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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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Contents

Abbreviation

CDs	Communicable Diseases
CHE	Health Expenditure per Capita
CSES 2020	Cambodia Socioeconomic Survey 2019/2020
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
KHR	Cambodian Riel
MoEF	Ministry of Economy and Finance
MoH	Ministry of Health
MoP	Ministry of Planning
NCDs	Non-Communicable Diseases
NIS	National Institute of Statistics
OOPS	Out-of-Pocket Spending
TB	Tuberculosis
USD	United States Dollar
WHO	World Health Organization

Executive Summary

This report highlights the public health expenditure and the socioeconomic impacts of non-communicable diseases (NCDs) in Cambodia. NCDs are responsible for 6.6 percent of the economic burden, of which KHR 5.97 trillion were lost annually by indirect costs of KHR 5.63 trillion (absenteeism, reduced capacity at work and premature death) and 23 percent of dying prematurely (UNDP, 2020).

To respond to the high risk of NCDs, the Ministry of Health (MoH) has implemented six programs; eye health, mental health and drug addiction, oral health, chronic diseases, other public health problems, NCD prevention and other public health services for the subnational level. However, was no budget for NCD prevention or other services at the subnational level in 2022. Other public health problems shared 53 percent of the entire NCDs budget in 2022, 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 decline in the public health budget in 2022 severely impacted prevention and other services for subnational NCD programs. Furthermore, the 40 percent decrease in the NCD budget in 2022 drew attention to the household financial burden, as out-of-pocket spending remained more than 60 percent of total treatment costs from 2000 to 2020.

Twelve percent of the total 2,271 NCD patients said their livelihood activities were impacted by being absent from work and unemployment in 13.38 days of the last 30 days (the Cambodia Socioeconomic Survey 2019/2020). Major diseases experienced were cervical cancer, dental problems/caries, diabetes, lung cancer, liver cancer and malnutrition. Additionally, it strongly impacted older people, regardless of residency areas and gender, and only 35 percent of NCD patients went to a health facility or sought health services for treatment. Private clinics, private pharmacies, private hospitals and national hospitals were the most popular health facilities and services chosen by NCD patients.

The average cost of NCD treatment was USD 12, considering the last 30 days per person. In addition, the patients from Phnom Penh and plain zones spent significantly higher than plateau/mountain patients by (USD .3424) and (USD .2428), ($p < .05$). In addition, the analysis revealed the importance of welfare practice, specifically the frequency of seeking healthcare that would significantly reduce the treatment costs.

Six coping strategies were used to cope with the household financial burden; household income, savings, borrowing, selling assets, selling household production in advance and other sources. More than 70 percent of households used their income to cope with the treatment costs, and only 25 percent used their savings. These results indicated that only one-third of NCD patients had planned a budget for their illness, while most did not prepare for the health risk. In the case of severe NCDs, the tendency to become indebted would also increase.

The report identifies potential resources for combating the growing health risk of NCDs at the national level: MoH annual budget program, health taxes, subnational administration budget, creating health foundation, facilitating private sector investment in NCDs market solution, new investment in NCD prevention and control and joint supports. Moreover, MoH, MoEF

and the subnational administration need to work together across key stakeholders and private sectors to access these potential resources. Four suggestions were made through the results.

Introduction

NCDs, such as cardiovascular disease, hypertension, cancer and diabetes are a growing public health challenge for Cambodians (IHME, 2019). Despite the country's significant health improvements, mortality rates have fallen by 60 percent since 1990. However, the burden of NCDs has increased. As of 2020, 23 percent of all premature deaths (below age 70) in Cambodia are attributable to NCDs (UNDP, 2020). NCDs are estimated to cost USD 1.5 billion in economic burdens in Cambodia, equal to seven percent of the gross domestic product (GDP), driven mainly by indirect costs of premature death and reduced work capacity (Mogojwe, 2021). For example, the prevalence of diabetes in Cambodia is highly likely driven in part by the shared experience of the Khmer Rouge period for all Cambodians born before 1979, as malnutrition in childhood increases the risk for diabetes later in life (Jiang et al., 2013).

As the oversight role of the parliament, Commission 8 has committed to addressing NCDs by scrutinising government expenditure and implementing budget laws to ensure accountability in public spending. Regarding this objective, Commission 8 requires up-to-date information on the budget analysis of government spending, socioeconomic impacts caused by NCD expenditure and resources needed to tackle the growing health risk of NCDs in Cambodia. As desired, this report analysed public health expenditure, 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.

1. 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 and documents collected from the Ministry of Health (MoH), the Ministry of Economy and Finance (MoEF), 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 towards the socioeconomic and welfare of the household (NIS, 2020).

Quantitative methods were employed to analyse public health expenditure and the socioeconomic impacts of NCDs in Cambodia. The analysis was run through three levels: national, NCD program and household. Descriptive statistics were used to define the features of public health expenditure 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 perspective toward 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.

$$Y_i = B_0 + B_1 age_i + B_2 gender_i + B_3 area_i + B_4 zone_i + B_5 times\ of\ seeking\ health\ care_i + B_6 number\ of\ night\ hospitalisation_i + (B_7 expensiveness_{\ i}) + \varepsilon$$

Where

- Y_i =the total NCD treatment cost (USD) in the last 30 days of respondent i (log)
- B_0 = intercept (constant term)
- B_{1-n}= slope coefficient of explanatory variables
- age_i= *age of the* respondent i (log)
- $gender_i$= dummy variable taking a value of 1 if respondent i female, 0 for male
- $area_i$= dummy variable taking a value of 1 if respondent i lives in rural, 0 for urban area
- $zone_i$= dummy variable of the zone if respondent i lives in (Phnom Penh, the plains, Tonle Sap, Coastal, or mountainous region) 1 if yes, 0 otherwise
- $times\ of\ seeking\ health\ care_i$= time of respondent i seeking health care in the last 30 days
- $number\ of\ night\ hospitalisation_i$= number of nights in hospital of respondent i in the last 30 days
- $expensiveness_{\ i}$= (treatment costs + transportation)/(times of hospitalisation) (log)
- ε = an error term indicating possible unobserved factors which might affect the total NCD treatment cost. The error term is assumed to be normally distributed and has zero conditional means.

This report consists of four main parts:

1. Part one provides an overview of public health expenditure at the national level;

[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.

2. Part two describes the public health expenditure patterns on CDs and NCDs within the last five years (2018-2022) of the government budget, disaggregated by significant spending on NCD programs and sub-programs;
3. Part three discusses the financial burden of NCDs on the public health sector and economic outcomes; and
4. Part four will discuss the socioeconomic and household welfare impacted by NCDs and identify resources needed to tackle the growing health risk of NCDs considering the gender perspective.

2. Research Limitations

This report employed systematic desk research to analyse public health expenditure, socioeconomic impacts and resource mapping to tackle the increasing health risk of NCDs in Cambodia. Hence, several research limitations were acknowledged:

Firstly, the data used in the analysis, specifically on Part 2: Public Health Expenditure: CDs and NCDs programs and Part 3: Burden of NCDs on Public Health and Economic Growth, were from the Budget Brief for 2018 to 2022 from the Ministry of Economy and Finance (MoEF, 2022). These were budget plans for a one-year period that the government used for budgeting but did not represent the actual spending on the specific programs. At the same time, the analysis captured budgets from 2018 to 2022, in which the government's actual expenditure may have been impacted by Covid-19.

Secondly, the Cambodia Socioeconomic Survey 2019/2020 (CSES 2020) was used to estimate the impact of NCDs towards the socioeconomic and welfare of the household in the last 30 days (NIS, 2020). This survey covered many aspects of the living conditions of Cambodian people, such as the status of a household member, health, education, housing conditions, household income and liabilities, household consumption, economic activities, victimisation, vulnerability and others. This survey was not designed purposively for NCD studies.

Finally, the quantitative research methodology captured the mean of the NCD impacts but did not explain the nature and the severity of the diseases on patients. To the nature of the NCD socioeconomic impact study, the mixed research method (both qualitative and quantitative research) needs to be considered for future research to improve the quality of the findings.

Part 1: An Overview of Public Health Expenditure in Cambodia

At a glance, health expenditure per capita (CHE) in the last 15 years (2005-2022) increased remarkably from USD 33 in 2005 to USD 116 in 2020, despite the fact that the government health spending as a percentage of CHE (GGHE-D%CHE) rose from 17.8 percent in 2005 to 27.7 percent in 2020. Moreover, out-of-pocket spending as a percentage of health spending (OOPS%CHE) remained at more than 57 percent (not significantly reduced), and the priority to health as a percentage of general government expenditure (GGHED%GGE) noticeably declined from 9.9 percent to 7.4 percent from 2005 to 2020. This brought consideration to the financial burden of households on health expenditures, despite the improvement in GDP per capita.

Table 1: Health expenditure in the last 15 years (2005-2022)

Key indicators	2005	2010	2015	2020
Health spending US$ per capita (CHE)	$ 33.00	$ 54.00	$ 73.00	$ 116.00
Government health spending % (GGHE-D%CHE)	17.80%	19.70%	21.70%	27.70%
Out-of-pocket health spending % (OOPS%CHE)	60.90%	51.90%	57.30%	60.60%
Priority to health (GGHE-D%GGE)	9.90%	6.50%	6.60%	7.40%
GDP (USD) per capita	$ 475.00	$ 783.00	$1,171.00	$1,542.00

Source: Calculated from data (WHO, 2022)

Figure 1 illustrates the analysis of health expenditure from 2000 to 2020. The results indicate a high share of out-of-pocket spending (OOPS) from households as the primary source of health expenditure, followed by government, external aid and other sources. In addition, there were social and voluntary health insurance contributions toward health expenditure, but these sources played a minimal role in the total health expenditure.

Figures 2 and 3 show the per capita health expenditure trend compared to OOPS and government spending. It was noted the CHE increased remarkably from USD 33 in 2005 to USD 116 in 2020, but the health expenditure as a share of GDP remained stable between six to 7 seven percent yearly. Moreover, OOPS remained at 60 percent, while government health spending improved from 20 percent in 2000 to 27.7 percent in 2020.

In terms of external aid per capita contributed to health expenditure, it significantly decreased from USD 14 in 2016 to USD 7 afterwards (2017-2020), while the priority of health as a general government expenditure declined from 9.9 percent to 7.4 percent from 2005 to

2020 (Figure 4). These results show health spending was mainly from household self-financing, which draws attention to the conditions of livelihoods and the welfare of people.

Figure 1: Trend of sources of health expenditure

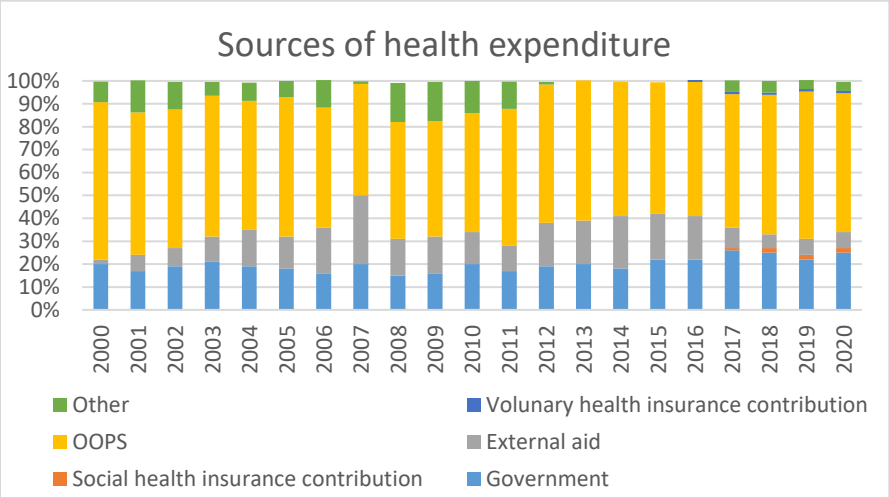


Figure 2: Trend of health expenditure

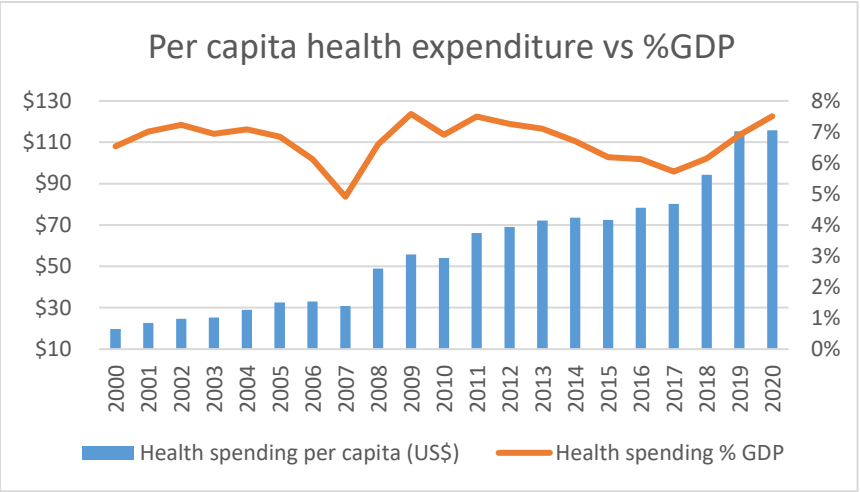


Figure 3: Trend of government health spending compared to OOPS

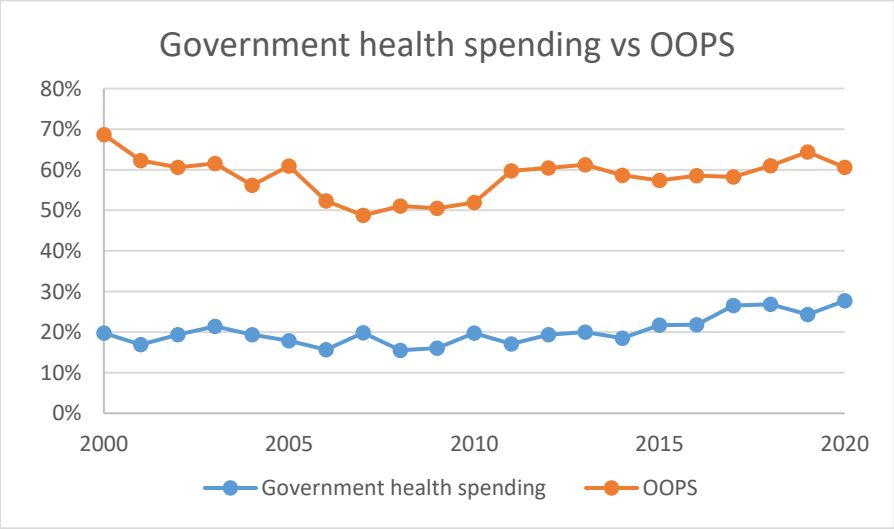
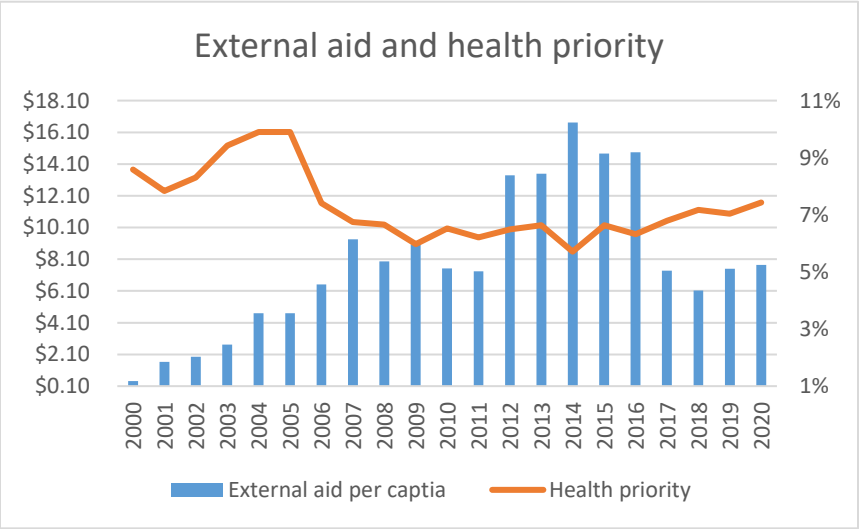


Figure 4: Trend of external aid and health priority



Source: Calculated from data (WHO, 2022)

Part 2: Public Health Expenditure: CDs and NCD Programs

According to MoEF, public health expenditure in Cambodia was allocated to programs and was implemented by the MoH (MoEF, 2022). The budget was divided into four programs: reproductive health, adolescents, mothers, infants, children and nutrition; communicable diseases; non-communicable diseases and other public health issues; strengthening the health system. It was observed that the total budget of MoH has declined remarkably 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. Table 2 shows the budget trends over five years (2018-2022)[2].

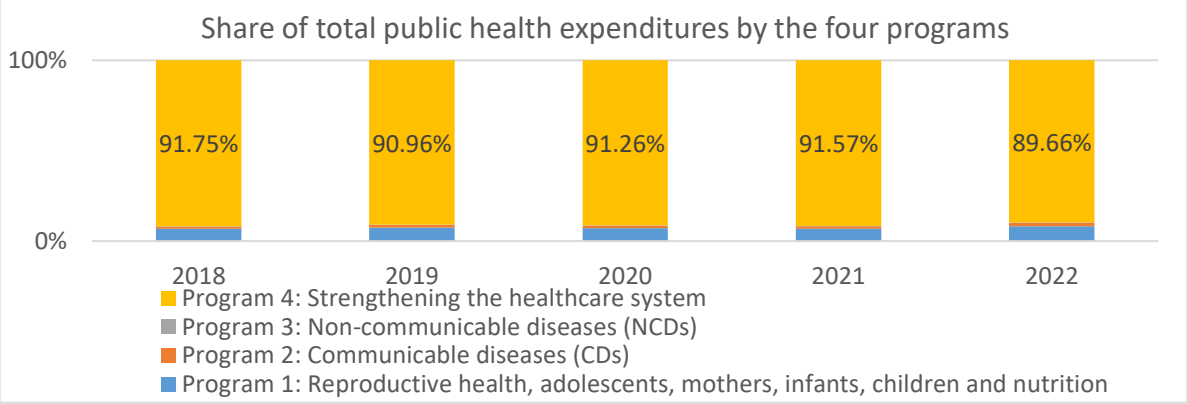
Table 2: Public health budget distribution in the last five years (2018-2022) *In million KHR*

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 from data (MoEF, 2022)

It was acknowledged that Program 4 shared 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, the governance health sector and supporting and strengthening regional training centres for health. Among the sub-programs of Program 4, the provision of health services shared more than 88 percent of the budget plan for 2022. Table 3 shows the breakdown budget of Program 4.

Figure 5: Share of total public health expenditures by the four programs



Source: Calculated from data (MoEF, 2022)

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

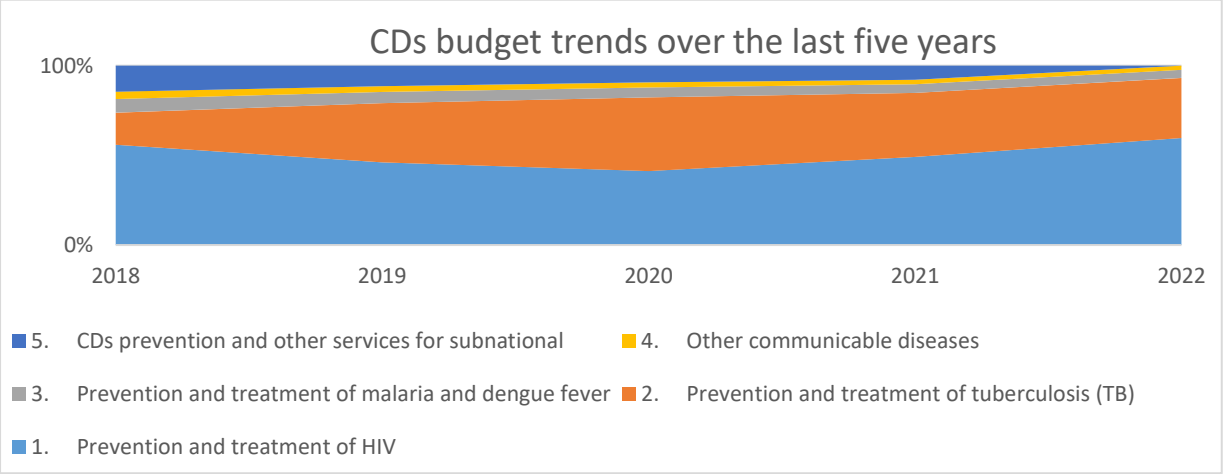
Table 3: Budget breakdown of Program 4 *In Million KHR*

N	Program 4: Strengthening the healthcare system	Budget in 2022	Share in %
1	Provision of health services	1,067,411.30	88.75%
2	Health financing	5,861.80	0.49%
3	Human resource development	114,178.70	9.49%
4	Health information system	126	0.01%
5	Governance health sector	2,881.90	0.24%
6	Supporting and strengthening regional training centres for health	12,277.00	1.02%

Source: Calculated from data (MoEF, 2022)

In terms of the CD budget, the prevention and treatment of HIV and tuberculosis (TB) are priority agendas. Figure 6 reveals HIV prevention and treatment shared more than 50 percent of the CD total budget, followed by TB at 32 percent in the last five years (2018-2022). Nevertheless, the prevention and treatment of malaria and dengue fever, as well as other CDs, have decreased from 12 to seven percent during the same period. Moreover, CD prevention and other subnational services budgets slowed down from 2018 to 2021 and were not budgeted for in 2022. Given this trend, the HIV and TB budgets would respond to the high risk of these CDs in the public health sector. The breakdown of CD sub-programs is shown in Table 5.

Figure 6: CD budget trends over the last five years (2018-2022)



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 from data (MoEF, 2022)

As shown in Figure 7, NCD prevention and other services for subnational and other public health problems shared most of the NCD budget from 2018 to 2021. But there were no budgets for NCD prevention and other services for the subnational level in 2022. The other public health problems shared a significant budget 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.

Figure 7: NCD budget trends over the last five years (2018-2022)

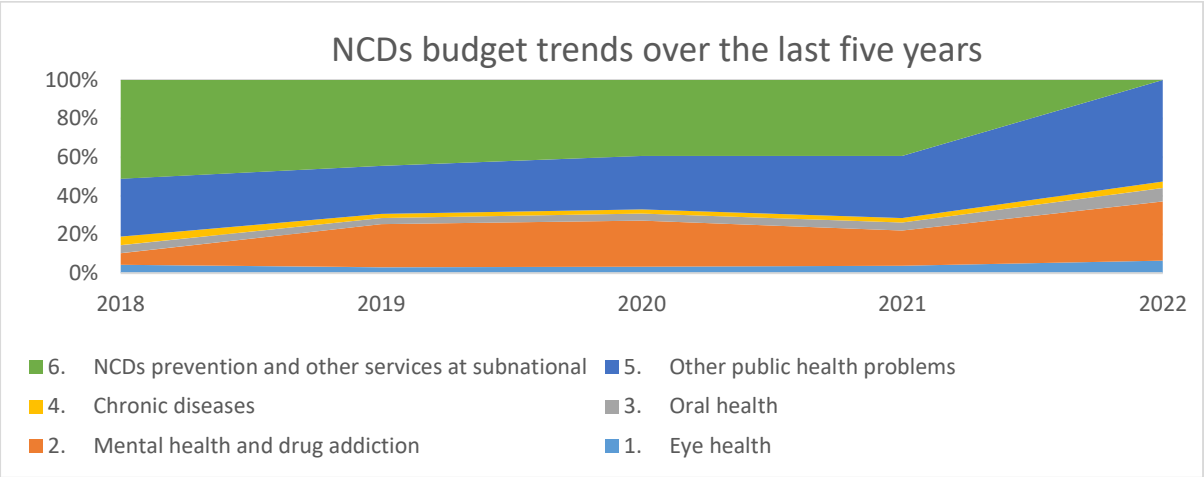


Table 5: NCD budget trends over the last five years (2018-2022) *In million KHR*

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)

The NCD expenditure was minimal in the total budget over the last five years (2018-2022). Specifically, it shared only 0.12 percent or KHR 1,543.30 million compared to all budget plans, totalling KHR 1,341,377.00 million in 2022. This was allocated to the following programs: (1) reproductive health; adolescents, mothers, infants, children and nutrition; (2) communicable diseases (CDs); (4) strengthening the health system. Throughout the comparative analyses, the NCD budget for control, prevention and treatment were not considered a priority of public health expenditure, though NCDs were estimated to cause economic burdens by premature death and reduced work capacity (Mogojwe, 2021).

Part 3: Burden of NCDs on Public Health and Economic Growth

An existing study analysed the burden of NCDs on public health and economic growth. The study (UNDP, 2020) found a critical economic burden caused by NCDs at the national level. 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 shared about 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). Table 6 shows the total direct and indirect costs of NCDs and the highest economic burden was cancers (KHR 4.3 trillion, USD 1.1 billion), followed by cardiovascular disease (KHR 810 billion, USD 199 million) and diabetes (KHR 674 billion, USD 165 million).

Table 6: 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)

At 6.6 percent of the economic burden caused by NCDs, KHR 5.97 trillion were lost annually, of which KHR 5.63 trillion was lost by indirect costs (absenteeism, reduced capacity at work, premature death). Cambodians with one of the four main NCDs were 23 percent more likely to die prematurely.

Figure 8: Public Health and Economic Growth Impacted by NCDs

Source: Summarised from data (UNDP, 2020)

While NCD chronic diseases critically impact public health and economic growth, MoH's budget allocation was minimal for NCD programs. Several development aspects of the NCD burden were analysed in the below section.

Noticeably, budget allocation for chronic diseases was the smallest overall at only 0.004 percent of the total public health budget, while cardiovascular disease, hypertension, cancer and diabetes are growing public health challenges for Cambodians (MoH, 2018; IHME, 2019). Again, NCD chronic patients were 23 percent more likely to die prematurely (UNDP, 2020), and this result could draw attention to revisiting the budget allocation of chronic illnesses.

It's also noted that the annual population growth was stable from 2019 to 2022 (2018 was the base year in the calculation), between one and 1.4 percent (Figure 9). The positive change in the population indicates an increased demand for healthcare services, but the NCD budget declined 40 percent in 2022, even though the MoH acknowledged that NCDs are the root cause of disabilities and mortality (MoH, 2018). Moreover, no budget for NCD prevention and other services at a subnational level in 2022 would impact rural populations with NCDs.

The annual growth of the NCD budget was compared to the total public health budget and GDP growth to see the change in economic outcome towards NCD expenditure (Figure 10). The result indicated that the budget allocation of NCDs kept declining, aligned with the total public health budget over the last four years (2019-2022), despite the GDP recovering from a 3.1 percent decline in 2020 to three percent in 2021 and 4.8 percent in 2022 (WorldBank, 2022). Based on Figure 10, more than 40 percent of the NCD budget in 2022 (compared to 2021) was not allocated, which brought a significant decline in NCD spending in the year.

As with GDP, NCD budget growth was also compared with per capita GDP over the last four years (Figure 11). 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 hugely declined from 28 percent in 2019 to a 40 percent decline in 2022[3]. Moreover, out-of-pocket spending as a percentage of health spending (OOPS%CHE) remained more than 60 percent of the source of treatment costs from 2000 to 2020 (WHO, 2022). This result indicated an increased financial burden on the household for NCD treatment over the last four years (2019-2022)[4].

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). By considering this treatment cost, the NCD shared 20 percent on average of the total health treatment cost per capita over the last

[3] There was no budget for NCD prevention and other services on the subnational level from the MoH in 2022.
[4] 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
MoEF. (2022). ថវិកាសង្ខេប Archives. ក្រសួងសេដ្ឋកិច្ចនិងហិរញ្ញវត្ថុ. Retrieved from https://mef.gov.kh/documents-category/publication/budget-in-brief/

four years (2019-2022) (Figure 12), while the annual budget of NCDs declined significantly. The personal NCD treatment costs would potentially rise if NCD public spending declined rapidly.

Figure 9: NCD growth and population growth

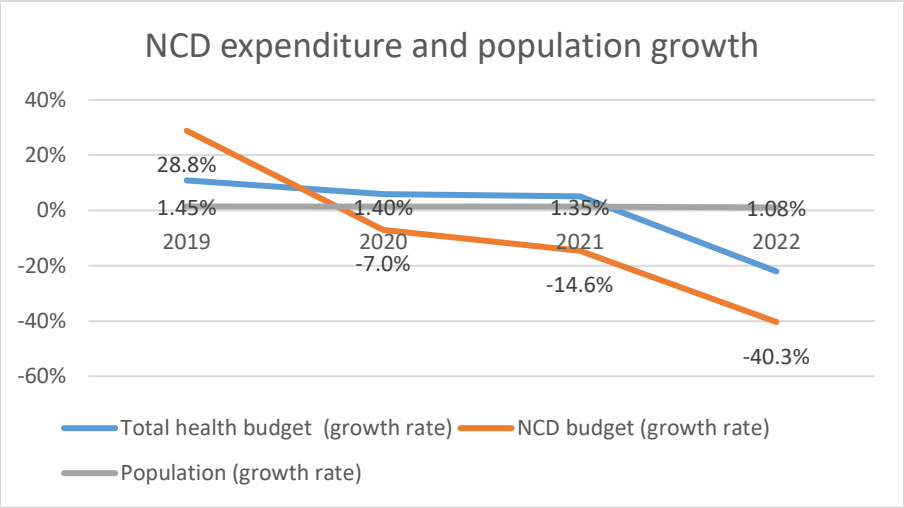


Figure 10: NCD expenditure and GDP growth

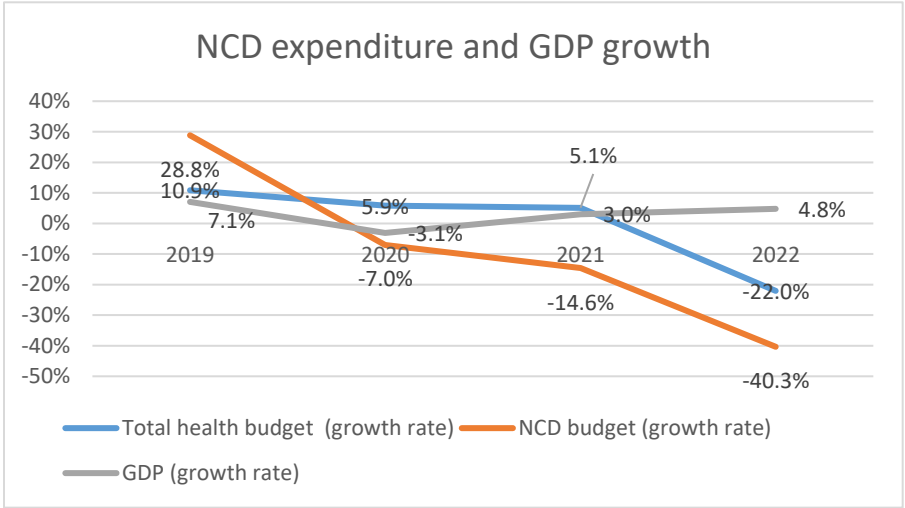


Figure 11: NCD expenditure and economic outcome

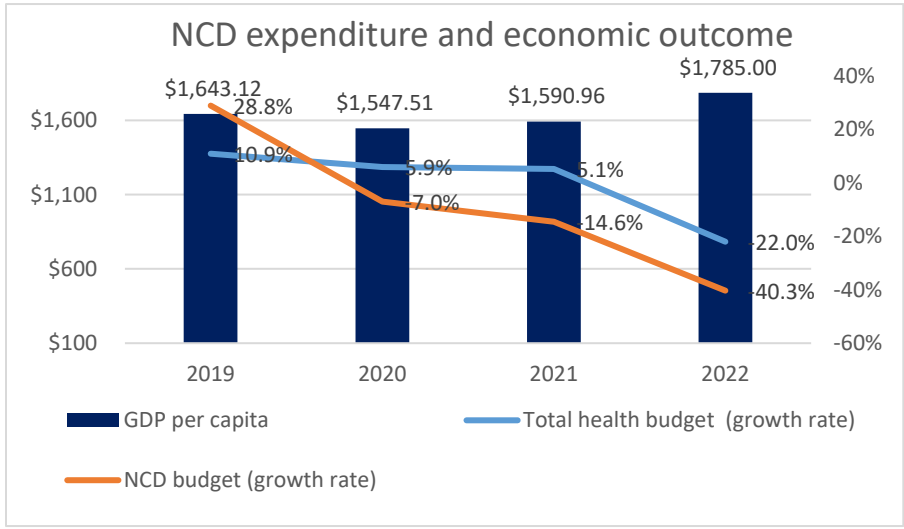
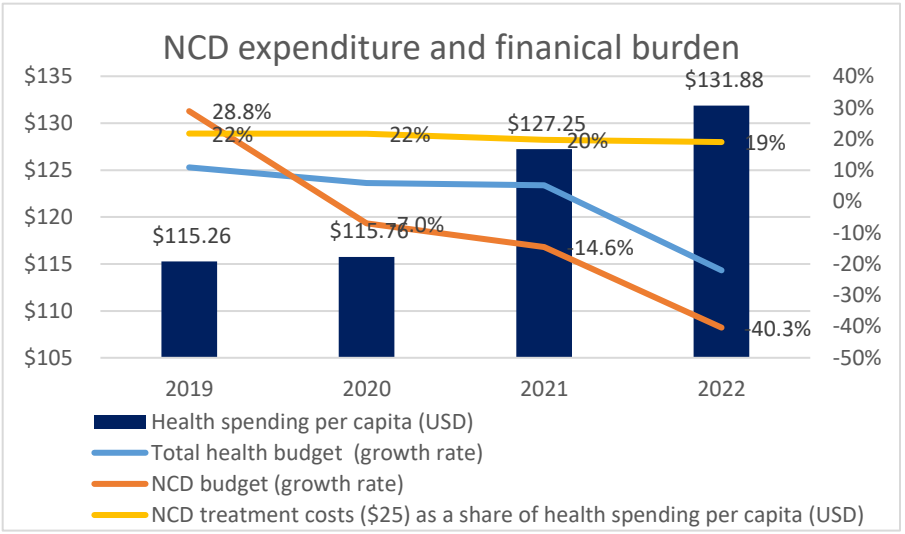


Figure 12: NCD expenditure and individual financial burden



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

Part 4: Impact of NCDs on Socioeconomic and Household Welfare

The CSES 2020 was used to analyse how socioeconomic and household welfare are impacted by NCDs. This survey was conducted to provide a comprehensive set of indicators on the living conditions of Cambodian people, covering the main socioeconomic areas such as the status of a household member, health, education, housing conditions, household income and liabilities, household consumption, economic activities (labour force), victimisation, vulnerability and others (NIS, 2020). In addition, of the 44,548 household members in the CSES 2020 health-illness section, 16.5 percent experienced diseases (CDs and NCDs), 0.3 percent experienced injuries and 83.2 percent experienced no diseases and injuries in the last 30 days preceding the survey [5]period.

Among the 16.5 percent of 44,548 household members who had diseases in the last 30 days, 2,271 people had NCDs. The top five NCDs that impacted people were high blood pressure (40 percent), gastrointestinal disorders/gastritis (13 percent), heart diseases (10 percent), diabetic diseases (nine percent), joint pain/disease (six percent) and others (21 percent).

3. Impact of NCDs on Socioeconomic Development

The analysis showed that 12 percent (275 household members) of 2,271 NCD patients stopped livelihood activities due to illness. On average, the patients stopped activities on 13.38 days out of the last 30 days. Those affecting individuals the most were cervical cancer, dental problems, diabetic diseases, lung cancer, liver cancer, malnutrition, and others. Table 6 shows details of the impact on livelihoods.

[5] 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)

Table 7: NCDs impacted on livelihood activities

NCDs	Number of days livelihood activities stopped				
	Min	Mean	Max	Sum	St. Dev
Cervical cancer	30	30	30	30	
Dental problems	30	30	30	30	
Diabetic diseases	3	21	30	364	11
Lung cancer	12	20	30	99	9
Liver cancer	20	20	21	61	1
Malnutrition	7	19	30	37	16
High blood pressure	1	15	30	1372	12
Gastrointestinal disorders/gastritis	1	10	30	464	9
Heart diseases	1	10	30	364	10
Skin diseases	4	5	6	10	1
Brain tumour	2	2	2	2	

Source: Calculated from data CSES 2020 (NIS, 2020)

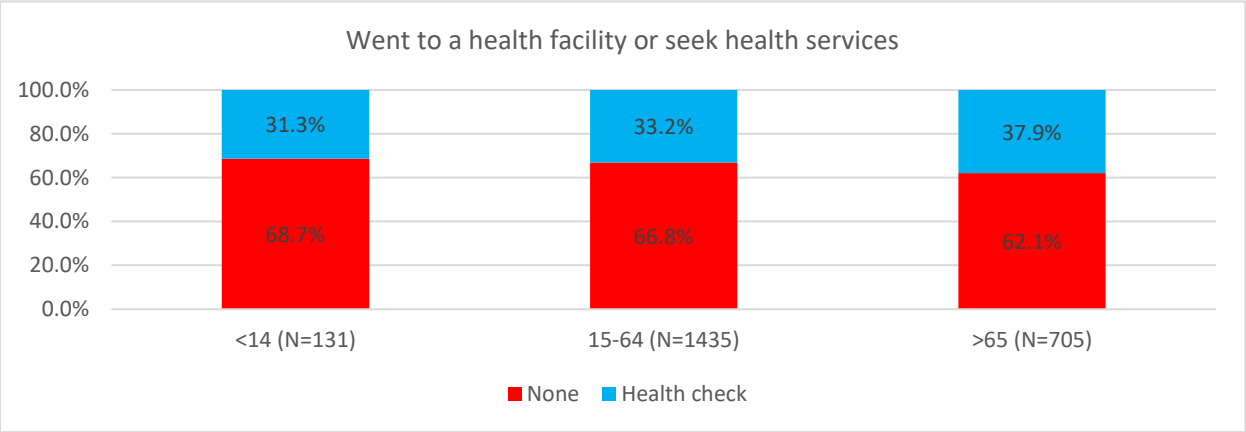
An independent sample t-test was conducted to compare the livelihoods of households in urban and rural areas impacted by NCDs. There was no significant difference in the livelihoods impacted by NCDs in urban (M= 13.43, SD= 11.57) and rural (M= 13.35, SD= 11.17) conditions; t (273) = 0.06, p = 0.95. These results suggested the livelihoods impacted by NCDs were not significantly different between people from urban and rural areas, specifically on the days of stopped employment and livelihood activities. Similarly, there were no significant differences in impacts on livelihoods caused by NCDs, considering gender perspective for male (M= 14.4, SD= 11.30) and female (M= 12.65, SD= 11.26) conditions; t (273) = 1.26, p = 0.20. However, NCDs tended to have a greater impact on older patients' livelihoods. A Pearson correlation coefficient confirmed a positive correlation between the two variables, r (273) = .230, p = 0.000. These results confirmed the impact of NCDs on livelihoods of older people, especially those aged more than 65 years, regardless of areas of living and gender.

4. The Current Practice of NCD Treatment and Welfare

Regarding NCDs' strong impact on older patients, the study divided ages into three groups: <14, 15-64 and >65. The result indicated that in the last 30 days, more than 60 percent of NCD patients did not go to any health facilities or healthcare services. In the last 30 days, only 31.3 percent of people aged lower than 14, 33.2 percent of those between 15-64 and 37.9 percent above 65 went to a health facility or sought health services 1.59 times on average. Although NCDs are

creating challenges in health and socioeconomic development (MoH, 2018), household healthcare has been limited among NCD patients.

Figure 13: Went to a health facility or seek health services



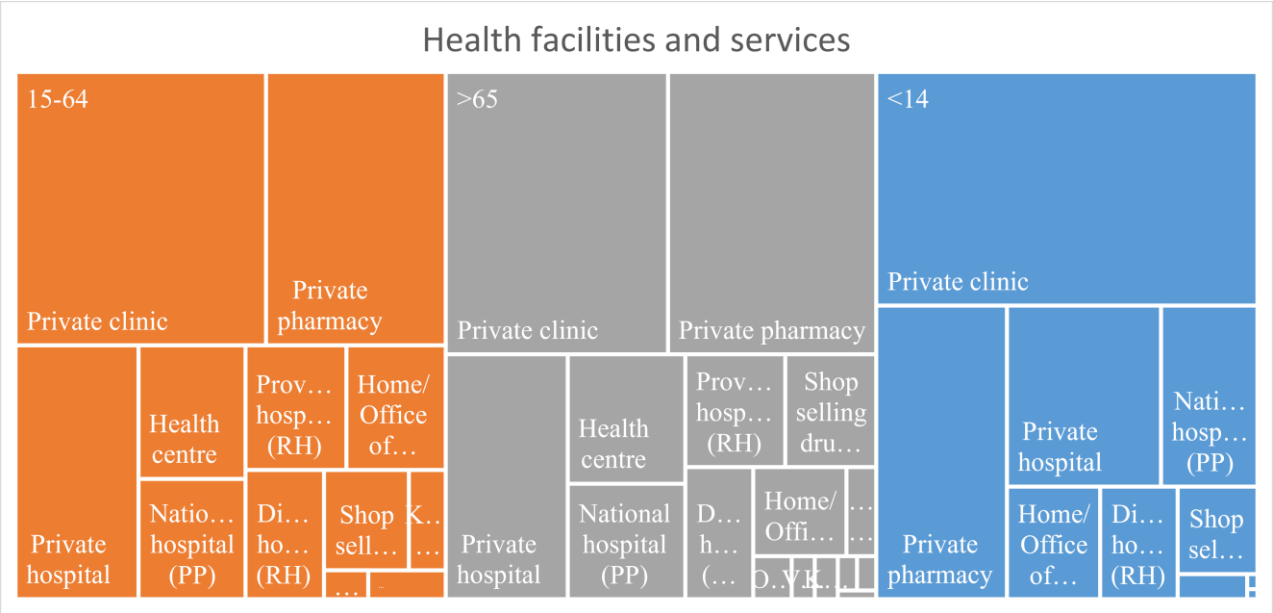
Source: Calculated from data CSES 2020 (NIS, 2020)

A one-way ANOVA revealed there was not a statistically significant difference in frequency of health checks between patients aged <14 and 15-64 (p=0.611) and aged <14 and aged >65 (p = 0.276), while WHO advised frequent and timely treatment of cancer for older patients (Akkazieva et al., 2014). This result would bring considerable awareness to older patients about NCD chronic diseases and welfare practice.

Private clinics, private pharmacies, private hospitals and national hospitals shared more than 70 percent of the health facilities and services chosen by NCD patients among the three age structures in the last 30 days (Figure 14), comparing 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 other overseas medical services (detailed in Appendix 6: Facility and services). This result indicated the high dependency of NCDs on private hospitals and services, rather than public service provision[6].

[6] 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.

Figure 14: Health facilities and services



Source: Calculated from data CSES 2020 (NIS, 2020)

5. The Financial Burden of NCDs on Households

The analysis revealed that the treatment cost of NCDs, on average, was USD 12 during the days preceding the survey period. The cost was broken down by gender and zones: Phnom Penh, plains, Tonle Sap, coastal, and plateau/mountain. The result revealed on average, males spent USD 12.07, and females spent relatively lower, USD 11.99, across the five zones. Table 8 shows the NCD treatment costs across gender and zones.

A two-way ANOVA was performed to analyse the burden of NCD treatment cost on households, considering gender and zone conditions. Table 8 illustrates that there was no statistically significant difference in the mean of the financial burden of treatment on households between males and females (p=.153) and their interaction (gender* zone) (p =.812), but there were statistically significant differences between zones (p < .005). It means that regardless of gender, NCD patients living in different zones had significantly different treatment costs.

Table 8: NCD treatment cost across gender and zones

Treatment cost		Mean	Std. Deviation	N
Male	Phnom Penh	$ 12.19	$ 0.59	26
	Plain	$ 12.11	$ 0.92	77
	Tonle Sap	$ 11.98	$ 0.53	65
	Coastal	$ 12.40	$ 1.64	19
	Plateau/Mountain	$ 11.91	$ 0.71	45
	Total	$ 12.07	$ 0.85	232
Female	Phnom Penh	$ 12.19	$ 0.86	48
	Plain	$ 12.08	$ 0.75	155
	Tonle Sap	$ 11.90	$ 0.51	130
	Coastal	$ 12.07	$ 1.15	35
	Plateau/Mountain	$ 11.82	$ 0.91	89
	Total	$ 11.99	$ 0.78	457
Total	Phnom Penh	$ 12.19	$ 0.77	74
	Plain	$ 12.09	$ 0.81	232
	Tonle Sap	$ 11.93	$ 0.52	195
	Coastal	$ 12.19	$ 1.33	54
	Plateau/Mountain	$ 11.85	$ 0.84	134
	Total	**$ 12.02**	**$ 0.81**	**689**

Source: Calculated from data CSES 2020 (NIS, 2020)

Table 9: A two-way ANOVA

Source	SS	df	MS	F	Sig.
Corrected Model	12.436[a]	9	1.382	2.163	.023
Intercept	67251.569	1	67251.569	67251.569	0.000
Gender	1.308	1	1.308	2.047	.153
Zone	9.544	4	2.386	3.735	.005
Gender* zone	1.011	4	.253	.396	.812
Total	99925.220	689			

a. R^2= .028 (Adjusted R Squared = .015)

Source: Calculated from data CSES 2020 (NIS, 2020)

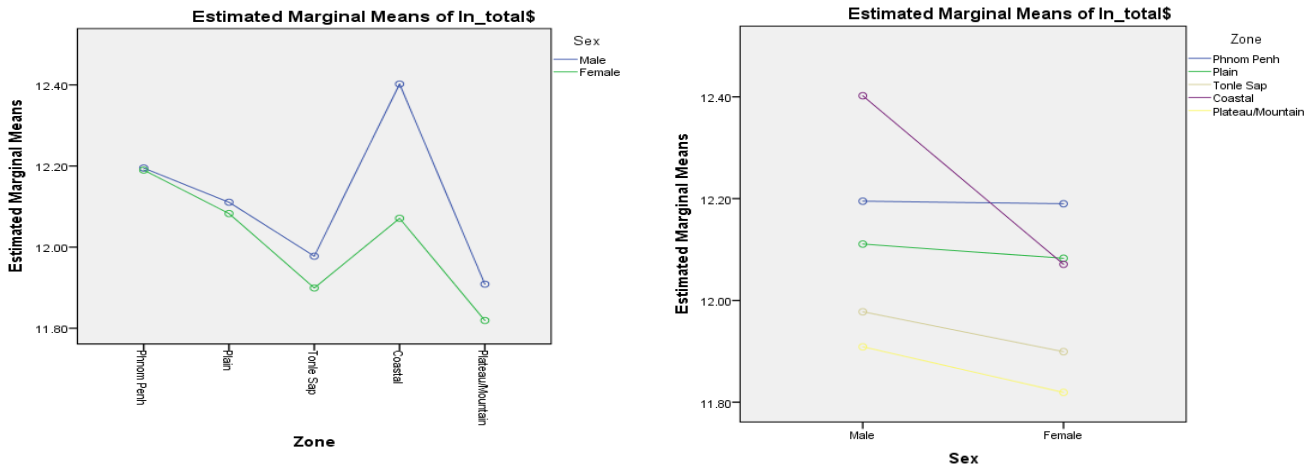
Tukey's post hoc test resulted in the different treatment costs by zones. The patients from Phnom Penh and plain zones spent significantly higher on NCD treatment costs than plateau/mountain patients by (USD .3424) and (USD .2428), ($p < .05$). The multiple comparisons of treatment cost by zones are shown in Table 10.

Table 10: Tukey's post hoc test results

(I) Zone		Mean Difference (I-J)	Std. Error	Sig.	95% CI	
					LB	UB
Phnom Penh	Plain	.0996	.10671	.884	-.1923	.3915
	Tonle Sap	.2662	.10913	.106	-.0322	.5647
	Coastal	.0042	.14305	1.000	-.3871	.3954
	Plateau/Mountain	.3424*	.11576	.027	.0258	.6590
Plain	Phnom Penh	-.0996	.10671	.884	-.3915	.1923
	Tonle Sap	.1666	.07765	.202	-.0457	.3790
	Coastal	-.0954	.12076	.933	-.4257	.2349
	Plateau/Mountain	.2428*	.08672	.042	.0056	.4800
Tonle Sap	Phnom Penh	-.2662	.10913	.106	-.5647	.0322
	Plain	-.1666	.07765	.202	-.3790	.0457
	Coastal	-.2621	.12291	.208	-.5982	.0741
	Plateau/Mountain	.0761	.08969	.915	-.1692	.3215
Coastal	Phnom Penh	-.0042	.14305	1.000	-.3954	.3871
	Plain	.0954	.12076	.933	-.2349	.4257
	Tonle Sap	.2621	.12291	.208	-.0741	.5982
	Plateau/Mountain	.3382	.12883	.067	-.0141	.6906
Plateau/Mountain	Phnom Penh	-.3424*	.11576	.027	-.6590	-.0258
	Plain	-.2428*	.08672	.042	-.4800	-.0056
	Tonle Sap	-.0761	.08969	.915	-.3215	.1692
	Coastal	-.3382	.12883	.067	-.6906	.0141

*Based on observed means. *. The mean difference is significant at the .05 level.*

Figure 15: Estimated marginal means



Source: Calculated from data CSES 2020 (NIS, 2020)

The Effects of Welfare Practices and Socioeconomic on NCD Treatment Cost

Multiple regression was employed to examine the association between treatment cost (USD) and socioeconomic household characteristics and welfare practices. The regression revealed that the patient living in Phnom Penh had a positive statistically significant NCD treatment cost (p=0.00). If the patients were in Phnom Penh, the NCD treatment cost would increase by USD 5.80 from the average cost. Additionally, if the patients were in the plain and coastal zones, the treatment cost declined by USD 0.79 and USD 0.65 (p=.018, p=0.002). Moreover, if the patients were in a rural area, the NCD treatment cost fell by USD 1.15 (p=0.003). However, the increase in expensivenss of the NCD treatment per time positively increased the NCD treatment by USD 0.23 (p= .000), while increasing the time of seeking health care would reduce NCD cost by USD 0.46. Finally, the multiple regression revealed that age, gender and nights of hospitalisation did not significantly impact the NCD treatment cost.

The 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 case would apply to prevention and treatment prior to the severe impact caused by NCDs.

Besides, the socioeconomic characteristics of NCD patients, specifically plain and coastal zones and rural areas, could decrease the treatment costs, but the frequencies and scarcity of health facilities and services in these areas need to be considered. It's also acknowledged that treatment costs are associated with access to health services. If the services in those areas are limited, the costs would also be low. Again, only 30% percent of NCD patients went to a health facility or sought health services for treatment. It could lead to low costs for these welfare practices.

Table 11: Regression coefficients for predating NCD treatment cost

Variables	B	95% CI		β	t	p
		LB	UB			
Constant	6.799	6.173	7.426		21.304	.000***
Plains	.208	.035	.380	.122	2.366	.018**
Tonle Sap	.125	-.052	.302	.070	1.390	.165
Coastal zone	.350	.134	.565	.117	3.184	.002**
Mountainous region	.013	-.170	.196	.006	.139	.890
Female patient	-.043	-.137	.050	-.025	-.908	.364
Rural areas	-.153	-.254	-.052	-.092	-2.972	.003**
Age of patient (ln age)	.031	-.034	.096	.027	.942	.347
Number of nights hospitalised	.007	-.001	.015	.049	1.742	.082
Expensiveness (ln_expensive)	1.233	1.086	1.379	.467	16.540	.000***
Number of times seeking healthcare	.539	.482	.596	.524	18.553	.000***

*Noted: Zone in Phnom Penh and male patient are reference category, R^2 = 0.48, (N=686, p=0.00), CI= Confidence Interval for B, LB= Lower Bound, UB= Upper Bound, *** significant at 0.001, ** significant at 0.05, log (total NCD treatment cost), log (age) and log (expensivenss), treatment cost = (1*B)-1*

6. Household Coping Strategies

Table 12 indicates 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. NCD patients tended to use household income as the first source of funding NCD treatment and saving and borrowing were the second sources of treatment. Selling assets, selling household production in advance and other sources were used, but minimal during the time of conducting the survey.

Table 12: Coping strategies on NCD financial burden

Coping strategy	The first source of finance	The second source of finance
Age <14	(N=130)	(N=11)
Household income	70.0%	
Savings	24.6%	90.9%
Borrowing	3.1%	9.1%
Other sources	2.3%	
Age 15-64	(N=1435)	(N=138)
Household income	72.5%	4.3%
Savings	21.8%	80.4%
Borrowing	2.7%	8.0%
Selling assets	0.4%	1.4%
Selling household production in advance	0.1%	2.2%
Other sources	2.6%	3.6%
Age >65	(N=684)	(N=59)
Household income	69.7%	3.4%
Savings	26.5%	76.3%
Borrowing	0.6%	6.8%
Selling assets		1.7%
Selling household production in advance		1.7%
Other sources	3.2%	10.2%

Source: Calculated from data CSES 2020 (NIS, 2020)

As illustrated in Table 12, more than 70 percent 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 second 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.

7. Identify Resources Needed to Tackle the Growing Health Risk of NCDs

Table 13 illustrates the potential resources in both existing and new forms. These resources were mapped by revisiting budget allocation in public health, implementing health taxes, allocating the subnational budget, creating health foundations, investing in NCDs from private sectors and development partners and joining support across stakeholders. Proposed activities and potential implementors to access the resources are detailed below.

Table 13: Resource mapping analysed the potential resources for combating the growing health risk of NCDs

N	Types of resources	Existence	Proposed activities	Implementors
1	MoH annual budget program	Exists	Revisit Program 4: Strengthening the health system and potentially allocate to NCDs.	MoH, MoEF
2	MoH annual budget program	Exists	Integrate the NCD services into the National HIV/AIDS sub-program of the CD budget. It needs to happen together through the orientation of the health system to enable NCD management in the long term with an extensive budget program.	MoH, MoEF
3	Health taxes	New	Taxes on health-harming products (health taxes), prioritising increases in excise taxes on tobacco, alcohol and sugar-sweetened beverages and using portions of the additional revenue for NCD prevention and control.	MoH, MoEF
4	Subnational administration budget	Exists	Engage the subnational administration (communes/sangkats) to increase the efficiency of domestic resources at the local level and create community awareness of NCDs, especially plain, coastal, mountain and Tonle Sap zones.	MoH, subnational administration
5	Health foundation	New	Create health foundations at the subnational level.	Subnational administration
6	Private sector investment in NCD market solution	New	Engage and facilitate the entry of private sectors that can leverage their expertise in developing marketing solutions on NCD facilities and services.	MoH, MoEF, MoE

7	Investment in NCD prevention and control	New	Engage and facilitate the entry of donors and development partners (e.g. WHO, GIZ, German bank KfW, UNDP) to provide official development assistance, such as financial and technical support toward NCD prevention and control.	MoH, MoEF
8	Joint support	New	Expand and diversify the NCD actors by establishing connections with key stakeholders across multiple sectors, at both national and subnational levels.	MoH, subnational administration

Source: Author analysed policies and reports related to NCDs in Cambodia

There were eight potential resources for combating the growing health risk of NCDs: the MoH annual budget program, integrating the NCD services into the national HIV/AIDS sub-program, health taxes, subnational administration budget, a health foundation, private sector investment in NCDs market solution, new investment in NCDs prevention and control and joint supports. 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 throughout the private-public partnership (PPP) at national and subnational levels for resource mobilisation. The roles and responsibilities of the PPP need to be well defined. Furthermore, the communication strategy, building trust among stakeholders and formalisation of the platform need to improve and commit based on agreement. Finally, the planning and implementation need to be monitored and appropriately evaluated.

Discussion on Findings

NCDs caused 6.6 percent of the economic burden, of which KHR 5.97 trillion were lost annually through indirect costs (absenteeism, reduced capacity at work and premature death). The NCD expenditure was minimal in the total public health budget of the MoH. Specifically, it shared 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. 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 noticed 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, but welfare practices were limited. For example, the study found that only 35 percent of patients went to a health facility or sought health services for treatment in the last 30 days. 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 and Suggestions

Commission 8 has committed to addressing NCDs by scrutinising government expenditure and implementing budget laws to ensure accountability in public spending. Regarding the objective, this report analysed public health expenditure, socioeconomic impacts and resource mapping to tackle the increasing health risk of NCDs in Cambodia. The study found that the NCD expenditure was minimal in the total public health budget and shared only 0.12 percent, or KHR 1,543.30 million compared to all budget plans 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 impact NCDs were cervical cancer, dental problems, diabetes, lung cancer, liver cancer, malnutrition and others. These NCDs impacted livelihood and health, specifically in older people, but welfare practices were limited. Only 35 percent of patients went to a health facility or sought health services for treatment in the last 30 days, which would challenge NCD treatment and be costly. Furthermore, there was a concern about household indebtedness due to OOPS on NCD treatment. 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 highly increase.

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.

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Appendix

8. Independent Sample T-Tests in Urban and Rural Areas Impacted by NCDs

Group Statistics					
Area		N	Mean	Std. Deviation	Std. Error Mean
How many days illness/injury stopped livelihood activities?	Urban	96	13.44	11.571	1.181
	Rural	179	13.35	11.178	.835

Independent Samples Test									
How many days illness/injury stopped livelihood activities?	Levene's Test for Equality of Variances		T-Test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean	Std. Error	95% CI	
								Lower	Upper
Equal variances assumed	.485	.487	.060	273	.952	.086	1.432	-2.733	2.904
Equal variances not assumed			.059	188.6	.953	.086	1.447	-2.768	2.939

9. Independent Sample T-Test of Males and Females Impacted by NCDs

Group Statistics					
Gender		N	Mean	Std. Deviation	Std. Error Mean
How many days illness/injury stopped livelihood activities?	Male	115	14.40	11.307	1.054
	Female	160	12.65	11.266	.891

Independent Samples Test									
How many days illness/injury stopped livelihood activities	Levene's Test for Equality of Variances		T-Test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean	Std. Error	95% CI	
								Lower	Upper
Equal variances assumed	.021	.884	1.269	273	.206	1.750	1.379	-.966	4.466
Equal variances not assumed			1.268	245.2	.206	1.75	1.38	-.969	4.469

10. A Pearson Correlation on Age and Impact of NCDs

Correlations		Age	How many days illness/injury stopped livelihood activities
Age	Pearson Correlation	1	.230**
	Sig. (2-tailed)		.000
	N	2271	275
How many days illness/injury stopped livelihood activities	Pearson Correlation	.230**	1
	Sig. (2-tailed)	.000	
	N	275	275

11. A One-Way ANOVA on Household Welfare Practice by Age Groups

NCD patients have sought healthcare services in the last 30 days.
Groups: <14, 15-64 and >65

	Sum of Squares	df	Mean Square	F	Sig.
Between groups	4.935	2	2.468	1.521	.219
Within groups	3679.303	2268	1.622		
Total	3684.239	2270			

12. NCD List

NCDs	N	Percent	Valid Percent
High blood pressure	904	39.8	39.8
Gastrointestinal disorders/gastritis	306	13.5	13.5
Heart diseases	217	9.6	9.6
Diabetes	210	9.2	9.2
Joint pain/disease	141	6.2	6.2
Ear-nose-throat (ENT) disease	55	2.4	2.4
Mental disorder	29	1.3	1.3
Lung cancer	25	1.1	1.1
Bronchitis	25	1.1	1.1
Skin diseases	24	1.1	1.1
Kidney disease	21	.9	.9
Back pain	20	.9	.9
Eye disease	19	.8	.8
Cyst/ovarian cyst/uterine cancer	18	.8	.8
High uricemia	18	.8	.8
Leukocytosis or leukemia	17	.7	.7
Liver cancer	16	.7	.7

Cervical cancer	14	.6	.6
Blader stone/galblader stone	14	.6	.6
Liver disease/cirrhosis/ascitis	13	.6	.6
Anemia	13	.6	.6
Fatigue	13	.6	.6
Hyperglycemia (diabetes)	12	.5	.5
Hypoglycemia	12	.5	.5
Dental problems	10	.4	.4
Vascular atrophy	9	.4	.4
Osteoporosis	9	.4	.4
Leukemia	8	.4	.4
Haemorrhoids	7	.3	.3
Albuminuria	7	.3	.3
High cholesterol	7	.3	.3
Heart disease	5	.2	.2
Osteitis	5	.2	.2
Fatty heart disease	5	.2	.2
Chicane pork	5	.2	.2
Brain tumour	4	.2	.2
Malnutrition	4	.2	.2
Chest pain/pain in the ribs	4	.2	.2
Beriberi	4	.2	.2
Chondroma	3	.1	.1
Hernia	3	.1	.1
Thyroid	3	.1	.1
Panic attack	3	.1	.1
Kidney failure/inguinal lymphadenopathy	2	.1	.1
Cyst on the back	2	.1	.1
Breast cancer	2	.1	.1
Bone trauma	1	.0	.0
Tetanus	1	.0	.0
Abscess	1	.0	.0
Myositis	1	.0	.0
Total	2,271	100.0	100.0

13. Facilities and Services

Facilities and services	Share	Rank
Age <14 (N=130)		
Private clinic	39.2%	1
Private pharmacy	16.9%	2
Private hospital	12.3%	3
National hospital (PP)	7.7%	4

Provincial hospital (RH)	0.1%	5
Health centre	0.0%	6
Home/office of trained health worker/nurse	4.6%	7
District hospital (RH)	3.8%	8
Shop/market selling drugs	3.1%	9
Health post	0.8%	10
Age 15-64 (N=1409)		
Private clinic	30.2%	1
Private pharmacy	21.6%	2
Private hospital	13.8%	3
Health centre	6.3%	4
National hospital (PP)	5.7%	5
Provincial hospital (RH)	5.5%	6
Home/office of trained health worker/nurse	5.5%	7
District hospital (RH)	4.5%	8
Shop/market selling drugs	3.8%	9
Kru Khmer/ magician	1.6%	10
Overseas medical services	0.6%	11
Other public healthcare	0.3%	12
Other overseas medical services (specify)	0.2%	13
Health post	0.1%	14
Visit of trained health worker/nurse	0.1%	15
Other private medical service (specify)	0.1%	16
Don't know	0.1%	17
Age >65 (684)		
Private clinic	27.6%	1
Private pharmacy	25.9%	2
Private hospital	13.2%	3
Health centre	6.7%	4
National hospital (PP)	6.0%	5
Provincial hospital (RH)	5.0%	6
Shop/market selling drugs	4.5%	7
District hospital (RH)	3.9%	8
Home/office of trained health worker/nurse	3.7%	9
Overseas medical service	1.2%	10
Other private medical service (specify)	0.7%	11
Visit of trained health worker/nurse	0.4%	12
Kru Khmer/ magician	0.4%	13
Health post	0.3%	14
Other public healthcare	0.3%	15
Monk/religious leader	0.1%	16