



## DO NOT FORGET THE DISEASES APART FROM COVID-19! ITS HIGH MORBIDITY ILLNESS: EVIDENCE FROM INDONESIA AND THE PHILIPPINES

Amril Mukmin<sup>1\*</sup>, Al Fauzi Rahmat<sup>2</sup>

<sup>1</sup>Department of Radiology, Faculty of Health Sciences, Universitas Aisyiyah Yogyakarta, Jln Ring Road Barat No. 63, Mlangi Nogotirto, Gamping, Sleman, Yogyakarta 55292, Indonesia

<sup>2</sup>Doctoral School of Economic and Regional Sciences, Hungarian University of Agriculture and Life Sciences, Budapest, Villányi út 29-43, Hungaria 1118, Hungary

\*[amrilmukminanis@unisayogya.ac.id](mailto:amrilmukminanis@unisayogya.ac.id)

### ABSTRACT

Along with the Coronavirus Diseases (or called "COVID-19") pandemic, most of the world's population is affected by global endemic diseases that have been around for a long period of time, so it can affect the additional burden on a country's healthcare system such Indonesia and the Philippines as case study. Therefore, this article aims to evaluate the rate of endemic disease and COVID-19, as well as to review the healthcare system and resources in Indonesia and the Philippines. We conducted a specific analysis based on official health documents by the government and previous literature; also, news portals were conducted. Our findings note that is a shift in the contribution of the healthcare system in Indonesia and the Philippines due to relatively high surveillance of the spread of COVID-19, as a consequence in the centralization of health budgets and resources for the prevention of COVID-19 disease as opposed to endemic diseases. Indeed, some endemic disease morbidity is reported to be higher than the COVID-19 pandemic. In the end, Indonesia and the Philippines are faced with the unexpected, where it has been proven that endemic diseases still exist during the COVID-19 pandemic and future healthcare spending

Keywords: COVID-19; endemic diseases; healthcare system; health resources; indonesia; philippines

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### INTRODUCTION

This article aims to evaluated the prevalence of endemic and Coronavirus pandemic diseases (or called "COVID-19"), as well as to review the healthcare system and resources in Indonesia and the Philippines. As a Southeast Asia including Indonesia and the Philippines are critical zone internationally in term of the risk of spreading diseases outbreaks. In line with this region is home to more than 30% of the world's population (Sarma, 2017). Thus, speaded of disease in Southeast Asia has distrupeted the healthcare system and endemic diseases management (Yeket al., 2021).

Countries, Indonesia and the Philippines, with a high population density, as well as uncontrolled environmental temperatures, are transmission factors for increasing disease transmission risk (Tian et al., 2022; Wilder-Smith, Ooi, Horstick, & Wills, 2019). Therefore, these two countries have the potential to produce "extraordinarily" high rates of endemic diseases and are dangerous to mankind (Chua et al., 2021; Ishak, et al., 2019). As a result, the Indonesian government is working hard to improve the health insurance service system and control many diseases (Agustina et al., 2019; Jong et al., 2018; Rahmat, 2021). Likewise, in the Philippines, the government is trying to realize responsive universal health coverage and provide a quality care system (Bautista et al., 2022; Dayrit, et al., 2018).

Nevertheless, these ideals were faced with the tremendous impact of a pandemic which resulted in disastrous consequences for most countries in the world, including Indonesia and

the Philippines, which had put their healthcare systems on the rise through the establishment of health centers and health units, the availability of health workers and adequate facilities (Flores, et al., 2021; Herwansyah et al., 2022). Moreover, it has been shaken badly serious concerns about the prevalence of the COVID-19 disease in the midst of fighting other endemic diseases.

COVID-19 disease is a global threat since the first cluster was reported in Wuhan, China in late-December 2019, it has destroyed all aspects of life (Najafi et al., 2021), including chaos in the world's healthcare system and emergency response. Therefore, policymakers and health practitioners work hard to save the community through various countermeasures policy efforts (Abbas, et al, 2021). Thus, Indonesia and the Philippines began to impose various restrictions on the movement of people caused by the findings of the first reported cluster of COVID-19 disease. Indeed, on the other hand, these countries are trying to fight several endemic diseases that have the potential to cause a number of deaths in several locations.

Throughout the COVID-19 pandemic in Indonesia, scholars have dramatically noted the relationship between diarrheal disease as an early manifestation of COVID-19 disease (Darnindro et al., 2020). Also, there were findings of multiple cases of dengue fever infection and COVID-19 (Alam et al., 2021; Fauziyah et al., 2021; Pascawati, et al., 2021). Furthermore, there are reports of the coexistence of malaria and dengue fever with COVID-19 reactivity (Yek et al., 2021). Even an assessment of measles that is likely to occur during the spread of COVID-19, even though the number of measles disease cases is decreasing (Suwantika, et al., 2020), is actually a concern for most scholars (Durrheim et al., 2021; Venkatesan, 2022).

Thus, some evidence of endemic diseases such as diarrhea, measles, and dengue fever in Indonesia during COVID-19 has been reported. They were significantly correlated with the rate of spread of COVID-19 disease when combined with climatic conditions and relatively high temperatures, as well as population density (Azizah et al., 2021; Tosepu et al., 2020). This is also likely to increase anxiety because Indonesia is a tropical country that has the opportunity to increase the number of transmissions of endemic disease cases (Jong et al., 2018). Likewise, with the Philippines, several findings have been noted. COVID-19 disease appears together with Chikungunya and Zika diseases (Costa, et al., 2021), as well as the presence of Dengue fever, which still poses a danger during COVID-19 (Wiyono, et al., 2021). Furthermore, the discovery of symptoms of pneumonia, which co-occurrence increases in patients with COVID-19 (Kim, Yoo, & Yang, 2022), and there are findings of cases of diarrhea and diabetes, which are one of the risk factors for death for patients with COVID-19 (Ceballos, 2021).

Overall, previous studies seem very clear in reporting the manifestations of COVID-19 along with other endemic diseases in Indonesia and the Philippines, but their studies are still limited to the local level, and there is a lack of studies in the evaluation of comprehensive endemic disease rates in the middle of the world. The outbreak of COVID-19 at the national level, the healthcare system, and available resources were also discussed. This is because the allocation of human resources and health infrastructure is also important to strengthen in the face of a number of diseases (Yek et al., 2021). In addition, Laiprakobsup, T. (2018) also stated that awareness of the health budget allocation is needed. Finally, this article synthesizes data sources for national health information in Indonesia and the Philippines through various credible documents and reports. Therefore, this study seeks to examine the prevalence of endemic diseases in parallel with the COVID-19 pandemic, with particular attention to the healthcare infrastructure and resource availability in Indonesia and the Philippines.

## **METHOD**

This article initiated the findings through a literature approach that was sourced from information on official Indonesian health reports in the form of documents titled "Indonesian health information," "InfoDATIN", the Data and Information Center of the Ministry of Republic of Indonesia, and "Performance Report of the Data and Information Center" related to disease information, and also sources of health resources obtained from 2000 to 2020. In addition, we have obtained sources of information from the official news media through the Indonesian Ministry of Health portal. For the Philippines data, it is obtained via "Philippine Statistics Authority" web portal, i.e. <https://psa.gov.ph/> in term of "Philippine Statistical Yearbook" document and various other supporting health documents.

Our research design adopts from Bowen's (2009) study, which proposes four steps: finding data; selecting data; assessing data; and also synthesizing the data contained in the document. It is necessary to understand the picture presented in the various documents obtained. To begin with, we have conducted a descriptive analysis of the reported documents. Where to collect information on the number of cases of illness from several endemic diseases and COVID-19. Furthermore, we sort lined the data and provides an evaluation assessment. In addition, a review of the annual health budget and health resources was also recorded, which aims to look at the preparedness response from Indonesia and the Philippines to endemic diseases and the COVID-19 pandemic.

Finally, this research discusses the challenges faced by the Indonesian and Philippine governments in addressing the emergence of endemic diseases that were previously considered isolated during the COVID-19 outbreak. To support this analysis, the research collected various data sets, including information on endemic diseases in both countries from 2000 to 2020, COVID-19 pandemic data from 2020 to 2021, and statistics on medical personnel and nurses from 2000 to 2020. Additionally, data on hospitals and pharmacies, as well as health budget allocations in Indonesia and the Philippines over the same two-decade period, were included. This comprehensive data collection provides valuable insights into the preparedness and capacity of both countries in handling simultaneous health crises.

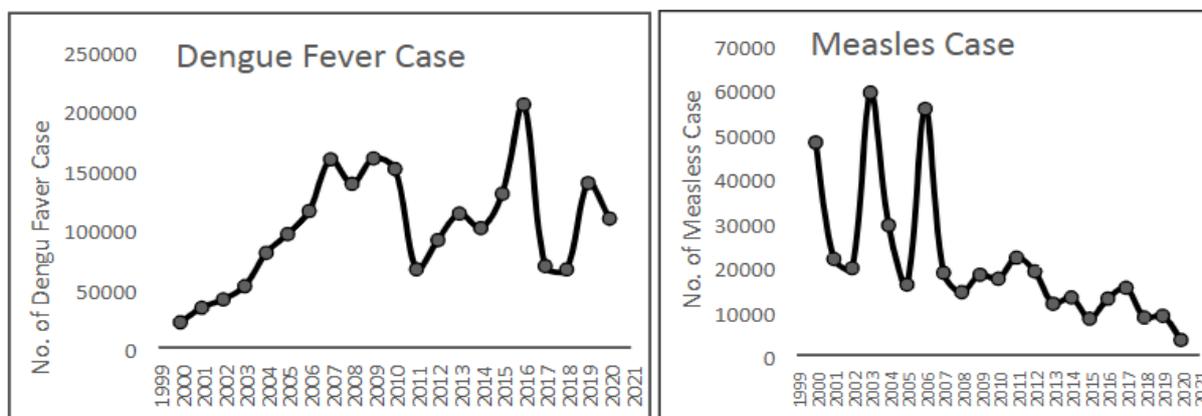
## **RESULT**

This section evaluates the findings of endemic disease morbidity and COVID-19. In addition, it also discusses the healthcare system, such as the number of medical and health personnel, reports on hospital facilities and the number of drugstores available, as well as assessing the annual health budgets in Indonesia and the Philippines. Furthermore, we also discussed the future challenges for both countries in facing the threat of multiple diseases. This article has documented the development of endemic diseases in Indonesia from 2000 to 2021. There are three diseases that have become highlights, such as dengue fever, measles, and diarrhea. Overall, diarrheal disease is the disease with the highest number of confirmed cases compared to dengue fever and measles. As for dengue fever, the number of confirmed cases has increased significantly from 2000 to 2007, the increase in cases being the most severe in the past two decades. Although from 2010 to 2011 there was a decline, the numbers fluctuated again from 2014 to 2016. The number of confirmed cases dropped dramatically from 204171 to 65602 between 2016 and 2018. At the end of 2021, it experienced a decrease compared to the previous year.

### **The Evolution of Endemic Diseases and the Presence of a COVID-19 Pandemic**

Furthermore, measles endemic disease has been reported throughout the last two decades. From 2000 to 2008, the number of confirmed cases was very alarming, with the occurrence of very dramatic fluctuations, which peaked in 2003 with 59,000 confirmed cases. In the next period, the number of measles cases appears to have decreased, reaching a peak in 2020 with 3382 confirmed cases. Like other endemic diseases, diarrhea also affects people in Indonesia.

Confirmed cases that have been reported from 2000 to 2005 have cumulatively decreased from 4,771,340 to 14,045. However, diarrhea cases jumped again in the next period, significantly increasing from 2005 to 2006 and 2012 to 2014. The peak of confirmed cases of diarrhea occurred in 2014, with a total of 8,490,976. Clearly, cases of diarrhea have skyrocketed, although in 2020 it decreased by 3,252,277.

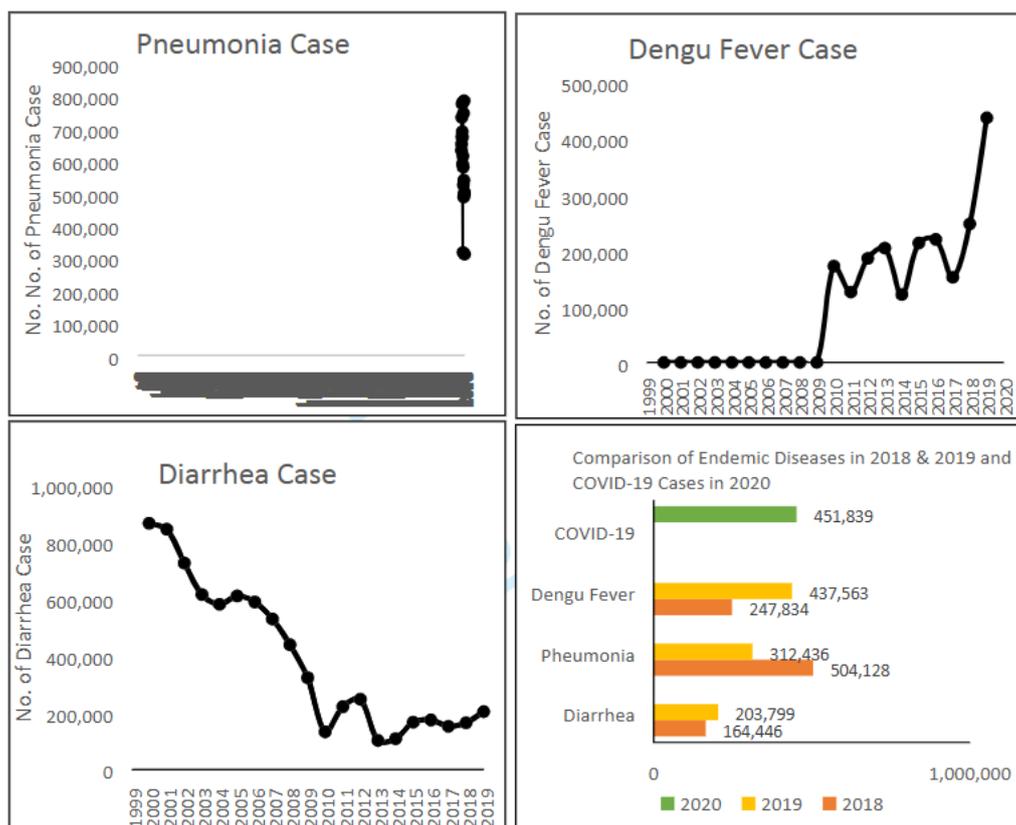


Source: Indonesian Health Profile, Elaboration

Figure 1. Comparing Diseases: Case Reported in Indonesia

The decline in cases of three endemic diseases in 2020 coincided with the presence of the COVID-19 pandemic. This pandemic entered Indonesia in March 2020. From the results of the report, the number of COVID-19 cases in Indonesia in 2020 was 743,198 confirmed cases. When compared with other endemic diseases, it is still inferior to diarrhea, which takes the most pain with a total of 3,252,277. This is in the spotlight even though the COVID-19 has taken over the people's pain from cases of dengue fever and measles, but diarrheal disease still exists amid the outbreak of confirmed cases of illness caused by COVID-19.

Longitudinally, cases of endemic diseases in the Philippines have been reported in Figure 2, including pneumonia, diarrhea, and dengue fever. These three confirmed cases of endemic disease are relatively frequent every year. From 2000 to 2008, Pneumonia disease was reported in as many as 632,930 cases of confirmed morbidity. Second, Pneumonia disease fluctuated from the reported numbers. Dramatically, pneumonia in 2008 to 2010 decreased to reach the point of 381,123 cases of illness in 2010, compared to 2008 when there were as many as 780,199 active cases. Furthermore, cases of pneumonia illness again experienced a fluctuating increase to free fall in 2018 to 2019, with a total of 312,436 confirmed cases of illness. Thus, cases of pneumonia in the Philippines have been declared to be getting better in recent years. From 2000 to 2010, it was reported that there was a massive decline in cases of illness from diarrheal disease, from 866,411 cases of illness in 2000 to 132,553 in 2010. In 2019, as many as 203,799.

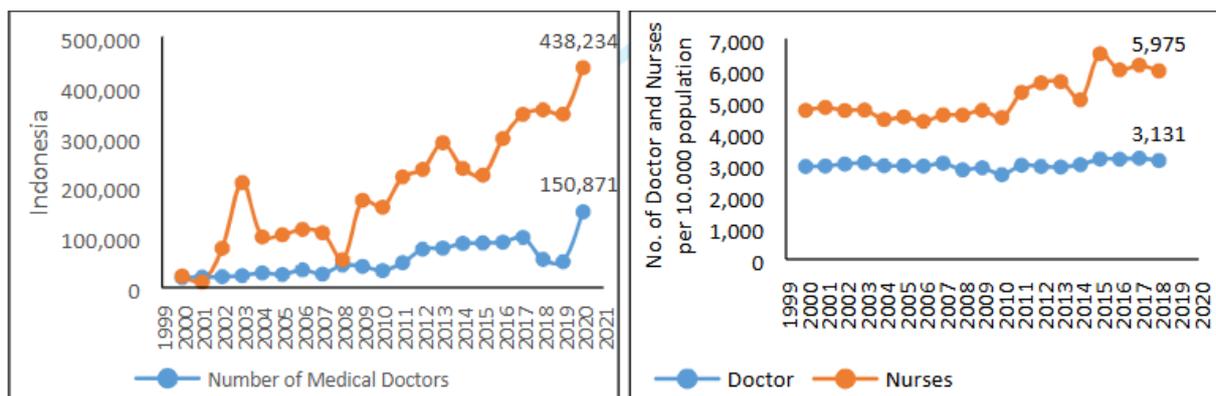


Source: Philippine Statistics Authority, Elaboration  
 Figure 2. Comparing Diseases: Cases Reported in the Philippines

Therefore, the two endemic diseases in the Philippines, pneumonia and diarrhea, were not significantly associated with cases of dengue compared to cases of dengue fever, which were also reported. Dengue fever since it was reported in 2010 to 2019 has actively infected Filipinos, where the most stressful is that in 2017 to 2019 there was a serious spike from the total 2017 morbidity of 152,224 to 437,563 in 2019. Based on the findings of endemic disease cases in the Philippines, compared to cases of the COVID-19 in 2020, the number of pandemic cases in 2020 outperformed those of endemic diseases in 2019. However, when compared to 2018, the number of pneumonia cases is higher in cases of illness, with a total of 504,128. Also, cases of illness due to dengue fever in 2019 almost reached the point of illness for COVID-19 in 2020, with a total of 437,563 for dengue fever and 451,839 for COVID-19. Thus, cases of dengue fever were reported to have increased before the onset of COVID-19 with the latest reports.

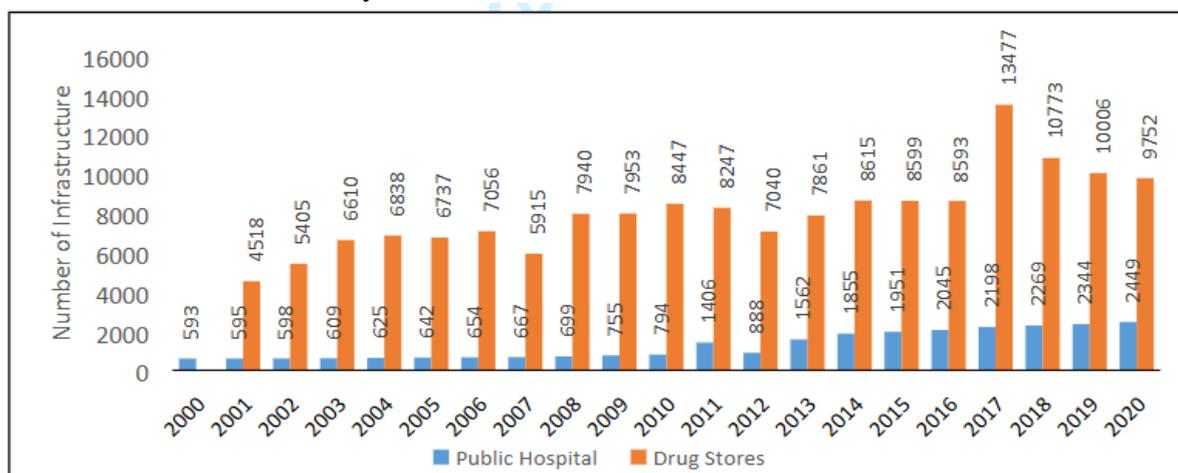
### Health Care System

Figure 3 displays the total of doctor and nurses between 2000 and 2020 in Indonesia and Philippines. These health workers are considered to play an important role in improving the health care system. Under their control, they are expected to be able to optimize the control of endemic and pandemic diseases. In term of Indonesia, for two decades, the number of doctors has increased relatively slowly. From 2017 to 2018, there was a decline from 99,703 to 56,084, and also a decline again in 2019 to 51,398. However, in 2020, the number of doctors increased dramatically by 150,871, or 1.93%. On the part of healthcare nurses, there have been reports of fluctuations for two decades from 2000 to 2020.



Source: Indonesian Health Profile, Elaboration. Philippines Statistical Yearbook, Elaboration  
 Figure 3. Number of Doctor and Nurses in Indonesia and the Philippines

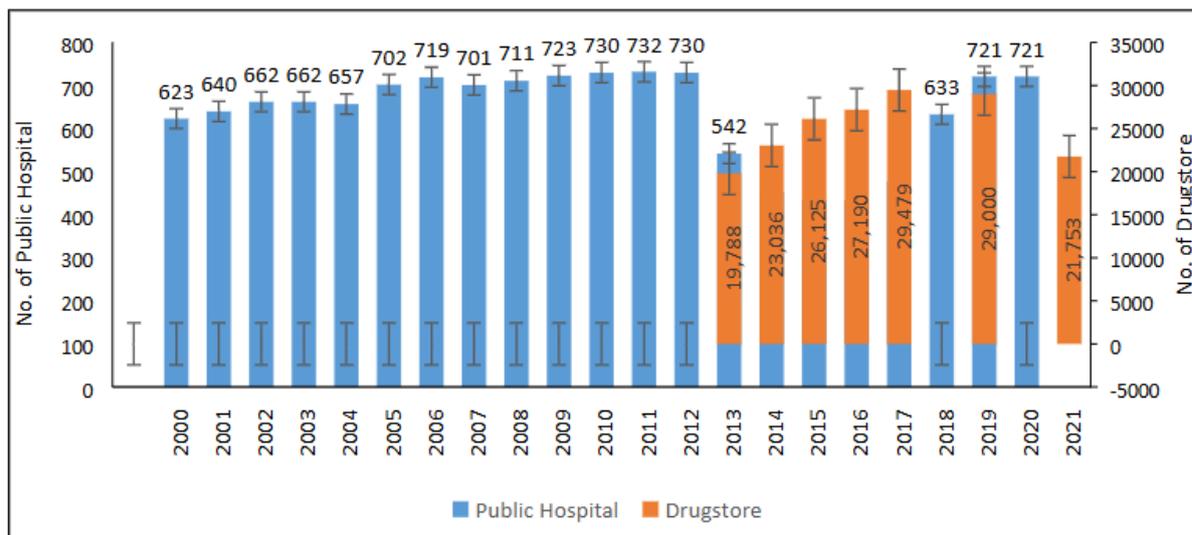
Several periods with an increase in the number of nursing personnel, from 2002 to 2003, increased by 1.67%, but decreased from 2003 to 2004, which was 0.51%. Furthermore, from 2008 to 2009 there was an increase of 2.15%. In addition, in 2020, the increase in the number of nurse health workers is not significant, which is only a difference of 92,726 nurses. Thus, the increase in the number of doctors is more substantial than the increase in nurses in 2020. This is far from the experience of the increase in previous years, even though the spike in COVID-19 is more significant in average morbidity compared to other endemic diseases. On the other hand, a compilation of information on the numbers of doctors and nurses from the Philippine government. The number of doctors does not explicitly change from year to year, in contrast to the number of nurses, which in 2014 decreased from the previous year, from 5,632 to 5,061, but in 2015 showed a very comprehensive increase to 6,520 total nurses. Throughout this study, we did not find any meaningful data collection in the early years of COVID-19, namely 2019 to 2020. Thus, the latest data for doctors amounted to 3,131 in 2018 and 5,975 nurses in the same year.



Source: Indonesian Health Profile, Elaboration  
 Figure 4. Number of Public Hospital and Drug Store in Indonesia

Furthermore, the number of drugstores continues to mushroom every year, with the peak of the number of drugstores in Indonesia occurring in 2017 with 13,477 drugstores. However, in the following year, there was a decline again, and at the end of 2020, only 9,752 drug stores were recorded. Based on the findings, we have concluded that the government is trying to provide an assessment of hospitals and drugstores so that the decline in the number in the middle year is believed to occur due to the implementation of an assessment of the quality of hospitals and drugstores.

Figure 5 presents annual information from government hospitals and drugstores in the Philippines between 2000 and 2021. There are important points to highlight from the limitations and gaps of the data presented. First, the Philippine government has provided hospital infrastructure from year to year but shows that it is not optimal in total. It is unfortunate that in 2013 the hospital data fell drastically from 2012. There was a gap of 188 hospitals. Worse, from 2014 to 2021 there was a reporting void because the Philippine authorities were still using old data, so only a few were reported in various official sources, such as 2018 and 2019 (633 and 721, respectively). In 2020 the data found was indicated to be the same as the previous year from the news in the mass media.



Source: DOH, Statistical Office, Online News, Philippines  
 Figure 5. Number of Public Hospital and Drugstore in The Philippines

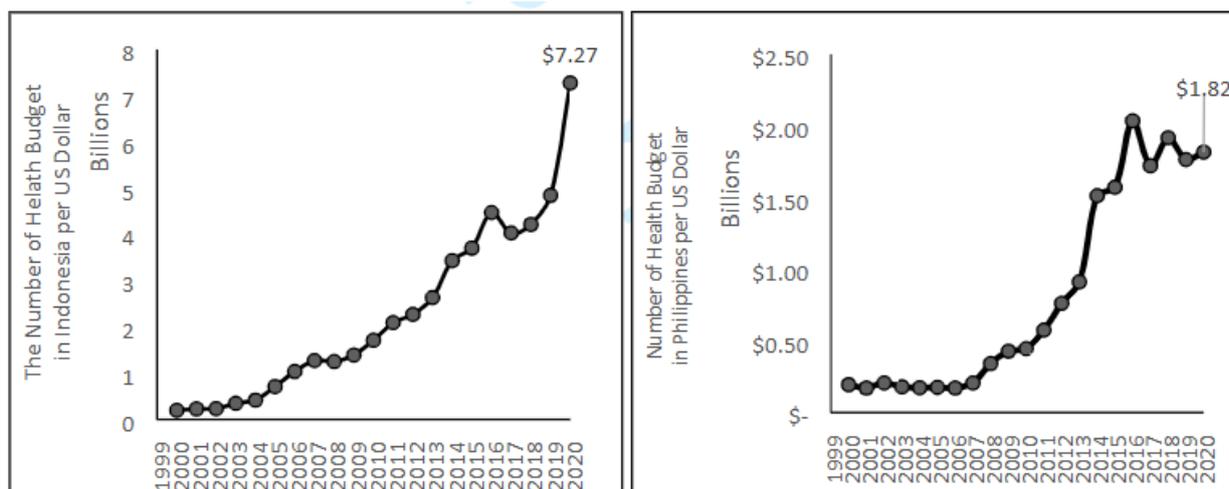
Then, information about drugstores was also recorded from 2013 to 2021. Reporting on the number of drugstores increased from year to year, but in 2018 there was a reporting void and the loss of the number of drugstores in 2020 and again in 2021, as many as 21,753 facilities were found. Evidently, during COVID-19 in 2020, there were 721 hospitals. This number proves an increase from 2018, when there were only 633 facilities. However, compared to 2009 to 2012, the data on government-owned hospitals is more than the last year. This also applies to drug store data, which is reported to show an increase from 2013 to 2019, but in 2021 the number of drugstores is only 21,753 buildings. This shows that the number of drugstores before the spread of COVID-19 was greater than during the first year of COVID-19.

### The Health Budget Allocation

The provision of a health budget covers various aspects of financing activities, in addition to operational funds for disease control treatments, including prevention, control, and eradication efforts. Also shown are employee salaries, maintenance of facilities, and procurement of equipment and other health equipment. Therefore, the health budget plays a vital role in the successful implementation of the program of activities, so we have highlighted the importance of the availability of an effective health budget to support the creation of a health system in Indonesia and the Philippines.

Figure 6 depicts the health budget allocation provided by the Indonesian government and the Philippines, in term of Indonesian case, the experienced fairly slow growth from 2000 to 2005. Then, costs began to move up in 2006, with a difference of \$ 326,774,752 from 2005. There was another recorded increase in the health budget from 2015 to 2016, which was \$3,703,894,895.00 to \$4,474,058,713.00. It also soared again and scored the total health

budget allocation given in 2019 worth \$4,845,166,672.00 to 2020 with a total of \$7,274,879,772.00.



Source: Indonesia Health Profile, Elaboration & DOH, Philippines, Elaboration  
 Figure 6. Number of Health Budget in Indonesia and the Philippines

The dramatic increase in 2019 to 2020 was due to the boom in the COVID-19 pandemic during the period. When referring to disease control programs, the government of Indonesia provided a health budget for endemic disease control in the previous year. However, in 2020 there was a spike in confirmed cases of COVID-19. The budget in 2020 shows a dramatic increase in costs of 0.50%. This is because, in addition to controlling endemic diseases, it is also provided for controlling the COVID-19 pandemic. On the other hand, an overview of the Philippine government's health budget allocation. Of these, the number of available health budgets from 2000 to 2020 is volatile. Dramatically, from 2013 to 2014 there was a fairly high increase in the allocation of the health budget by a difference of \$601,516,056 or 0.65%. An increase in the number also occurred in 2016, although in the following years there was a decrease in fluctuating budget allocations. The increase from 2019 to 2020 was still modest when compared to the increase from 2015 to 2016. In fact, in 2020, there were cases of the COVID-19 pandemic that spread in the Philippines. The health budget to control endemic and pandemic diseases in 2020 is considered optimal because, when referring to the number of confirmed cases of COVID-19 in the Philippines, it shows a dramatic increase in 2020, coupled with the costs for efforts to control endemic diseases that have been faced so far. Therefore, we consider that the Philippine government has not optimized its budget allocation to deal with this dual disease.

**DISCUSSION**

The surveillance of COVID-19 disease has been scientifically proven to worsen the health system in Indonesia and the Philippines, in this case, increasing the burden of health care for a country in terms of the availability of human resources, infrastructure, and health budgets. During the COVID-19 outbreak, multiple disease co-incidences have been reported. Cases of endemic diseases such as diarrhea, dengue fever, and pneumonia also have a double contribution to COVID-19 sufferers, so this crisis further complicates the care systems of Indonesia and the Philippines. Although cases of illness from endemic diseases in Indonesia and the Philippines have decreased, we have investigated that these two countries are more focused on handling COVID-19 than endemic diseases. In addition, there is a policy of limiting movement for the community so that cases in the field are not maximally reported. This is also evident in Thailand. Prasertbun et al. noted a decrease in cases of endemic diseases in Thailand during the COVID-19 pandemic period, such as pneumonia, influenza, and dengue fever, not because there were no case findings in the field, but because Thai health workers were more focused on mitigating COVID-19 disease rather than dealing with

other endemic diseases, so the data reported is not optimal (Prasertbun, et al., 2022). This is believed to have happened in Indonesia and the Philippines.

Then, the number of diarrheal diseases in Indonesia in 2020 is still high compared to cases of COVID-19 illness (see Figure 1). In the Philippines in 2019, the increase in dengue fever disease experienced a significant increase (see Figure 2). Although case data for 2020 has not been reported as of this writing. Looking at the data before COVID-19 spread, in the Philippines, data on dengue fever showed a very drastic increase from 2018 to 2019 (see Figure 2). The evidence that the Philippines ranks as one of the top four countries in Southeast Asia in terms of the incidence of dengue fever by age at the national level (Tian et al., 2022). This indicated that the Philippines' decades-long struggle against Dengue Fever is still continuing (Ong, et al., 2022). Then, the number of pneumonia cases in 2018 in the Philippines was higher than the cases of COVID-19 illness in 2020. Thus, endemic diseases also deserve high attention because they are complicated by the co-occurrence of the COVID-19 pandemic. Langer (2020) noted that every patient who has recovered from COVID-19 is still dealing with other diseases, so this is no less important to prevent. Then, Lu et al. (2021) have raised the alarm for countries in ASIA, where it was found that there was a potential impact of a second pandemic, especially in Indonesia from Dengue Fever during COVID-19.

There were also implications for disease coexistence, for example, Dengue Fever with COVID-19 (Yek et al., 2021). This was confirmed by Pascawati, who implied that although in Indonesia the control of dengue fever had decreased in intensity, this was because Indonesian governments only focused on controlling the COVID-19 disease. As a result, the breeding source of the *Aedes A. mosquito* has the potential to increase (Pascawati et al., 2021). Therefore, the demand for resources and infrastructure facilities needs to be carried out on a massive scale. Most of the attention of the Indonesian government on health resources in Indonesia has been directed to combating the COVID-19 pandemic and has paid little attention to the risk of endemic disease, which has hit many parts of Indonesia. This is evidenced by diarrheal disease in 2014, in which the number of diseases was much higher than COVID-19 in 2020. However, the availability of nurse resources in 2014 actually decreased from the previous year (see Figure 3), which is inversely proportional to the number of COVID-19 cases. 19. Therefore, the presence of COVID-19 has drastically increased the availability of the entire care system, such as the availability of resources for doctors, nurses, and infrastructure for government hospitals and drugstores. The results of this study also show that there is a significant difference in the provision of health budgets. The government has budgeted a large portion for the handling of COVID-19 (see Figure 6), compared to other diseases, even though the level of endemic morbidity is not much lower.

In the Philippines, pneumonia disease in 2018 has exceeded the total morbidity of COVID-19 in 2020, and dengue fever has almost matched the total morbidity of COVID 19. However, the Philippine government is less focused on endemic diseases compared to COVID19 and 2020. This is evidenced by the surplus. The budget for handling COVID-19 in 2020 increased but was significant during the COVID-19 year compared to endemic in previous years. Rahmat et al., (2021) argue that the Philippines is one of the countries in ASEAN that is considered less ready to respond to the presence of COVID 19. Furthermore, the latest data collection as of the time of writing this article, we have not found any updated data provided by the Philippine government, such as the availability of health human resources, both doctors and nurses, or the government hospitals and drug stores. As a result, this uncertainty causes a lack of seriousness in handling endemic diseases, and the reported data does not look complete.

However, when explored further through various previous literature, it is found that governments in ASEAN countries, including the Philippines, have shifted health care from

endemic to the COVID-19 pandemic (Wiyono et al., 2021). However, this crisis shift is considered not yet ready because their treatment system is not very stable but is forced to deal with COVID-19. In fact, Bayod is of the opinion that they still lack budget for health, health personnel, and also poor health facilities (Bayod, 2020). This can be proven from our findings showing that there was not a significant increase in the budget for handling diseases in 2020 during the COVID-19. (See Figure 6). Thus, the Philippine government and policymakers need to allocate appropriate health resources (Tian et al., 2022).

## CONCLUSION

The endemic diseases that have existed in Indonesia and the Philippines for many years have been surprised by the presence of surveillance for the COVID-19 pandemic disease. The endemic and pandemic morbidity is questionable, considering that Indonesia and the Philippines have given serious attention to COVID-19 compared to previous endemics. Healthcare systems such as the availability of human resources for doctors and nurses were analyzed, as was infrastructure in Indonesia and the Philippines – although in the Philippines there is still missing data and even relatively poor data updates. Likewise, the availability of health budgets in Indonesia and the Philippines. This paper highlighted endemic disease control activities that are considered to have decreased in intensity during the COVID-19. This is evidenced by the decrease in morbidity reporting data for several endemic diseases in Indonesia, such as data on measles, dengue fever, and diarrhea. Furthermore, in the Philippines, the morbidity of pneumonia and diarrhea is inversely proportional to the increase in the morbidity of dengue fever. This endemic disease morbidity crisis associated with the presence of COVID-19 has disrupted the health care system so that the government gives priority to treatment over endemic diseases even though some cases of endemic diseases are more than and almost reaching the point of COVID-19 morbidity. Therefore, it is necessary to support the government as the highest authority in policy making to increase attention to endemic diseases so that a second wave of disease and recurrence will not occur.

## REFERENCES

- Abbas, H. S. M., Xu, X., & Sun, C. (2021). Role of COVIDsafe app and control measures in Australia in combating COVID-19 pandemic. *Transforming Government: People, Process and Policy*, 15(4), 708–719. <https://doi.org/https://doi.org/10.1108/TG-01-20210004>
- Agustina, R., Dartanto, T., Sitompul, R., Susiloretni, K. A., Suparmi, Achadi, E. L., ... Khusun, H. (2019). Universal health coverage in Indonesia: concept, progress, and challenges. *The Lancet*, 393(10166), 75–102. [https://doi.org/10.1016/S01406736\(18\)31647-7](https://doi.org/10.1016/S01406736(18)31647-7)
- Alam, A., Sudarwati, S., Hakim, L., & Mahdiani, S. (2021). Case Report : Severe COVID-19 and Dengue in an Indonesian Infant. *American Journal of Tropical Medicine and Hygiene*, 104(4), 1456–1460. <https://doi.org/10.4269/ajtmh.20-1244>
- Azizah, R., Martini, S., Sulistyorini, L., Mahmudah, Pawitra, A. S., Nagari, S. S., ... Budijanto, D. (2021). Association between climatic conditions, population density and covid-19 in indonesia. *Sains Malaysiana*, 50(3), 879–887. <https://doi.org/10.17576/jsm2021-5003-28>
- Bautista, M. C. G., Acacio-Claro, P. J., Mendoza, N. B., Pulmano, C., Estuar, M. R. J., Dayrit, M. M., ... Villamor, D. A. (2022). The 2019 Philippine UHC Act, Pandemic Management and Implementation Implications in a Post-COVID-19 World: A Content Analysis. *International Journal of Environmental Research and Public Health*, 19(15). <https://doi.org/10.3390/ijerph19159567>
- Bayod, R. P. (2020). Ethics of Care and Philippine Politics During the Covid-19 Outbreak. *Eubios Journal of Asian and International Bioethics*, 30(3), 69–76. Bowen, G. A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal*, 9(2), 27–40. <https://doi.org/10.3316/QRJ0902027>

- Ceballos, R. (2021). Mortality Analysis of Early COVID-19 Cases in the Philippines Based on Observed Demographic and Clinical Characteristics. *Recoletos Multidisciplinary Research Journal*, 9(1), 91–106. <https://doi.org/10.32871/rmrj2109.01.09>
- Chua, P. L. C., Ng, C. F. S., Rivera, A. S., Salva, E. P., Salazar, M. A., Huber, V., & Hashizume, M. (2021). Association between ambient temperature and severe diarrhoea in the national capital region, Philippines. *International Journal of Environmental Research and Public Health*, 18(15), 1–10. <https://doi.org/10.3390/ijerph18158191>
- Costa, J., Ferreira, E. C., & Santos, C. (2021). Covid-19, chikungunya, dengue and zika diseases: An analytical platform based on maldi-tof ms, ir spectroscopy and rt-qpcr for accurate diagnosis and accelerate epidemics control. *Microorganisms*, 9(4). <https://doi.org/10.3390/microorganisms9040708>
- Darnindro, N., Nurdewati, L., Manurung, A., Mokoagow, M. I., Nasarudin, J., Wardoyo, E. Y., ... Harahap, A. (2020). Diarrhea as an Early and Predominant Manifestation of Coronavirus Disease 2019 (COVID-19): A Case Report. In *Acta Medica Indonesiana* (Vol. 52).
- Dayrit, M., Lagrada, L., Picazo, O., Pons, M., & Villaverde, M. (2018). Philippines Health System Review 2018. In *Health Systems in Transition* (Vol. 8). [https://doi.org/10.1007/3-540-44864-0\\_15](https://doi.org/10.1007/3-540-44864-0_15)
- Durrheim, D. N., Andrus, J. K., Tabassum, S., Bashour, H., Githanga, D., & Pfaff, G. (2021). A dangerous measles future looms beyond the COVID-19 pandemic. *Nature Medicine*, 27, 360–361. <https://doi.org/https://doi.org/10.1038/s41591-021-01237-5>
- Fauziyah, S., Aquaresta, F., Sucipto, T. H., & Junus, H. N. . (2021). Dengue and COVID-19: Double burden for Indonesia health system. *Gazzetta Medica Italiana Archivio per Le Scienze Mediche*, 180(5), 250–251. <https://doi.org/10.23736/S0393-3660.20.04494-0>
- Flores, L. J. Y., Tonato, R. R., Dela Paz, G. A., & Ulep, V. G. (2021). Optimizing health facility location for universal health care: A case study from the Philippines. *PLoS ONE*, 16(9 September), 1–13. <https://doi.org/10.1371/journal.pone.0256821>
- Herwansyah, H., Czabanowska, K., Kalaitzi, S., & Schröder-Bäck, P. (2022). The utilization of maternal health services at primary healthcare setting in Southeast Asian Countries: A systematic review of the literature. *Sexual and Reproductive Healthcare*, 32(March). <https://doi.org/10.1016/j.srhc.2022.100726>
- Ishak, H., Sartika, J. D., & Darmawansyah. (2019). Relationship of rainfall, population density, and human behavior with DHF incidence in makassar city. *Indian Journal of Public Health Research and Development*, 10(1), 1253–1258. <https://doi.org/10.5958/0976-5506.2019.00228.6>
- Jong, W. de, Rusli, M., Bhoelan, S., Rohde, S., Rantam, F. A., Noeryoto, P. A., ... Goeijenbier, M. (2018). Endemic and emerging acute virus infections in Indonesia: an overview of the past decade and implications for the future. *Critical Reviews in Microbiology*, 44(4), 487–503. <https://doi.org/10.1080/1040841X.2018.1438986>
- Kim, G., Yoo, C. D., & Yang, S. J. (2022). Survival Analysis of COVID-19 Patients With Symptoms Information by Machine Learning Algorithms. *IEEE Access*, 10, 62282–62291. <https://doi.org/10.1109/access.2022.3182350>
- Laiprakobsup, T. (2018). Democracy, economic growth and government spending in public health in Southeast Asia. *International Journal of Development Issues*. <https://doi.org/10.1108/IJDI-08-2018-0112>
- Langer, S. (2020). Don't forget about other infections even in times of pandemic: 15th Congress on Infectious Diseases and Tropical Medicine (KIT) [Auch in Pandemiezeiten andere Infektionen nicht vergessen]. *Medizinische Monatsschrift Fur Pharmazeuten*, 44(9), 346–355.
- Lu, X., Bambrick, H., Pongsumpun, P., Dhewantara, P. W., Toan, D. T. T., & Hu, W. (2021). Dengue outbreaks in the covid-19 era: Alarm raised for Asia. *PLoS Neglected Tropical Diseases*, 15(10), 6–11. <https://doi.org/10.1371/JOURNAL.PNTD.0009778>
- Najafi, M., Nazari, M., Pouragha, B., Mohammadi, A. J., Baghian, N., Ashrafi, E., & Rajaei,

- R. (2021). Studying COVID-19 Disease Management: A Review Study. *Evidence Based Health Policy, Management & Economics*, 5(1), 63–74.
- Ong, E. P., Obeles, A. J. T., Ong, B. A. G., & Tantengco, O. A. G. (2022). Perspectives and lessons from the Philippines' decades-long battle with dengue. *The Lancet Regional Health - Western Pacific*, 24, 100505. <https://doi.org/10.1016/j.lanwpc.2022.100505>
- Pascawati, N. A., Saputri, E. S., Lathu, F., Erwanto, R., & Vidayanti, V. (2021). Vector control aedes sp. During pandemic COVID-19. *International Journal of Public Health Science*, 10(4), 713–723. <https://doi.org/10.11591/ijphs.v10i4.20924>
- Prasertbun, R., Mori, H., Mahittikorn, A., Siri, S., & Naito, T. (2022). Pneumonia, influenza, and dengue cases decreased after the COVID-19 pandemic in Thailand. *Tropical Medicine and Health*, 50(1), 1–5. <https://doi.org/10.1186/s41182-022-00419-2>
- Rahmat, A. F. (2021). Time to Track Endemic Diseases: Extraordinary Occurrence Diseases Shrinkage, Policy and Its Resources Management (2000-2018) in Indonesia. *Jurnal Kebijakan Kesehatan Indonesia: JKKI*, 10(02), 62–69. <https://doi.org/https://doi.org/10.22146/jkki.62181>
- Sarma, N. (2017). Emerging and Re-emerging Infectious Diseases in South East Asia. *Indian Journal of Dermatol*, 62(5), 451–455. [https://doi.org/10.4103/ijd.IJD\\_389\\_17](https://doi.org/10.4103/ijd.IJD_389_17)
- Suwantika, A. A., Boersma, C., & Postma, M. J. (2020). Expert Review of Vaccines The potential impact of COVID-19 pandemic on the immunization performance in Indonesia. *Expert Review of Vaccines*, 00(00), 1–4. <https://doi.org/10.1080/14760584.2020.1800461>
- Tian, N., Zheng, J., Guo, Z., Li, L., Xia, S., & Lv, S. (2022). Dengue Incidence Trends and Its Burden in Major Endemic Regions from 1990 to 2019. *Trop. Med. Infect. Dis.*, 7(180), 1–17. <https://doi.org/https://doi.org/10.3390/tropicalmed7080180>
- Tosepu, R., Gunawan, J., Effendy, D. S., Ahmad, L. O. A. I., Lestari, H., Bahar, H., & Asfian, P. (2020). Correlation between weather and Covid-19 pandemic in Jakarta, Indonesia. *Science of the Total Environment*, 725, 138436. <https://doi.org/10.1016/j.scitotenv.2020.138436>
- Venkatesan, P. (2022). Worrying global decline in measles immunisation. *The Lancet Microbe*, 3(1), e9. [https://doi.org/10.1016/s2666-5247\(21\)00335-9](https://doi.org/10.1016/s2666-5247(21)00335-9)
- Wilder-Smith, A., Ooi, E. E., Horstick, O., & Wills, B. (2019). Dengue. *The Lancet*, 393(10169), 350–363. [https://doi.org/10.1016/S0140-6736\(18\)32560-1](https://doi.org/10.1016/S0140-6736(18)32560-1)
- Wiyono, L., Rocha, I. C. N., Cedeno, T. D. D., Miranda, A. V., & Prisno, D. E. L. (2021). Dengue and COVID-19 infections in the ASEAN region: A concurrent outbreak of viral diseases. *Epidemiology and Health*, 43(December). <https://doi.org/10.4178/epih.e2021070>
- Yek, C., Nam, V. S., Leang, R., Parker, D. M., Heng, S., Souv, K., ... Manning, J. E. (2021). The Pandemic Experience in Southeast Asia: Interface Between SARS-CoV-2, Malaria, and Dengue. *Frontiers in Tropical Diseases*, 2(November), 1–8. <https://doi.org/10.3389/ftd.2021.788590>