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Commission 8 on Public Health, Social Work, Veterans, Youth, Rehabilitation, Labor, Vocational Training and Women's Affairs, of the National Assembly of Cambodia

Analysis of Public Health Expenditure and the Socioeconomic Impacts of Non-Communicable Diseases in Cambodia

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Mr. Ing Kvanthai, CDRI Researcher

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Key Messages

To better control treatment and resource mobilisation for combating the growing health risk of NCDs, the study provides four suggestions.

1. **Revisiting the budget allocation of NCDs in Cambodian public health:** Consider increasing the budget for NCDs, especially chronic diseases such as blood pressure, gastrointestinal disorders/gastritis, heart diseases, diabetes, joint pain/disease and other NCDs. It could be both from revisiting Program 4: Strengthening the health system, in addition to integrating NCD health services into the national HIV/AIDS of the Communicable Disease budget.
2. **Health taxes:** Consider taxes on health-harming products, prioritising increases in excise taxes on tobacco, alcohol and sugar-sweetened beverages and using portions of the additional revenue for NCD prevention and control.
3. **Raising awareness on NCD prevention and treatment, especially at the Subnational level:** Consider involving the subnational administration to promote prevention and treatment of NCDs to people in rural areas. Promote awareness about the costs of NCDs and the benefits of welfare practices to people. The subnational budget and joint stakeholder support needs to take this into account for resource mobilisation.
4. **NCD private-public partnerships (PPP):** The roles and responsibilities of PPP need to be well-defined. Furthermore, the communication strategy and building trust among stakeholders needs to improve and have commitment based on agreement. Finally, the planning and implementation of NCD programs needs to be monitored and appropriately evaluated.

Introduction

Commission 8 has committed to addressing NCDs by scrutinising government expenditures and implementing budget laws to ensure accountability in public spending. Regarding this objective, this report analysed public health expenditures, socioeconomic impacts and resource mapping to tackle the increasing health risk of NCDs in Cambodia.

The study addressed three essential research objectives:

1. to break down public health expenditure patterns on communicable diseases (CDs) and NCDs in the last five years (2018-2022) of government budget data and disaggregated by significant spending at the national, program and sub-program levels;
2. to examine the financial burden of NCDs on the public health sector and economic growth; and
3. to estimate the socioeconomic development and household welfare impacted by NCDs and identify resources needed to tackle the growing health risk of NCDs considering the gender perspective.

Research Methodology

This report conducted systematic desk research to collect official data, technical reports and existing strategic documents. This collection process ensured the quality of collected data and improved the validity of the analytical study. Hence, there were datasets from the Budget Brief for 2018 to 2022 from the Ministry of Economy and Finance (MoEF) and documents collected from the Ministry of Health (MoH), the National Institute of Statistics (NIS), the Ministry of Planning (MoP), the World Bank Group and World Health Organization (WHO). Finally, the Cambodia Socioeconomic Survey 2019/2020 (CSES 2020) was used to estimate the impact of NCDs on the socioeconomic and welfare of the household (NIS, 2020).

Quantitative methods were employed to analyse public health expenditures and the socioeconomic impacts of NCDs in Cambodia. The analysis was run through three levels: national, NCD program and household welfare. Descriptive statistics were used to define the features of public health expenditures by generating summaries, trends and comparative metrics.

A two-way ANOVA (analysis of variance and tests for differences in the effects of independent variables on a dependent variable) was used to analyse the impact of NCDs on gender perspectives on the financial burden of NCD treatment cost (USD) on households from five zones[1], namely Phnom Penh, the plain region, Tonle Sap, coastal, and mountainous regions. Finally, multiple regression was employed to examine the association between the NCD treatment cost (USD) and household socioeconomic characteristics and welfare practices.

Key findings

1. Health Expenditure: CDs and NCDs programs

According to MoEF, public health expenditure in Cambodia was allocated to four national programs: reproductive health, adolescents, mothers, infants, children and nutrition; communicable diseases; non-

[1]
- Phnom Penh.
- Plain: Kampong Cham, Tbong Khmum, Kandal, Prey Veng, Svay Rieng, and Takeo.
- Tonle Sap: Banteay Meanchey, Battambang, Kampong Chhnang, Kampong Thom, Pursat, Siem Reap, Otdar Meanchey, and Pailin.
- Coastal: Kampot, Koh Kong, Preah Sihanouk, and Kep.
- Plateau and Mountains: Kampong Speu, Kratie, Mondul Kiri, Preah Vihear, Ratanak Kiri, and Stung Treng.

communicable diseases and other public health issues; strengthening the health system. It was observed that the total budget of MoH has declined from KHR 1,545,525 in 2019, equal to an 11 percent annual growth rate, to KHR 1,341,377 in 2022 million or equal to a 22 percent decline in the annual growth rate[2].

It can be seen that Program 4 (see Table 1) utilized more than 90 percent of the total public health budgets over the last five years, divided into sub-programs: provision of health services, health financing, human resource development, health information system, governance of the health sector and supporting and strengthening regional training centres for health. Among the sub-programs of Program 4, the provision of health services accounted for more than 88 percent of the budget plan for 2022.

Table 1: Public health budget distribution *In million KHR*

Budget programs of MoH	2018	2019	2020	2021	2022
Program 1: Reproductive health, adolescents, mothers, infants, children and nutrition	95924.8	116612.8	117723.5	117082.7	110138.9
Program 2: CDs	16493.6	19869.9	22302.8	25362	26958.1
Program 3: NCDs	2527.6	3256.8	3028.1	2586.9	1543.3
Program 4: Strengthening the health system	1279028	1405785	1493444	1575652	12027367
Total health program	**1,393,974**	**1,545,525**	**1,636,498**	**1,720,684**	**1,341,377**
Growth rate	Base year	**11%**	**6%**	**5%**	**-22%**

Source: Calculated data from (MoEF, 2022)

In terms of the CD budget, the prevention and treatment of HIV and tuberculosis (TB) are priorities. HIV prevention and treatment accounted for more than 50 percent of the CD total budget, followed by TB at 32 percent in the last five years (2018-2022). The budget for prevention and treatment of malaria and dengue fever, as well as other CDs, has decreased from 12 to seven percent during the same period. Moreover, CD prevention and other subnational services budgets decreased between 2018 and 2021 and were not budgeted for in 2022. Given this trend, the HIV and TB budgets were allocated to respond to the high risk of HIV and TB in the public health sector in Cambodia. The breakdown of CD sub-programs is shown in Table 2.

Table 2: CD budget breakdown from (2018-2022) *In million KHR*

Breakdown by Sub-programs	2018	2019	2020	2021	2022
Program2: Communicable diseases (CDs)	**16493.6**	**19869.9**	**22302.8**	**25362**	**26958.1**
1. Prevention and treatment of HIV	9,220.70	9,145.40	9,192.40	12,478.00	16,090.70
2. Prevention and treatment of tuberculosis (TB)	2,954.10	6,564.10	9,164.10	9,019.80	9,017.80
3. Prevention and treatment of malaria and dengue fever	1,252.10	1,256.90	1,256.90	1,228.90	1,228.90
4. Other communicable diseases	669.1	620.7	620.7	620.7	620.7
5. CDs prevention and other public health services for the subnational	2,397.60	2,282.80	2,068.70	2,014.60	No budget
Growth rate	**Base year**	**20%**	**12%**	**14%**	**6%**

Source: Calculated data from (MoEF, 2022)

[2] 2022 budget was allocated for recovery, rebuilding and resiliency of socioeconomic growth from Covid-19.

As shown in Table 3, NCD prevention and other services for the subnational level and other public health problems accounted for most of the NCD budget from 2018 to 2021. There were no budget allocations for NCD prevention and other services for the subnational level in 2022. Other public health problems accounted for a significant share of the entire NCD budget plan in 2022, which was equal to 53 percent, followed by mental health and drug addiction at 31 percent, oral health at seven percent, eye health at six percent and chronic diseases at three percent. The 22 percent decline in the total public health budget severely impacted prevention and other services for subnational CD and NCD programs.

Table 3: NCD budget breakdown from (2018-2022) *In million KHR*

Breakdown by Sub-programs	2018	2019	2020	2021	2022
Program3: Non-communicable diseases (NCDs)	**2527.6**	**3256.8**	**3028.1**	**2586.9**	**1543.3**
1. Eye health	110	100	100	100	100
2. Mental health and drug addiction	152	724.3	724.3	472.6	472.6
3. Oral health	104.6	107.3	107.3	107.3	107.3
4. Chronic diseases	112.2	67.3	67.3	59.6	51.9
5. Other public health problems	755.7	811.3	839.5	830.9	811.5
6. NCDs prevention and other public health services for the subnational	1,293.10	1,446.60	1,189.70	1,016.50	No budget
Growth rate	**Base year**	**29%**	**-7%**	**-15%**	**-40%**

Source: Calculated from data (MoEF, 2022)

2. The burden of NCDs on Public Health and Economic Growth

An existing study by UNDP in 2020 that analysed the burden of NCDs on public health and economic growth found that NCDs caused a critical economic burden at the national level[3]. The burden of NCDs was KHR 5.97 trillion (USD 1.5 billion), equivalent to 6.6 percent of the national GDP in 2017, primarily due to high indirect costs, which accounted for approximately 95 percent of the total economic burden. The indirect costs (absenteeism, reduced capacity at work, premature death) were KHR 5.63 trillion (USD 1.4 billion), which was nearly 19 times higher than the direct cost of government spending at KHR 343 billion (USD 84 million). Lastly, Cambodians with one of the four main NCDs were 23 percent more likely to die prematurely[4].

Table 4: Economic burden of NCDs *In billion KHR*

Cost	Cardiovascular disease	Cancer	Diabetes	Respiratory diseases	Total
Direct costs					
Government healthcare expenditure	154	77	46	67	343
Indirect costs	656	4,266	628	76	5,626
Absenteeism	17	NA	16	NA	33
Reduced capacity at work	137	NA	529	NA	666
Premature death	503	4,266	83	76	4,928
Total economic burden	**810**	**4,343**	**674**	**143**	**5,970**

Source: Summarised from data (UNDP, 2020)

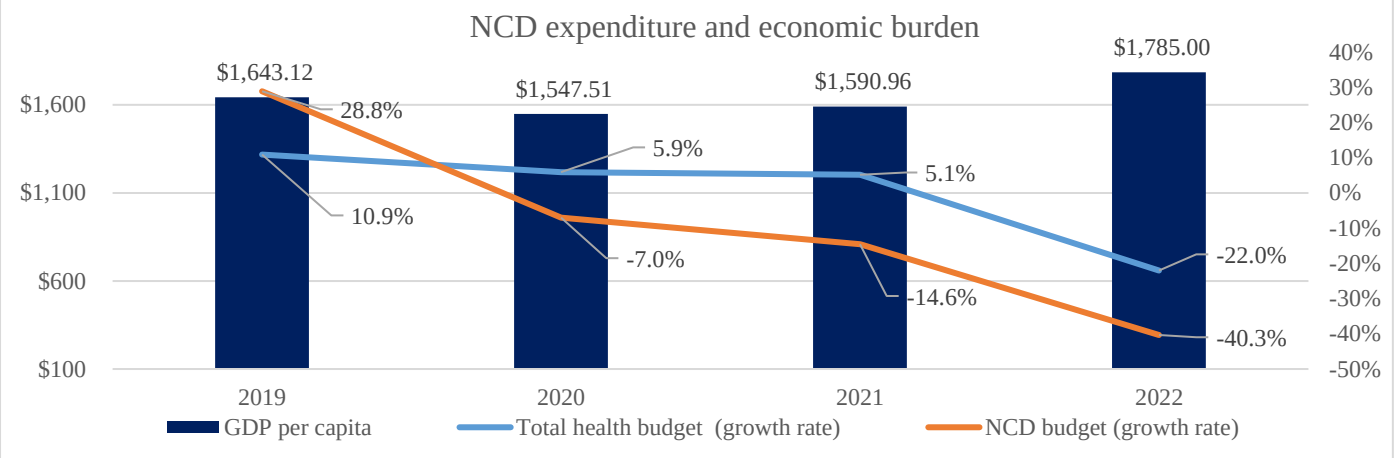
[3] UNDP. (2020). *Prevention and control of noncommunicable diseases in Cambodia | United Nations Development Programme*. Retrieved from https://www.undp.org/ cambodia/publications/prevention-and-control-noncommunicable-diseases-cambodia

[4] Premature death, die before the age of 70

NCD budget growth was also compared with per capita GDP over the last four years (Figure 1) (UNDP, 2020). The result revealed a stable improvement in GDP per capita from USD 1,643 in 2019 to USD 1,785 in 2022, but the NCD budget declined from 28 percent in 2019 to 40 percent in 2022[5]. Moreover, out-of-pocket spending as a percentage of health expenditure per capita (OOPS% CHE) remained at more than 60 percent of the source of treatment costs from 2000 to 2020 (WHO, 2022). This result indicated an increased financial burden on households for NCD treatment over the last four years (2019-2022)[6].

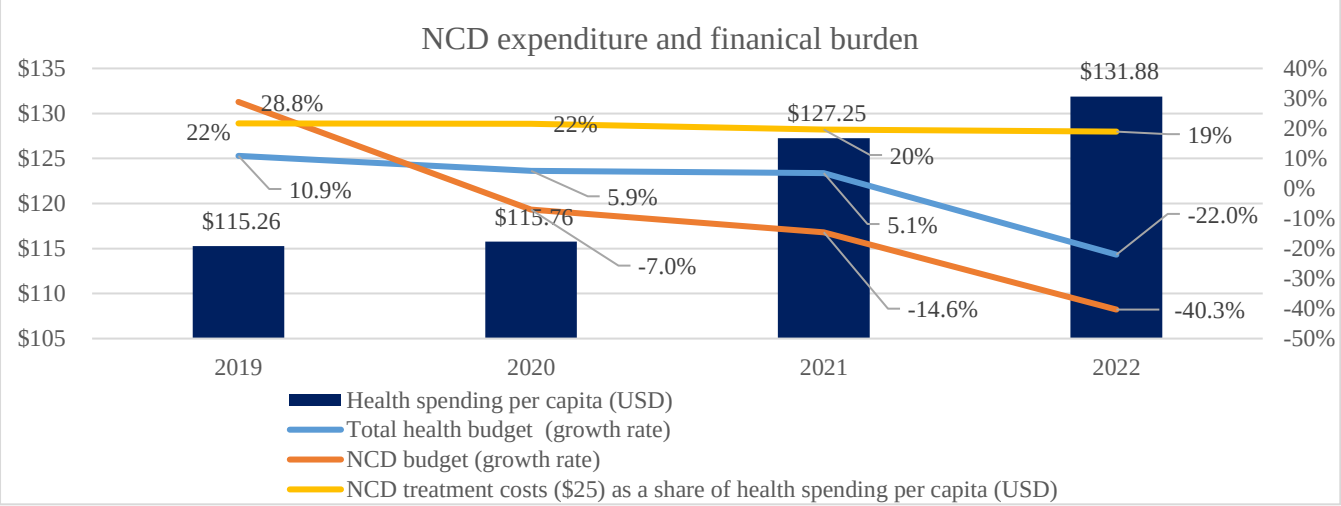
Furthermore, the MoH stated in the National Multisectoral Action Plan for the Prevention and Control of Noncommunicable Diseases 2018-2027 that NCDs were estimated to cost USD 25 for treatment annually per person (MoH, 2018, p.7). Figure 2 also showed that each person spent 20 percent on average, of the total health treatment cost over the last four years (2019-2022). Since the annual budget allocated for NCDs kept declining significantly, this could indicate that individuals would bear more treatment costs for NCDs.

Figure 1: NCD spending and economic burden



Source: Calculated from data (World Bank 2022; MoEF, 2022)

Figure 2: NCD spending and financial burden



Source: Calculated from data (World Bank, 2022; MoEF, 2022)

[5] There was no budget for NCD prevention and other services at the subnational level from the MoH in 2022.

[6] World Bank. (2022). *GDP growth (annual %)—Cambodia | Data*. Retrieved from https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2021&locations=KH&start=2021&view=bar

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3. Impact of NCDs on socioeconomic and household welfare

According to the Cambodia Socioeconomic Survey report by the National Institute of Statistics in 2020, 16.5 percent of 44,548 household members reported that they had diseases in the last 30 days preceding the survey [7]period. Among them, 31% (2,271 household members) had NCDs. The top five NCDs that impacted them were high blood pressure (40 percent), gastrointestinal disorders/gastritis (13 percent), heart diseases (10 percent), diabetic diseases (9 percent), joint pain/disease (6 percent) and others (21 percent) (NIS, 2020).

Impact of NCDs on socioeconomic development

The result from the analysis of this study showed that 12.1 percent (275 household members) out of 2,271 NCD patients stopped livelihood activities due to illness. On average, the patients stopped activities for 13.38 days out of the last 30 days in 2019/20. The NCDs affecting individuals the most were cervical cancer, dental problems, diabetic diseases, lung cancer, liver cancer, malnutrition, and others. The analysis revealed the impact of NCDs on livelihoods of older people, especially those aged more than 65 years, regardless of where they lived or their gender.

The current practice of NCD treatment and welfare

Welfare practices were limited among the 2,271 NCD patients. Only 35 percent of them went to a health facility or sought health services 1.59 times on average in the last 30 days. Moreover, private clinics, private pharmacies, private hospitals and national hospitals accounted for more than 70 percent of the health facilities and services chosen by NCD patients compared to other facilities and services. This result indicated the high dependency of NCD patients on private hospitals and services, rather than public service provision[8].

The financial burden of NCDs on households

The research analysis revealed that the treatment cost for NCDs, on average, was USD 12 during the last 30 days preceding the survey period. The analysis also showed the burden of NCD treatment cost on households revealed no statistically significant difference between males and females but there were statistically significant differences between zones. Patients from Phnom Penh and plain zones spent significantly higher on NCD treatment costs compared to patients from plateau/ mountain zones by (USD .3424) and (USD .2428) respectively.

The effects of welfare practices and socioeconomic on NCD treatment cost

The multiple regression indicated the importance of welfare practice, specifically on the frequency of seeking healthcare that would reduce the NCD treatment cost. With more frequent consulting with health service providers and access to health facilities, treatment costs would decline. This would apply to prevention and treatment prior to the severe impact caused by NCDs. Finally, the regression revealed that age, gender and nights of hospitalisation did not significantly impact the NCD treatment cost.

Household coping strategies

Six coping strategies were used to cope with the NCD financial burden: household income, savings, borrowing, selling assets, selling household production in advance and other sources. More than 70 percent

[7] CSES2019/20 was designed for a nationwide representative sample of 1,008 sampling units (villages), which were divided into 12 monthly samples of 84 villages/Enumeration Areas per month in total samples of 10,080 households. The survey was conducted from July 2019 to June 2020 (NIS, 2020)

[8] The public service provision may include provincial hospitals, homes and offices of trained health worker/nurse, district hospitals, shops selling drugs, Kru Khmer and magicians, overseas medical services and other public overseas medical services.

of NCD households used their household income to cope with NCD treatment costs and only 25 percent used their savings. Furthermore, less than 10 percent of NCD patients had secondary financial coping strategies. These results indicated that only one-third of NCD patients had planned a budget for their illness, while the majority did not prepare a budget or other coping strategies for the diseases. In the case of NCDs severely impacting households, the tendency to borrow and take loans from others would increase.

Identify resources needed to tackle the growing health risk of NCDs

There are eight potential resources for combating the growing health risk of NCDs: the MoH annual budget program, integrating NCD services into the national HIV/AIDS sub-program, health taxes, use of the subnational administration budget, creating health foundations to raise funds at the subnational level, private sector investment in NCDs, new investment in NCDs prevention and control and joint support by expanding and diversifying the NCD stakeholders across multiple sectors, at both national and subnational levels The MoH, MoEF and subnational administration need to work together to access these potential resources. Moreover, a strong coordination relationship between key stakeholders and private sectors needs to be strengthened through private-public partnerships (PPP) at national and subnational levels for resource mobilisation.

Discussion

NCDs caused 6.6 percent in terms of economic burden, of which KHR 5.97 trillion were lost annually through indirect costs (absenteeism, reduced capacity at work and premature death before the age of 70 years). The NCD expenditure was minimal in the total public health budget of the MoH. Specifically, it accounted for only 0.12 percent or KHR 1,543.30 million compared to all public health budget plans; KHR 1,341,377.00 million in 2022 was allocated to Programs 1, 2 and 4 (see Table 1). Throughout the analyses, the NCD control, prevention and treatment budget were minimal, though NCDs caused critical economic burdens in public health (Mogojwe, 2021).

Chronic disease budgets have been minimal; only 0.004 percent compared to the total public health budget in 2022. It was seen that among 2,271 NCD patients, 40 percent had high blood pressure, 13 percent had gastrointestinal disorders/gastritis, 10 percent had heart diseases, nine percent had diabetes, six percent had joint pain/disease and 21 percent had other diseases. Given these results, it creates an urgency to revisit the budget allocation of chronic illnesses.

Meanwhile, NCDs impacted patient health, specifically in older people, while welfare practices were limited. For example, based on the Cambodia Socioeconomic Survey data 2019-20 only 35 percent of patients went to a health facility or sought health services for treatment in the last 30 days preceding the survey period. The limitation of welfare practices would be a challenge for NCD treatment and be costly. To better treat NCDs, the WHO advised frequent and timely treatment, especially for older patients (Akkazieva et al., 2014). Moreover, the analysis revealed that frequent and timely treatment would significantly reduce treatment costs. Thus, raising awareness of NCD welfare would help both treatment outcomes and reduce costs.

Lastly, there was a concern about household indebtedness due to OOPS on NCD treatment. The study found that more than 70 percent of NCD households used their household income to cope with NCD treatment costs and only 25 percent used their savings. The results indicated that only one-third of NCD patients had planned a budget for their illness, while the majority did not prepare a budget or secondary coping strategies

for the diseases. In the case of NCDs severely impacting households, the tendency to borrow and take loans from others would highly increase.

The resource mapping for NCDs in this report strongly aligned with Non-Communicable Disease Prevention and Control: A Guidance Note For Investment Cases (WHO & UNDP, 2019) by including taxes on health-harming products and revisiting public expenditures across sectors. Moreover, it also contributed to raising awareness about the true costs of NCDs and the enormous benefits of NCD welfare practices recommended (Akkazieva et al., 2014; UNDP, 2020). The findings also contributed to the National Multisectoral Action Plan for the Prevention and Control of Noncommunicable Diseases 2018-2027 on resource mapping and mobilisation (MoH, 2018). Finally, it suggests strengthening national coordination and planning for preventing and controlling NCDs throughout PPP (UNDP, 2020).

Conclusion

The study found that the NCD expenditure was minimal in the total public health budget and accounted for only 0.12 percent, or KHR 1,543.30 million compared to the annual budget plan of KHR 1,341,377.00 million in 2022. Moreover, mental health, drug addiction and other public health problems shared most of the NCD budget allocation in 2022, while chronic disease budgets, the most impacted NCDs, were minimal, only 0.004 percent compared to the total public health budget.

The most prevalent NCDs were cervical cancer, dental problems, diabetes, lung cancer, liver cancer, malnutrition and others. These NCDs impacted livelihood and health, specifically in older people, while welfare practices were limited. Cambodian people did not regularly seek health services for treatment of NCDs., If that took place it would be a challenge to deliver treatment and be costly. Furthermore, there was a concern about household indebtedness due to OOPS on NCD treatment costd. The results indicated that only one-third of NCD patients had planned a budget for their illness, while the majority did not prepare a budget or second coping strategies for the diseases. In the case of NCDs severely impacting households, the tendency to borrow and take loans from others would likely significantly increase.

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