,992	21.95	10,440,097	9.7
Care and Treatment	67,139,988	91.48	5,966,963	17.4	73,106,951	67.89
Vulnerable Groups and Orphans	179.090	0.24	0	0	179.090	0.17
Program Management and Administration Strengthening	1,100,135	1.5	12,397,405	36.16	13,497,540	12.53
Human Resources	1,559,853	2.13	4,188,734	12.22	5,748,587	5.34
Social Protection and Services	269,645	0.37	36,272	0.11	305,917	0.28
Enabling Environment	212,659	0.29	2,926,327	8.54	3,138,987	2.92
Study	19,231	N/A	1,224,559	3.63	1,263,790	1.17
Total	**73,396,707**	**100**	**34,284,252**	**100**	**107,680,959**	**100**
2018						
PS.01 Public Service Provider	73,379,451	99.98	14,223,825	41.49	87,603,276	81.35
PS.02 Private Service Provider	17,256	0.02	7,545,920	22.01	7,563,176	7.02
PS.03 Bilateral & Multilateral Entities	0	0	12,514,507	36.5	12,514,507	11.62
Total	**73,396,707**	**100**	**34,284,252**	**100**	**107,680,959**	**100**

Source: Secondary Data of NASA, 2019

DISCUSSION

Public funding has increased gradually since 2006 and exceeded more than 60% of total spending in the 2015-2018 period. This funding consists of central ministries and agencies (85%), while local governments are 10% and 5% from *Badan Penyelenggaraan Jaminan Sosial Kesehatan* (*BPJS Kesehatan)*.[6] Thus, the role of sub national and other private funding contributions should be increased.[8] Basically public funding consists of 3 types, namely funds from the central government, provincial and district/city governments, as well as funds from community contributions through the national health insurance program *BPJS Kesehatan*.

Most of the program expenditure carried out by domestic funds focuses on care and treatment activities (91.48% in 2017) while the largest international funds were on prevention spending (21.95%) and program management and administrative strengthening (36.16%).[7] Expenditures in the program management and administrative strengthening categories focus on: planning, coordination, and program management; administrative and transaction costs related to funding; monitoring and evaluation; sero-surveillance; HIV-drug resistance supervision; drug supply system; information Technology; patient tracking; infrastructure improvement and construction; HIV testing and management/administrative matters.[9]

Table 3. Correlation Test on HIV Transmission

Variable (2010-2018)	*p*	R	R Squared
Reported HIV cases - Total HIV Expenditure	0.035	0.703	0.490
Number of HIV patients on ARV treatment - Total HIV Domestic Expenditure	0.034	0.700	0.495
Reported HIV cases - Total HIV Domestic Expenditure	0.030	0.717	0.513
Number of HIV patients on ARV treatment - Total HIV Expenditure	0.027	0.725	0.526
GDP Growth (%) - Total HIV Domestic Expenditure	0.021	0.742	0.551
Health Budget (million) - Total HIV Domestic Expenditure	0.001	0.885	0.783

Source: Secondary Data of NASA, 2019, World Bank, 2020 & Indonesia Health Profile, 2019

Funds related to reducing discrimination or areas of conducive environment receive a fairly small proportion of spending. In 2017 this area spent USD 1,825,899 in funding or only around 1.28%. Prevention and treatment still appear to be a national priority in AIDS response in the regions while reducing stigma does not appear to be a priority judging by the 2017 and 2018 funding figures. Implementation of the country's fast track accelerates the achievement of: 1) reduction of new HIV infections, 2) Reducing AIDS-related deaths, 3) Eliminate HIV-related stigma and discrimination. Creating a conducive environment (category 7) that supports this 3rd target, UNAIDS itself targets to reach at least 8% of spending in 2020.[10]

Countries need more stable and predictable sources of funding for HIV prevention, treatment, and care. The trend of increasing domestic funds can be interpreted as growing independence and stability of the state in dealing with HIV/AIDS. However, the unbalanced allocation between prevention, treatment, and a conducive environment will make dependence on international funds high. Prevention only gets a share of 3.97% or as much as 2,916,105. In fact, Globally, the cost of prevention per infection is estimated at 3.923 USD. While the cost of treatment per person is estimated at 4,707 USD, then prevention would save 784 USD for each preventable infection.[11]

Prevention priorities for key populations will be able to reduce cumulative HIV infections by 5 million infections, reduce the number of People Living with HIV AIDS (PLWHA) by 3.1 million, reduce AIDS deaths by 40% and reduce HIV prevalence.[11] Sustained domestic funding for HIV/AIDS is needed to achieve a robust program to tackle the HIV epidemic that will result in a reduction in cases in the long term. The high level of dependence on international funding, especially on prevention, makes it necessary to reorganize the HIV/AIDS funding architecture to protect the sustainability of HIV funding.[12]

The increase in the government's contribution is directly proportional to the HIV/AIDS control program in Indonesia. Expenditures for HIV/AIDS control programs from the domestic budget continued to increase from 2010-2016. Similar trends are shown by reported HIV cases and ARV coverage in Indonesia. The value of the

correlation study also showed a strong and significant relationship between domestic spending on HIV/AIDS with reported cases (R=0.717, p=0.030) and ARV coverage (R=0.725, p=0.027). In this study, it is shown that sthe source of public funding from the central government spent on this program is largely expenditure by the Ministry of Health for treatment (91.48% in 2017). Funds from the APBN are disbursed for the procurement of ARV drugs, OI, Reagents and the provision of HIV test kits every year. There was an increase in spending on ARV drugs, from 18 million USD in 2015 to 65 million USD in 2016 due to the policy of switching health programs.

The increase in the treatment budget is in line with the policy commitments shown since the first case was discovered until the implementation of the Sustainable Comprehensive Service for HIV-AIDS and Sexually Transmitted Infections (STIs).[13-14] Strengthening treatment coverage is considered efficient but effective in suppressing the epidemic. A modeling carried out in 23 countries shows that a more efficient allocation of HIV resources can reduce cumulative HIV infections and reduce deaths caused by HIV/AIDS.[15] However, the current amount of funding is not sufficient to meet the targets of the national strategic plan, at least a 185% increase in budget is required to achieve the desired target.[15]

The country's economic growth in this study also shows a relationship with domestic spending on HIV/AIDS in Indonesia.Total HIV domestic expenditure and GDP growth (%) have a strong relationship (R=0.742) with the contribution of the influence of the health budget of 0.551% and p=0.021. These results are in line with a study conducted by Avila, et al in 125 low- and middle-income countries in 2013, the study found that GDP per capita and HIV prevalence were positively associated with increased levels of HIV expenditure from public sources.[9] There was a 10 percent increase in HIV prevalence associated with a 2.5 percent increase in domestic funding for HIV.[9]

The rate of economic growth reflects a measure of its ability to maintain public health conditions.[16] This study indicates the country's ability and readiness to fund HIV/AIDS prevention, especially for treatment. Re-mapping of funding allocations, however, needs to be done. Funding for community-based prevention programs aimed at key populations is necessary and the development of a conducive environment needs to be allocated.

This study also shows a strong relationship between the health budget and domestic spending on HIV/AIDS. Total domestic HIV expenditure and total health budget have a very strong relationship (R=0.885) with a contribution of 78.3% of the health budget influence and a p=0.001. Financial capacity in dealing with HIV/AIDS is related to the availability of the health budget at the Ministry of Health. This is in line with research by Yang, dkk which confirms that the larger the health budget, the greater the support for the population affected by HIV/AIDS.[17] However, the distribution of the proportion of the HIV/AIDS budget needs to face 3 other budget priorities at the Ministry of Health, namely the handling of stunting, prevalence of tuberculosis, and elimination of malaria.

This study has several limitations. First, NASA's data collection at the sub-national level only covers eight to eleven provinces that have the highest HIV/AIDS prevalence. In addition, this data also does not explore independent funds issued by the community (out of pocket). Therefore, this result from NASA has the possibility of a lower estimate than the actual one. In addition, this research design only looks at the relationship of the aggregated data without being able to determine what variables have the most influence. The last, there is no direct causal relationship between program expenditures and the independent variables studied in this study.

CONCLUSION AND RECOMMENDATION

A sustainable HIV/AIDS control program is highly dependent on funding. The results of NASA's analysis for 2017-2018 show that the total expenditure of funds related to the HIV/AIDS program in 2017 was 143,053,754 USD and decreased to 107,680,959 USD in 2018. Of the total expenditure, about 60% each came from public funding (APBN/APBD) and the remaining 35-40% comes from international partner institutions and the private sector. To achieve the target of 80% of funding sources coming from the public, intensive advocacy activities at all levels are needed to identify potential sources of public funding (including

the Ministry of Finance, BAPPENAS, Ministry of Home Affairs); strengthening cross-sectoral capacity for planning HIV/AIDS prevention programs at each regional level and increasing the allocation of funds for HIV/AIDS prevention and control programs through related sectors and government funding mechanisms for Non-Governmental Organizations; explore opportunities for private sector partnerships or other forms of public-private collaboration; and the use of village funds for HIV/AIDS prevention and control programs. The last, HIV/AIDS funding architecture needs to be reorganized to protect the sustainability of HIV funding.

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