

**NHMS 2019**

**National Health and Morbidity Survey 2019**  
Technical Report — Volume II

# Healthcare Demand

**National Institutes of Health (NIH)**  
**Ministry of Health Malaysia**



# **NATIONAL HEALTH AND MORBIDITY SURVEY 2019: NON-COMMUNICABLE DISEASES, HEALTHCARE DEMAND AND HEALTH LITERACY**

Volume II: Healthcare Demand  
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## Message from the Director General of Health Malaysia

Malaysia has been acknowledged globally for its high performing health system based on its well-trained workforce, excellent infrastructure, and quality health service. We have achieved remarkable progress in improving health outcomes since independence with low-cost healthcare system funded through public revenue. Our country has been recognised by the World Health Organization (WHO) as one of the nations that has achieved Universal Health Coverage (UHC) with the availability and wide access to health services ranging from health promotion, prevention, treatment, rehabilitation, and palliative care. However, the challenge now is to build onto the previous success and reinforce our healthcare services to cope with the challenge of shifting demographics particularly in the elderly population and the rise of non-communicable diseases.

In the Ministry of Health's continuous effort to sustain and strengthen healthcare delivery, the Healthcare Demand (HCD) module of the National Health and Morbidity Survey (NHMS) was introduced to determine the population's pattern of healthcare services utilisation, health-seeking behaviour and estimate the total household out-of-pocket expenditure for health and its distribution. Previously, the core scopes considered in the healthcare utilisation were outpatient, inpatient and oral healthcare utilisation. This latest HCD module in NHMS 2019 will feature other aspects such as the utilisation of community pharmacy and domiciliary care as well as the provision of informal care and family doctor concept. Additionally, perceived general health and reported chronic pain were reintroduced to provide a more comprehensive picture of healthcare demand in the country.

The public sector has successfully provided universal and comprehensive healthcare services for Malaysians at a nominal fee. It remains to be the principal custodian of healthcare services for the country. However, one in ten of the population

reported borrowing money from family and friends when paying out-of-pocket for healthcare services. This may risk them to catastrophic spending, which could lead to worsening individual economic status. The nation must, therefore, look on to improve the current health financing system and offer financial protection for the population, particularly in the vulnerable groups to sustain and strengthen UHC.

Over-crowding of public facilities and long waiting-time have been chronic issues of the public sector and demands a pragmatic approach. In this HCD 2019 study, we discovered less than 2% of the Malaysian population received healthcare services at home, despite a quarter of the population perceived they needed the services. With the advancement in health technology and demand for convenience by the consumer coupled with over-crowding and long-waiting time issues, there is a serious need for a shift in the delivery of healthcare services from healthcare facilities back to the community and home.

Overall, this HCD module provides important evidence and invaluable inputs to support the Ministry of Health in evaluating the impact of strategies for healthcare service, reviewing the priorities and activities of the health programme, as well as planning for future allocation of resources.

My commendation to the survey team from the Institute for Public Health, Institute for Health Systems Research, and Institute for Health Behavioural Research for the successful completion of this important study. I also wish to thank all the agencies involved for their support and cooperation throughout the process. Last but not least, thank you to all the respondents who had taken the time to participate in this survey.

  
**Tan Sri Dato' Seri Dr. Noor Hisham bin Abdullah**  
 Director General of Health Malaysia  
 Chairman of NHMS Steering Committee  
 Ministry of Health Malaysia

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Last but not least, our sincere appreciation to all respondents who have participated in the survey. Their contributions in the survey would assist the Ministry of Health in improving health services in Malaysia.

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# Executive Summary

The Healthcare Demand (HCD) module has been an integral part of Malaysia's National Health and Morbidity Survey (NHMS) since its inaugural implementation in 1986. The NHMS is a nationwide community-based cross-sectional survey and 2019 was the sixth iteration for the HCD module. Components in 2019's HCD module include self-rated health, acute health problems, health-seeking behaviour, chronic bodily pain, health services utilisation, informal care, and payment sources for healthcare.

NHMS 2019 was a complex study design with two stage stratified cluster sampling. For HCD, a total of 14 houses were selected from each cluster (enumeration block); selection was conducted by the Department of Statistics Malaysia. The survey was carried out in all states and federal territories in Malaysia via face-to-face interview by trained data collectors. A total of 16,688 individuals were interviewed. Data was analysed and weighted by ethnicity and locality to produce nationally representative findings.

Looking at the general health status of the country, 19.5% of the population reported having acute health problems within the last two weeks prior to interview. Among them, 57.5% sought treatment/medication/advice from healthcare practitioners and 22.8% took medicine without a healthcare practitioner's advice. Findings also show that 8.7% of the population aged 13 years old and over were suffering from chronic bodily pain, in which 81.3% of them reported disturbances in performing daily activities due to the pain.

The survey found that 8.1% of population utilised outpatient healthcare services within two weeks prior to interview with a mean number of 2.74 visits per capita per year. Whilst, the population's oral healthcare utilisation was 23.7% within the last 12 months prior to interview with a mean number of 0.29 visits per capita per year. It was also noted that 15.0% of the population have never received dental care in their lifetime. The findings showed increases in the public sector utilisation for outpatient healthcare services and oral healthcare services when compared with findings from NHMS 2011 and NHMS 2015.

Meanwhile, inpatient healthcare services showed a plateauing trend of public sector utilisation, despite the public sector patient load being consistently three times higher than its private sector counterpart. The inpatient healthcare services were utilised by 5.2% of the population within the last 12 months with a mean number of 0.07 admissions per capita per year. Information on domiciliary care was collected for the first time in this NHMS, which showed that the public sector provided 88.2% of the services that were received by 1.7% of the population.

Findings on health services utilisation also showed that 10.2% of adults visited community pharmacies, 33.3% of adults went for medical check-ups/health screenings, and 4.8% of adults utilised the private medical laboratory services. Additionally, purchase of dietary supplements was prevalent among 13.8% of adult population in Malaysia.

HCD in NHMS 2019 also looked into some financial aspects of healthcare. Healthcare expenditure was reported to be around 5.1% of the total household monthly expenditure. 81.4% of households used current income to pay for the health services, while only 8.1% used insurance reimbursement. It was also noted that 10.9% of households also had to borrow money from family and friends to pay for the health services. Overall, our population spent out-of-pocket mainly for outpatient healthcare (40.4%), followed by purchase of dietary supplement (24.5%).

Overall, 5.3% of the population aged 13 years old and over acted as caregivers, providing unpaid care to household and/or non-household members. The average duration of a caregiver's role was 5.2 years, while the average hours of care per week was 24.5 hours. With regards to the family doctor concept, 47.1% of households reported visiting the same clinic, while only 24.1% of households visited the same doctor.

These findings are the general description of the population's current demand for healthcare services in 2019. All of these are especially important for the Ministry of Health Malaysia. It will be used as inputs to conduct reviews on existing programmes, and also to plan and formulate policies with regards to service implementation and forecasting on the resources required. The findings can also be used as problems statement for further exploration into the underlying reasons. All in all, the ultimate objective is to achieve a healthy Malaysia.



# Background and Methodology

# Background and Methodology

## 1.1 Background

The National Health and Morbidity Survey (NHMS) is carried out to obtain community-based data in the pattern of health problems and health needs of the people in Malaysia. This data is essential for the Ministry of Health to review its priorities and programmes, plan future allocation of resources and enhance the standard of health services and health status of the population in the country.

The first NHMS was carried out in 1986. Subsequent surveys were conducted in ten-yearly intervals, to review the health status in Malaysia. Since 2011, taking into account the need for updated and recent health data for policy formulation, the NHMS was structured to be carried out every year, in four-yearly cycles. The start of each cycle focuses on non-communicable diseases (NCDs) and healthcare demand, as well as other areas of priority as determined by the Ministry of Health (MOH). The scopes of study within each survey were determined by discussions with stakeholders, health experts and the NHMS Steering Committee, which was chaired by the Director General of Health Malaysia.

Information on health care needs, utilisation patterns and demand for care is vital for health sector planning and development, as these are building blocks of reform plans that targets health financing, service provision and quality, governance and resource management, in one way or another (1). Knowledge of the utilisation pattern, equity and provider choices impact design and performance of healthcare systems. The aim is to strength and improve the performance of the healthcare systems, ensuring universal access to quality healthcare (2, 3) and ultimately to improve the health of the population, towards achieving Sustainable Development Goals (SDG) (4).

The demand for health and healthcare will continually increase and evolve, to a certain extent independent of the ability of the healthcare systems to meet public expectations. The movement toward wellness, person and family centred care, the largely untapped resource for health such as the individual, novel service access approaches such as online consultation may change how healthcare could be delivered, thus contributing to a paradigm shift in access to healthcare. This may influence health-seeking behaviours and be reflected in service access changes such as self-medication practices and domiciliary care. The year 2019 marks the start of a new cycle of NHMS, the 6<sup>th</sup> cycle, to monitor the changes

and trends in healthcare demand, following the pattern of the previous surveys carried out in 2011 and 2015.

The data obtained from NHMS 2019 is important to assist the Ministry of Health Malaysia to make evidence based policies, and review the status of non-communicable diseases in Malaysia, as well as determine the utilisation and expenditure of health services. The data is also used by multiple agencies, including monitoring of international indicators such as the Sustainable Development Goals (SDG).

## 1.2 Objectives

### General objective

To provide community-based data and evidence to the Ministry of Health Malaysia on non-communicable diseases, risk factors of non-communicable diseases, and healthcare demand for review of national health priorities and programmes.

### Specific objectives (Healthcare Demand module)

1. To determine prevalence of:
  - self-rated health
  - reported acute health problems
  - chronic bodily pain
  - private medical laboratory utilisation
  - community pharmacy utilisation
  - outpatient healthcare utilisation
  - inpatient healthcare utilisation
  - oral healthcare utilisation
  - domiciliary care utilisation
  - medical check-up/health screening
  - private medical laboratory utilisation
  - dietary supplements purchased
  - informal caregiver
2. To identify sources of out-of-pocket payment and estimate the total household out-of-pocket (OOP) health expenditure.
3. To determine the percentage of household visiting the same clinic or seeing the same doctor.

## 1.3 Methodology

### 1.3.1 Target population

The NHMS 2019 covered both urban and rural areas in all 13 states and 3 federal territories in Malaysia. The target population was the residence in the non-institutional living quarters (LQ). Institutional population such as those staying in hotel, hostels, hospitals, etc. were excluded from this survey.

### 1.3.2 Sampling frame

The geographical areas in Malaysia were divided into Enumeration Blocks (EB). Each EBs is defined and classified into either urban or rural areas by Department of Statistics based on the population size of the gazetted area. The definition of urban area is a gazetted area which has a combined population of 10,000 or more. A gazetted area with a combined population of less than 10,000 is classified as rural area.

There were over 75,000 EBs in Malaysia. Each EB usually contains between 80 to 120 Living Quarters with an average population of 500 to 600 people. The sampling frame consists of selected EBs as was provided by Department of Statistics Malaysia in NHMS 2015.

### 1.3.3 Sample size determination

Sample size was calculated using a single proportion formula for estimation of prevalence.

$$n_{SRS} \geq \frac{Z^2_{\alpha/2} P(1-P)}{e^2}$$

The sample size calculation was based on a few criteria as below:

- Variance of proportion of the variable of interest (Based on NHMS 2015 or other literatures)
- Margin of error (e) (Between 0.02 to 0.07)
- Confidence Interval of 95%

To ensure optimum sample size, few adjustments were made:

- Adjusted for finite population (Based on 2019 projected population)
- Adjusted for the design effect (deff) (Based on previous survey: NHMS 2015)  
 $n(\text{complex}) = n(\text{srs}) \times \text{deff}$
- Adjusted the  $n(\text{complex})$  taking into account expected non-response rates of 35%  
 $n(\text{adj}) = n(\text{complex}) \times (1 + \text{non-response rate})$

The sample size was then adjusted according to the need of the analysis, whether the prevalence estimate was at the national, or state level. Based on the core objectives and above mentioned considerations, the optimum sample size required was 6,482 LQs.

The allocation of samples to the states, urban and rural was done proportionally to the population size. Bigger number of samples were allocated to states with bigger population size such as Selangor, Johor and Sabah, and lesser number of samples were allocated to states with smaller population size such as Melaka, Perlis and Labuan.

### 1.3.4 Sampling design

To ensure national representativeness, a two-stage stratified random sampling was used. The two strata are Primary stratum, which made up of states of Malaysia, including Federal Territories, and Second stratum, which made up of urban and rural strata formed within primary stratum.

Sampling involved two stages; the Primary Sampling Unit (PSU), which was EBs and the Second Sampling Unit (SSU), which LQs within the selected EBs. For Healthcare Demand module NHMS 2019, a total of 6,482 LQs were selected from the selected 463 EBs in Malaysia, where 350 EBs from the urban areas and 113 EBs from the rural areas, respectively. Fourteen LQs were randomly selected from each selected EB. All households within the selected LQs and all eligible respondents in the households were included in the study. Of the 6,482 LQs were selected, a total of 4,900 LQs were from the urban areas and 1,582 LQs were from the rural areas. The distribution of selected sample by state is presented in **Table 1.1**.

### 1.3.5 Ethical considerations

This study had obtained ethical approval from the Medical Research and Ethics Committee of Ministry of Health Malaysia, and was registered in the National Medical Research Registry, bearing registration number NMRR-18-3085-44207. Before data collection was conducted, the relevant local authorities were contacted and informed.

**Table 1.1:** Distribution of sample by state, HCD NHMS 2019

State	Urban		Rural		Total EB by state	Total LQ by state
	Number of EB	Number of LQ	Number of EB	Number of LQ		
Johor	29	406	10	140	39	546
Kedah	16	224	8	112	24	336
Kelantan	11	154	13	182	24	336
Melaka	21	294	2	28	23	322
Negeri Sembilan	17	238	7	98	24	336
Pahang	13	182	11	154	24	336
Pulau Pinang	24	336	2	28	26	364
Perak	20	280	7	98	27	378
Perlis	14	196	10	140	24	336
Selangor	59	826	5	70	64	896
Terengganu	15	210	9	126	24	336
Sabah	23	322	16	224	39	546
Sarawak	17	238	13	182	30	420
WP Kuala Lumpur	25	350	0	0	25	350
WP Labuan	23	322	0	0	23	322
WP Putrajaya	23	322	0	0	23	322
<b>MALAYSIA</b>	<b>350</b>	<b>4,900</b>	<b>113</b>	<b>1,582</b>	<b>463</b>	<b>6,482</b>

Prior to each interview, the purpose of the survey and methods used during the survey were explained to the respondent and information handed out via the participant's information sheet. Furthermore, before the interview was carried out, informed written consent was obtained from each participant or guardian, with an additional assent form signed by participants aged between 7 to 18 years old.

All participants who were found to require medical attention were referred using a structured referral letter to the nearest government health clinic for further assessment and management.

### 1.3.6 Questionnaire and other survey materials

Structured questionnaires were used to collect data based on the scopes of the survey. Face-to-face interview were conducted for all the scopes for Healthcare Demand module. A bi-lingual (Bahasa Melayu and English) pre-tested questionnaire was used (5). Questionnaire manual was used as a guide during data collection.

The face-to-face interview questionnaire was programmed into an application and the data collection was done using tablets. The modules contained in the questionnaire, and target age group are presented in **Table 1.2**. The complete questionnaire and code book for NHMS 2019 are attached as appendices of this report.

**Table 1.2:** Scopes covered in Healthcare Demand module, NHMS 2019

Module	Target age group
Household information	All
Sociodemographic	All
Self-rated health	13 years and above
Load of illness and health-seeking behaviour	All
Chronic bodily pain	13 years and above
Utilisation of private medical laboratory	18 years and above
Utilisation of community pharmacy	18 years and above
Utilisation of outpatient healthcare	All
Utilisation of inpatient healthcare	All
Utilisation of domiciliary care	All
Medical check-up (Health screening)	18 years and above
Self-care: Purchase of dietary supplement(s)	18 years and above
Utilisation of oral healthcare services	All
Informal care	13 years and above
Family doctor	All
Financial sources to pay for health	All
Payer for healthcare services	All

Respondents aged 13 years and over responded to the face-to-face themselves while for respondents aged less than 13 years old, the parent/guardian responded to the interview on their behalf (by proxy).

### 1.3.7 Field preparation and logistic support

Excellent support was provided by the State Health Departments in the preparation for field data collection. A Liaison Officer was appointed in each state to assist in the data collection activities. They assisted in the delivery of information regarding the survey and liaised with the selected communities, relevant District Health Officers and Local Authorities for logistic arrangements. They also assisted in the publicity of the survey through dissemination of relevant information to various stakeholders including the public.

Before the implementation of the data collection, scouts were appointed from the District Health Office of the selected districts. The selected LQs were then identified and tagged by the scouts. The members in the selected LQs, communities and related government agencies were also informed about the survey, through information leaflets.

Field Supervisors for each state were recruited from the Institute for Public Health, the Institute for Health Systems Research, the Institute for Health Behaviour Research, Oral Health Programme, selected state health departments as well as hospitals, health clinic, and dental clinics under the Ministry of Health Malaysia. The Field Supervisors liaised with the Liaison Officers in the arrangement of transportation, accommodation, appointment with respondents and other related logistic issues. Research Assistants were recruited as interviewers to assist in the data collection. A total of 70 teams were established throughout Malaysia, 57 in Peninsular Malaysia and 13 in East Malaysia, comprising Sabah, Sarawak and Wilayah Persekutuan Labuan. Each data collection team was supervised by a team leader, and comprised of four other data collectors.

### 1.3.8 Training

A training course for scouts was conducted in March 2019. The scouts were trained on the technique of reading the EB maps, locating the selected LQs, tagging the identified LQs and informing head of the household on the survey. The scouts were also required to update the data collection teams on the basic information of the household members.

Prior to data collection, a training course was conducted for the field supervisors, team leaders, nurses and interviewers. The training course was conducted separately for data collectors from Peninsular Malaysia and Sarawak, Sabah and Labuan from 8<sup>th</sup> to 13<sup>th</sup> of July 2019.

The main objectives of the training were to familiarize the data collection teams with the questionnaire, develop the interpersonal skills and appreciate the need for good teamwork. Briefing on the questionnaire, mock interview in the classroom and individual interviewing practice under supervision were conducted during the training. At the end of training, a pilot test for data collection was conducted.

### 1.3.9 Publicity

A publicity campaign is a vital component in enhancing the response rate of a national level community survey. Its main purpose is to create awareness among the public about the planned survey activities besides obtaining the highest possible participation from the household members of the selected LQs nationwide. The publicity campaign utilised both printed and electronic media and was further emphasized during the listing activities.

A publicity team was formed to coordinate all the activities related to publicity. The publicity team was responsible for designing the template and drafting the content of publicity materials such as pamphlets, posters, buntings, banners, car stickers, participant information sheets, media press releases, news stickers and text (both questions and answers) for radio and television interviews based on input from the Principal Investigator and approval of the NHMS Central Committee.

In order to ensure the message reached various ethnic groups of the community, most of the printed publicity materials such as pamphlets and respondent information sheets were produced in four main languages – Malay, English, Mandarin and Tamil. Pamphlets were distributed by the scouts during their initial visit as well as utilised by the data collection team.

The publicity team liaised closely with their counterparts from the Corporate Communication Unit, MOH especially in making publicity arrangements with the printed media as well as mass media such as television and radio. In addition, the implementation at the state level was strongly supported by the State Health Departments through the State Liaison Officers. Furthermore, the State Liaison Officers or Field Supervisors for each state were also responsible for the arranging of local media interviews and arranging additional publicity strategies when required. NHMS 2019 also actively utilised the social media, such as Facebook and Instagram, to create awareness of this survey among the public.

### 1.3.10 Data collection

Data collection was carried out between 14<sup>th</sup> July 2019 and 2<sup>nd</sup> October 2019. An appointment with the eligible household was made by the team leader prior to the actual visit. In case any of the eligible household members were not available during the first visit, the team had to make several visits to ensure a good coverage of all the eligible members in the household. At least three visits were attempted before the household was classified as unsuccessful.

Unsuccessful survey at the household level was due to LQs that refused to participate, that were empty, locked, besides others such as a hostile or dangerous environment. Unsuccessful survey at the individual level could be due to individuals who did not meet the eligibility criteria for the survey, individuals who were not at home during the scheduled visits, those who refused to participate, or language barrier.

### 1.3.11 Data management and monitoring during data collection

Data processing activities were centralised at the Institute for Public Health. This included receiving data from the field (input from mobile tablet devices to the centralised server) up to handing over the cleaned dataset to the data analysis team.

Face-to-face interviews were conducted by the data collection teams using mobile tablet devices based on the questionnaire system application developed. Completed interviews were sent to the Survey Creation System (SCS) server centralised in the Institute for Public Health whenever there was an internet connection. Data in the server were downloaded weekly by the data management team. Datasets were continuously monitored for quality control; especially on accuracy of the respondent ID, outliers or incorrect data.

To ensure the quality of data captured, quality checks were also in-built into the application pertaining to eligibility in answering different modules based on age.

Throughout the data collection period, the Central Coordinating Team (CCT) conducted weekly meeting to monitor the progress of each team. These meetings were chaired by the Director of Institute for Public Health (IPH) to discuss on the movements of the teams, logistic issues, response rate, and the publicity.

The productivity of each team was monitored by comparing the cumulative targeted LQs with the weekly progress report by the teams and the amount of data received in the server. This information was updated regularly on the monitoring board at the operation room.

### 1.3.12 Data analysis

Data analysis was done by the Healthcare Demand module team members. All analysis was carried out according to objectives of the survey, working definitions and dummy tables. Complex samples analysis procedures were used in the analysis and was carried out at 95% confidence interval.

A weighting factor was applied to each individual to adjust for non-response and for the varying probabilities of selection. The weight used for estimation is given by:

$$W = W1 \times F \times PS$$

Where;

- W1 : the inverse of the probability of selecting the EBs
- F : the non-response adjustment factor
- PS : a post-stratification adjustment factor calculated by age, gender & ethnicity

### References:

1. Maynard A, Bloor K. Health care reform: informing difficult choices. The International journal of health planning and management. 1995; 10:247-64.
2. Economic Planning Unit. 2015. Eleventh Malaysia Plan. Strategy paper 5. Achieving Universal Access to Quality Healthcare. Economic Planning Unit, Prime Minister's Department.
3. Economic Planning Unit. 2015. Eleventh Malaysia Plan, 2016-2020: Anchoring growth on people. Malaysia: Prime Minister's Department.
4. United Nations. 2015. Transforming Our World: The 2030 Agenda for Sustainable Development. A/RES/70/1. Available from: <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> [Accessed: 10 March 2020].
5. Institute for Health Systems Research (IHSR) (2018). Revision of Healthcare Demand Questionnaire for National Health and Morbidity Survey (NHMS) 2019.

# General Findings

# General Findings

## 2.1 Sample coverage

Of the 5,791 eligible LQs, a total of 5,365 LQs were successfully interviewed, giving a LQ response rate of 92.6%. From these 5,365 LQs, 18,546 respondents were eligible for the interview. A total of 16,688 respondents were successfully interviewed, giving an individual response rate of 90.0%. The overall response rate for this community-based survey is therefore 83.4% (Table 2.1).

## 2.2 Sociodemographic characteristics of the study population

A total of 10.9% of the respondents are from Selangor and 60.0% are from urban localities. Females made up 51.8% of the respondents and those of Malay ethnicity were 67.6% of the respondents. A total of 36.5% of the respondents

reported their highest educational level to be up to secondary education, while 15.3% reported no formal education. Private employees made up 20.6% of the respondents, meanwhile government employees and retirees made up 7.3% and 3.3% of the respondents, respectively.

Based on the self-reported income of each individual, the household income was calculated and categorized based on state specific cut-off for B40, M40 and T20 category. The cut-off values were obtained from the Departments of Statistics Malaysia. A total of 69.0% of the respondents fell in the B40 category, with only 8.1% in the T20 category. This, as in most self-reported studies, shows a certain degree of under-reporting present in the income levels. Details of sociodemographic characteristics are described in Table 2.2.

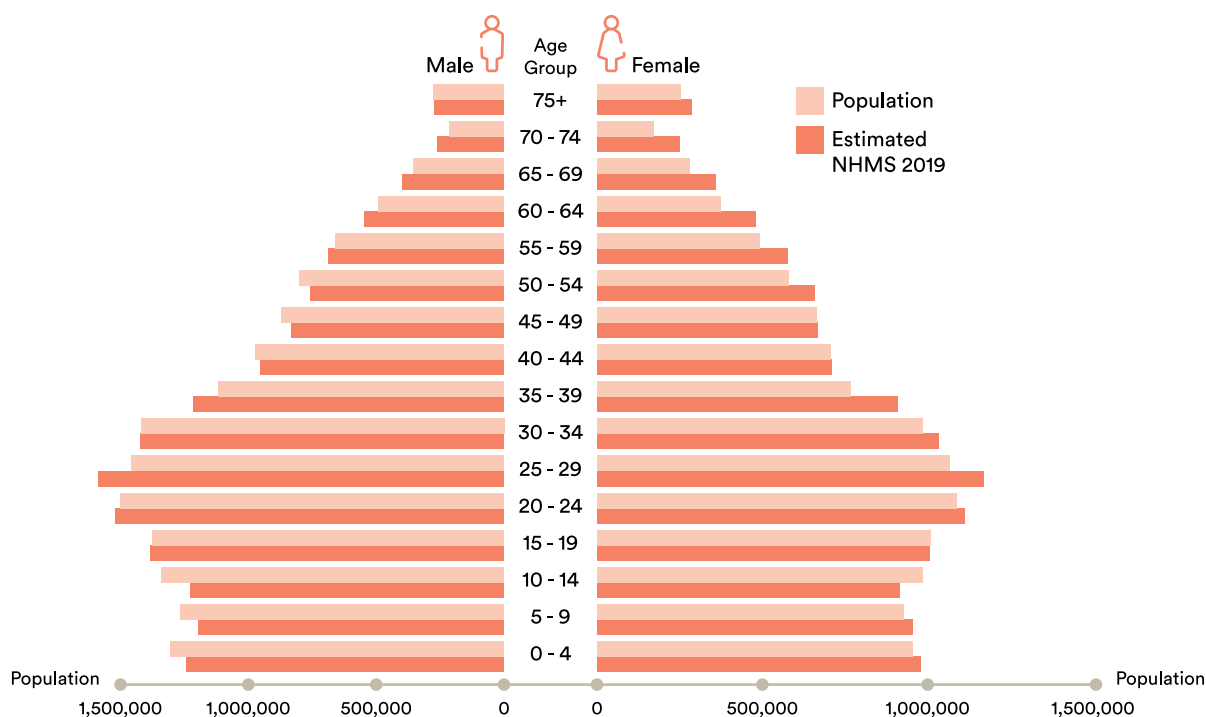


Figure 2.1: Population pyramid comparing estimated population of NHMS 2019 and projected population of Malaysia for 2019 by age and sex (1).

**Table 2.1:** Response rate at living quarter and individual level by state, HCD NHMS 2019

State	Living quarter			Individual			Total response rate (%)
	Eligible	Interviewed	Response rate (%)	Eligible	Interviewed	Response rate (%)	
Johor	491	463	94.3	1,587	1,487	93.7	88.4
Kedah	294	279	94.9	1,026	948	92.4	87.7
Kelantan	293	287	98.0	1,091	1,040	95.3	93.4
Melaka	309	296	95.8	973	919	94.5	90.5
Negeri Sembilan	311	302	97.1	966	894	92.5	89.9
Pahang	322	313	97.2	1,029	994	96.6	93.9
Pulau Pinang	315	290	92.1	1,084	950	87.6	80.7
Perak	326	308	94.5	980	811	82.8	78.2
Perlis	297	293	98.7	964	914	94.8	93.5
Selangor	799	679	85.0	2,111	1,811	85.8	72.9
Terengganu	293	288	98.3	1,202	1,118	93.0	91.4
Sabah	467	414	88.7	1,568	1,355	86.4	76.6
Sarawak	370	334	90.3	1,227	1,005	81.9	73.9
WP Kuala Lumpur	329	286	86.9	840	729	86.8	75.4
WP Labuan	306	304	99.3	935	912	97.5	96.9
WP Putrajaya	269	229	85.1	963	801	83.2	70.8
<b>MALAYSIA</b>	<b>5,791</b>	<b>5,365</b>	<b>92.6</b>	<b>18,546</b>	<b>16,688</b>	<b>90.0</b>	<b>83.4</b>

## 2.3 Sample representativeness

The estimated population from this survey was compared to the projected population in Malaysia for 2019 based on the 2010 Census (1). The sample was a representative of Malaysia's population of 2010, as shown in **Figure 2.1**. Population pyramid was almost identical with only a slight difference at every age group and by sex.

### Reference:

1. Department of Statistics Malaysia. (2016). Population Projections (Revised), Malaysia, 2010-2040.

**Table 2.2:** Sociodemographic characteristics of respondents, HCD NHMS 2019

Sociodemographic characteristics	Count	Percentage (%)
<b>MALAYSIA</b>	<b>16,688</b>	<b>100.0</b>
<b>State</b>		
Johor	1,487	8.9
Kedah	948	5.7
Kelantan	1,040	6.2
Melaka	919	5.5
Negeri Sembilan	894	5.4
Pahang	994	6.0
Pulau Pinang	950	5.7
Perak	811	4.9
Perlis	914	5.5
Selangor	1,811	10.9
Terengganu	1,118	6.7
Sabah	1,355	8.1
Sarawak	1,005	6.0
WP Kuala Lumpur	729	4.4
WP Labuan	912	5.5
WP Putrajaya	801	4.8
<b>Location</b>		
Urban	10,009	60.0
Rural	6,679	40.0
<b>Sex</b>		
Male	8,043	48.2
Female	8,645	51.8
<b>Age group (Years)</b>		
0-4	1,298	7.8
5-9	1,565	9.4
10-14	1,428	8.6
15-19	1,094	6.6
20-24	1,048	6.3
25-29	1,121	6.7
30-34	1,189	7.1
35-39	1,254	7.5
40-44	1,064	6.4
45-49	1,062	6.4
50-54	1,063	6.4
55-59	998	6.0
60-64	852	5.1
65-69	693	4.2
70-74	492	2.9
75 and over	467	2.8
<b>Ethnicity</b>		
Malay <sup>a</sup>	11,282	67.6
Chinese	1,838	11.0
Indian	980	5.9
Bumiputera Sabah	1,035	6.2
Bumiputera Sarawak	698	4.2
Others	812	4.9

Sociodemographic characteristics	Count	Percentage (%)
<b>Citizenship</b>		
Malaysian	15,783	94.6
Permanent Resident	121	0.7
Non-Malaysian	780	4.7
<b>Marital status<sup>b</sup></b>		
Single	3,713	22.2
Married	7,938	47.6
Widow(er)/Divorcee	1,255	7.5
<b>Education level</b>		
No formal education	2,560	15.3
Primary education	5,111	30.6
Secondary education	6,091	36.5
Tertiary education	2,868	17.2
<b>Occupation</b>		
Government employee	1,225	7.3
Private employee	3,446	20.6
Self-employed	2,206	13.2
Unpaid worker/Homemaker	2,128	12.8
Retiree	548	3.3
Student	3,584	21.5
Not working <sup>c</sup>	3,549	21.3
<b>Household income group</b>		
Less than RM 1,000	2,733	16.4
RM 1,000 - RM 1,999	3,115	18.7
RM 2,000 - RM 2,999	2,713	16.3
RM 3,000 - RM 3,999	2,241	13.4
RM 4,000 - RM 4,999	1,407	8.4
RM 5,000 - RM 5,999	1,043	6.3
RM 6,000 - RM 6,999	847	5.1
RM 7,000 - RM 7,999	595	3.6
RM 8,000 - RM 8,999	470	2.8
RM 9,000 - RM 9,999	254	1.5
RM 10,000 and above	1,126	6.7
<b>Household income quintile</b>		
Q1 (20% poorest)	3,445	20.6
Q2	3,219	19.3
Q3	3,270	19.6
Q4	3,302	19.8
Q5 (20% richest)	3,308	19.8
<b>Household income category</b>		
Bottom 40% (B40)	11,515	69.0
Middle 40% (M40)	3,678	22.0
Top 20% (T20)	1,351	8.1

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

NHMS 2019

# General Health

# General Health

## Introduction

Self-rated health has been used extensively in epidemiologic studies to gauge the population's state of health (1). It is very subjective, which may be influenced by physical and emotional components, including sense of well-being and satisfaction in life of a person. In 2011, 83.6% of the population in Malaysia rated their health as very good or good (2).

About a quarter of Malaysia population, 23.0% in 2011 (2) and 24.9% in 2015 (3), experienced recent acute health problems. Perceived health problems that are accompanied by symptoms may act as an important trigger that prompt health seeking behaviour, and thus should not be ignored. Undoubtedly, people respond differently to symptoms and they vary in utilisation of care. Some will have a higher tendency to seek care from healthcare practitioners, while others may tend to delay in seeking help and opt to get advice from other sources.

Chronic bodily pain is a prevalent health problem that has marked effects on the quality of life among those who suffer with it. In NHMS 2006, 7.1% of the population reported experiencing chronic bodily pain (4).

### Operational definition

- For self-rated health, respondents aged 13 years and over were asked to self-report their current general health status. Responses for self-rated health question were based on a 5-point Likert-type scale (excellent, good, fair, poor, very poor). The responses were then grouped into three categories: 1) positive responses (excellent or good), 2) neutral responses (fair), and 3) negative responses (poor or very poor).
- Health problems were defined as the presence of acute health problems such as fever, sore throat, diarrhoea, allergies etc. in the last two weeks prior to the interview. Questions related to health problems were asked among respondents in all age groups.
- Chronic bodily pain was defined as persistent pain for three months or more, within the last six months, in any parts of the body. This section was only applicable to respondents aged 13 years and over.

## Objectives

### General objective

To determine the prevalence of health status and acute health problems, as well as chronic bodily pain.

### Specific objectives

To determine the:

1. prevalence of self-rated health.
2. prevalence of self-rated excellent or good health by sociodemographic characteristics.
3. prevalence of reported acute health problems in the last two weeks by sociodemographic characteristics.
4. type of care sought among those who experienced acute health problems in the last two weeks.
5. percentage of seeking treatment or medication or advice from healthcare practitioners among those who experienced acute health problems in the last two weeks by sociodemographic characteristics.
6. percentage of self-medication among those who experienced acute health problems in the last two weeks by sociodemographic characteristics.
7. percentage of getting advice from sources other than healthcare practitioners among those who experienced acute health problems in the last two weeks by sociodemographic.
8. percentage of getting advice from other resources among those who experienced acute health problems in the last two weeks by sociodemographic characteristics.
9. distribution of perceived necessity to seek treatment or medication or advice from healthcare practitioners, among those who experienced acute health problems and did not seek treatment or medication or advice from healthcare practitioners in the last two weeks.
10. distribution of main reasons for not seeking treatment or medication or advice from healthcare practitioners, among those who experienced acute health problems and did not seek treatment or medication or advice from healthcare practitioners in the last two weeks.
11. prevalence of chronic bodily pain in the last six months by sociodemographic characteristics.
12. distribution of level of daily activity interference caused by chronic bodily pain among those who experienced chronic bodily pain in the last six months.

## Findings

### 3.1 Self-rated health

A total of 12,915 (100.0%) respondents responded to this section. In general, 79.7% (95% CI = 78.33, 81.02) of the population rated their health as excellent or good, while only 1.9% (95% CI = 1.56, 2.19) rated their health as poor or very poor (Table 3.1).

By state, 86.8% (95% CI = 82.98, 89.79) of the population in Kelantan rated their health as excellent or good, while 66.3% (95% CI = 59.49, 72.54) of the population in Sarawak rated their health as excellent or good. Across location and sex, more population in the urban locality (81.5%; 95% CI = 79.83, 83.06) and males (80.8%; 95% CI = 78.70, 82.73) rated their health as excellent or good. As age increases, the prevalence of the population self-rated their health as excellent or good decreased. Across household income quintiles, lower proportion of Q1 (68.4%; 95% CI = 65.23, 71.36) rated their health as excellent or good, compared with the richest income quintile (Q5) (86.2%; 95% CI = 83.49, 88.57) (Table 3.2).

### 3.2 Prevalence of reported acute health problems

A total of 16,688 (100.0%) respondents responded to this section. Overall, 19.5% (95% CI = 18.28, 20.79) of the population reported that they had acute health problems in the last two weeks prior to the interview (Table 3.3).

Across states, Wilayah Persekutuan Putrajaya had the highest percentage of reported acute health problems (42.5%; 95% CI = 37.18, 48.04), followed by Sarawak (33.6%; 95% CI = 28.18, 39.58). The percentage was also higher among females (21.2%; 95% CI = 19.48, 22.98) as compared with males (17.8%; 95% CI = 16.23, 19.52). Across age groups, highest percentage of reported acute health problems was found among those aged 75 years and over (27.9%; 95% CI = 21.44, 35.46), followed by those aged 65–69 years old (25.6%; 95% CI = 20.85, 31.01), while lowest was shown among those aged 10–14 years old (12.9%; 95% CI = 10.51, 15.85). Bumiputera Sarawak (37.6%; 95% CI = 30.82, 44.86) had a higher percentage of reported

acute health problems as compared with the rest of the ethnic groups, except for Bumiputera Sabah. By household income group, the highest percentage was observed among the population in the household income group of less than RM 1,000 (22.9%; 95% CI = 20.26, 25.87). According to household income quintile and household income category, highest percentage reported of having recent acute health problems was observed among the Q1 (22.0%; 95% CI = 19.51, 24.72) and B40 (19.9%; 95% CI = 18.47, 21.35) (Table 3.3).

### Health seeking behaviour in relation to acute health problems

Among those who reported health problems, they were asked on the action taken for their health problems and multiple answers were allowed.

### Seek treatment or medication or advice from healthcare practitioners

Among those who had acute health problems within two weeks prior to the interview, the overall percentage of those who sought treatment or medication or advice from healthcare practitioners was 57.5% (95% CI = 53.82, 61.14) (Figure 3.3) (Table 3.4).

Highest percentage was observed among the population in Johor (67.9%; 95% CI = 53.33, 79.63). Meanwhile, the lowest percentage was observed among the population in Sabah (49.1%; 95% CI = 37.33, 60.92) (Table 3.5).

Highest percentage of population seeking treatment or medication or advice from healthcare practitioner was from the age group of 4 years and below (79.1%; 95% CI = 71.89, 84.79), while the lowest was from the age group of 75 years and over (44.5%; 95% CI = 27.78, 62.57). It was also highest among those who had no formal education (72.5%; 95% CI = 65.96, 78.16). By household income group, the lowest percentage was observed among the population in the household income group of RM 4,000 – RM 4,999 (43.1%; 95% CI = 32.61, 54.34) (Table 3.5).

**Table 3.1:** Prevalence of self-rated health, among population aged 13 years old and over, NHMS 2019 (N=12,915)

Self-rated health	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
Excellent or good <sup>a</sup>	9,870	19,929,536	79.7	78.33	81.02
Fair	2,655	4,375,790	17.5	16.29	18.78
Poor or very poor <sup>b</sup>	288	462,651	1.9	1.56	2.19

95% CI = 95% Confidence Interval

<sup>a</sup> Excellent or good include those who answered "Excellent" or "Good"

<sup>b</sup> Poor or very poor include those who answered "Poor" or "Very poor"

## Self-medication

Self-medication is the act of using medication without advice from healthcare practitioners. Among those who experienced acute health problems within two weeks prior to the interview, 22.8% (95% CI = 19.89, 25.97) reported that they self-medicated (**Figure 3.3**) (**Table 3.4**). The percentage was highest among the population in Negeri Sembilan (32.8%; 95% CI = 21.72, 46.22) (**Table 3.6**).

## Get advice from sources other than healthcare practitioner

Among those who had acute health problems within two weeks prior to the interview, 16.4% (95% CI = 13.91, 19.22) reported that they got advice from others, other than a healthcare practitioner for the health problems experienced (**Figure 3.3**) (**Table 3.4**). It was found highest among the population in Sabah (25.7%; 95% CI = 18.09, 35.03) (**Table 3.7**).

## Get advice from other resources

Among those who had acute health problems within two weeks prior to the interview, 11.3% (95% CI = 9.71, 13.12) reported that they obtained advice from other resources such as internet, television, application, radio and others (**Figure 3.3**) (**Table 3.4**). The percentage was highest in Pahang (23.8%; 95% CI = 14.19, 37.21) (**Table 3.8**).

## Perceived need to seek treatment or medication or advice from healthcare practitioner

Among those who reported that they did not seek care from healthcare practitioners for their acute health problems in the last two weeks, 24.4% (95% CI = 19.22, 30.54) perceived the necessity to seek care (**Table 3.9**).

## Main reasons for not seeking treatment or medication or advice for recent health problems

Among those who reported that they did not seek care from healthcare practitioner for their acute health problems in the last two weeks, 37.2% (95% CI = 32.63, 42.05) perceived that they were not sick enough and did not need treatment, and 30.1% (95% CI = 25.07, 35.65) perceived that they were not sick enough and self-medicated (**Table 3.10**).

## 3.3 Chronic bodily pain

A total of 12,915 (100.0%) respondents responded to this section. Overall, 8.7% (95% CI = 7.96, 9.60) of the population reported to have chronic bodily pain in the last six months (**Table 3.11**).

It was found highest in Melaka (16.1%; 95% CI = 12.31, 20.82), followed by Negeri Sembilan (15.6%; 95% CI = 11.74, 20.50) and Sarawak (14.1%; 95% CI = 12.11, 16.43). The prevalence of the population who experienced chronic bodily pain increases with age, especially those who were 75 years and over (29.3%; 95% CI = 23.89, 35.43). It was noted that the Indian population (16.1%; 95% CI = 11.35, 22.21) had the highest prevalence of chronic bodily pain (**Table 3.11**).

Those with no formal education (18.0%; 95% CI = 13.88, 23.02) and those who were not working (20.4%; 95% CI = 17.72, 23.31) had the highest prevalence of chronic bodily pain. (**Table 3.11**).

By household income quintile, it was reported that those in Q1 (10.6%; 95% CI = 8.94, 12.54) had higher prevalence of chronic bodily pain as compared with those in Q5 (7.3%; 95% CI = 5.62, 9.54) (**Table 3.11**).

Among those who reported to have chronic bodily pain in the last six months, 3.5% (95% CI = 2.30, 5.37) reported being extremely disturbed, followed by 12.8% (95% CI = 10.52, 15.44) reported being severely disturbed and 16.8% (95% CI = 13.91, 20.03) reported being moderately disturbed. Majority of them reported that their daily activities were mildly disturbed (48.2%; 95% CI = 44.08, 52.33) and 18.2% (95% CI = 15.22, 21.53) reported that their daily activities were not disturbed at all (**Table 3.12**).

## Discussions

Almost 80% of the population aged 13 years and over in Malaysia rated their health status as excellent or good in NHMS 2019. The prevalence was higher compared with Organisation for Economic Co-operation and Development (OECD) countries where 68.1% of adults aged 15 years and over reported to be in good or very good health (1). As compared with a previous national survey, the proportion of those who rated their health as excellent or good reduced from 83.6% in NHMS 2011 to 79.7% in NHMS 2019 (2) (**Figure 3.1**).

Higher proportion of population in NHMS 2011 (23.0%) (2) and NHMS 2015 (24.9%) (3) reported experienced recent acute health problems as compared with 19.5% in NHMS 2019 (**Figure 3.2**).

From the 19.5% who experienced acute health problems, there were 42.0% who did not seek any treatment or medication or advice from healthcare practitioners (**Figure 3.3**). Additionally, there were 38.3% who did nothing-at-all to address their acute health problems. These numbers indicate a likelihood of delay in seeking treatment.

Our results show that there were a considerable number of people who self-medicated and/or seeking advice from sources other than healthcare practitioners. Studies in socio-behavioural tendencies observed that these behaviours were more likely influenced by the availability of internet access (5, 6). This is due to an increased demand to access health information and participation in medical decision-making for their own self (6, 7). Whilst, the traditional behaviour of seeking advice from close relations such as family members and work colleagues were also reported to still be an influencing factor in health seeking behaviour (8).

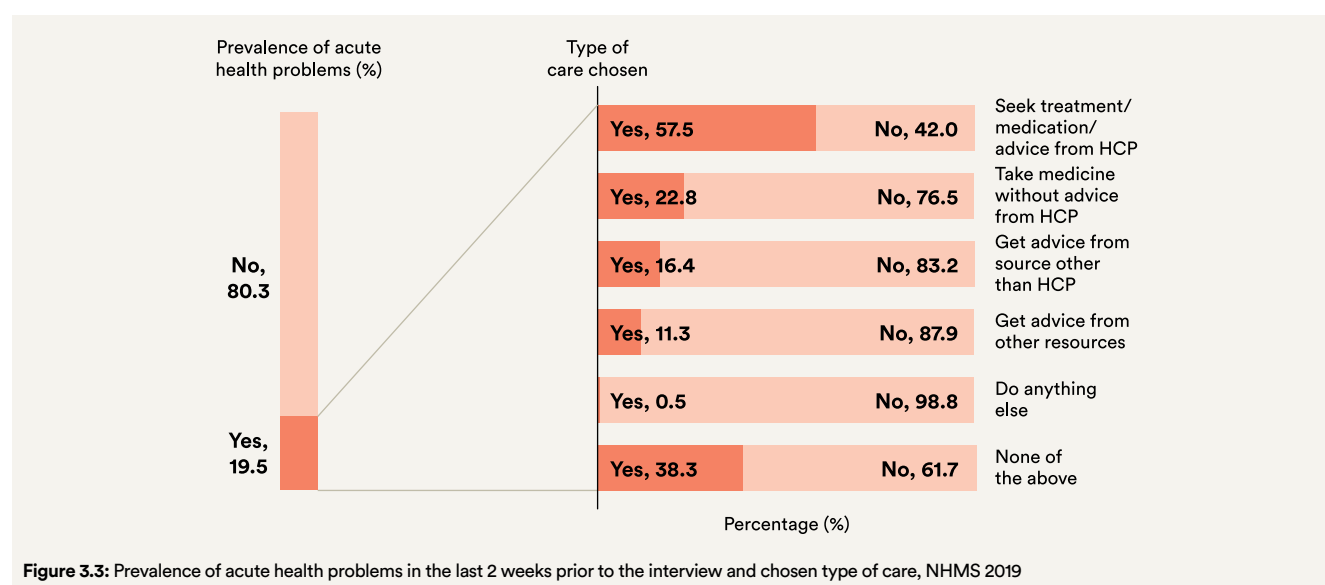
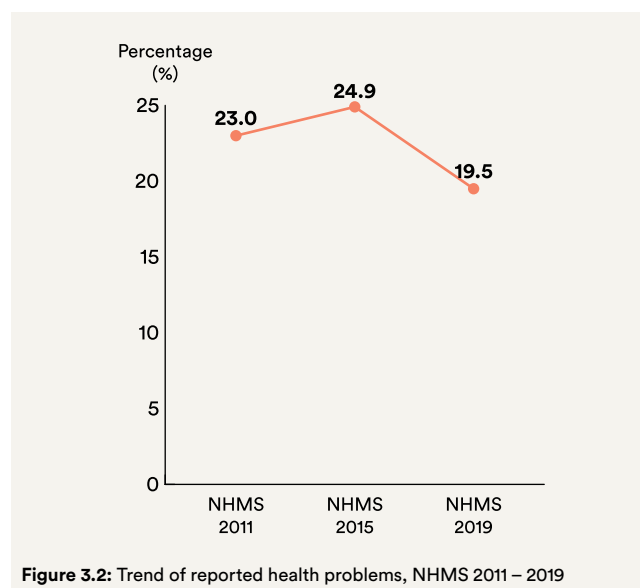
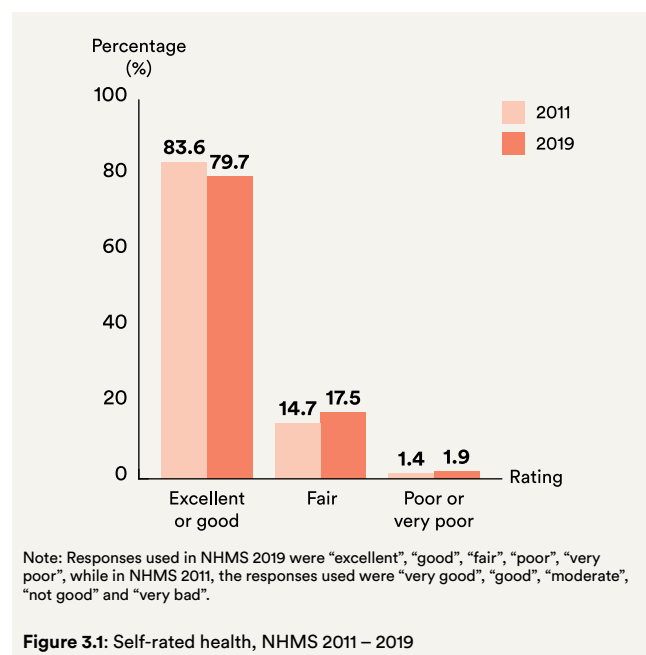
Globally, it has been estimated that about 20% of adults suffer from pain (9) and around 10% of adults are diagnosed with chronic pain each year (10). In NHMS 2019, 8.7% of the population experienced chronic bodily pain which is lower than global statistics. This is an increase from the 7.1% reported in NHMS 2006 (4).

In NHMS 2019, the prevalence of males experienced chronic bodily pain was almost similar with females, whereas in NHMS 2006, it was reported that females (7.7%) had higher prevalence as compared with males (6.3%) (4). This finding contrasts with many studies done on chronic pain. Studies worldwide reported that chronic pain affects 20% of the European population and is more common in women, older people, and with relative deprivation (11). Women consistently reported lower pain thresholds, lower pain tolerance, and greater unpleasantness or intensity with pain with different analgesic sensitivity (12).

It was also reported that the population of the poorest household income quintile had higher prevalence of chronic pain as compared with those of the richest household income quintile. This supports similar findings shown that people living in adverse socioeconomic circumstances experienced more chronic pain and greater pain severity (11).

## Recommendations

- There is a need to strengthen health promotion activities, to equip the public with the correct knowledge and quality health information by encouraging informed and responsible self-medication.
- Strengthening the public health information availability. In the current era where there is a flood of information availability, there is a need for a proactive body that actively engages the public in monitoring the internet and social media for fake health information, dispelling healthcare myths and verifying unsolicited claims on matters related to public health.
- Pain relief should be a human right. As there are more people living with chronic pain, regardless of age, the Pain as the Fifth Vital Sign and the Pain-Free Hospital initiatives are of greater importance now. Thus, the implementation and enhancement of such programmes must be continued throughout the healthcare system in order to ensure better health for the nation.
- Prolonged worsening chronic pain is associated with hospital admission and depression. Hence, health policies, including a framework for providing better pain management and supportive care (including psychosocial and spiritual) particularly at the primary care level in the community setting, should be developed.
- All healthcare professionals have a duty to comfort and relieve suffering in their patients. Patients with complaints of acute or sub-acute pain are an important target group for intervention in order to prevent progression to chronic pain which may lead to larger negative individual and economic impacts.
- Specialised fields dealing with chronic pain such as pain medicine, palliative care and geriatric medicine should be further developed to provide consultation in complex situations and continuous medical education to others in this area.



#### References:

- OECD. Health at a Glance 2019: OECD Indicators [Internet]. Paris; 2019. Available from: <http://www.oecd.org/health/health-at-a-glance.htm>. Accessed on December 26, 2019.
- Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) (2012). National Health and Morbidity Survey 2011 (NHMS 2011). Vol. III: Healthcare Demand and Out-Of-Pocket Health Expenditure.
- Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) (2015). National Health and Morbidity Survey 2015 (NHMS 2015). Vol III: Healthcare Demand. 2015.
- Institute of Public Health (2008). The Third National Health and Morbidity Survey (NHMS III) 2006. Load of Illness.
- Baumann, E, Czerwinski, F, & Reifegerste, D. (2017). Gender-Specific Determinants and Patterns of Online Health Information Seeking: Results from a Representative German Health Survey. Journal of medical Internet research, 19(4), e92.
- Zhao, Y, & Zhang, J. (2017). Consumer health information seeking in social media: a literature review. Health Information & Libraries Journal, 34, 268–283.
- Giustini, D, Ali, SM, Fraser, M, & Kamel Boulos, MN. (2018). Effective uses of social media in public health and medicine: a systematic review of systematic reviews. Online journal of public health informatics, 10(2), e215.
- Ek, S. (2015). Gender differences in health information behaviour: a Finnish population-based survey. Health promotion international, 30(3), 736–45.
- International Association for the Study of Pain: Unrelieved pain is a major global healthcare problem [Internet]. Available from: <https://s3.amazonaws.com/rdcms-iasp/files/production/public/Content/ContentFolders/GlobalYearAgainstPain2/20042005RighttoPainRelief/factsheet.pdf>. Accessed on December 26, 2019.
- Gureje, O, Von Korff, M, Simon, GE, & Gater, R. (1998). Persistent pain and well-being: A World Health Organization Study in Primary Care. JAMA, 280(2), 147–151.
- Van Hecke, O, Torrance, N, & Smith, BH. (2013). Chronic pain epidemiology and its clinical relevance. British Journal of Anaesthesia, 111(1), 13–18.
- Wiesenfeld-Hallin, Z. (2005). Sex differences in pain perception. Gender medicine, 2(3), 137–1.

**Table 3.2:** Prevalence of self-rated excellent or good health, among population aged 13 years old and over, by sociodemographic characteristics, NHMS 2019 (N=12,915)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>9,870</b>	<b>19,929,536</b>	<b>79.7</b>	<b>78.33</b>	<b>81.02</b>
<b>State</b>					
Johor	921	2,347,507	82.3	79.75	84.55
Kedah	605	1,301,428	83.9	80.44	86.93
Kelantan	666	1,139,834	86.8	82.98	89.79
Melaka	558	524,749	81.5	75.11	86.48
Negeri Sembilan	549	1,094,630	73.4	67.65	78.53
Pahang	634	975,057	81.2	76.57	85.03
Pulau Pinang	621	1,145,515	83.2	74.67	89.30
Perak	438	1,340,656	73.7	69.34	77.69
Perlis	526	131,425	73.2	68.14	77.80
Selangor	1,133	4,323,436	85.4	82.24	88.06
Terengganu	613	656,038	76.4	72.25	80.04
Sabah	678	2,245,593	74.6	70.01	78.77
Sarawak	484	1,396,733	66.3	59.49	72.54
WP Kuala Lumpur	512	1,203,451	85.6	79.30	90.18
WP Labuan	570	57,515	84.7	79.56	88.70
WP Putrajaya	362	45,970	70.3	65.20	74.89
<b>Location</b>					
Urban	6,003	15,347,433	81.5	79.83	83.06
Rural	3,867	4,582,103	74.2	71.22	77.04
<b>Sex</b>					
Male	4,830	10,076,943	80.8	78.70	82.73
Female	5,040	9,852,593	78.6	76.91	80.18
<b>Age group (Years)</b>					
13-14	468	805,671	90.5	86.59	93.38
15-19	984	2,409,687	88.4	84.16	91.55
20-24	905	2,621,239	87.3	84.00	90.01
25-29	992	2,764,934	87.9	84.70	90.43
30-34	1,025	2,456,402	87.7	84.68	90.14
35-39	1,051	2,088,880	86.0	82.87	88.68
40-44	871	1,541,438	81.0	77.50	84.13
45-49	834	1,383,922	80.6	76.41	84.23
50-54	742	1,157,225	70.9	66.49	74.94
55-59	683	1,005,173	69.0	64.97	72.85
60-64	532	714,584	60.2	55.39	64.85
65-69	369	429,321	49.3	42.82	55.72
70-74	229	285,786	48.4	41.26	55.59
75 and over	185	265,275	40.7	33.54	48.35
<b>Ethnicity</b>					
Malay <sup>a</sup>	6,531	10,430,802	80.0	78.40	81.59
Chinese	1,241	4,355,831	82.3	78.89	85.29
Indian	641	1,212,559	80.9	77.10	84.19
Bumiputera Sabah	535	1,149,874	73.3	68.77	77.30
Bumiputera Sarawak	356	684,658	62.5	54.70	69.79
Others	566	2,095,812	83.2	77.24	87.92

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	9,239	17,661,195	79.2	77.72	80.68
Permanent resident	77	162,537	75.8	61.57	85.99
Non-Malaysian	551	2,105,456	84.4	78.34	89.08
<b>Marital status</b>					
Single	3,209	7,888,547	86.6	84.43	88.50
Married	5,959	11,000,656	78.0	76.24	79.75
Widow(er)/Divorcee	696	1,024,290	57.7	53.28	61.91
<b>Education level</b>					
No formal education	361	740,225	60.0	52.88	66.68
Primary education	2,200	4,023,154	70.3	67.70	72.86
Secondary education	4,849	10,002,379	82.2	80.38	83.92
Tertiary education	2,424	5,075,581	88.0	85.64	89.97
<b>Occupation</b>					
Government employee	1,010	1,349,694	85.3	81.85	88.11
Private employee	2,933	7,298,171	85.7	83.50	87.68
Self-employed	1,715	3,183,761	80.0	76.84	82.79
Unpaid worker/ Homemaker	1,563	2,930,885	76.4	73.78	78.90
Retiree	342	489,764	62.7	54.93	69.86
Student	1,321	2,958,122	91.3	89.00	93.22
Not working <sup>b</sup>	984	1,713,721	55.9	52.01	59.71
<b>Household income group</b>					
Less than RM 1,000	1,360	2,725,340	66.3	62.62	69.71
RM 1,000 - RM 1,999	1,818	3,596,789	77.6	74.77	80.17
RM 2,000 - RM 2,999	1,667	3,369,443	81.8	79.05	84.31
RM 3,000 - RM 3,999	1,376	2,894,626	82.2	79.17	84.91
RM 4,000 - RM 4,999	879	1,828,293	83.5	80.42	86.21
RM 5,000 - RM 5,999	634	1,237,155	85.3	81.14	88.63
RM 6,000 - RM 6,999	511	1,068,887	83.6	78.04	92.46
RM 7,000 - RM 7,999	384	822,024	88.8	83.57	92.46
RM 8,000 - RM 8,999	298	642,316	85.7	79.66	90.13
RM 9,000 - RM 9,999	151	212,342	84.5	75.41	91.14
RM 10,000 and above	717	1,391,133	87.6	83.35	97.10
<b>Household income quintile</b>					
Q1 (20% poorest)	1,784	3,567,867	68.4	65.23	71.36
Q2	1,898	3,924,535	79.6	77.09	81.87
Q3	1,997	4,071,057	81.8	79.27	84.05
Q4	2,047	4,065,471	83.5	81.14	85.59
Q5 (20% richest)	2,069	4,159,419	86.2	83.49	88.57
<b>Household income category</b>					
Bottom 40% (B40)	6,645	13,616,568	77.8	76.15	79.41
Middle 40% (M40)	2,270	4,516,505	83.9	81.26	86.18
Top 20% (T20)	880	1,655,276	85.3	81.68	88.34

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli<sup>b</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 3.3:** Prevalence of reported acute health problems in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>3,730</b>	<b>6,157,614</b>	<b>19.5</b>	<b>18.28</b>	<b>20.79</b>
<b>State</b>					
Johor	159	372,522	10.4	7.92	13.53
Kedah	195	372,912	18.6	14.82	23.13
Kelantan	107	146,902	8.3	6.09	11.09
Melaka	226	172,963	21.1	16.12	27.05
Negeri Sembilan	188	383,678	20.2	14.77	26.78
Pahang	165	240,435	15.8	12.50	19.63
Pulau Pinang	168	264,546	16.2	11.43	22.49
Perak	186	428,351	19.6	15.88	23.72
Perlis	255	67,492	29.4	24.86	33.91
Selangor	393	1,152,249	18.0	15.44	20.95
Terengganu	258	289,252	24.4	20.08	29.23
Sabah	381	1,047,515	27.6	24.20	31.35
Sarawak	346	891,021	33.6	28.18	39.58
WP Kuala Lumpur	124	262,837	15.6	10.37	22.71
WP Labuan	247	23,662	27.0	20.45	34.70
WP Putrajaya	332	41,275	42.5	37.18	48.04
<b>Location</b>					
Urban	2,272	4,462,609	18.9	17.24	20.66
Rural	1,458	1,695,005	21.3	18.97	23.87
<b>Sex</b>					
Male	1,635	2,803,761	17.8	16.23	19.52
Female	2,095	3,353,854	21.2	19.48	22.98
<b>Age group (Years)</b>					
0-4	315	466,411	18.3	15.39	21.65
5-9	318	407,771	16.5	13.95	19.44
10-14	217	316,682	12.9	10.51	15.85
15-19	207	494,256	18.1	14.22	22.81
20-24	213	559,093	18.6	15.42	22.32
25-29	221	552,870	14.6	14.58	21.01
30-34	278	586,531	20.9	17.73	24.54
35-39	301	504,778	20.8	17.58	24.42
40-44	235	386,383	20.3	17.21	23.82
45-49	227	292,062	17.0	14.36	20.04
50-54	282	408,296	25.0	21.31	29.12
55-59	238	335,357	23.0	19.56	26.92
60-64	231	302,484	25.5	21.23	30.27
65-69	179	223,148	25.6	20.85	31.01
70-74	132	139,662	23.6	18.10	30.26
75 and over	136	181,829	27.9	21.44	35.46
<b>Ethnicity</b>					
Malay <sup>a</sup>	2,545	3,326,862	19.1	17.58	20.70
Chinese	271	841,869	13.7	11.36	16.55
Indian	222	388,632	21.7	17.94	25.96
Bumiputera Sabah	276	557,277	26.9	22.51	31.81
Bumiputera Sarawak	268	528,876	37.6	30.82	44.86
Others	148	514,098	18.7	14.61	23.52

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	3,570	5,612,106	19.6	18.21	21.14
Permanent Resident	22	54,734	23.3*	10.82	43.34
Non-Malaysian	138	490,775	17.8	13.97	22.52
<b>Marital status<sup>b</sup></b>					
Single	682	1,525,609	16.7	14.60	19.14
Married	1,910	3,059,090	21.7	20.08	23.41
Widow(er)/Divorcee	364	484,921	21.3	23.50	31.45
<b>Education level</b>					
No formal education	617	916,322	19.3	16.93	21.96
Primary education	1,094	1,683,687	19.2	17.26	21.33
Secondary education	1,305	2,318,001	19.0	17.29	20.93
Tertiary education	702	1,221,703	21.1	18.60	23.95
<b>Occupation</b>					
Government employee	354	391,049	24.7	20.99	28.84
Private employee	698	1,624,058	19.0	16.66	21.69
Self-employed	502	854,872	21.4	18.97	24.11
Unpaid worker/ Homemaker	520	835,525	21.8	18.94	24.87
Retiree	144	180,480	23.1	18.25	28.69
Student	650	1,031,237	15.5	13.45	17.78
Not working <sup>c</sup>	862	1,240,394	20.0	17.87	22.40
<b>Household income group</b>					
Less than RM 1,000	688	1,174,365	22.9	20.26	25.87
RM 1,000 - RM 1,999	672	1,162,887	20.1	17.78	22.66
RM 2,000 - RM 2,999	595	975,756	19.1	16.56	21.83
RM 3,000 - RM 3,999	487	824,857	18.6	15.44	22.27
RM 4,000 - RM 4,999	281	527,943	19.0	15.30	23.26
RM 5,000 - RM 5,999	221	322,755	17.5	14.16	21.33
RM 6,000 - RM 6,999	177	298,389	18.4	14.58	22.93
RM 7,000 - RM 7,999	136	186,500	16.1	11.76	21.63
RM 8,000 - RM 8,999	100	182,933	18.7	12.95	26.23
RM 9,000 - RM 9,999	61	75,986	22.4	14.01	33.91
RM 10,000 and above	289	389,001	18.4	14.34	23.30
<b>Household income quintile</b>					
Q1 (20% poorest)	812	1,428,181	22.0	19.51	24.72
Q2	715	1,205,551	19.7	17.41	22.26
Q3	721	1,211,868	19.3	17.01	21.80
Q4	688	1,128,020	18.3	15.84	21.06
Q5 (20% richest)	771	1,147,752	18.4	15.96	21.04
<b>Household income category</b>					
Bottom 40% (B40)	2,623	4,323,446	19.9	18.47	21.35
Middle 40% (M40)	774	1,295,100	18.3	15.93	20.87
Top 20% (T20)	310	502,826	20.5	16.56	25.02

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Does not include children aged less than 13 years old

<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution.

**Table 3.4:** Type of care sought, among those who experienced acute health problems in the last 2 weeks, NHMS 2019 (N=3,061)

Type of care	Count <sup>b</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Seek treatment or medication or advice from healthcare practitioner	1,817	2,864,066	57.5	53.82	61.14
Take medicine without advice from healthcare practitioner <sup>a</sup>	641	1,134,849	22.8	19.89	25.97
Get advice from sources other than healthcare practitioner	465	816,358	16.4	13.91	19.22
Get advice from other resources	364	562,797	11.3	9.71	13.12
Do anything else	15	25,343	0.5	0.20	1.26
None of the above	1,393	2,359,396	38.3	35.53	41.19

95% CI = 95% Confidence Interval

a Take medicine without advice from healthcare practitioner refers to self-medication

b Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

**Table 3.5:** Percentage of seeking treatment or medication or advice from healthcare practitioner, among those who experienced acute health problems in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=3,061)

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>1,817</b>	<b>2,864,066</b>	<b>57.5</b>	<b>53.82</b>	<b>61.14</b>
<b>State</b>					
Johor	63	142,623	67.9	53.33	79.63
Kedah	95	188,721	66.8	54.84	76.90
Kelantan	48	59,213	62.6	45.91	76.72
Melaka	115	86,730	60.8	45.56	74.26
Negeri Sembilan	83	147,834	54.4	43.14	65.31
Pahang	69	103,939	61.8	50.93	71.54
Pulau Pinang	78	107,041	51.6	38.04	65.01
Perak	92	208,169	61.1	47.64	73.01
Perlis	137	34,113	61.7	52.00	70.56
Selangor	207	609,645	66.0	59.40	71.99
Terengganu	127	147,813	62.5	52.56	71.43
Sabah	182	482,195	49.1	37.33	60.92
Sarawak	165	405,201	51.4	43.69	59.13
WP Kuala Lumpur	48	107,017	49.6	36.15	63.19
WP Labuan	126	11,946	54.6	45.33	63.65
WP Putrajaya	182	21,866	57.6	49.57	65.33
<b>Location</b>					
Urban	1,123	2,121,928	59.2	54.85	63.48
Rural	694	742,138	53.1	46.49	59.65
<b>Sex</b>					
Male	784	1,235,186	54.4	49.09	59.67
Female	1,033	1,628,880	60.1	56.10	63.99
<b>Age group (Years)</b>					
0-4	222	340,375	79.1	71.89	84.79
5-9	214	275,125	72.1	64.45	78.70
10-14	111	151,729	51.1	42.51	59.57
15-19	94	208,837	45.7	32.61	59.49
20-24	86	222,141	47.2	35.66	59.01
25-29	94	249,751	61.0	50.48	70.56
30-34	130	237,835	50.4	40.36	60.47
35-39	145	241,892	60.2	50.49	69.16

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
40-44	93	137,713	48.7	38.78	58.73
45-49	87	118,422	52.5	42.53	62.20
50-54	122	193,080	63.0	53.82	71.37
55-59	95	121,433	53.7	42.87	64.18
60-64	103	129,136	57.6	45.87	68.46
65-69	88	109,488	64.4	52.99	74.39
70-74	68	68,372	73.9	61.20	83.61
75 and over	65	58,738	44.5	27.78	62.57
<b>Ethnicity</b>					
Malay <sup>a</sup>	1,233	1,610,963	61.3	57.22	65.15
Chinese	123	312,868	51.8	41.04	62.33
Indian	109	192,699	65.1	55.58	73.52
Bumiputera Sabah	145	300,585	57.4	48.67	65.75
Bumiputera Sarawak	140	261,639	56.7	47.78	65.11
Others	67	185,313	40.0	23.49	59.05
<b>Citizenship</b>					
Malaysian	1,748	2,662,073	59.3	56.22	62.24
Permanent Resident	7	8,381	19.7	4.11	58.38
Non-Malaysian	62	193,612	43.5	25.75	63.15
<b>Marital status<sup>b</sup></b>					
Single	297	637,403	49.4	41.99	56.81
Married	831	1,275,927	55.4	50.96	59.67
Widow(er)/Divorcee	173	212,883	57.1	46.76	66.83
<b>Education level</b>					
No formal education	388	589,720	72.5	65.96	78.16
Primary education	543	784,892	53.9	47.04	60.68
Secondary education	565	940,737	52.6	47.57	57.63
Tertiary education	315	540,995	59.8	52.50	66.65
<b>Occupation</b>					
Government employee	157	168,433	60.2	50.35	69.25
Private employee	316	659,156	51.4	43.12	59.60
Self-employed	186	326,210	50.2	43.59	56.80

**Table 3.5:** Percentage of seeking treatment or medication or advice from healthcare practitioner, among those who experienced acute health problems in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=3,061) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Unpaid worker/ Homemaker	237	367,139	56.5	48.73	64.03
Retiree	64	70,826	62.0	44.56	76.76
Student	365	560,342	58.5	51.88	64.86
Not working <sup>c</sup>	492	711,961	68.1	62.46	73.21
<b>Household income group</b>					
Less than RM 1,000	321	536,056	54.7	45.94	63.20
RM 1,000 - RM 1,999	327	564,609	58.2	51.45	64.75
RM 2,000 - RM 2,999	285	443,484	55.1	46.72	63.28
RM 3,000 - RM 3,999	244	418,025	61.3	54.59	67.60
RM 4,000 - RM 4,999	131	180,658	43.1	32.61	54.34
RM 5,000 - RM 5,999	110	156,940	62.4	49.99	73.31
RM 6,000 - RM 6,999	83	124,818	67.5	54.46	78.36
RM 7,000 - RM 7,999	72	104,916	62.4	46.98	75.66
RM 8,000 - RM 8,999	54	97,572	67.8	51.57	80.58
RM 9,000 - RM 9,999	24	29,955	63.1	34.94	84.53
RM 10,000 and above	156	195,512	63.4	50.97	74.26
<b>Household income quintile</b>					
Q1 (20% poorest)	379	660,805	55.1	46.71	63.13
Q2	349	562,939	56.7	49.91	63.22
Q3	343	578,243	58.5	51.85	64.92
Q4	343	489,342	53.4	46.26	60.47
Q5 (20% richest)	393	561,215	65.1	58.28	71.44
<b>Household income category</b>					
Bottom 40% (B40)	1,268	1,985,123	55.9	51.39	60.34
Middle 40% (M40)	380	630,202	61.7	54.95	68.08
Top 20% (T20)	159	237,218	61.3	50.54	71.04

95% CI = 95% Confidence Interval

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 3.6:** Percentage of self-medication, among those who experienced acute health problems in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=3,061)

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>641</b>	<b>1,134,849</b>	<b>22.8</b>	<b>19.89</b>	<b>25.97</b>
<b>State</b>					
Johor	21	48,885	23.3	12.87	38.37
Kedah	34	60,817	21.5	14.24	31.18
Kelantan	12	13,299	14.1	8.82	21.67
Melaka	43	33,833	23.7	15.81	34.03
Negeri Sembilan	34	89,094	32.8	21.72	46.22
Pahang	19	24,847	14.8	8.26	24.99
Pulau Pinang	23	43,749	21.1	8.58	43.25
Perak	27	57,867	17.0	10.49	26.30
Perlis	42	10,006	18.1	11.67	27.00
Selangor	60	165,733	17.9	13.10	24.07
Terengganu	60	74,133	31.3	24.37	39.25
Sabah	91	284,252	28.9	20.27	39.46
Sarawak	71	172,459	21.9	15.29	30.33
WP Kuala Lumpur	18	45,851	21.3	12.85	33.11
WP Labuan	19	1,359	6.2	3.17	11.83
WP Putrajaya	67	8,664	22.8	18.43	27.95
<b>Location</b>					
Urban	382	792,169	22.1	19.06	25.50
Rural	259	342,680	24.5	18.27	32.09
<b>Sex</b>					
Male	274	491,254	21.6	17.37	26.64
Female	367	643,595	23.8	20.39	27.47
<b>Age group (Years)</b>					
0-4	46	65,343	15.2	10.45	21.53
5-9	46	53,720	14.1	9.38	20.62
10-14	38	55,085	18.5	12.29	27.00
15-19	39	130,516	28.6	15.36	46.89
20-24	49	134,130	28.5	20.96	37.43
25-29	42	106,097	25.9	17.90	35.92
30-34	42	112,170	23.8	14.55	36.39
35-39	44	80,453	20.0	12.79	29.93
40-44	43	66,698	23.6	16.22	32.99
45-49	52	63,913	28.3	20.68	37.44
50-54	49	66,618	21.7	15.01	30.42
55-59	41	67,412	29.8	20.51	41.13
60-64	32	36,186	16.1	9.72	25.57
65-69	35	44,167	26.0	16.18	38.96
70-74	20	26,210	28.3	15.89	45.30
75 and over	23	26,130	19.8	10.92	33.20
<b>Ethnicity</b>					
Malay <sup>a</sup>	426	542,357	20.6	17.69	23.91
Chinese	54	181,414	30.0	21.07	40.80
Indian	40	48,820	16.5	10.76	24.42
Bumiputera Sabah	45	102,491	19.6	12.89	28.62
Bumiputera Sarawak	38	82,230	17.8	12.78	24.25
Others	38	177,537	38.3	23.73	55.28

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	603	962,786	21.4	18.90	24.20
Permanent Resident	2	3,182	7.5	0.84	43.46
Non-Malaysian	36	168,881	38.0	22.78	55.96
<b>Marital status<sup>b</sup></b>					
Single	148	388,595	30.1	23.58	37.56
Married	313	525,673	22.8	19.42	26.59
Widow(er)/Divorcee	70	82,319	22.1	15.54	30.37
<b>Education level</b>					
No formal education	101	150,527	18.5	14.57	23.20
Primary education	186	369,707	25.4	19.34	32.60
Secondary education	231	403,681	22.6	18.97	26.65
Tertiary education	120	208,181	23.0	17.13	30.16
<b>Occupation</b>					
Government employee	59	59,755	21.3	13.98	31.20
Private employee	129	357,143	27.8	21.16	35.70
Self-employed	93	153,467	23.6	18.05	30.27
Unpaid worker/ Homemaker	87	167,214	25.7	19.07	33.80
Retiree	29	34,931	30.6	19.12	45.04
Student	104	175,918	18.4	13.98	23.76
Not working <sup>c</sup>	140	186,420	17.8	14.13	22.24
<b>Household income group</b>					
Less than RM 1,000	117	222,590	22.7	14.65	33.49
RM 1,000 - RM 1,999	126	236,803	24.4	19.10	30.69
RM 2,000 - RM 2,999	89	170,940	21.3	16.70	26.65
RM 3,000 - RM 3,999	91	152,733	22.4	16.07	30.31
RM 4,000 - RM 4,999	58	130,438	31.2	20.72	43.92
RM 5,000 - RM 5,999	40	45,697	18.2	10.79	28.93
RM 6,000 - RM 6,999	31	44,128	23.9	15.14	35.54
RM 7,000 - RM 7,999	25	27,053	16.1	7.95	29.87
RM 8,000 - RM 8,999	12	29,342	20.4	9.12	39.49
RM 9,000 - RM 9,999	9	11,279	23.8	9.52	48.04
RM 10,000 and above	38	55,583	18.0	10.99	28.13
<b>Household income quintile</b>					
Q1 (20% poorest)	141	277,960	23.2	16.37	31.69
Q2	126	230,493	23.2	17.79	29.68
Q3	120	232,170	23.5	18.44	29.46
Q4	134	218,576	23.9	17.78	31.24
Q5 (20% richest)	115	167,384	19.4	14.55	25.46
<b>Household income category</b>					
Bottom 40% (B40)	446	812,334	22.9	19.48	26.68
Middle 40% (M40)	152	242,726	23.8	18.76	29.64
Top 20% (T20)	38	71,524	18.5	11.75	27.84

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Does not include children aged less than 13 years old

<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 3.7:** Percentage of getting advice from sources other than healthcare practitioner, among those who experienced acute health problems in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=3,061)

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>465</b>	<b>816,358</b>	<b>16.4</b>	<b>13.91</b>	<b>19.22</b>
<b>State</b>					
Johor	11	31,357	14.9	9.90	21.87
Kedah	23	25,383	9.0	5.27	14.89
Kelantan	8	11,516	12.2	5.49	24.84
Melaka	25	16,048	11.3	5.68	21.10
Negeri Sembilan	13	18,037	6.6	2.47	16.64
Pahang	22	32,885	19.5	12.20	29.81
Pulau Pinang	16	14,202	6.9	2.78	15.89
Perak	13	29,787	8.7	3.95	18.24
Perlis	42	13,456	24.3	14.65	37.61
Selangor	60	166,448	18.0	12.99	24.44
Terengganu	32	38,210	16.1	11.16	22.78
Sabah	91	252,054	25.7	18.09	35.03
Sarawak	53	141,476	18.0	12.14	25.75
WP Kuala Lumpur	8	19,363	9.0	2.39	28.41
WP Labuan	14	957	4.4	2.33	8.10
WP Putrajaya	34	5,179	13.7	9.10	19.99
<b>Location</b>					
Urban	265	537,577	15.0	12.44	17.99
Rural	200	278,781	20.0	14.69	26.52
<b>Sex</b>					
Male	206	408,571	18.0	13.81	23.12
Female	259	407,788	15.0	12.55	17.94
<b>Age group (Years)</b>					
0-4	29	37,796	8.8	5.60	13.50
5-9	28	38,379	10.1	6.35	15.59
10-14	23	36,096	12.1	7.34	19.44
15-19	46	173,562	38.0	24.25	54.03
20-24	43	100,980	21.4	14.37	30.76
25-29	22	57,277	14.0	7.89	23.58
30-34	27	60,316	12.8	7.53	20.90
35-39	33	65,593	16.3	10.30	24.89
40-44	24	42,925	15.2	9.70	22.98
45-49	26	32,448	14.4	8.89	22.41
50-54	27	31,624	10.3	5.70	17.99
55-59	27	28,718	12.7	7.79	20.03
60-64	36	42,949	19.1	12.35	28.46
65-69	26	19,766	11.6	6.80	19.17
70-74	19	21,260	23.0	12.32	38.81
75 and over	29	26,668	20.2	11.58	32.86
<b>Ethnicity</b>					
Malay <sup>a</sup>	297	352,251	13.4	11.20	15.94
Chinese	26	87,720	14.5	8.97	22.63
Indian	25	43,760	14.8	6.97	28.65
Bumiputera Sabah	56	136,795	26.1	19.83	33.61
Bumiputera Sarawak	35	82,661	17.9	11.86	26.09
Others	26	113,170	24.4	11.79	43.80

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	439	704,535	15.7	13.56	18.08
Permanent Resident	2	325	0.8	0.10	5.52
Non-Malaysian	24	111,498	25.1	12.24	44.53
<b>Marital status<sup>b</sup></b>					
Single	114	324,581	25.1	18.65	33.00
Married	224	346,793	15.0	12.29	18.29
Widow(er)/Divorcee	58	54,371	14.6	10.20	20.41
<b>Education level</b>					
No formal education	93	134,178	16.5	12.55	21.36
Primary education	127	214,427	14.7	9.67	21.82
Secondary education	168	338,787	19.0	15.47	23.00
Tertiary education	74	124,454	13.8	9.27	19.93
<b>Occupation</b>					
Government employee	34	38,729	13.8	7.66	23.71
Private employee	68	200,801	15.7	9.88	23.92
Self-employed	71	121,359	18.7	13.90	24.62
Unpaid worker/ Homemaker	56	88,177	13.6	9.71	18.67
Retiree	18	19,003	16.6	8.79	29.21
Student	80	170,843	17.8	13.21	23.65
Not working <sup>c</sup>	138	177,447	17.0	13.37	21.29
<b>Household income group</b>					
Less than RM 1,000	124	231,317	23.6	16.68	32.29
RM 1,000 - RM 1,999	87	169,929	17.5	13.24	22.85
RM 2,000 - RM 2,999	69	118,855	14.8	10.42	20.55
RM 3,000 - RM 3,999	46	76,427	11.2	7.58	16.27
RM 4,000 - RM 4,999	37	79,905	19.1	12.63	27.79
RM 5,000 - RM 5,999	25	28,922	11.5	6.47	19.60
RM 6,000 - RM 6,999	19	26,114	14.1	7.49	25.07
RM 7,000 - RM 7,999	17	28,910	17.2	7.33	35.27
RM 8,000 - RM 8,999	7	9,119	6.3	1.99	18.34
RM 9,000 - RM 9,999	3	2,588	5.5	1.49	18.01
RM 10,000 and above	26	39,734	12.9	5.60	26.93
<b>Household income quintile</b>					
Q1 (20% poorest)	136	259,741	21.6	15.82	28.87
Q2	91	179,754	18.1	13.96	23.13
Q3	82	126,704	12.8	9.33	17.38
Q4	79	139,154	15.2	11.47	19.86
Q5 (20% richest)	72	106,465	12.4	8.26	18.09
<b>Household income category</b>					
Bottom 40% (B40)	340	608,351	17.1	14.18	20.55
Middle 40% (M40)	96	158,293	15.5	11.78	20.14
Top 20% (T20)	24	45,176	11.7	5.54	22.93

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Does not include children aged less than 13 years old

<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 3.8:** Percentage of getting advice from other resources, among those who experienced acute health problems in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=3,061)

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>364</b>	<b>562,797</b>	<b>11.3</b>	<b>9.71</b>	<b>13.12</b>
<b>State</b>					
Johor	17	43,746	20.8	14.73	28.58
Kedah	9	9,529	3.4	1.59	7.00
Kelantan	3	5,116	5.4	1.59	16.86
Melaka	16	15,898	11.2	4.68	24.31
Negeri Sembilan	11	10,161	3.7	1.81	7.57
Pahang	22	40,122	23.8	14.19	37.21
Pulau Pinang	14	16,526	8.0	2.54	22.38
Perak	10	24,270	7.1	3.60	13.60
Perlis	15	5,255	9.5	4.81	17.93
Selangor	44	111,833	12.1	9.12	15.89
Terengganu	23	28,878	12.2	7.93	18.32
Sabah	46	99,217	10.1	6.74	14.87
Sarawak	55	140,081	17.8	13.03	23.80
WP Kuala Lumpur	2	3,031	1.4	13.03	5.41
WP Labuan	25	2,314	10.6	13.03	19.94
WP Putrajaya	52	6,820	18.0	13.03	25.10
<b>Location</b>					
Urban	236	385,532	10.8	8.87	13.00
Rural	128	177,265	12.7	10.00	15.96
<b>Sex</b>					
Male	138	213,884	9.4	7.48	11.81
Female	226	348,912	12.9	10.63	15.51
<b>Age group (Years)</b>					
0-4	25	23,786	5.5	3.16	9.48
5-9	25	27,235	7.1	4.16	12.00
10-14	11	23,142	7.8	3.97	14.71
15-19	21	53,310	11.7	6.48	20.15
20-24	33	61,587	13.1	8.23	20.16
25-29	24	46,070	11.2	6.67	18.35
30-34	32	41,327	8.8	5.15	14.53
35-39	39	57,760	14.4	9.50	21.17
40-44	28	51,166	18.1	10.70	28.94
45-49	27	46,057	20.4	13.35	29.89
50-54	26	34,440	11.2	6.76	18.13
55-59	27	36,183	16.0	9.96	24.70
60-64	15	23,224	10.4	4.76	21.04
65-69	14	17,574	10.3	5.15	19.68
70-74	9	12,401	13.4	5.27	30.13
75 and over	8	7,535	5.7	2.46	12.69
<b>Ethnicity</b>					
Malay <sup>a</sup>	239	303,201	11.5	9.61	13.77
Chinese	23	54,698	9.1	5.09	15.59
Indian	16	23,407	7.9	4.36	13.90
Bumiputera Sabah	29	54,621	10.4	6.13	17.22
Bumiputera Sarawak	39	84,072	18.2	12.15	26.37
Others	18	42,798	9.2	5.51	15.04

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	346	519,999	11.6	9.91	13.48
Permanent Resident	1	1,367	3.2	0.34	24.47
Non-Malaysian	17	41,431	9.3	5.66	14.96
<b>Marital status<sup>b</sup></b>					
Single	80	156,166	12.1	9.07	15.96
Married	201	318,658	13.8	11.27	16.85
Widow(er)/Divorcee	28	29,928	8.0	4.91	12.85
<b>Education level</b>					
No formal education	55	75,542	9.3	6.19	13.70
Primary education	79	125,825	8.2	6.30	11.75
Secondary education	135	228,366	12.8	10.10	16.03
Tertiary education	94	129,764	14.3	10.72	18.92
<b>Occupation</b>					
Government employee	55	47,603	17.0	10.07	27.27
Private employee	68	137,882	10.8	7.76	14.72
Self-employed	50	86,924	13.4	9.46	18.59
Unpaid worker/ Homemaker	55	97,396	15.0	10.98	20.16
Retiree	12	15,140	13.2	6.64	24.70
Student	49	87,464	9.1	6.23	13.21
Not working <sup>c</sup>	75	90,387	8.6	6.37	11.63
<b>Household income group</b>					
Less than RM 1,000	69	108,125	11.0	7.94	15.14
RM 1,000 - RM 1,999	59	101,813	10.5	7.41	14.69
RM 2,000 - RM 2,999	57	91,741	11.4	7.61	16.76
RM 3,000 - RM 3,999	39	74,810	11.0	6.95	16.89
RM 4,000 - RM 4,999	28	49,364	11.8	7.69	17.66
RM 5,000 - RM 5,999	27	33,223	13.2	7.85	21.36
RM 6,000 - RM 6,999	19	16,458	8.9	4.51	16.82
RM 7,000 - RM 7,999	16	17,113	10.2	4.67	20.78
RM 8,000 - RM 8,999	8	16,097	11.2	4.47	25.30
RM 9,000 - RM 9,999	7	10,333	21.8	7.48	48.96
RM 10,000 and above	30	37,511	12.2	6.28	22.26
<b>Household income quintile</b>					
Q1 (20% poorest)	76	131,591	11.0	8.31	14.33
Q2	68	99,525	10.0	7.14	13.90
Q3	66	118,269	12.0	8.60	16.44
Q4	68	109,597	12.0	8.61	16.40
Q5 (20% richest)	81	97,605	11.3	8.00	15.81
<b>Household income category</b>					
Bottom 40% (B40)	245	389,054	11.0	9.17	13.04
Middle 40% (M40)	85	113,301	11.1	8.05	15.10
Top 20% (T20)	29	54,232	14.0	8.25	22.79

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Does not include children aged less than 13 years old

<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 3.9:** Distribution of perceived necessity to seek treatment or medication or advice from healthcare practitioners, among those who experienced acute health problems and did not seek treatment or medication or advice from healthcare practitioners in the last 2 weeks, NHMS 2019 (N=1,236)

Perceived necessity	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Yes	299	511,377	24.4	19.22	30.54
No	929	1,566,307	74.9	68.81	80.07

95% CI = 95% Confidence Interval

**Table 3.10:** Distribution of main reasons for not seeking treatment or medication or advice from healthcare practitioners, among those who experienced acute health problems and did not seek treatment or medication or advice from healthcare practitioners in the last 2 weeks, NHMS 2019 (N=1,236)

Main reason	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Perceived not sick enough and do not need treatment	474	778,753	37.2	32.63	42.05
Perceived not sick enough and self-medicate	430	629,768	30.1	25.07	35.65
Work commitment or could not take time off work or had other commitments	99	191,264	9.1	6.85	12.10
Cannot afford to pay for the treatment	28	108,013	5.2	2.68	9.73
No transport	17	24,206	1.2	0.61	2.17
Did not know where to go	6	15,338	0.7	0.27	1.96
Could not afford the cost of transport	4	6,795	0.3	0.10	1.02
You were previously badly treated	4	4,925	0.2	0.08	0.72
The healthcare provider's skill are inadequate	1	4,300	0.2	0.03	1.46
Others	71	128,550	6.1	3.97	9.39

95% CI = 95% Confidence Interval

**Table 3.11:** Prevalence of chronic bodily pain in the last 6 months, among population aged 13 years old and over, by sociodemographic characteristics, NHMS 2019 (N=12,915)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>1,468</b>	<b>2,186,507</b>	<b>8.7</b>	<b>7.96</b>	<b>9.60</b>
<b>State</b>					
Johor	80	175,576	6.2	4.40	8.54
Kedah	59	92,867	6.0	4.60	7.77
Kelantan	70	91,118	6.9	4.74	10.04
Melaka	153	103,802	16.1	12.31	20.82
Negeri Sembilan	159	232,911	15.6	11.74	20.50
Pahang	93	106,144	8.8	7.20	10.80
Pulau Pinang	96	155,539	11.3	6.63	18.61
Perak	116	244,104	13.4	9.23	19.13
Perlis	94	22,083	12.3	10.38	14.54
Selangor	146	356,097	7.0	5.47	8.99
Terengganu	51	49,287	5.7	3.89	8.40
Sabah	67	172,807	5.7	4.31	7.61
Sarawak	138	297,677	14.1	12.11	16.43
WP Kuala Lumpur	45	75,251	5.4	3.56	7.96
WP Labuan	54	4,304	6.3	4.55	8.77
WP Putrajaya	47	6,938	10.6	6.55	16.71
<b>Location</b>					
Urban	804	1,564,207	8.3	7.31	9.43
Rural	664	622,300	10.1	8.70	11.66
<b>Sex</b>					
Male	701	1,085,098	8.7	7.49	10.09
Female	767	1,101,409	8.8	7.86	9.81
<b>Age group (Years)</b>					
13-14	14	14,363	1.6*	0.83	3.11
15-19	26	50,966	1.9	1.10	3.16
20-24	35	102,357	3.4	2.19	5.26
25-29	54	147,578	4.7	3.29	6.64
30-34	74	142,104	5.1	3.57	7.17
35-39	104	153,945	6.3	4.71	8.48
40-44	107	170,058	8.9	6.95	11.43
45-49	109	188,006	11.0	8.31	14.30
50-54	177	258,193	15.8	12.88	19.28
55-59	162	227,612	15.6	12.24	19.76
60-64	171	249,431	21.0	16.46	26.45
65-69	148	167,392	19.2	14.65	24.76
70-74	126	123,462	20.9	16.35	26.33
75 and over	161	191,038	29.3	23.89	35.43
<b>Ethnicity</b>					
Malay <sup>a</sup>	947	1,189,782	9.1	8.19	10.16
Chinese	177	405,883	7.7	5.73	10.20
Indian	166	240,643	16.1	11.35	22.21
Bumiputera Sabah	49	83,494	5.3	3.86	7.29
Bumiputera Sarawak	87	157,727	14.4	11.56	17.81
Others	42	108,978	4.3	2.80	6.64

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	1,420	2,075,564	9.3	8.42	10.28
Permanent Resident	16	18,523	8.6*	3.62	19.25
Non-Malaysian	32	92,420	3.7	2.35	5.79
<b>Marital status</b>					
Single	170	383,085	4.2	3.42	5.16
Married	1,028	1,490,051	10.6	9.37	11.91
Widow(er)/Divorcee	270	313,372	17.6	14.99	20.65
<b>Education level</b>					
No formal education	164	222,187	18.0	13.88	23.02
Primary education	494	653,021	11.4	9.70	13.39
Secondary education	584	917,406	7.5	6.57	8.65
Tertiary education	217	386,189	6.7	5.14	8.68
<b>Occupation</b>					
Government employee	108	130,796	8.3	6.24	10.86
Private employee	270	565,568	6.5	5.55	8.01
Self-employed	243	355,296	8.9	7.25	10.95
Unpaid worker/ Homemaker	217	307,334	8.0	6.42	9.97
Retiree	103	152,573	19.5	14.68	25.51
Student	36	50,195	1.5	0.94	2.53
Not working <sup>b</sup>	491	624,747	20.4	17.72	23.31
<b>Household income group</b>					
Less than RM 1,000	373	3,603,860	12.1	10.22	14.30
RM 1,000 - RM 1,999	266	362,825	7.8	6.46	9.45
RM 2,000 - RM 2,999	244	396,369	9.6	7.97	11.58
RM 3,000 - RM 3,999	171	278,388	7.9	6.27	9.92
RM 4,000 - RM 4,999	114	166,427	7.6	5.70	10.08
RM 5,000 - RM 5,999	72	99,286	6.8	4.97	9.36
RM 6,000 - RM 6,999	45	102,115	8.0	4.72	13.20
RM 7,000 - RM 7,999	32	62,018	6.7	3.76	11.64
RM 8,000 - RM 8,999	31	44,732	6.0	3.73	9.42
RM 9,000 - RM 9,999	17	28,275	11.2*	4.77	24.29
RM 10,000 and above	83	114,796	7.2	4.84	10.67
<b>Household income quintile</b>					
Q1 (20% poorest)	423	553,466	10.6	8.94	12.54
Q2	295	409,975	8.3	6.95	9.91
Q3	260	457,379	9.2	7.68	10.96
Q4	261	378,641	7.8	6.40	9.42
Q5 (20% richest)	209	354,181	7.3	5.62	9.54
<b>Household income category</b>					
Bottom 40% (B40)	1,102	1,612,457	9.2	8.27	10.26
Middle 40% (M40)	241	392,501	7.3	5.82	9.09
Top 20% (T20)	105	148,684	7.7	5.69	10.25

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli<sup>b</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution.

**Table 3.12:** Distribution of level of daily activity interference caused by chronic bodily pain, among those who experienced chronic bodily pain in the last 6 months, NHMS 2019 (N=1,468)

Level of interference	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Not disturbed at all	245	397,100	18.2	15.22	21.53
Mildly disturbed	724	1,053,657	48.2	44.08	52.33
Moderately disturbed	244	366,298	16.8	13.91	20.03
Severely disturbed	192	279,449	12.8	10.52	15.44
Extremely disturbed	58	77,190	3.5	2.30	5.37

95% CI = 95% Confidence Interval

# Utilisation of Health Services

# Utilisation of Health Services

Health services utilisation refers to the use of healthcare services. People use healthcare for many reasons including preventive and curative care, promoting maintenance of health and well-being, or obtaining information about their health status and prognosis. In Healthcare Demand 2019, the components of health services utilisation that was assessed among population were private medical laboratory, community pharmacy, outpatient healthcare, inpatient healthcare, domiciliary care, medical check-up (health screening), self-care (purchase of dietary supplements), and oral healthcare. However, findings on utilisation of oral healthcare is included in Utilisation of Oral Healthcare.

## 4.1 Utilisation of Private Medical Laboratory

### Introduction

Medical laboratories are healthcare facilities providing a wide range of laboratory procedures which aid the physicians in carrying out the diagnosis, treatment, and management of patients (1). Medical laboratories are valuable as an integral part of the healthcare system to confirm the physicians' diagnoses and to support the monitoring of their patients' response to therapy. Private laboratory networks were developed to foster proper coordination and improve the healthcare system's efficiency (2).

Being conducted for the first time in the National Health and Morbidity Survey in Malaysia, the findings of private medical laboratory utilisation will serve as the country's baseline data.

### Operational definition

- Utilisation of private medical laboratories referred to the respondent's experience visiting a private medical laboratory for health purposes such as blood tests, urine tests, x-rays and other health services in the last 12 months prior to interview.
- It excluded medical laboratories within private and public hospitals and clinics.
- This section was only applicable for those aged 18 years and over.

## Objectives

### General objective

To determine the prevalence and patterns of private medical laboratory utilisation.

### Specific objectives

To determine the:

1. prevalence of private medical laboratory utilisation in the last 12 months by sociodemographic characteristics.
2. reason for visit to private medical laboratories among those who utilised in the last 12 months.
3. distribution of arrangement of visit to private medical laboratories among those who utilised in the last 12 months.

## Findings

### Prevalence of private medical laboratory utilisation

A total of 11,674 (100.0%) respondents responded to this section. Overall, 4.8% (95% CI = 4.11, 5.52) of the population utilised private medical laboratories in the last 12 months prior to the interview (Table 4.1).

Across states, Sarawak (7.8%; 95% CI = 5.34, 11.15) had the highest utilisation of private medical laboratories, followed by Selangor (7.6%; 95% CI = 5.94, 9.79) and Wilayah Persekutuan Labuan (7.5%; 95% CI = 5.55, 10.02). In contrast, Kelantan (1.5%; 95% CI = 1.01, 2.24) had the lowest utilisation of private medical laboratories (Table 4.1).

Our findings show that the urban population (5.4%; 95% CI = 4.56, 6.37) utilised private medical laboratories more than the rural population (2.9%; 95% CI = 2.26, 3.65). By marital status, those who were married (7.8%; 95% CI = 6.59, 9.29) had higher utilisation as compared with those who were single (3.4%; 95% CI = 2.54, 4.57) (Table 4.1).

By sex, there was almost equal utilisation of private medical laboratories, where 4.9% (95% CI = 4.16, 5.81) of males and 4.6% (95% CI = 3.83, 5.53) of females utilised private medical laboratories. By age groups, the findings show that the highest utilisation was among those aged 45-49 years old (9.1%, 95% CI = 5.94, 13.75). By ethnicity, the highest utilisation of private medical laboratories was among Chinese (7.6%; 95% CI = 5.42, 10.55) and the lowest was among Bumiputera Sabah (2.7%; 95% CI = 1.65, 4.46). By citizenship, the highest utilisation of private medical laboratories was among non-Malaysians (7.0%; 95% CI = 4.85, 9.99) (Table 4.1).

By education, those with tertiary education (8.8%; 95% CI = 7.11, 10.85) had the highest utilisation as compared with other education levels. From occupation point of view, government employees (9.2%; 95% CI = 6.77, 12.52) had higher utilisation, as compared with unpaid workers or homemakers (4.9%; 95% CI = 3.62, 6.49) and those who were not working (2.2%; 95% CI = 1.65, 2.91). By household income group, the utilisation was highest among those in the household income group of RM 10,000 and above (12.0%; 95% CI = 8.64, 16.47) (Table 4.1).

Those in the household income quintile of Q5 (8.6%; 95% CI = 6.71, 11.02) and household income category of T20 (11.3%; 95% CI = 8.06, 15.70) utilised private medical laboratories more, as compared with those in other household income quintiles and household income categories (Table 4.1).

### Reason for visit to private medical laboratory

Among those who visited private medical laboratories, 81.2% (95% CI = 76.71, 84.95) did blood or urine tests or x-ray, while 71.0% (95% CI = 64.39, 76.80) reported they sought advice related to health as the reason for visit to the private medical laboratories (Table 4.2).

### Distribution of arrangement of visit to private medical laboratory

Among those who visited private medical laboratories, the majority (72.8%; 95% CI = 67.08, 77.79) reported that they arranged their visits to private medical laboratories themselves. Hospitals or clinics account for 17.4% (95% CI = 13.68, 21.95) of the arrangement to the private medical laboratories, while 8.8% (95% CI = 5.82, 13.11) was arranged by other sources (Table 4.3).

## Discussions

This study shows higher utilisation of private medical laboratories among the population in the urban areas as compared with rural areas. This finding reflects better accessibility to private medical laboratories in the urban areas, which could be attributed to private medical facilities being more available in major cities in the country (3). The difference in density of private medical laboratories in urban and rural areas could pose a state of inequity to the population in the rural areas with regards to accessibility to services provided by the private medical laboratories. This could pose a risk and disadvantage to the healthcare coverage of the population in rural areas and an increase in burden of work, cost, and resources in the public sector to cater for the needs of the rural population.

Most of the visits to private medical laboratories were for health screening and health advice purposes. Private medical laboratories are one of the first lines of defence in recognising and preventing the spread of communicable diseases by examining specimens to identify disease outbreaks, isolating causative agents, and identifying the source of infection (4). Accurate and timely laboratory analyses could facilitate identification and surveillance of public health threats as well as limit these threats to reduce rates of preventable morbidity and mortality.

In this modern era, a medical infrastructure is incomplete without pathological laboratory services as the practice of scientific medicine becomes handicapped without adequate laboratory support (5). Hence, there is a need for more laboratories of good standards across the country.

## Recommendations

- Medical laboratory services are indispensable in the scientific practice of medicine; therefore, it should be made accessible to everyone in the population regardless of where they live. As such, establishing private medical laboratories in underserved areas, could help complement and lessen the burden on the public sector and provide options to the population to access medical laboratory services according to their needs.
- Establishing public-private partnerships through sharing of technology, expertise, and equipment could help distribute resources between the two sectors and pave a way for the betterment of health in the country. Being one of the first lines of defence in recognising and preventing the spread of communicable diseases, there is a need for collaboration among academicians, private sector researchers and other government agencies to adapt emerging technologies in health laboratory techniques and information systems.

## 4.2 Utilisation of Community Pharmacy (Pharmacy Shop)

### Introduction

Community pharmacy, also known as retail pharmacy, is the most common type of pharmacy that allows the public access to their medications and advice about their health. The types of health services provided include patient counselling at the time of dispensing medications, provide drug information to other health professionals, patients and the general public, and participation in health-promotion programmes.

Among those who reported being sick in the last two weeks prior to the interview, 14.6% of them reported that they purchased medicine after getting advice from a pharmacist in 2011 (1), and the percentage doubled in 2015 (27.2%) (2).

This is the first time the utilisation of community pharmacy was included in the National Health and Morbidity Survey in Malaysia. Hence, it will serve as the baseline data for the country.

### Operational definition

- Utilisation of community pharmacy referred to populations' experience at community pharmacies for their own health and others.
- Community or retail pharmacies within private and public hospitals were counted as a community pharmacy in this section, while pharmacies inside any clinics are not counted.
- It excluded care related to oral healthcare\*.
- This section was only applicable for those aged 18 years and over.

*\*please refer to chapter on Utilisation of Oral Healthcare for findings on utilisation of oral healthcare*

## Objectives

### General objective

To determine the prevalence and patterns of community pharmacy utilisation.

### Specific objectives

To determine the:

1. prevalence of community pharmacy utilisation in the last two weeks by sociodemographic characteristics.
2. annual mean number of visits to community pharmacies per capita by sociodemographic characteristics.
3. distribution of number of community pharmacies visited among those who utilised in the last two weeks.

### References:

1. Schroeder, LF, Guarner, J, & Amukele, TK. (2018). Essential diagnostics for the use of World Health Organization essential medicines. *Clinical chemistry*, 64(8), 1148-1157.
2. Rauch, CA, & Nichols, JH. (2007). Laboratory accreditation and inspection. *Clinics in laboratory medicine*, 27(4), 845-858.
3. Thomas, S, Beh, L, & Nordin, RB (2011). Health care delivery in Malaysia: changes, challenges and champions. *Journal of public health in Africa*, 2(2).
4. World Health Organization. Laboratory Services National Strategic Plan 2008 [Internet]. Available from: [http://origin.who.int/hiv/amds/amds\\_nat\\_strat\\_plan\\_lab\\_2008.pdf](http://origin.who.int/hiv/amds/amds_nat_strat_plan_lab_2008.pdf). Accessed on January 24, 2020.
5. Chandrasekharan, N. (1982). Health laboratory services in Malaysia. *The Medical Journal of Malaysia*, 37(3), 197.

4. type of services received among those who utilised community pharmacies in the last two weeks.
5. distribution of type of purchase with advice.
6. overall population experience towards community pharmacy services among those who utilised in the last two weeks.

## Findings

### Prevalence of community pharmacy utilisation

A total of 11,674 (100.0%) respondents responded to this section. In the last two weeks prior to the interview, 10.2% (95% CI = 9.21, 11.21) of the population visited community pharmacies (Table 4.4).

Across states, Wilayah Persekutuan Putrajaya had the highest utilisation which was 25.9% (95% CI = 20.45, 32.20), followed by Perlis (19.8%; 95% CI = 16.85, 23.12) and Kedah (16.0%; 95% CI = 11.80, 21.30). In contrast, Pahang had the lowest utilisation which was 5.4% (95% CI = 3.80, 7.65), followed by Kelantan (5.9%; 95% CI = 3.94, 8.84) (Table 4.4).

By location, the prevalence of utilisation was higher among urban population (10.9%; 95% CI = 9.77, 12.18) than rural population (7.9%; 95% CI = 6.39, 9.61). By sex, the prevalence was higher among females (12.3%; 95% CI = 11.04, 13.67) than males (8.0%; 95% CI = 6.81, 9.47) (Table 4.4).

According to age group, the rate of utilisation was low among those aged 75 years and over (5.0%; 95% CI = 2.91, 8.52). The prevalence of Malaysians who visited (10.8%; 95% CI = 9.83, 11.96) community pharmacies was higher than non-Malaysians (3.2%; 95% CI = 1.98, 5.08) and those who were married had higher utilisation (11.3%; 95% CI = 10.09, 12.57) as compared with those who were single (7.7%; 95% CI = 6.27, 9.48) (Table 4.4).

By occupation, the highest utilisation of community pharmacies were among the retirees (17.9%; 95% CI = 13.02, 24.05) and the lowest utilisation were among the private employees (8.3%; 95% CI = 6.94, 9.84) and students (7.1%; 95% CI = 4.35, 11.30) (Table 4.4).

By household income quintile, those in Q5 (13.3%; 95% CI = 10.78, 16.20) visited community pharmacies more than those in Q3 (8.0%; 95% CI = 6.61, 9.67), while by household income category, M40 (12.2%; 95% CI = 9.96, 14.83) visited community pharmacies more than B40 (9.3%, 95% CI = 8.35, 10.32) (Table 4.4).

### Annual mean number of visits to community pharmacies (per capita)

Although the recall period for community pharmacies utilisation was two weeks, the results were annualised to standardize the reporting of utilisation rate. Overall, Malaysian population had a mean of 2.22 visits (SD = 9.39, median = 0.00, IQR = 0.00 – 0.00) to community pharmacies in a year. Highest utilisation rate was seen in Wilayah Persekutuan Putrajaya (4.47; 95% CI = 3.32, 5.62), followed by Perlis (3.83; 95% CI = 3.00, 4.67) and Negeri Sembilan (3.50; 95% CI = 1.67, 5.32) (Table 4.5).

### Number of community pharmacies visited

Among those who visited community pharmacies in the last two weeks, the majority (97.2%; 95% CI = 95.57, 98.24) visited one community pharmacy, while only 2.8% (95% CI = 1.76, 4.43) visited two community pharmacies for health reasons (Table 4.6).

### Types of services received

About half of the community pharmacies utilisation were due to health problems in the last two weeks (51.8%; 95% CI = 47.35, 56.25) (Table 4.7).

Buying medications (65.7%; 95% CI = 61.29, 69.90) and supplements (46.7%; 95% CI = 42.30, 51.20) were types of services that were highly utilised by the population (Table 4.7). Among those who bought medications and supplements, 60.7% (95% CI = 55.24, 65.98) and 52.8% (95% CI = 47.44, 58.13) reported buying them with advice (Table 4.8).

### Overall population experience towards community pharmacy services

Among those who visited the community pharmacies in the last two weeks, majority rated their overall experience towards community pharmacies services as excellent or good (91.9%; 95% CI = 89.32, 93.92) (Table 4.9).

## Discussions

Overall, there are about 3,000 community pharmacies in Malaysia (3). However, only 10.2% of the population in Malaysia visited community pharmacies for health reasons in the last two weeks prior to the interview. Compared with males, females visited community pharmacies more. Other population studies also reported similar findings where females were more likely to have obtained medicine or asked for advice in the community pharmacies (4).

Generally, half of the population in Malaysia had visited community pharmacies due to health problems in the last two weeks. The health problems referred to acute illnesses included, but not limited to, fever, sore throat, running nose, stomach ache, skin problems and allergies. This finding is consistent with another study where populations visited community pharmacies to seek treatment for minor conditions such as body aches and pains, colds, coughs and stomach pain (4).

Published articles reported that the majority of patients seeking care for minor illnesses at emergency departments in public hospitals, resulting in increased workload on healthcare practitioners, increased waiting time and resulting those with more serious conditions struggling to get access to appropriate care (5-7). As community pharmacies provide convenient hours of operation and no appointment needed for consultation, community pharmacists can be one of the most accessible healthcare practitioners compared with others. In return, this will help to reduce burden on other health services, by reducing waiting time and costs related to preventable use of other expensive healthcare services, which include visits to emergency departments in hospitals (8).

## Recommendations

- Community pharmacies may provide an alternative to the primary healthcare services in Malaysia, so that the level of congestion and waiting time of patients in clinics could be reduced. Thus, knowledge of the current findings can be used by policymakers to develop appropriate policy that may help bring community pharmacies into the delivery of specific primary healthcare services, such as handling minor ailments and provision of advice on healthy living and self-care, in addition to giving advice on medications and supplements.
- For future studies, we could explore in depth on community perception towards community pharmacists' roles in management of minor illnesses which correspond to the key factors that influence the use of community pharmacy services.

### References:

1. Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) (2012). National Health and Morbidity Survey 2011 (NHMS 2011). Vol. III: Healthcare Demand and Out-of-Pocket Health Expenditure.
2. Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) (2015). National Health and Morbidity Survey 2015 (NHMS 2015). Vol III: Healthcare Demand. 2015.
3. Bahagian Perkhidmatan Farmasi (2016). Laporan Statistik Program Farmasi 2016 [Internet]. Available from: <https://www.pharmacy.gov.my/v2/sites/default/files/statistik/Statistik%20Farmasi%202016.pdf>. Accessed on January 24, 2020.
4. Okai, GA, Abekah-Nkrumah, G, & Asuming, PO (2019). Perceptions and trends in the use of community pharmacies in Ghana. *Journal of pharmaceutical policy and practice*, 12(1), 25.
5. Fielding, S, Porteous, T, Ferguson, J, Maskrey, V, Blyth, A, Paudyal, V, et al. (2015). Estimating the burden of minor ailment consultations in general practices and emergency departments through retrospective review of routine data in North East Scotland. *Family practice*, 32(2), 165-172.
6. Selasawati, HG, Naing, L, Wan Aasim, WA, Winn, T, & Rusli, BN. (2004). Inappropriate utilization of emergency department services in Universiti Sains Malaysia hospital. *The Medical Journal of Malaysia*, 59(1), 26-33.
7. Arinah, WDS, Faisal, I, Juni, MH, Ismail, I, & Mohamed, AS. (2016). Factors associated with emergency department green zone utilization in hospital. *International Journal of Public Health and Clinical Sciences*, 3(5), 159-173.
8. Baqir, W, Learoyd, T, Sim, A, & Todd, A. (2011). Cost analysis of a community pharmacy 'minor ailment scheme' across three primary care trusts in the North East of England. *Journal of Public Health*, 33(4), 551-555.

## 4.3 Utilisation of Outpatient Healthcare

### Introduction

Malaysia is committed to achieve Universal Health Coverage, in which timely quality healthcare services are accessible to people and community without exposing them to risk of financial hardship (1). The Ministry of Health (MOH), the main provider of outpatient services in the public sector, has strived to provide affordable and accessible outpatient healthcare to all.

In the last two weeks prior to being interviewed, 12.6% of Malaysia population in 2011 (2) and 9.0% in 2015 (3) reported that they had used outpatient services. Despite increase in population size, ageing population and non-communicable diseases (NCDs), the utilisation rates had declined by approximately 3.6% from 2011 to 2015. For annual mean number of visits for outpatient healthcare, it decreases from a mean of 4.43 (NHMS 2011) to 3.23 (NHMS 2015) visits per year in four years duration (2, 3).

### Operational definition

- Outpatient healthcare in this study was defined as the respondent's experience in receiving traditional, complementary or modern advice, check-up or treatment at healthcare facilities, in the last two weeks prior to interview.
- Healthcare facilities include clinics, premises of traditional and complementary medicine treatment, clinics in a hospital, emergency departments and day care/ambulatory care centres.
- The care did not involve overnight stay and excluded oral healthcare\*.
- Healthcare providers include modern, traditional and complementary medicine practitioners (e.g. spiritual healer, Chinese herbalist, Ayurvedic practitioner and Islamic medicine practitioner).
- It covered respondents in all age groups.

*\*please refer to chapter on Utilisation of Oral Healthcare for findings on utilisation of oral healthcare.*

### Objectives

#### General objective

To determine the prevalence and patterns of outpatient healthcare utilisation.

#### Specific objectives

To determine the:

1. prevalence of outpatient healthcare utilisation in the last two weeks by sociodemographic characteristics.
2. distribution of outpatient healthcare utilisation in the last two weeks by sector and sociodemographic characteristics.
3. distribution of number of outpatient healthcare facilities visited among those who utilised in the last two weeks.
4. annual mean number of visits to outpatient healthcare facilities per capita by sector and sociodemographic characteristics.
5. distribution of frequency of visit to outpatient healthcare facilities among those who utilised in the last two weeks, by sector.
6. type of services received among those who utilised outpatient healthcare facilities in the last two weeks.
7. type of treatments received among those who utilised outpatient healthcare facilities in the last two weeks.
8. payer for outpatient healthcare utilisation among those who utilised outpatient healthcare facilities in the last two weeks.
9. overall population experience towards outpatient healthcare services among those who utilised outpatient healthcare facilities in the last two weeks.

### Findings

#### Prevalence of outpatient healthcare utilisation

A total of 16,688 (100.0%) respondents responded to this section. In the last two weeks prior to the interview, 8.1% (95% CI = 7.41, 8.84) of the population had received outpatient healthcare (**Table 4.10**).

Across states, Wilayah Persekutuan Putrajaya (16.4%; 95% CI = 12.86, 20.76) had the highest utilisation, followed by Wilayah Persekutuan Labuan (14.3%; 95% CI = 11.59, 17.50), Perlis (11.9%; 95% CI = 9.84, 14.31), and Sarawak (11.3%; 95% CI = 8.54, 14.74), whereas Johor (5.6%; 95% CI = 4.18, 7.43) and Kelantan (5.7%; 95% CI = 4.19, 7.70) were among the states with low utilisation of outpatient healthcare (**Table 4.10**).

By locality, rural population (8.8%; 95% CI = 7.74, 10.05) showed higher utilisation than urban population (7.8%; 95% CI = 7.01, 8.77). By sex, females (9.1%; 95% CI = 8.17, 10.18) utilised outpatient healthcare more than males (7.1%; 95% CI = 6.28, 7.91) (**Table 4.10**).

Generally, those aged 55 years and over utilised outpatient healthcare more than younger age groups, where those aged 75 years and over (17.6%; 95% CI = 12.87, 23.60) had the most utilisation. Those aged 0-4 years old (11.9%; 95% CI = 9.68, 14.45) also showed high outpatient healthcare utilisation (**Table 4.10**).

By ethnic group, Bumiputera Sarawak (14.1%; 95% CI = 10.60, 18.46) had the highest utilisation of outpatient healthcare, followed by Indian population (11.9%; 95% CI = 8.69, 16.09) and Bumiputera Sabah (9.4%; 95% CI = 7.28, 12.18). Malaysians (8.5%; 95% CI = 7.76, 9.23) had higher utilisation of outpatient healthcare as compared with non-Malaysians (4.7%; 95% CI = 3.03, 7.26). By marital status, the widow(er)/divorcee population (13.1%; 95% CI = 10.65, 16.08) utilised outpatient healthcare the most. Furthermore, those with no formal education (11.0%; 95% CI = 9.40, 12.99) had higher utilisation of outpatient healthcare than other levels of education (**Table 4.10**).

By occupation, those who were not working (11.6; 95% CI = 10.16, 13.25) had the highest utilisation, followed by government employees (11.1%; 95% CI = 8.41, 14.41), whereas students (5.5%; 95% CI = 4.48, 6.64) had the lowest utilisation of outpatient healthcare. By household income quintile, those in Q1 (9.1%; 95% CI = 7.82, 10.48) utilised outpatient services the most (**Table 4.10**).

### Outpatient healthcare utilisation by sector

Among those who utilised outpatient healthcare within two weeks prior to the interview, more had visited public (64.6%; 95% CI = 59.98, 68.99) than private healthcare facilities (36.3%; 95% CI = 31.89, 40.93) (**Table 4.11**).

Highest utilisation of public outpatient healthcare was in Kelantan (86.6%; 95% CI = 71.38, 94.32), followed by Perak (77.9%, 95% CI = 52.30, 91.87) and Perlis (77.0%, 95% CI = 68.98, 83.46). Whereas, highest utilisation of private outpatient healthcare was in Pulau Pinang (67.2%; 95% CI = 42.25, 86.13), followed by Selangor (48.1%; 95% CI = 37.13, 59.17) and Wilayah Persekutuan Kuala Lumpur (48.0%; 95% CI = 31.35, 65.05). By location, those from both urban (59.2%; 95% CI = 53.45, 64.64) and rural (79.0%; 95% CI = 72.68, 84.18) areas utilised public healthcare facilities more than private healthcare facilities (**Table 4.11**).

By age group, those aged 70-74 years old (88.6%; 95% CI = 76.84, 94.82) utilised public outpatient healthcare the most, whereas those in the age group of 40-44 years (50.2%; 95% CI = 36.70, 63.76) utilised private outpatient healthcare the most. Among those who utilised outpatient healthcare, Bumiputera Sarawak (74.6%; 95% CI = 54.77, 87.65) utilised public outpatient healthcare the most, while for private services, highest utilisation was by the Others ethnic group (65.6%; 95% CI = 44.08, 82.23). Permanent Residents (77.6%;

95% CI = 33.61, 95.93) utilised public outpatient healthcare the most, while non-Malaysians (68.2%; 95% CI = 45.45, 84.72) utilised private care the most (**Table 4.11**).

Utilisation of public outpatient healthcare was higher than private outpatient healthcare, in each marital status group. By education level, those with tertiary education (55.8%; 95% CI = 46.22, 64.95) utilised more private outpatient healthcare as compared with public outpatient healthcare. On the other hand, other levels of education showed higher utilisation of public outpatient healthcare services as compared with private services (**Table 4.11**).

More than 60% of the population across household income quintiles of Q1 to Q4 utilised public outpatient healthcare. Utilisation of private outpatient healthcare increases, as socioeconomic status increases. For the household income category, the richest 20% of the population (62.4%; 95% CI = 45.18, 76.99) utilised private outpatient healthcare services the most (**Table 4.11**).

### Number of outpatient healthcare facilities visited

Among those who had outpatient healthcare in the last two weeks, the majority (95.5%, 95% CI = 93.99, 96.71) visited only one healthcare facility, while only 4.2% (95% CI = 3.09, 5.68) visited two or more facilities (**Table 4.12**).

### Annual mean number of visits to outpatient healthcare facilities (per capita)

Although the recall period for outpatient healthcare utilisation was two weeks, the results were annualised to standardize the reporting of utilisation rate. Overall, Malaysia population had a mean of 2.74 visits (95% CI = 2.44, 3.03) to outpatient healthcare facilities in a year. Public outpatient healthcare facilities had a mean of 1.76 (95% CI = 1.55, 1.97) visits per year, whereas private outpatient healthcare facilities had a mean of 0.98 (95% CI = 0.78, 1.17) visits per year (**Table 4.13**). The composition of utilisation of outpatient healthcare services showed 64.3% of the utilisation was in the public sector and 35.7% of the utilisation was in the private sector (**Figure 4.1**).

### Frequency of visit to outpatient healthcare facilities

Among those who utilised public outpatient healthcare facilities, majority (85.2%, 95% CI = 82.16, 87.86) visited the same healthcare facility once, 8.4% (95% CI = 6.34, 11.05) visited twice, and 6.4% (95% CI = 4.85, 8.32) visited more than twice. Similarly, among those who utilised private outpatient healthcare facilities, the majority (85.2%, 95% CI = 79.19, 89.73) visited the same healthcare facility once and 10.1% (95% CI = 6.53, 15.34) visited twice (**Table 4.14**).

### Type of services received

Among those who utilised outpatient healthcare in the last two weeks, majority of utilisation were due to health problems (74.1%; 95% CI = 70.49, 77.36), followed by follow-ups (37.1%; 95% CI = 32.97, 41.46) and medical check-ups (26.4%; 95% CI = 23.18, 29.89), as well as other services (3.1%; 95% CI = 2.00, 4.63) (Table 4.15).

### Type of treatments received

Majority of the visits to outpatient healthcare facilities were for modern treatment (97.5%; 95% CI = 95.98, 98.48) (Table 4.16).

### Payer for outpatient healthcare utilisation

Majority of the population paid for the services using money sourced from self/ family/household members (65.7%; 95% CI = 62.09, 69.20), followed by employer/panel clinic/ employer-sponsored health insurance (13.1%; 95% CI = 10.25, 16.71) and Government guarantee letter (GL)/Government specific health fund (12.2%; 95% CI = 10.20, 14.63). Payment done by personal health insurance was 3.8% (95% CI = 2.46, 5.70) and by SOCSO was 2.3% (95% CI = 1.44, 3.75) (Table 4.17).

### Overall population experience towards outpatient healthcare services

Overall, outpatient healthcare services were mainly rated as excellent or good (89.5%; 95% CI = 86.66, 91.78) (Table 4.18).

## Discussions

Outpatient healthcare services utilisation was found lower (8.1%) as compared with previous NHMS studies (12.6% in NHMS 2011 and 9.0% in NHMS 2015) (2, 3) (Figure 4.2); with an overall decline in services utilisation by 4.5% in the last eight years. This is rather contradictory with the global trend, where many studies imply that inpatient healthcare services are being replaced by the outpatient healthcare services (4-6).

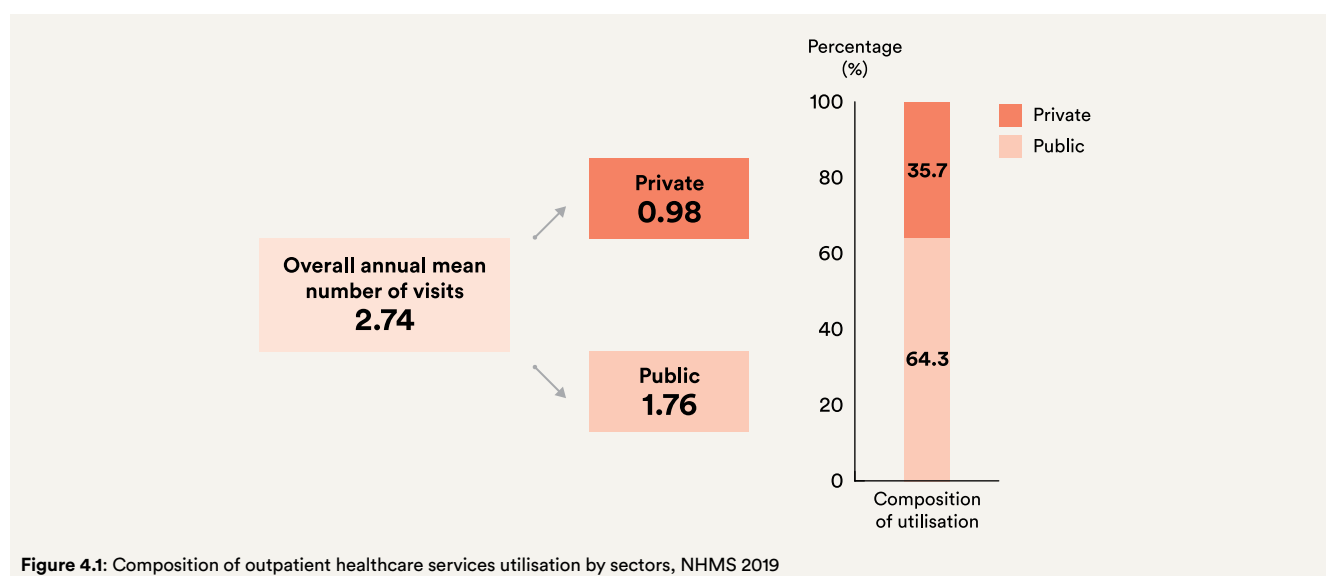
Clinical innovation and financial incentives are tilting the balance in favour of outpatient services in developed countries (4, 5). The American Hospitals Association reported that technological advancements such as minimally invasive surgical procedures that reduce risk complications, telemedicine and electronic health records were the catalyst for this shift towards outpatient healthcare service utilisation (4).

The “self-care” concept is a proactive, holistic, and personalised approach to the promotion of health and well-being of one’s own self (7). This concept is heavily influenced by the ease of access to information (4, 8), which is definitely the case in the current era where a heightened awareness as information is available at each person’s fingertips (9); especially in the urban areas. As awareness increases, the population will then have a better understanding of their own illnesses and diseases, empowering them to make decisions for themselves and avoid unnecessary outpatient visits. However, this does not rule out the possibility of hesitancy in seeking healthcare among the population; the higher cost of living in urban areas may be a deterring factor for them to travel and acquire healthcare services, especially from the private healthcare facilities.

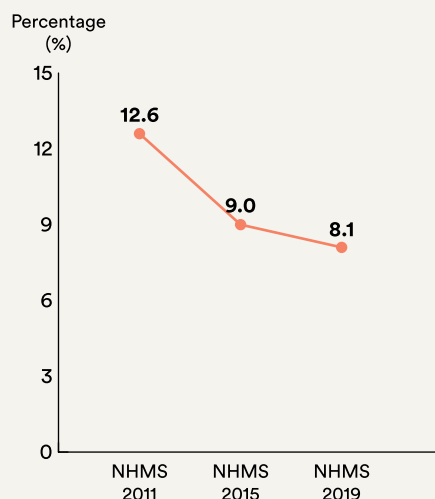
The well-publicised issue of long waiting time and overcrowding in public healthcare facilities (10-13) may also influence the population to use the outpatient healthcare services less, which might be a possible cause for reduced overall outpatient healthcare utilisation, even though various evidence is saying otherwise (14-16). Regardless, as shown in the findings, the number of visits to the public outpatient services is still twice more than its private sector counterpart. The populations’ dependency on public healthcare services is still apparent and remained constant over the years (Figure 4.3), especially among the socioeconomically underprivileged (2, 3).

## Recommendations

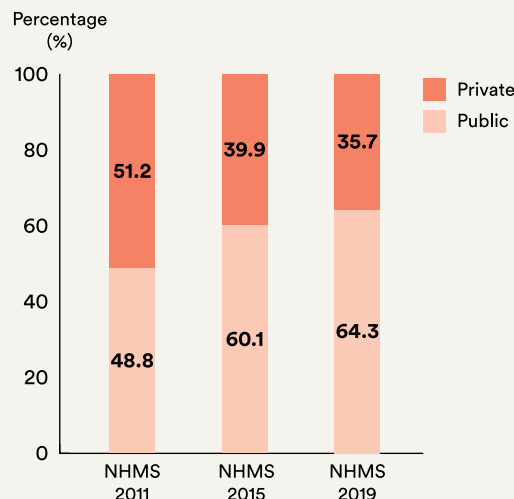
- Strengthening collaborations.
  - » Public-private partnerships need to leverage the resources in extensive private general practitioners' networks and private hospitals in order to ensure healthcare is accessible and affordable.
  - » Partnering with physicians and integrated networks of physicians' practices may further drive up services availability in outpatient settings.
- Improving the government health financing mechanism. One of the benefits of the PeKa B40 scheme is opening the access to private healthcare facilities to the B40 household income category. The benefit package could allow recipients to continue with the required treatment at the same private healthcare facility, as the current arrangement requires recipients to bear the treatment cost themselves if they continue treatment at a private healthcare facility. This will ensure care continuity and affordable healthcare for the patient.
- Incentives and benefits. It may be worth exploring into monetary incentives or tax relief for employers who provide employee healthcare benefits.
- Improving the services provision for the elderly. Increased utilisation of outpatient healthcare services by the older age groups (60 years and over) calls for a comprehensive and enhanced geriatric care. Since similar findings have been apparent from NHMS 2015, it is wise to provide elderly-friendly healthcare facilities for the ageing population in Malaysia.



**Figure 4.1:** Composition of outpatient healthcare services utilisation by sectors, NHMS 2019



**Figure 4.2:** Outpatient healthcare services utilisation, NHMS 2011- 2019



Source: Authors' analysis of NHMS 2011, NHMS 2015 and NHMS 2019.

**Figure 4.3:** Public-private composition for outpatient healthcare services utilisation, NHMS 2011-2019

#### References:

- World Health Organization. Universal Health Coverage and health financing [Internet]. Available from: [https://www.who.int/health\\_financing/universal\\_coverage\\_definition](https://www.who.int/health_financing/universal_coverage_definition). Accessed on January 30, 2020.
- Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) (2012). National Health and Morbidity Survey 2011 (NHMS 2011). Vol. III: Healthcare Demand and Out-of-Pocket Health Expenditure.
- Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) (2015). National Health and Morbidity Survey 2015 (NHMS 2015). Vol III: Healthcare Demand.
- From Inpatient to Outpatient: The Evolution of Healthcare Delivery [Internet]. Norwich University Online. Available from: <https://online.norwich.edu/academic-programs/masters/nursing/resources/infographics/from-inpatient-to-outpatient-the-evolution-of-health-care-delivery>. Accessed on January 30, 2020.
- Hargreaves, J, & Reiff, J. Shifting Care from Office to Outpatient Settings: Services are Increasingly Performed in Outpatient Settings with Higher Prices [Internet]. Health Care Cost Institute: April 2019. Available from: <https://www.healthcostinstitute.org/blog/entry/shifting-care-office-to-outpatient>. Accessed on January 30, 2020.
- Davis, K, & Russell, LB. (1972). The substitution of hospital outpatient care for inpatient care. *The Review of Economics and Statistics*, 109-120.
- Burnside, IM, & Burnside, IM. (1988). *Nursing and the aged: A self-care approach*. New York: McGraw-Hill.
- Lorig, KR, & Holman, HR. (2003). Self-management education: history, definition, outcomes, and mechanisms. *Annals of behavioral medicine*, 26(1), 1-7.
- Gross, T, & Specht, M. (2001). Awareness in context-aware information systems. In *Mensch & Computer 2001* (pp. 173-182).
- Saidi, S, Milnes, LJ, & Griffiths, J. (2018). Fatalism, faith and fear: A case study of self-care practice among adults with Type 2 diabetes in urban Malaysia. *Journal of clinical nursing*, 27(19-20), 3758-3767.
- Azizi, NA. Tuanku Jaafar Hospital Seremban not spared from overcrowding [Internet]. New Straits Times: Kuala Lumpur MYS; 2018 Aug 11. Available from: <https://www.nst.com.my/news/nation/2018/08/400339/tuanku-jaafar-hospital-seremban-not-spared-overcrowding>. Accessed on January 30, 2020.
- Aliman, KA. AG's Report 2018: Audit finds Malaysian hospitals understaffed, underfunded and overcrowded [Internet]. The Edge Markets: Kuala Lumpur MYS; 2019 Jul 15. Available from: <https://www.theedgemarkets.com/article/audit-finds-malaysian-hospitals-understaffed-underfunded-and-overcrowded>. Accessed on January 30, 2020.
- Pillay, DL, Ghazali, RJ, & Manaf, NH. (2011). Hospital waiting time: the forgotten premise of healthcare service delivery? *International Journal of Health Care Quality Assurance*, 24(7), 506-522.
- Sharifa Ezat, WP, Jamsiah, M, Malka, SA, Azimatun Noor, A, Tuti, N, & Noor Izzah, AS. (2010). Customers' satisfaction among urban and rural public health clinics in state of Selangor, Malaysia. *Malaysian Journal of Public Health Medicine*, 10(2), 52-67.
- Ganasegeran, K, Perianayagam, W, Abdul Manaf, R, Ali Jadoo, SA, & Al-Dubai, SAR. (2015). Patient satisfaction in Malaysia's busiest outpatient medical care. *The Scientific World Journal*, 2015.
- Hazilah, N, Manaf, A, & Phang, SN. (2009). Patient satisfaction as an indicator of service quality in Malaysian public hospitals. *The Asian Journal of Quality*, 10(1), 77-87.

## 4.4 Utilisation of Inpatient Healthcare

### Introduction

Numerous countries have moved certain medical services from inpatient to day care settings in recent years to improve efficiency and reduce waiting times (1). A patient with known morbidity(ies), if managed well at the primary healthcare level, usually does not require hospital admission and therefore, not utilise inpatient healthcare services.

A total of 6.9% of Malaysia population in 2011 and 7.6% in 2015 reported that they were admitted in the last 12 months prior to being interviewed. NHMS 2011 reported 74.4% of public inpatient healthcare utilisation and 25.6% of private inpatient healthcare utilisation. Whilst, the reported public-private utilisation in NHMS 2015 were 80.0% and 20.0% (2, 3).

### Operational definition

- Inpatient healthcare in this study was defined as the respondent's experience with admission or spent at least one night of stay at a treatment place for healthcare, in the last 12 months prior to interview.
- Respondents were considered as spending a night when the admission for healthcare crosses 12 am. This excluded a person that was admitted and discharged on the same day, admission to day-care centres, visit to an outpatient clinic, non-health related treatments, or person accompanying patients.
- Healthcare facilities include hospitals, clinics, hospices, maternity homes, emergency departments, and premises of traditional and complementary medicine practitioners.
- Healthcare providers include modern, traditional and complementary medicine practitioners (e.g. spiritual healer, Chinese herbalist, Ayurvedic practitioner and Islamic medicine practitioner).
- It covered respondents in all age groups.

### Objectives

#### General objective

To determine the prevalence and patterns of inpatient healthcare utilisation.

#### Specific objectives

To determine the:

1. prevalence of inpatient healthcare utilisation in the last 12 months by sociodemographic characteristics.
2. distribution of inpatient healthcare utilisation in the last 12 months by sector and sociodemographic characteristics.

3. distribution of number of inpatient healthcare facilities utilised among those who were admitted in the last 12 months.
4. annual mean number of admissions to inpatient healthcare facilities per capita by sector and sociodemographic characteristics.
5. mean number of admissions and length of stay in inpatient healthcare facilities among those who were admitted in the last 12 months by sector, location and state.
6. distribution of total days spent in inpatient healthcare facilities among those who were admitted in the last 12 months.
7. payer for inpatient healthcare utilisation among those who were admitted in the last 12 months.
8. overall population experience towards inpatient healthcare services among those who were admitted in the last 12 months.

### Findings

#### Prevalence of inpatient healthcare utilisation

A total of 16,688 (100.0%) respondents responded to this section. In the last 12 months prior to the interview, 5.2% (95% CI = 4.64, 5.73) of the population had inpatient healthcare (Table 4.19).

By state, Perlis had the highest utilisation which was 8.2% (95% CI = 5.64, 11.69), followed by Negeri Sembilan (7.5%; 95% CI = 5.13, 10.79) and Melaka (7.5%; 95% CI = 5.81, 9.68). In contrast, Kelantan had the lowest utilisation which was 3.2% (95% CI = 2.08, 4.89), followed by Johor (3.6%; 95% CI = 2.40, 5.41). The prevalence of utilisation among urban (5.2%; 95% CI = 4.53, 5.86) and rural (5.2%; 95% CI = 4.34, 6.15) population were similar. By sex, females (6.2%; 95% CI = 5.42, 7.06) had more inpatient healthcare than males (4.1%; 95% CI = 3.49, 4.86) (Table 4.19).

By age group, those aged 75 years and over (11.1%; 95% CI = 7.82, 15.55) had the highest inpatient healthcare utilisation, followed by those in the age groups of 65-69 years (9.1%; 95% CI = 6.39, 12.89) and 25-29 years (7.6%; 95% CI = 5.60, 10.31). Those aged 5-9 years old (1.9%; 95% CI = 1.30, 2.81) had the lowest utilisation. By ethnic group, Indian population utilised inpatient healthcare the most (7.1%; 95% CI = 4.86, 10.24), followed by Bumiputera Sabah (6.9%; 95% CI = 4.99, 9.36) and Bumiputera Sarawak (6.1%; 95% CI = 4.58, 8.09) (Table 4.19).

The prevalence of Malaysians that utilised inpatient healthcare was 5.5% (95% CI = 4.93, 6.06). Utilisation among the widow(er)/divorcee population (8.5%; 95% CI = 6.61, 10.96) was higher than those who were married (6.8%; 95% CI = 6.00, 7.74) and single (3.0%; 95% CI = 2.30, 3.81) (**Table 4.19**).

By education level, those with tertiary education (6.5%; 95% CI = 5.21, 8.07) utilised more inpatient healthcare, followed by those with no formal education (5.4%; 95% CI = 4.22, 6.79) and secondary education (5.3%; 95% CI = 4.58, 6.23). From the occupation point of view, unpaid workers or homemakers (9.9%; 95% CI = 7.89, 12.29) utilised inpatient healthcare the most, followed by retirees (8.3%; 95% CI = 5.72, 11.99) and those who were not working (7.3%; 95% CI = 6.10, 8.74) (**Table 4.19**).

By household income group, the utilisation was highest among those in the household income group of RM 8,000 – RM 8,999 (6.9%; 95% CI = 4.52, 10.42) and lowest among those in the household income group of RM 3,000 – RM 3,999 (3.9%; 95% CI = 2.83, 5.44). Those in the household income quintile of Q5 (6.0%; 95% CI = 4.82, 7.50) utilised inpatient healthcare the highest, whereas those in the household income quintile of Q3 (3.8%; 95% CI = 2.85, 4.94) had the lowest utilisation of inpatient healthcare. Those who were in the household income category of T20 (7.0%; 95% CI = 4.98, 9.85) were more likely to utilise inpatient healthcare as compared with those who were in the household income category of M40 (5.8%; 95% CI = 4.71, 7.14) and B40 (4.7%; 95% CI = 4.13, 5.35) (**Table 4.19**).

### Inpatient healthcare utilisation by sector

The utilisation of inpatient healthcare services in the public healthcare facilities were more (75.3%; 95% CI = 69.60, 80.31) than in the private healthcare facilities (25.5%; 95% CI = 20.46, 31.24) (**Table 4.20**).

Highest utilisation of public inpatient healthcare services were in Kelantan (94.8%; 95% CI = 81.27, 98.69), followed by Perlis (92.5%; 95% CI = 84.51, 96.56) and Sabah (90.2% CI = 76.18, 96.33), while the lowest were in Wilayah Persekutuan Kuala Lumpur (55.3%; 95% CI = 29.12, 78.78) and Pulau Pinang (56.9%; 95% CI = 29.77, 80.43).

Rural population (90.6%; 95% CI = 82.64, 95.14) utilised more public healthcare facilities than urban population (70.2%; 95% CI = 63.19, 76.36) for inpatient healthcare. Males (78.9%; 95% CI = 71.85, 84.54) had slightly more public inpatient healthcare services as compared with females (73.0%; 95% CI = 65.29, 79.53). By age group, public inpatient healthcare services were utilised by those in the 70-74 years old (98.3%; 95% CI = 90.20, 99.74) the most, followed by those from the age group of 75 years and over (91.0%; 95% CI = 79.79, 96.26) (**Table 4.20**).

Urban population (30.6%; 95% CI = 24.37, 37.61) utilised more private hospitals than rural population (10.3%; 95% CI = 5.64, 18.15) for inpatient healthcare. Females (27.0%; 95% CI = 20.47, 34.71) utilised more private inpatient healthcare as compared with males (23.2%; 95% CI = 17.39, 30.20). By age group, private inpatient healthcare was utilised most by those aged 35-39 years old (48.9%; 95% CI = 31.94, 66.06), followed by those aged 45-49 years old (41.6%; 95% CI = 22.44, 63.64) (**Table 4.20**).

In terms of ethnicity, Bumiputera Sabah utilised public inpatient healthcare the most at 97.2% (95% CI = 84.04, 99.57), followed by Bumiputera Sarawak (91.6%; 95% CI = 60.01, 98.76). In contrast, the Chinese population utilised the private inpatient healthcare the most at 54.1% (95% CI = 38.98, 68.56) (**Table 4.20**).

By citizenship, Malaysians (76.4%; 95% CI = 70.72, 81.23) utilised public inpatient healthcare the most. For marital status, utilisation of public inpatient healthcare services was the highest among the widow(er)/divorcee population (85.7%; 95% CI = 75.02, 92.31). 28.4% (95% CI = 21.65, 36.18) of those who were married opted for private inpatient healthcare instead. Those with primary education (88.3%; 95% CI = 79.23, 93.70) utilised public inpatient healthcare the highest, whereas those with tertiary education utilised public inpatient healthcare the lowest (54.4%; 95% CI = 42.06, 66.26). Private inpatient healthcare was most utilised by those with tertiary education (45.6%; 95% CI = 33.75, 57.95) (**Table 4.20**).

By occupation, those who were not working (88.8%; 95% CI = 79.86, 94.03) utilised public inpatient healthcare services the most, followed by retirees (74.8%; 95% CI = 48.96, 90.20). Private employees used the public inpatient healthcare (65.5%; 95% CI = 53.51, 75.75) the least, while using private inpatient healthcare (34.5%; 95% CI = 24.25, 46.49) the most. Those who were not working utilised private inpatient healthcare the least (12.7%; 95% CI = 7.20, 21.38) (**Table 4.20**).

Public inpatient healthcare was utilised most by those in the household income group of RM 1,000 – RM 1,999 (96.0%; 95% CI = 90.72, 98.30), followed by those in the household income group of less than RM 1,000 (86.0%; 95% CI = 72.99, 93.36). In contrast, those in the household income group of RM 9,000 – RM 9,999 (78.5%; 95% CI = 34.17, 96.25) utilised private inpatient healthcare the most, followed by those in the household income group of RM 10,000 and above (73.6%; 95% CI = 53.00, 87.39). Similar pattern was also seen in the household income quintile; those in the household income quintile of Q1 utilised public inpatient healthcare (88.5%; 95% CI = 77.16, 94.57) the most, while those in the household income quintile of Q5 utilised private inpatient healthcare (53.7%; 95% CI = 42.36, 64.65) the most (**Table 4.20**).

By household income category, B40 group utilised public inpatient healthcare (85.6%; 95% CI = 78.87, 90.44) the most, while T20 group utilised private inpatient healthcare (67.1%; 95% CI = 48.79, 81.36) the most (**Table 4.20**).

#### Number of inpatient healthcare facilities utilised

Among those who utilised inpatient healthcare in the last 12 months, 96.3% (95% CI = 94.38, 97.61) visited only one healthcare facility, while 3.7% (95% CI = 2.39, 5.62) visited two or more facilities (**Table 4.21**).

#### Annual mean number of admissions to inpatient healthcare facilities (per capita)

The annual mean number of admissions per capita for the country was 0.07, with public healthcare facilities contributing 0.05 and private healthcare facilities contributing 0.02 (**Table 4.22**). The composition of utilisation of inpatient healthcare services showed 75.5% in public sector and 24.5% in private sector (**Figure 4.4**).

#### Mean number of admissions and average length of stay in inpatient healthcare facilities

Among those who utilised inpatient healthcare in the last 12 months, the mean number of admissions in the last 12 months was 1.31 times (SD = 1.20, median = 1.00, IQR = 1.00 – 1.00), with no considerable difference between public and private healthcare facilities (**Table 4.23**).

The average length of stay during an inpatient healthcare was 6.86 days (SD = 19.91, median = 3.00, IQR = 2.00 – 6.00), with very minimal difference between public and private healthcare facilities (6.74 days in public healthcare facility, 6.99 days in private healthcare facility) (**Table 4.23**).

#### Total days spent in inpatient healthcare facilities

About two thirds of the admissions were four days or less, in which two days of admission were the most (20.9%; 95% CI = 16.92, 25.53), followed by three days of admission (19.3%; 95% CI = 15.62, 23.64) (**Table 4.24**).

#### Type of treatments received

Majority of the inpatient healthcare services utilisation were for modern treatment (98.7%; 95% CI = 96.08, 99.56). There were five admissions (three in public hospitals and two in private hospitals) under the Traditional and Complementary Medicine (T&CM) services (1.1%; 95% CI = 0.29, 3.97).

#### Payer for inpatient healthcare utilisation

Among those who utilised inpatient healthcare services, the majority paid for the services using money sourced from self/family/household (62.6%; 95% CI = 57.44, 67.47). Other sources were Government GL/government specific health fund such as mySalam (19.0%; 95% CI = 15.59, 22.90), and fee exemptions, e.g. Orang Asli, elderly, students and person with disabilities (11.0%; 95% CI = 8.54, 14.08). It is also worth noting that payment via personal health insurance was only 11.9% (95% CI = 8.76, 15.92) for inpatient healthcare (**Table 4.25**).

#### Overall population experience towards inpatient healthcare services

Overall, 85.5% (95% CI = 81.71, 88.62) of the population rated the inpatient healthcare services received as excellent or good (**Table 4.26**).

## Discussions

Prevalence of inpatient healthcare utilisation was highest in Perlis, Negeri Sembilan and Melaka, among the age group of 75 years and over, Indian ethnicity, widow(ers) or divorcees, unpaid workers or homemakers and those with tertiary education. Kelantan and Johor utilised the least inpatient healthcare.

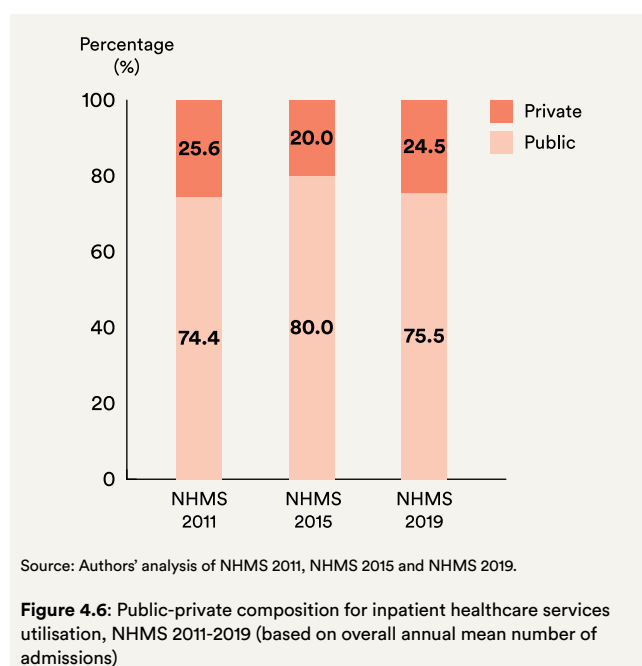
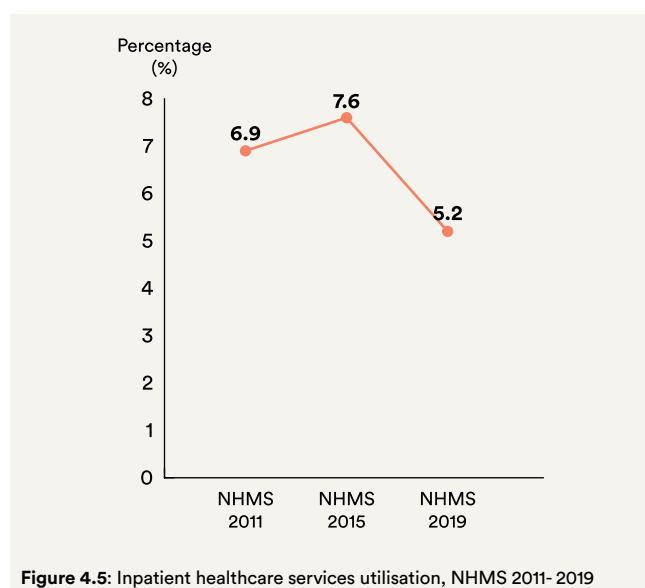
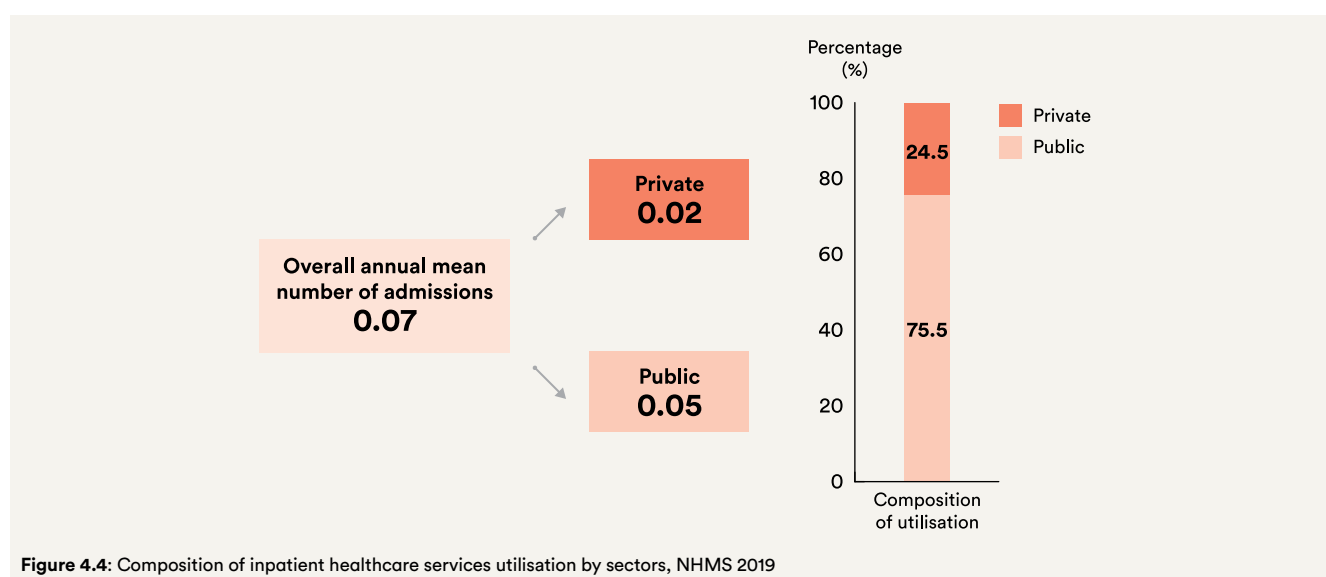
Majority (94.8%) of the population had never utilised inpatient healthcare in the 12 months prior to the interview. From the 5.2% that used it, 96.3% among them visited only one healthcare facility, either a public or private healthcare facility. The inpatient services utilisation trend between 2011 and 2019 is as depicted in **Figure 4.5** (2, 3).

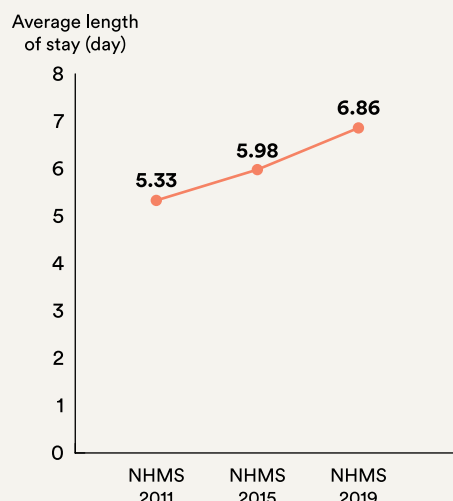
The public-private utilisation in NHMS 2019 were 75.5% and 24.5%. In comparison, findings from NHMS 2015 showed that 80.0% of public inpatient healthcare utilisation and 20.0% of private inpatient healthcare utilisation. Whilst, the public-private utilisation in NHMS 2011 were 74.4% and 25.6% (**Figure 4.6**). This public-private distribution over the years is consistent with MOH's reported administrative data (4-13).

All states utilised more inpatient services in the public healthcare facilities as compared with private healthcare facilities. However, utilisation for private inpatient healthcare was much higher in Wilayah Persekutuan Kuala Lumpur, Selangor and Pulau Pinang as compared with the other states. This is also consistent with the distribution of private healthcare facilities in the country (14). The reported average days spent during admissions was noted to be steadily increasing (**Figure 4.7**) (2, 3), but the 2019 finding (6.9) is still lower than the reported average for OECD countries (7.7) (1). It was also noted that the average length of stay was longer in private inpatient healthcare facilities than in public inpatient healthcare facilities.

## Recommendations

- Looking at the patient load managed by the public inpatient healthcare, our population's need for public inpatient healthcare is still greater as compared with private services. Therefore, the planning of resource management in terms of personnel availability, expertise distribution, funding, condition of existing equipment and infrastructure are very important matters to keep tabs on in ensuring inpatient healthcare to be accessible by all while at the same time, leaving no one behind. There is also a need to anticipate the sustainability of the current government's heavily subsidised funding mechanism if the need continues to increase.





**Figure 4.7:** Average length of stay for inpatient healthcare, NHMS 2011-2019

#### References:

1. OECD (2019), *Health at a Glance 2019: OECD Indicators*, OECD Publishing, Paris. Available from: <http://doi.org/10.1787/4dd50c09-en>. Accessed on January 30, 2020.
2. Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) 2011. National Health and Morbidity Survey 2011 (NHMS 2011). Vol. III: Healthcare Demand and Out-Of-Pocket Health Expenditure. 2012.
3. Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) 2015. National Health and Morbidity Survey 2015 (NHMS 2015). Vol. III: Healthcare Demand. 2015.
4. Health Facts 2008 [Internet]. Health Informatics Centre Planning and Development Division Ministry of Health Malaysia. 2009. Available from: [http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document\\_2e8a4325-a0188549-d5315d00-e53429e0/2008.pdf](http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document_2e8a4325-a0188549-d5315d00-e53429e0/2008.pdf). Accessed on January 30, 2020.
5. Health Facts 2009 [Internet]. Health Informatics Centre Planning and Development Division Ministry of Health Malaysia. 2010. Available from: [http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document\\_2e8aa951-a0188549-d5315d00-a7dd3fc0/2009.pdf](http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document_2e8aa951-a0188549-d5315d00-a7dd3fc0/2009.pdf). Accessed on January 30, 2020.
6. Health Facts 2010 [Internet]. Health Informatics Centre Planning and Development Division Ministry of Health Malaysia. 2011. Available from: [http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document\\_2e8b27a9-a0188549-d5315d00-79cf9f30/2010.pdf](http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document_2e8b27a9-a0188549-d5315d00-79cf9f30/2010.pdf). Accessed on January 30, 2020.
7. Health Facts 2012 [Internet]. Health Informatics Centre Planning and Development Division Ministry of Health Malaysia. 2012. Available from: [http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document\\_2e8d12ef-a0188549-d5315d00-1c23c0ca/Health\\_Facts\\_2012.pdf](http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document_2e8d12ef-a0188549-d5315d00-1c23c0ca/Health_Facts_2012.pdf). Accessed on January 30, 2020.
8. Health Facts 2013 [Internet]. Health Informatics Centre Planning and Development Division Ministry of Health Malaysia. 2013. Available from: [http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document\\_2e8ded32-a0188549-d5315d00-b8e72dbe/HEALTH\\_FACTS\\_2013.pdf](http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document_2e8ded32-a0188549-d5315d00-b8e72dbe/HEALTH_FACTS_2013.pdf). Accessed on January 30, 2020.
9. Health Facts 2014 [Internet]. Health Informatics Centre Planning and Development Division Ministry of Health Malaysia. 2014. Available from: [http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document\\_2e8e997f-a0188549-d5315d00-2d9464b7/HEALTH\\_FACTS\\_2014.pdf](http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document_2e8e997f-a0188549-d5315d00-2d9464b7/HEALTH_FACTS_2014.pdf). Accessed on January 30, 2020.
10. Health Facts 2015 [Internet]. Health Informatics Centre Planning and Development Division Ministry of Health Malaysia. 2015. Available from: [http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document\\_2e8efe25-a0188549-d5315d00-e9ca9560/KKM\\_HEALTH\\_FACTS\\_2015.pdf](http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document_2e8efe25-a0188549-d5315d00-e9ca9560/KKM_HEALTH_FACTS_2015.pdf). Accessed on January 30, 2020.
11. Health Facts 2016 [Internet]. Health Informatics Centre Planning and Development Division Ministry of Health Malaysia. 2016. Available from: [http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document\\_4ad54b25-a0188549-187fd50-1006a4e5/Health\\_Facts\\_2016.pdf](http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document_4ad54b25-a0188549-187fd50-1006a4e5/Health_Facts_2016.pdf). Accessed on January 30, 2020.
12. Health Facts 2017 [Internet]. Health Informatics Centre Planning and Development Division Ministry of Health Malaysia. 2017. Available from: [http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document\\_77d75374-a0188549-16992bd0-76fb713b/HEALTH\\_FACTS\\_2017.pdf](http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document_77d75374-a0188549-16992bd0-76fb713b/HEALTH_FACTS_2017.pdf). Accessed on January 30, 2020.
13. Health Facts 2018 [Internet]. Health Informatics Centre Planning and Development Division Ministry of Health Malaysia. 2018. Available from: [http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document\\_d07e478b-a0188549-ebcfa200-52570141/hfa-2018.pdf](http://vlib.moh.gov.my/cms/documentstorage/com.tms.cms.document.Document_d07e478b-a0188549-ebcfa200-52570141/hfa-2018.pdf). Accessed on January 30, 2020.
14. Health Informatics Centre. HIMS Taburan Fasilitas Jagaan Kesihatan Swasta (Hospital & Pusat Bersalin). Putrajaya MYS; Ministry of Health Malaysia 2015.

## 4.5 Utilisation of Domiciliary Care

### Introduction

Care provided at home or close to home constitute one of the eight health goals in the healthcare system in Malaysia which aim to empower people with the knowledge to engage healthcare services from their home (1). Domiciliary care services enable healthcare services to be delivered to the patient's doorstep ensuring ease of access to healthcare at the comfort of their home.

### Operational definition

- Domiciliary care utilisation was defined as the experience of receiving healthcare at home, which included modern, traditional and complementary treatment, in the last 12 months prior to interview.
- It included respondents from all age groups.

### Objectives

#### General objective

To determine the prevalence and patterns of domiciliary care utilisation.

#### Specific objectives

To determine the:

1. prevalence of domiciliary care utilisation in the last 12 months by sociodemographic characteristics.
2. perceived need for domiciliary care services in the last 12 months by sociodemographic characteristics.
3. distribution of domiciliary care providers in the last 12 months.
4. mean utilisation of domiciliary care among those who received care in the last 12 months by sociodemographic characteristics.
5. type of services received among those who utilised domiciliary care in the last 12 months.
6. payer for domiciliary care utilisation among those who received care in the last 12 months.
7. overall population experience towards domiciliary care services among those who received care in the last 12 months.

## Findings

### Prevalence of domiciliary care utilisation

A total of 16,688 (100.0%) respondents responded to this section. Overall, 1.7% (95% CI = 1.32, 2.17) of the population received domiciliary care services in the last 12 months prior to the interview (**Table 4.27**).

The state of Sarawak utilised domiciliary care services the most at 5.8% (95% CI = 3.26, 10.14), followed by Wilayah Persekutuan Putrajaya at 3.9% (95% CI = 2.40, 6.27). Rural population (1.9%; 95% CI = 1.36, 2.69) utilised more domiciliary care than urban population (1.6%; 95% CI = 1.17, 2.23). Females (2.2%; 95% CI = 1.73, 2.90) who received domiciliary care services doubled that of males (1.1%; 95% CI = 0.80, 1.64) (**Table 4.27**).

Notably, children aged 0-4 years old (4.2%; 95% CI = 2.88, 6.13) received domiciliary care the most, followed by adults aged 30-34 years old (3.2%; 95% CI = 2.23, 4.64). By marital status and occupation, those who were married (2.0%; 95% CI = 1.54, 2.61) and unpaid workers or homemakers (3.0%; 95% CI = 2.16, 4.26) had the highest utilisation of domiciliary care services as compared with others (**Table 4.27**).

Those in the household income quintile of Q1 (1.4%; 95% CI = 0.86, 2.13) had the lowest utilisation, while those in household income quintile of Q4 (2.0%; 95% CI = 1.20, 3.36) received domiciliary care services the most (**Table 4.27**).

### Perceived need for domiciliary care services

Overall, 23.5% (95% CI = 21.49, 25.69) of the population perceived the need for domiciliary care services in the last 12 months prior to the interview (**Table 4.28**).

Population in Sarawak (48.6%; 95% CI = 41.53, 55.77) had the highest percentage who perceived the need for domiciliary care services, followed by Terengganu at 42.1% (95% CI = 34.23, 50.30). Population from rural areas (28.0%; 95% CI = 23.80, 32.53) perceived the need for domiciliary care more than those from urban areas (22.0%; 95% CI = 19.75, 24.50) (**Table 4.28**).

The perceived need for domiciliary care among the males (23.7%; 95% CI = 21.28, 26.26) and females (23.4%; 95% CI = 21.20, 25.68) were comparable. Population aged 65-69 years old (28.3%; 95% CI = 23.04, 34.22) perceived the highest need for domiciliary care services while those aged 55-59 years old (18.2%; 95% CI = 14.74, 22.27) perceived the lowest need for domiciliary care services (**Table 4.28**).

Bumiputera Sarawak (53.7%; 95% CI = 45.26, 62.02) perceived the highest need for domiciliary care services, while the Chinese population (17.7%; 95% CI = 13.79, 22.50) perceived the need for domiciliary care services the least. Perceived need for domiciliary care services were slightly higher among those who were self-employed (26.5%; 95% CI = 23.18, 30.09) and lower among government employees (21.0%; 95% CI = 17.55, 24.99) as compared with other occupation groups (Table 4.28).

By household income quintile, those in Q1 (26.3%; 95% CI = 23.95, 29.99) perceived the highest need for domiciliary care services, while Q5 population (21.4%; 95% CI = 17.58, 25.75) perceived the lowest need for domiciliary care services in the last 12 months prior to the interview (Table 4.28).

### Distribution of domiciliary care providers

Among the domiciliary care providers in the last 12 months, 88.2% (95% CI = 82.14, 92.37) were from the public sector (Table 4.29).

### Mean utilisation of domiciliary care

Overall, the mean usage of domiciliary care among those who received domiciliary care in the last 12 months was 3.24 visits (SD = 3.55, median = 2.00, IQR = 0.00 – 24.00) (Table 4.30).

### Type of services received

The most common type of care delivered during the domiciliary care in the last 12 months were child healthcare (43.8; 95% CI = 33.78, 54.33), followed by antenatal or postnatal care (40.7%; 95% CI = 31.53, 50.58), health check (33.2%; 95% CI = 25.65, 41.69) and care related to medication (16.8%; 95% CI = 11.08, 24.72) (Table 4.31).

### Payer for domiciliary care utilisation

Majority of domiciliary care recipients were given fee exemption (51.2%; 95% CI = 42.42, 59.99), while 27.1% (95% CI = 20.25, 35.27) reported using money sourced from self/family/household members to pay for the care received (Table 4.32).

### Overall population experience towards domiciliary care services

Majority of the population who received domiciliary care services in the last 12 months prior to the interview had good (65.7%; 95% CI = 58.06, 72.53) or excellent (24.7%; 95% CI = 18.45, 32.18) experience with the services provided (Table 4.33).

## Discussions

The findings of this study show that the provision of domiciliary care services in Malaysia is still very low. Utilisation of domiciliary care services were highest among those who were married, females, unpaid workers or homemakers and children aged 0-4 years old. Those from reproductive age groups (25-39 years old) were also among the highest domiciliary care users. The most provided care in the last 12 months were child healthcare and antenatal or postnatal care. This finding corresponds to the provision of domiciliary care through the mother and child healthcare programme which is an initiative of the Family Health Development Division under the Ministry of Health Malaysia (2). Therefore, scopes of domiciliary care provided by healthcare agencies or individuals could be broadened.

Further investigation to explore the reasons the population perceive the need for domiciliary care would be helpful to steer the healthcare providers on the right path in provision of appropriate services required by the population (3).

Populations with lower socioeconomic status received the least number of domiciliary care services in the last 12 months but they were the population who perceived the highest need for domiciliary care services. This could be attributed to the fact that certain subgroups in the population needed the service more than others (4) which were consistent with the findings from this study where populations residing in rural areas perceived a higher need for domiciliary care. The finding suggests that there might be difficulty for the population in rural areas to access healthcare facilities due to logistic factors and distance from their home (5).

Malaysia is expected to achieve the status of an ageing nation by 2020 when the population aged 65 and older reaches 7.2% (6). As the population ages, the disablement process kicks in resulting in more people with chronic diseases and difficulty to commute (7). Chronic diseases are the major cause of death and disability in Malaysia (8). To cater to their healthcare needs, domiciliary care is crucial to ensure that no individual is left out when it comes to accessibility to healthcare in the country.

The public sector was the main provider of domiciliary care services in the last 12 months prior to the interview which suggests the need for collaborative efforts among the public and private sectors as well as non-government organisations to share resources to increase the provision of domiciliary care services to those who need them. Such collaborative efforts would deem useful in lessening the work burden of the public sector to enable efficient service in other areas as well (9).

With the advancement in health technology and innovation, the concept of healthcare at home is feasible and could be a reality with proper planning and implementation.

## Recommendations

- Efforts to increase public awareness on the availability of domiciliary care services and methods of engagement of such services would empower the population in need of such services with the knowledge to utilise domiciliary care services whenever they need it. An easier and more comprehensive way of domiciliary care service engagement such as a 24-hours call centre, or a mobile application would be helpful to ease access to domiciliary care services by the population.
- Private sectors and non-government organisations should be encouraged to provide domiciliary care services through collaborative efforts with ministries and the public sector in sharing their resources and responsibilities. Broadening the scope of care and services provided during domiciliary care according to public needs would improve the relevance of such services.
- The provision of domiciliary care should meet the needs of care recipients. As such, well-thought national programs specifically for domiciliary care services that include monitoring and evaluation mechanisms could be implemented to ensure the dedication from the workforce and continuity of domiciliary care services.

## References:

1. Ministry of Health Malaysia. (n.d). Country Health Plan: 10<sup>th</sup> Malaysia Plan (2011-2015).
2. Family Health Development Division, Ministry of Health Malaysia. (2015). Manual Perkhidmatan Kesihatan Ibu & Anak bagi Anggota Kejururawatan di Perkhidmatan Kesihatan Awam.
3. Datuk Dr Noor Hisham Abdullah (as told to Jennifer Jacobs), The Edge Malaysia. The uberisation of healthcare in Malaysia [Internet]. March 5, 2019. Available from: <https://www.theedgemarkets.com/article/uberisation-healthcare-malaysia>. Accessed on December 11, 2019.
4. Landers, S, Madigan, E, Leff, B, Rosati, RJ, McCann, BA, Hornbake, R, et al. (2016). The future of home health care: a strategic framework for optimizing value. *Home health care management & practice*, 28(4), 262-278.
5. Levesque, JF, Harris, MF, & Russell, G. (2013). Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *International journal for equity in health*, 12(1), 18.
6. The Office of Chief Statistician Malaysia, Department of Statistics, Malaysia. Press Release Population Projection (Revised), Malaysia, 2010-2040 [Internet]. November 4, 2016. Available from: [https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=118&bul\\_id=Y3kwU2tSN-VFDOWp1YmtZYnhUeVBEdz09&menu\\_id=L0pheU43NWJwRWVSZkl-WdzQ4TlhUUT09](https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=118&bul_id=Y3kwU2tSN-VFDOWp1YmtZYnhUeVBEdz09&menu_id=L0pheU43NWJwRWVSZkl-WdzQ4TlhUUT09). Accessed on December 18, 2019.
7. Verbrugge, LM & Jette, AM. (1994). The Disablement Process. *Social Science & Medicine*, 38(1), 1-14.
8. Ramli, AS, & Taher, SW (2008). Managing chronic diseases in the Malaysian primary health care—a need for change. *Malaysian Family Physician: The Official Journal of the Academy of Family Physicians of Malaysia*, 3(1), 7.
9. Adeleye, OA, & Ofili, AN. (2010). Strengthening Intersectoral Collaboration for Primary Health Care in Developing Countries: Can The Health Sector Play Broader Roles? *Journal of Environmental and Public Health*, 2010, 272896.

## 4.6 Medical Check-Up (Health Screening)

### Introduction

Medical check-up (health screening) is an opportunity to deliver clinical preventive services by healthcare providers or persons with no signs and symptoms of illness as part of a routine healthcare process (1). However, as participation is voluntary, the act and intention of seeking medical assessment was the main difference between individual medical check-up and mass screening activities (2). The determinants of medical check-up use may vary, which may be the result of service availability or socio-cultural openness towards the services (1). For Malaysia, the practice of seeking medical check-up services was encouraged by the government with the introduction of annual income tax exemptions for doing so (3). NHMS 2019 was the second episode of data collection on medical check-up use among the population in Malaysia, with some improvements made on the previous set of questions in NHMS 2011.

### Operational definition

- Medical check-up referred to health screening which included, but not limited to, blood tests, urine tests and x-rays.
- The recall period was within 12 months prior to the interview.
- This section was only applicable to respondents aged 18 years and over.

### Objectives

To determine the:

1. prevalence of getting medical check-up (health screening) in the last 12 months, by sociodemographic characteristics.
2. type of facility where medical check-up (health screening) was received among those who went for medical check-up in the last 12 months.

### Findings

A total of 11,674 (100.0%) respondents responded in this section. It was found that 33.3% (95% CI = 31.48, 35.13) of the population reported that they had a medical check-up in the last 12 months prior to the interview (**Table 4.34**).

It was noted that Johor (21.0%; 95% CI = 16.63, 26.15) and Kelantan (19.3%; 95% CI = 16.37, 22.55) both had lower prevalence of medical check-ups as compared with other states. More females (36.0%; 95% CI = 33.75, 38.24) had medical check-ups than males (30.6%; 95% CI = 28.34, 32.94). By age group, the percentage of population having medical check-ups was the highest among those aged 65-69 years old (59.6%; 95% CI = 53.34, 65.55) and the lowest among those aged 18-19 years old (12.9%; 95% CI = 8.88, 18.44) (**Table 4.34**).

By ethnicity, Others ethnic group (21.7%; 95% CI = 17.15, 27.10) had lesser medical check-ups as compared with the rest of ethnic groups, except for Bumiputera Sabah (31.4%; 95% CI = 26.10, 37.24). By citizenship, the prevalence was found highest among Malaysians (34.8%; 95% CI = 32.98, 36.62), followed by non-Malaysians (22.5%; 95% CI = 17.99, 27.84). Across marital status groups, the prevalence of population had medical check-ups was found highest among the widow(er)/divorcee population (47.5%; 95% CI = 43.05, 52.00), followed by those who were married (37.8%; 95% CI = 35.63, 40.05) and shown lowest among those who were single (19.6%; 95% CI = 17.26, 22.23) (**Table 4.34**).

By occupation, retirees (53.9%; 95% CI = 46.37, 61.21) had higher prevalence of medical check-ups as compared with other occupations, except government employees (45.4%; 95% CI = 41.03, 49.86) and those who were not working (44.0%; 95% CI = 40.36, 47.67). Population in the household income group of RM 9,000 – RM 9,999 (44.1%; 95% CI = 31.75, 57.18) showed highest prevalence had medical check-ups, followed by household income group of RM 10,000 and above (41.3%; 95% CI = 33.81, 49.23), and those with income less than RM 1,000 (39.1%; 95% CI = 35.10, 43.22). Across household income quintiles and household income categories, those in Q1 (37.6%; 95% CI = 34.07, 41.29) had medical check-ups more as compared with those in Q3 (30.3% 95% CI = 27.20, 33.54) and T20 (42.6%; 95% CI = 35.84, 49.66) had medical check-ups more as compared with other household income categories (**Table 4.34**).

About two-thirds (64.6%; 95% CI = 61.12, 67.97) of the population had medical check-ups in public hospitals or clinics and about one-third (34.0%; 95% CI = 30.70, 37.45) had medical check-ups in private hospitals or clinics. 2.7% (95% CI = 2.03, 3.66) obtained the medical check-ups in community pharmacies, and 1.4% (95% CI = 0.99, 2.12) went to other facilities to perform their medical check-ups (**Table 4.35**).

### Discussions

Findings show that 33.3% of the population reported that they had a medical check-up. There was a decrease in trend as compared with NHMS 2011, where 37.8% of the population reported that they had medical check-ups in the last 12 months (4).

In NHMS 2019, more females had medical check-ups as compared with males. This remains unchanged from previous NHMS in 2011, where the prevalence was higher among females (40.7%) as compared with males (34.9%) (4). A population-based study conducted in Canada reported the same findings, where men had a lower screening uptake than women (5), which may explain why men have poorer health compared with women (6).

Respondents that underwent medical check-ups within the last 12 months were mostly the elderly and retirees; this indicates that the uptake of early health screenings among the youths could be enhanced. Since Malaysia is known to have an epidemic of non-communicable diseases (which by nature is a chronic progression of ailments and unfavourable habitual practice or lifestyle), it is of utmost importance for the disease to be detected and managed earlier (7-10). A local study revealed that misconception about the importance of health screening for disease prevention; perceived low risk of disease, and cost of screening deterred younger men from health screening (11).

Findings show uptake of medical check-ups was higher among T20 household income category, this is similar to the findings from other studies that show socio-economic inequalities in uptake of medical check-ups or health screening activities (12-14). The finding highlights the importance of the current healthcare protection scheme, PeKa B40 programme in health screening activities. PeKa B40 is a government-initiated health financing scheme, on top of the existing subsidised health financing on the public healthcare sector, which is targeted on the B40 household income category. The scheme had registered more than 200,000 population from the B40 category (as of December 2019) since it was first launched in March 2019 (15-17).

## Recommendations

- Findings from two NHMS studies gives us a bigger picture on the population's behaviour towards medical check-up activities. The next iteration of the Healthcare Demand module in NHMS could study the populations' reasons and drive to acquire the services, along with its perceived barriers in order to get a more comprehensive understanding of the population's health seeking behaviour.
- At the moment, the responsibility and activity load for health screenings still relied heavily on the public healthcare sector. Other than the PeKa B40 initiative, more alternative platforms should be explored to balance the burden between the public and private sectors, because public health is the responsibility of everyone.
- With regards to awareness, health screening via the medical check-ups should be emphasised in those younger than 40 years old, for early secondary prevention and the early management of any detected health issues.

## References:

1. Culica, D, Rohrer, J, Ward, M, Hilsenrath, P, & Pomrehn, P. (2002). Medical checkups: who does not get them? *American Journal of Public Health*, 92(1), 88-91.
2. Bayliss, R. I. (1981). The medical check-up. *British medical journal (Clinical research ed.)*, 283(6292), 631.
3. Official Portal: Inland Revenue Board of Malaysia [Internet]. Available from: [http://www.hasil.gov.my/bt\\_goindex.php?bt\\_kump=5&bt\\_skum=1&bt\\_posi=3&bt\\_unit=1&bt\\_sequ=1](http://www.hasil.gov.my/bt_goindex.php?bt_kump=5&bt_skum=1&bt_posi=3&bt_unit=1&bt_sequ=1). Accessed on December 11, 2019.
4. Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) (2012). National Health and Morbidity Survey 2011 (NHMS 2011). Vol. III: Healthcare Demand and Out-of-Pocket Health Expenditure.
5. Borkhoff, CM, Saskin, R, Rabeneck, L, Baxter, NN, Liu, Y, Tinmouth, J, & Paszat, LF. (2013). Disparities in receipt of screening tests for cancer, diabetes and high cholesterol in Ontario, Canada: a population-based study using area-based methods. *Canadian Journal of Public Health*, 104(4), e284-e290.
6. Ng, CJ, Teo, CH, Ho, CCK, Tan, WP, & Tan, HM. (2014). The status of men's health in Asia. *Preventive medicine*, 67, 295-302.
7. Ng, M, Fleming, T, Robinson, M, Thomson, B, Graetz, N, Margono, C, et al. (2014). Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a Systematic Analysis for the Global Burden of Disease Study 2013. *The Lancet*, 384(9945), 766-781.
8. World Health Organization (2018). Noncommunicable Diseases Country Profiles 2018. Geneva CHE: WHO. ISBN 978-92-4-151462-0.
9. Lum, M. Malaysia is Asia's fattest country [Internet]. Kuala Lumpur MYS: Star2.com; 2018 Aug 14. Available from: <https://www.star2.com/health/2018/08/14/fat-state-of-affairs/>. Accessed on December 11, 2019.
10. Chan, YY, Lim, KK, Lim, KH, Teh, CH, Kee, CC, Cheong, SM, et al. (2017). Physical activity and overweight/obesity among Malaysian adults: findings from the 2015 National Health and morbidity survey (NHMS). *BMC Public Health*, 17(1), 733.
11. Hoebe, J, Rattay, P, Prütz, F, Rommel, A, & Lampert, T. (2016). Socioeconomic Status and Use of Outpatient Medical Care: The Case of Germany. *PloS one*, 11(5), e0155982. <https://doi.org/10.1371/journal.pone.0155982>.
12. Teo, CH, Ng, CJ, & White, A. (2017). Factors influencing young men's decision to undergo health screening in Malaysia: a qualitative study. *BMJ open*, 7(3), e014364. <https://doi.org/10.1136/bmjopen-2016-014364>.
13. Shin, HY, Kang, HT, Lee, JW, & Lim, HJ. (2018). The Association between Socioeconomic Status and Adherence to Health Check-up in Korean Adults, Based on the 2010-2012 Korean National Health and Nutrition Examination Survey. *Korean journal of family medicine*, 39(2), 114–121. <https://doi.org/10.4082/kjfm.2018.39.2.114>
14. OECD (2019), Health for Everyone?: Social Inequalities in Health and Health Systems, OECD Publishing, Paris, <https://doi.org/10.1787/3c8385d0-en>. <https://www.oecd-ilibrary.org/docserver/3c8385d0-en.pdf?expires=1585106155&id=id&accname=guest&checksum=087BCC9C111C2CF7F9FFC-C89428E4B30>
15. BERNAMA. Peka B40 'game changer' untuk perkhidmatan kesihatan di Malaysia [Internet]. Kuala Lumpur MYS: Sinar Harian; 11 January 2010. Available from: <https://www.sinarharian.com.my/article/65459/BERITA/Nasional/Peka-B40-game-changer-untuk-perkhidmatan-kesihatan-di-Malaysia>. Accessed on December 11, 2019.
16. Health Care for B40 'a game changer' [Internet]. Kuala Lumpur MYS: Borneo Post Online; 12 January 2020. Available from: <https://www.theborneopost.com/2020/01/12/health-care-for-b40-a-game-changer/>. Accessed on December 11, 2019.
17. Loh, FF. Dr. Dzulkefly: PeKa B40 pilot to begin in March [Internet]. Kuala Lumpur MYS: The Star Online; 29 January 2019. Available from: <https://www.thestar.com.my/news/nation/2019/01/28/dr-dzulkefly-peka-b40-pilot-project-to-begin-in-march/>. Accessed on December 11, 2019.

## 4.7 Self-Care: Purchase of Dietary Supplements for Health Purposes

### Introduction

Dietary supplement use is increasingly common nowadays. People may purchase dietary supplements for a variety of reasons; performance enhancing, cosmetic, or health maintenance reasons.

The use of dietary supplements showed an increasing trend in the United States, where weight status, education level and ethnicity as their socio-economic determinant factors (1). Similar trend was observed in Malaysia (2).

The act of purchasing dietary supplements was part of a larger concept called “self-care”, which is a proactive, holistic, and personalised approach to the promotion of health and well-being of one’s own self (3). The only question is how one manages self-care; thus, factors such as ignorance and assumptions, misinformation, lifestyle, attitude and marketing advertisements may be a huge influence on their practice (4-7). Self-care is essential for people with chronic disease, where only they can be responsible for their day-to-day care over the length of their illness, which can be a lifetime task (4).

### Operational definition

- Purchase of dietary supplements referred to purchase of dietary supplements for health purposes, which is usually consumed, in the form of pill, powder or liquid in the last one month prior to interview.
- This section was only applicable to respondents aged 18 years and over.
- Examples given were namely calcium, fish oil, probiotic, health drinks or juices and others.

### Objectives

To determine the:

1. prevalence of dietary supplements purchased in the last one month by sociodemographic characteristics.
2. source of dietary supplements purchased in the last one month.

## Findings

A total of 11,674 (100.0%) respondents responded to this section. Overall, 13.8% (95% CI = 12.60, 15.14) of the population purchased dietary supplements in the last one month prior to the interview (**Table 4.36**).

Across states, Wilayah Persekutuan Putrajaya (23.9%; 95% CI = 19.87, 28.38) had the highest prevalence in the purchase of dietary supplements, followed by Pulau Pinang (20.9%; 95% CI = 12.94, 32.01) and Sarawak (18.7%; 95% CI = 14.68, 23.42). On the contrary, Kelantan (5.6%; 95% CI = 4.18, 7.56) had the lowest prevalence in the purchase of dietary supplements. By location, the population from urban areas (14.8%; 95% CI = 13.30, 16.41) had purchased more dietary supplements than the population from rural areas (10.8%; 95% CI = 8.97, 13.00) (**Table 4.36**).

Findings also showed that females (16.7%; 95% CI = 15.19, 18.40) purchased more dietary supplements than males (10.9%; 95% CI = 9.45, 12.54). There was an increasing trend towards purchase of dietary supplements as age increases, with the highest was observed in the 65-69 age group (20.3%; 95% CI = 14.78, 27.19). The similar increasing pattern was also observed for education level, where the peak was among those with tertiary education (21.5%; 95% CI = 19.26, 23.95) (**Table 4.36**).

By ethnicity, the highest prevalence was found among the Chinese population (18.7%; 95% CI = 15.32, 22.55) and the lowest prevalence was found among those in Others ethnic group (6.5%; 95% CI = 4.46, 9.36). Malaysians (14.7%; 95% CI = 13.38, 16.13) purchased more dietary supplements than non-Malaysians (6.8%; 95% CI = 4.74, 9.69). By marital status, the widow(er)/divorcee population (15.8%; 95% CI = 12.40, 19.87) had higher prevalence as compared with those who were single (9.7%; 95% CI = 7.98, 11.68) (**Table 4.36**).

Across occupation groups, students (5.8%; 95% CI = 3.20, 10.17) showed the lowest prevalence. Across household income quintiles and household income categories, those in Q5 (21.5%; 95% CI = 18.62, 24.64) and T20 (22.2%; 95% CI = 18.41, 26.43) had the highest prevalence in the purchase of dietary supplements (**Table 4.36**).

Overall, majority had reported community pharmacy (56.1%; 95% CI = 52.08, 60.05) as source of dietary supplements bought, followed by direct sales (28.7%; 95% CI = 25.05, 32.64), online pharmacy (10.9%; 95% CI = 8.61, 13.65), hospital or clinic (8.1%; 95% CI = 6.45, 10.19), and others (2.5%; 95% CI = 1.62, 3.88) (**Table 4.37**).

## Discussions

Many studies reported that the prevalence of dietary supplement use in women is higher compared with men (1, 8, 9), which is similar to the findings of this study. However, the reason for use of dietary supplements was not explored in NHMS 2019.

Our findings show that among those who purchased dietary supplements, 28.7% had made their purchases from direct sales and 10.9% purchased via online pharmacy. A study conducted in China reported similar findings, where 11.7% of the caregivers purchased dietary supplements online for their children and 6.4% of them purchased from direct selling (10). Although some dietary supplements consumption could be beneficial, these products also became a matter of concern to public health because of their potential adverse effects to the users (11-14). Since the purchase of dietary supplements through direct sales and online pharmacies have become evident, there should be rigorous assessment and strict regulatory controls by the authorities.

Recall period for this section is only one month and therefore it might underestimate the actual prevalence in the purchase of dietary supplements.

## Recommendations

- Future studies could explore more on the types of dietary supplements purchased and the reasons of purchase to better understand the characteristics of dietary supplement use.
- NHMS 2019 show alarming findings on purchase of dietary supplements from direct sales and online pharmacy. Therefore, it is important to:
  1. Educate and empower the public on safe use of dietary supplements.
  2. Continue vigilant monitoring and surveillance by the authorities on the purchase of dietary supplements from direct sales and online pharmacy to ensure provision of safe and quality dietary supplements.
  3. Conduct more comprehensive and in-depth research on direct sales and online pharmacy purchase of dietary supplements.

## References:

1. Bailey, RL, Gahche, JJ, Lentino, CV, Dwyer, JT, Engel, JS, Thomas, PR, et al. (2011). Dietary supplement use in the United States, 2003–2006. *The Journal of Nutrition*, 141(2), 261-266.
2. Teng, CL, Tey, KK, Lim, PH, Cheng, SF, Nordin, MS, Ng, CM, et al. (2008). Dietary supplements: usage and opinions among health sciences students. *International e-Journal of Science, Medicine and Education*, 2(2), 30-32.
3. Burnside, IM, & Burnside, IM. (1988). *Nursing and the aged: A self-care approach*. New York: McGraw-Hill.
4. Lorig, KR, & Holman, HR. (2003). Self-management education: history, definition, outcomes, and mechanisms. *Annals of behavioral medicine*, 26(1), 1-7.
5. Braun, H, Koehler, K, Geyer, H, Kleinert, J, Mester, J, & Schänzer, W. (2009). Dietary supplement use among elite young German athletes. *International journal of sport nutrition and exercise metabolism*, 19(1), 97-109.
6. Noor, NAM, Yap, SF, Liew, KH, & Rajah, E. (2014). Consumer attitudes toward dietary supplements consumption: Implications for pharmaceutical marketing. *International Journal of Pharmaceutical and Healthcare Marketing*, 8(1), 6-26.
7. Hassali, MA, Saleem, F, Aljadhey, H, & Khan, TM (2012). Evaluating the content of advertisements for dietary supplements in Malaysian women's magazines. *Drug Information Journal*, 46(6), 723-728.
8. Skeie, G, Braaten, T, Hjartaker, A, Lentjes, M, Amiano, P, Jakšzyn, et al. (2009). Use of dietary supplements in the European Prospective Investigation into Cancer and Nutrition calibration study. *European Journal of Clinical Nutrition*, 63(4), S226-S238.
9. Zaki, NAM, Rasidi, MN, Awaluddin, SM, Hiong, TG, Ismail, H, & Nor, NSM. (2018). Prevalence and Characteristic of Dietary Supplement Users in Malaysia: Data From the Malaysian Adult Nutrition Survey (MANS) 2014. *Global Journal of Health Science*, 10(12), 127-135.
10. Liu, H, Zhang, S, Zou, H, Pan, Y, Yang, Q, Ouyang, Y, et al. (2019). Dietary Supplement Use Among Chinese Primary School Students: A Cross-Sectional Study in Hunan Province. *International Journal of Environmental Research and Public Health*, 16(3), 374.
11. Binns, CW, Lee, MK, & Lee, AH. (2018). Problems and Prospects: Public Health Regulation of Dietary Supplements. *Annual Review of Public Health*, 39, 403-420.
12. Geller, AI, Shehab, N, Weidle, NJ, Lovegrove, MC, Wolpert, BJ, Timbo, BB, et al. (2015). Emergency department visits for adverse events related to dietary supplements. *New England Journal of Medicine*, 373(16), 1531-1540.
13. Halsted, CH. (2003). Dietary Supplements and Functional Foods: 2 sides of a coin? *The American Journal of Clinical Nutrition*, 77(4), 1001S-1007S.
14. Stickel, F. (2007). Slimming at all costs: Herbalife®-induced liver injury. *Journal of Hepatology*, 47(4), 444-446.

**Table 4.1:** Prevalence of private medical laboratory utilisation in the last 12 months, among population aged 18 years old and over, by sociodemographic characteristics, NHMS 2019 (N=11,674)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>1,277</b>	<b>2,274,287</b>	<b>10.2</b>	<b>9.21</b>	<b>11.21</b>
<b>State</b>					
Johor	86	209,635	8.2	6.05	11.08
Kedah	91	224,358	16.0	11.80	21.30
Kelantan	47	66,287	5.9	3.94	8.84
Melaka	48	52,996	9.1	6.28	12.89
Negeri Sembilan	85	166,992	12.7	8.72	18.10
Pahang	39	57,013	5.4	3.80	7.65
Pulau Pinang	69	108,594	8.7	6.04	12.30
Perak	71	207,554	13.2	8.68	19.59
Perlis	123	31,923	19.8	16.85	23.12
Selangor	172	551,528	11.9	9.64	14.51
Terengganu	76	78,652	10.4	8.11	13.25
Sabah	71	177,252	6.6	4.62	9.41
Sarawak	82	222,537	11.9	8.83	15.84
WP Kuala Lumpur	46	100,191	7.8	5.31	11.30
WP Labuan	47	3,926	6.5	3.97	10.40
WP Putrajaya	124	14,849	25.9	20.45	32.20
<b>Location</b>					
Urban	848	1,845,938	10.9	9.77	12.18
Rural	429	428,350	7.9	6.39	9.61
<b>Sex</b>					
Male	492	897,795	8.0	6.81	9.47
Female	785	1,376,493	12.3	11.04	13.67
<b>Age group (Years)</b>					
18-19	18	46,283	4.7*	2.60	8.43
20-24	77	228,381	7.6	5.65	10.12
25-29	95	247,764	7.9	5.82	10.56
30-34	158	319,908	11.4	8.99	14.39
35-39	159	264,598	10.9	8.47	13.92
40-44	132	197,370	10.4	7.83	13.63
45-49	121	194,673	11.3	8.89	14.36
50-54	138	211,595	13.0	10.11	16.47
55-59	116	181,997	12.5	9.44	16.38
60-64	104	140,175	11.8	9.19	15.05
65-69	77	127,373	14.6	10.80	19.47
70-74	50	81,458	13.8	8.84	20.89
75 and over	32	32,713	5.0	2.91	8.52
<b>Ethnicity</b>					
Malay <sup>a</sup>	917	1,321,306	11.5	10.32	12.81
Chinese	127	469,093	9.8	7.37	12.90
Indian	81	154,361	11.4	8.79	14.74
Bumiputera Sabah	54	109,084	8.0	5.71	11.07
Bumiputera Sarawak	57	105,005	10.9	7.04	16.64
Others	41	115,438	4.8	2.89	7.80

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	1,228	2,142,388	10.8	9.83	11.96
Permanent Resident	13	55,485	26.3*	12.22	47.82
Non-Malaysian	36	76,415	3.2	1.98	5.08
<b>Marital status</b>					
Single	179	502,647	7.7	6.27	9.48
Married	965	1,584,600	11.3	10.09	12.57
Widow(er)/Divorcee	133	187,040	10.5	8.29	13.32
<b>Education level</b>					
No formal education	49	101,512	8.5	5.88	12.08
Primary education	224	339,544	7.7	6.19	9.57
Secondary education	538	1,035,115	9.5	8.26	10.90
Tertiary education	465	794,116	13.8	11.60	16.29
<b>Occupation</b>					
Government employee	218	236,440	14.9	12.11	18.29
Private employee	300	697,275	8.3	6.94	9.84
Self-employed	243	472,181	11.9	9.77	14.51
Unpaid worker/ Homemaker	260	452,150	12.0	9.98	14.26
Retiree	89	139,291	17.9	13.02	24.05
Student	143	213,877	7.1	4.35	11.30
Not working <sup>b</sup>	513	860,500	7.3	5.67	9.26
<b>Household income group</b>					
Less than RM 1,000	194	357,956	10.0	8.02	12.41
RM 1,000 - RM 1,999	205	357,115	8.5	6.90	10.31
RM 2,000 - RM 2,999	193	347,159	9.5	7.70	11.62
RM 3,000 - RM 3,999	151	265,628	8.3	6.58	10.53
RM 4,000 - RM 4,999	107	210,607	10.9	8.37	14.12
RM 5,000 - RM 5,999	80	147,643	11.3	7.68	16.30
RM 6,000 - RM 6,999	83	212,280	18.2	12.79	25.15
RM 7,000 - RM 7,999	63	102,100	12.4	8.63	17.41
RM 8,000 - RM 8,999	35	46,683	7.1	4.13	11.92
RM 9,000 - RM 9,999	28	36,592	15.2*	8.09	26.71
RM 10,000 and above	132	174,745	12.2	9.03	16.30
<b>Household income quintile</b>					
Q1 (20% poorest)	228	420,584	9.1	7.50	11.12
Q2	242	439,272	10.0	8.11	12.19
Q3	215	361,933	8.0	6.61	9.67
Q4	244	460,265	10.6	8.81	12.73
Q5 (20% richest)	342	576,454	13.3	10.78	16.20
<b>Household income category</b>					
Bottom 40% (B40)	834	1,456,270	9.3	8.35	10.32
Middle 40% (M40)	290	583,072	12.2	9.96	14.83
Top 20% (T20)	147	219,167	12.5	9.65	16.11

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution

**Table 4.2:** Reason for visit to private medical laboratories, among those who utilised in the last 12 months, NHMS 2019 (N=725)

Reason for visit	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Blood/urine tests/x-ray	584	1,220,717	81.2	76.71	84.95
Seek advice related to health	518	1,067,461	71.0	64.39	76.80
Others	6	20,775	1.4	0.48	3.88

95% CI = 95% Confidence Interval

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

**Table 4.3:** Distribution of arrangement of visit to private medical laboratories, among those who utilised in the last 12 months, NHMS 2019 (N=725)

Arrangement of visit	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Myself	524	1,094,212	72.8	67.08	77.79
Hospital/clinic	129	262,176	17.4	13.68	21.95
Others	68	132,386	8.8	5.82	13.11

95% CI = 95% Confidence Interval

**Table 4.4:** Prevalence of community pharmacy utilisation in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=11,674)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>1,277</b>	<b>2,274,287</b>	<b>10.2</b>	<b>9.21</b>	<b>11.21</b>
<b>State</b>					
Johor	86	209,635	8.2	6.05	11.08
Kedah	91	224,358	16.0	11.80	21.30
Kelantan	47	66,287	5.9	3.94	8.84
Melaka	48	52,996	9.1	6.28	12.89
Negeri Sembilan	85	166,992	12.7	8.72	18.10
Pahang	39	57,013	5.4	3.80	7.65
Pulau Pinang	69	108,594	8.7	6.04	12.30
Perak	71	207,554	13.2	8.68	19.59
Perlis	123	31,923	19.8	16.85	23.12
Selangor	172	551,528	11.9	9.64	14.51
Terengganu	76	78,652	10.4	8.11	13.25
Sabah	71	177,252	6.6	4.62	9.41
Sarawak	82	222,537	11.9	8.83	15.84
WP Kuala Lumpur	46	100,191	7.8	5.31	11.30
WP Labuan	47	3,926	6.5	3.97	10.40
WP Putrajaya	124	14,849	25.9	20.45	32.20
<b>Location</b>					
Urban	848	1,845,938	10.9	9.77	12.18
Rural	429	428,350	7.9	6.39	9.61
<b>Sex</b>					
Male	492	897,795	8.0	6.81	9.47
Female	785	1,376,493	12.3	11.04	13.67
<b>Age group (Years)</b>					
18-19	18	46,283	4.7*	2.60	8.43
20-24	77	228,381	7.6	5.65	10.12
25-29	95	247,764	7.9	5.82	10.56
30-34	158	319,908	11.4	8.99	14.39
35-39	159	264,598	10.9	8.47	13.92
40-44	132	197,370	10.4	7.83	13.63
45-49	121	194,673	11.3	8.89	14.36
50-54	138	211,595	13.0	10.11	16.47
55-59	116	181,997	12.5	9.44	16.38
60-64	104	140,175	11.8	9.19	15.05
65-69	77	127,373	14.6	10.80	19.47
70-74	50	81,458	13.8	8.84	20.89
75 and over	32	32,713	5.0	2.91	8.52
<b>Ethnicity</b>					
Malay <sup>a</sup>	917	1,321,306	11.5	10.32	12.81
Chinese	127	469,093	9.8	7.37	12.90
Indian	81	154,361	11.4	8.79	14.74
Bumiputera Sabah	54	109,084	8.0	5.71	11.07
Bumiputera Sarawak	57	105,005	10.9	7.04	16.64
Others	41	115,438	4.8	2.89	7.80
<b>Citizenship</b>					
Malaysian	1,228	2,142,388	10.8	9.83	11.96
Permanent Resident	13	55,485	26.3*	12.22	47.82
Non-Malaysian	36	76,415	3.2	1.98	5.08

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Marital status</b>					
Single	179	502,647	7.7	6.27	9.48
Married	965	1,584,600	11.3	10.09	12.57
Widow(er)/Divorcee	133	187,040	10.5	8.29	13.32
<b>Education level</b>					
No formal education	49	101,512	8.5	5.88	12.08
Primary education	224	339,544	7.7	6.19	9.57
Secondary education	538	1,035,115	9.5	8.26	10.90
Tertiary education	465	794,116	13.8	11.60	16.29
<b>Occupation</b>					
Government employee	218	236,440	14.9	12.11	18.29
Private employee	300	697,275	8.3	6.94	9.84
Self-employed	243	472,181	11.9	9.77	14.51
Unpaid worker/ Homemaker	260	452,150	12.0	9.98	14.26
Retiree	89	139,291	17.9	13.02	24.05
Student	143	213,877	7.1	4.35	11.30
Not working <sup>b</sup>	513	860,500	7.3	5.67	9.26
<b>Household income group</b>					
Less than RM 1,000	194	357,956	10.0	8.02	12.41
RM 1,000 - RM 1,999	205	357,115	8.5	6.90	10.31
RM 2,000 - RM 2,999	193	347,159	9.5	7.70	11.62
RM 3,000 - RM 3,999	151	265,628	8.3	6.58	10.53
RM 4,000 - RM 4,999	107	210,607	10.9	8.37	14.12
RM 5,000 - RM 5,999	80	147,643	11.3	7.68	16.30
RM 6,000 - RM 6,999	83	212,280	18.2	12.79	25.15
RM 7,000 - RM 7,999	63	102,100	12.4	8.63	17.41
RM 8,000 - RM 8,999	35	46,683	7.1	4.13	11.92
RM 9,000 - RM 9,999	28	36,592	15.2*	8.09	26.71
RM 10,000 and above	132	174,745	12.2	9.03	16.30
<b>Household income quintile</b>					
Q1 (20% poorest)	228	420,584	9.1	7.50	11.12
Q2	242	439,272	10.0	8.11	12.19
Q3	215	361,933	8.0	6.61	9.67
Q4	244	460,265	10.6	8.81	12.73
Q5 (20% richest)	342	576,454	13.3	10.78	16.20
<b>Household income category</b>					
Bottom 40% (B40)	834	1,456,270	9.3	8.35	10.32
Middle 40% (M40)	290	583,072	12.2	9.96	14.83
Top 20% (T20)	147	219,167	12.5	9.65	16.11

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution

**Table 4.5:** Annual mean number of visits to community pharmacies per capita, by sociodemographic characteristics, NHMS 2019

Sociodemographic characteristics	Count	Estimated population	Mean	SD	Median	IQR	Min	Max	95% CI	
									Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>70,001,117</b>	<b>2.22</b>	<b>9.39</b>	<b>0.00</b>	<b>0 - 0</b>	<b>0.00</b>	<b>338.90</b>	<b>1.96</b>	<b>2.48</b>
<b>State</b>										
Johor	1,487	6,423,471	1.79	8.24	0.00	0 - 0	0.00	104.30	1.07	2.52
Kedah	948	6,438,474	3.22	9.54	0.00	0 - 0	0.00	78.21	2.33	4.10
Kelantan	1,040	2,225,453	1.25	6.86	0.00	0 - 0	0.00	78.21	0.66	1.84
Melaka	919	1,588,899	1.94	7.87	0.00	0 - 0	0.00	78.21	1.12	2.75
Negeri Sembilan	894	6,674,772	3.50	13.44	0.00	0 - 0	0.00	130.40	1.67	5.32
Pahang	994	1,601,039	1.05	5.64	0.00	0 - 0	0.00	78.21	0.66	1.43
Pulau Pinang	950	3,132,450	1.92	7.50	0.00	0 - 0	0.00	78.21	1.07	2.77
Perak	811	5,772,135	2.63	8.41	0.00	0 - 0	0.00	78.21	1.56	3.69
Perlis	914	886,602	3.83	12.78	0.00	0 - 0	0.00	338.90	3.00	4.67
Selangor	1,811	15,305,818	2.40	8.37	0.00	0 - 0	0.00	78.21	1.88	2.91
Terengganu	1,118	2,826,266	2.38	11.14	0.00	0 - 0	0.00	130.40	1.56	3.20
Sabah	1,355	4,713,000	1.24	5.75	0.00	0 - 0	0.00	78.21	0.80	1.68
Sarawak	1,005	8,452,701	3.19	13.67	0.00	0 - 0	0.00	156.40	1.86	4.52
WP Kuala Lumpur	729	3,421,483	2.03	13.26	0.00	0 - 0	0.00	260.70	1.04	3.01
WP Labuan	912	104,536	1.19	5.60	0.00	0 - 0	0.00	78.21	0.60	1.78
WP Putrajaya	801	434,019	4.47	11.35	0.00	0 - 0	0.00	78.21	3.32	5.62
<b>Location</b>										
Urban	10,009	55,727,819	2.36	9.58	0.00	0 - 0	0.00	260.70	2.06	2.66
Rural	6,679	14,273,298	1.80	8.77	0.00	0 - 0	0.00	338.90	1.29	2.30
<b>Sex</b>										
Male	8,043	28,579,611	1.82	9.11	0.00	0 - 0	0.00	260.70	1.48	2.15
Female	8,645	41,421,506	2.62	9.64	0.00	0 - 0	0.00	338.90	2.28	2.96
<b>Age group (Years)</b>										
18-19	371	1,402,489	0.51	4.29	0.00	0 - 0	0.00	130.40	0.20	0.83
20-24	1,048	7,365,986	2.45	10.87	0.00	0 - 0	0.00	260.70	1.62	3.29
25-29	1,121	7,263,008	2.31	8.74	0.00	0 - 0	0.00	78.21	1.52	3.10
30-34	1,189	8,808,204	3.14	9.70	0.00	0 - 0	0.00	130.40	2.41	3.88
35-39	1,254	8,119,826	3.34	10.92	0.00	0 - 0	0.00	156.40	2.39	4.29
40-44	1,064	5,229,569	2.75	8.61	0.00	0 - 0	0.00	104.30	1.98	3.52
45-49	1,062	6,398,341	3.73	12.00	0.00	0 - 0	0.00	130.40	2.67	4.78
50-54	1,063	6,209,940	3.80	10.91	0.00	0 - 0	0.00	78.21	2.80	4.81
55-59	998	5,693,421	3.91	12.38	0.00	0 - 0	0.00	130.40	2.73	5.09
60-64	852	5,717,266	4.82	18.21	0.00	0 - 0	0.00	260.70	2.75	6.88
65-69	693	4,267,315	4.90	14.13	0.00	0 - 0	0.00	338.90	2.98	6.82
70-74	492	2,696,626	4.57	13.61	0.00	0 - 0	0.00	104.30	2.41	6.72
75 and over	467	829,126	1.27	5.79	0.00	0 - 0	0.00	52.14	0.57	1.98
<b>Ethnicity</b>										
Malay <sup>a</sup>	11,325	40,552,674	2.33	9.38	0.00	0 - 0	0.00	338.90	2.01	2.64
Chinese	1,838	15,819,316	2.58	11.61	0.00	0 - 0	0.00	260.70	1.76	3.40
Indian	980	4,095,156	2.29	7.96	0.00	0 - 0	0.00	78.21	1.65	2.92
Bumiputera Sabah	1,035	2,949,072	1.42	6.25	0.00	0 - 0	0.00	78.21	0.93	1.92
Bumiputera Sarawak	698	3,203,218	2.28	9.12	0.00	0 - 0	0.00	130.40	1.25	3.30
Others	812	3,381,682	1.23	6.21	0.00	0 - 0	0.00	52.14	0.57	1.88
<b>Citizenship</b>										
Malaysian	15,783	66,190,239	2.32	9.65	0.00	0 - 0	0.00	338.90	2.04	2.59
Permanent Resident	121	1,711,449	7.30	14.36	0.00	0 - 0	0.00	52.14	1.71	12.89
Non-Malaysian	780	2,099,429	0.76	4.65	0.00	0 - 0	0.00	52.14	0.38	1.15

**Table 4.5:** Annual mean number of visits to community pharmacies per capita, by sociodemographic characteristics, NHMS 2019 (cont'd)

Sociodemographic characteristics	Count	Estimated population	Mean	SD	Median	IQR	Min	Max	95% CI	
									Lower	Upper
Marital status										
Single	3,713	16,150,817	1.77	8.73	0.00	0 - 0	0.00	260.70	1.33	2.22
Married	7,938	47,581,685	3.38	11.18	0.00	0 - 0	0.00	260.70	2.95	3.80
Widow(er)/Divorcee	1,255	6,268,615	3.53	12.28	0.00	0 - 0	0.00	338.90	2.31	4.75
Education level										
No formal education	2,560	3,396,983	0.72	5.29	0.00	0 - 0	0.00	104.30	0.41	1.02
Primary education	5,111	11,568,009	1.32	8.55	0.00	0 - 0	0.00	260.70	0.92	1.72
Secondary education	6,091	31,965,807	2.63	9.96	0.00	0 - 0	0.00	338.90	2.21	3.05
Tertiary education	2,868	22,966,027	3.98	11.48	0.00	0 - 0	0.00	260.70	3.29	4.66
Occupation										
Government employee	1225	6780886	4.28	11.77	0.00	0 - 0	0.00	130.40	3.35	5.22
Private employee	3446	20422068	2.40	9.91	0.00	0 - 0	0.00	260.70	1.94	2.85
Self-employed	2206	14909823	3.74	11.68	0.00	0 - 0	0.00	130.40	2.89	4.58
Unpaid worker/Homemaker	2128	14083485	3.67	11.74	0.00	0 - 0	0.00	338.90	2.92	4.42
Retiree	548	4506740	5.76	13.55	0.00	0 - 0	0.00	52.14	3.61	7.90
Student	3584	1765513	0.27	2.88	0.00	0 - 0	0.00	78.21	0.13	0.40
Not working <sup>b</sup>	3549	7532601	1.22	7.91	0.00	0 - 0	0.00	130.40	0.74	1.69
Household income group										
Less than RM 1,000	2,632	11,635,685	2.51	11.39	0.00	0 - 0	0.00	130.40	1.73	3.29
RM 1,000 - RM 1,999	3,088	10,215,999	1.80	7.52	0.00	0 - 0	0.00	78.21	1.39	2.21
RM 2,000 - RM 2,999	2,684	10,500,202	2.08	9.60	0.00	0 - 0	0.00	338.90	1.59	2.57
RM 3,000 - RM 3,999	2,227	8,277,073	1.87	9.24	0.00	0 - 0	0.00	260.70	1.33	2.40
RM 4,000 - RM 4,999	1,399	6,446,111	2.32	8.96	0.00	0 - 0	0.00	104.30	1.71	2.92
RM 5,000 - RM 5,999	1,036	4,322,484	2.34	9.12	0.00	0 - 0	0.00	130.40	1.29	3.39
RM 6,000 - RM 6,999	842	6,054,257	3.73	10.56	0.00	0 - 0	0.00	104.30	2.44	5.03
RM 7,000 - RM 7,999	593	2,947,626	2.54	9.24	0.00	0 - 0	0.00	130.40	1.59	3.50
RM 8,000 - RM 8,999	466	1,285,144	1.31	6.29	0.00	0 - 0	0.00	104.30	0.62	2.00
RM 9,000 - RM 9,999	254	1,036,398	3.06	9.46	0.00	0 - 0	0.00	78.21	1.25	4.87
RM 10,000 and above	1,122	5,094,265	2.41	9.28	0.00	0 - 0	0.00	130.40	1.50	3.33
Household income quintile										
Q1 (20% poorest)	3,337	13,631,182	2.29	10.63	0.00	0 - 0	0.00	130.40	1.65	2.92
Q2	3,221	13,144,952	2.18	8.88	0.00	0 - 0	0.00	338.90	1.70	2.67
Q3	3,209	10,247,268	1.66	7.96	0.00	0 - 0	0.00	260.70	1.33	1.99
Q4	3,592	15,957,222	2.32	9.88	0.00	0 - 0	0.00	260.70	1.83	2.80
Q5 (20% richest)	2,984	14,834,619	2.65	9.27	0.00	0 - 0	0.00	130.40	2.04	3.25
Household income category										
Bottom 40% (B40)	11,515	45,517,121	2.09	9.45	0.00	0 - 0	0.00	338.90	1.81	2.37
Middle 40% (M40)	3,678	17,272,181	2.44	8.95	0.00	0 - 0	0.00	130.40	1.92	2.96
Top 20% (T20)	1,351	6,593,035	2.68	9.97	0.00	0 - 0	0.00	130.40	1.89	3.48

Use of community pharmacy was applicable for those aged 18 years and over (N=11,674). However, annual mean visit to community pharmacy per capita was calculated based on all of the population.

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 4.6:** Distribution of number of community pharmacies visited, among those who utilised in the last 2 weeks, NHMS 2019 (N=1,277)

Number of community pharmacy	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
1 place	1,223	2,210,545	97.2	95.57	98.24
2 places and above	54	63,742	2.8	1.76	4.43

95% CI = 95% Confidence Interval

**Table 4.7:** Type of services received, among those who visited community pharmacies in the last 2 weeks, NHMS 2019 (N=1,277)

Type of service	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Buy medication	885	1,494,766	65.7	61.29	69.90
Buy supplement	577	1,062,655	46.7	42.30	51.20
Advice from pharmacist	382	746,489	32.8	28.72	37.21
Health check	144	281,029	12.4	9.58	15.80
Buy medical appliances	72	109,401	4.8	3.04	7.52
Related to previous health problems in the last 2 weeks	662	1,178,327	51.8	47.35	56.25

95% CI = 95% Confidence Interval

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

**Table 4.8:** Distribution of type of purchase with advice, NHMS 2019

Purchase with advice	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Medication	540 <sup>a</sup>	907,901	60.7	55.24	65.98
Supplement	324 <sup>b</sup>	561,259	52.8	47.44	58.13

95% CI = 95% Confidence Interval

a N=885

b N=577

**Table 4.9:** Overall population experience towards community pharmacy services, among those who utilised in the last 2 weeks, NHMS 2019 (N=1,277)

Rating	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Excellent/Good	1,175	2,090,441	91.9	89.32	93.92
Fair/Poor/Very Poor	83	125,675	5.5	3.89	7.80

95% CI = 95% Confidence Interval

**Table 4.10:** Prevalence of outpatient healthcare utilisation in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>1,697</b>	<b>2,555,381</b>	<b>8.1</b>	<b>7.41</b>	<b>8.84</b>
<b>State</b>					
Johor	95	200,155	5.6	4.18	7.43
Kedah	81	165,043	8.2	6.67	10.14
Kelantan	77	101,391	5.7	4.19	7.70
Melaka	93	66,432	8.1	6.10	10.66
Negeri Sembilan	106	180,130	9.4	7.15	12.35
Pahang	106	140,122	9.2	6.24	13.30
Pulau Pinang	64	84,411	5.2*	2.82	9.31
Perak	81	171,642	7.8	5.26	11.46
Perlis	105	27,514	11.9	9.84	14.31
Selangor	201	573,480	9.0	7.39	10.85
Terengganu	111	116,112	9.8	7.44	12.76
Sabah	133	296,683	7.8	5.93	10.26
Sarawak	132	298,573	11.3	8.54	14.74
WP Kuala Lumpur	52	105,216	6.2	3.94	9.72
WP Labuan	131	12,531	14.3	11.59	17.50
WP Putrajaya	129	15,948	16.4	12.86	20.76
<b>Location</b>					
Urban	1,009	1,853,356	7.8	7.01	8.77
Rural	688	702,025	8.8	7.74	10.05
<b>Sex</b>					
Male	729	1,109,935	7.1	6.28	7.91
Female	968	1,445,445	9.1	8.17	10.18
<b>Age group (Years)</b>					
0-4	203	301,894	11.9	9.68	14.45
5-9	154	188,182	7.6	6.03	9.58
10-14	85	108,961	4.5	3.25	6.08
15-19	70	131,091	4.8	3.43	6.70
20-24	69	165,576	5.5	4.04	7.49
25-29	72	212,100	6.7	4.90	9.21
30-34	112	212,871	7.6	5.81	9.87
35-39	111	162,181	6.7	5.07	8.75
40-44	90	150,158	7.9	5.92	10.45
45-49	90	108,910	6.3	4.52	8.84
50-54	122	168,712	10.3	8.13	13.05
55-59	129	167,032	11.5	8.97	14.57
60-64	126	159,131	13.4	10.24	17.36
65-69	102	121,104	13.9	10.74	17.78
70-74	88	82,848	14.0	10.34	18.76
75 and over	74	114,629	17.6	12.87	23.60
<b>Ethnicity</b>					
Malay <sup>a</sup>	1,161	1,482,547	8.5	7.71	9.38
Chinese	131	333,555	5.4	4.15	7.12
Indian	115	213,277	11.9	8.69	16.09
Bumiputera Sabah	121	195,687	9.4	7.28	12.18
Bumiputera Sarawak	120	198,092	14.1	10.60	18.46
Others	49	132,222	4.8	3.15	7.24

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	1,650	2,420,144	8.5	7.76	9.23
Permanent Resident	9	5,634	2.4*	0.81	6.88
Non-Malaysian	38	129,603	4.7	3.03	7.26
<b>Marital status<sup>b</sup></b>					
Single	234	454,030	5.0	4.07	6.09
Married	863	1,302,582	9.2	8.30	10.28
Widow(er)/Divorcee	186	233,287	13.1	10.65	16.08
<b>Education level</b>					
No formal education	365	523,809	11.0	9.40	12.99
Primary education	528	722,500	8.2	7.22	9.40
Secondary education	520	833,540	6.8	5.98	7.84
Tertiary education	277	459,187	7.9	6.45	9.76
<b>Occupation</b>					
Government employee	150	175,101	11.1	8.41	14.41
Private employee	274	572,947	6.7	5.57	8.09
Self-employed	184	271,008	6.8	5.32	8.63
Unpaid worker/ Homemaker	233	377,266	9.8	8.10	11.87
Retiree	73	76,325	9.8	6.96	13.50
Student	272	363,770	5.5	4.48	6.64
Not working <sup>c</sup>	511	718,964	11.6	10.16	13.25
<b>Household income group</b>					
Less than RM 1,000	331	509,382	10.0	8.54	11.58
RM 1,000 - RM 1,999	320	498,355	8.6	7.20	10.29
RM 2,000 - RM 2,999	260	355,232	6.9	5.68	8.44
RM 3,000 - RM 3,999	205	350,318	7.9	6.31	9.86
RM 4,000 - RM 4,999	117	169,567	6.1	4.46	8.27
RM 5,000 - RM 5,999	100	116,795	6.3	4.74	8.36
RM 6,000 - RM 6,999	72	127,771	7.9	5.36	11.44
RM 7,000 - RM 7,999	56	74,437	6.4	4.00	10.16
RM 8,000 - RM 8,999	58	105,568	10.8	6.78	16.75
RM 9,000 - RM 9,999	18	20,390	6.0*	3.06	11.50
RM 10,000 and above	146	201,345	9.5	6.81	13.17
<b>Household income quintile</b>					
Q1 (20% poorest)	394	588,385	9.1	7.82	10.48
Q2	336	527,208	8.6	7.30	10.16
Q3	296	477,182	7.6	6.31	9.13
Q4	304	399,479	6.5	5.39	7.78
Q5 (20% richest)	353	536,906	8.6	7.07	10.40
<b>Household income category</b>					
Bottom 40% (B40)	1,196	1,771,092	8.1	7.38	8.98
Middle 40% (M40)	338	535,606	7.6	6.36	8.95
Top 20% (T20)	149	222,462	9.1	6.50	12.48

95% CI = 95% Confidence Interval

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution

**Table 4.11:** Distribution of outpatient healthcare utilisation in the last 2 weeks, by sector and sociodemographic characteristics, NHMS 2019 (N=1,697)

Sociodemographic characteristics	Public					Private				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>1,191</b>	<b>1,651,121</b>	<b>64.6</b>	<b>59.98</b>	<b>68.99</b>	<b>535</b>	<b>927,301</b>	<b>36.3</b>	<b>31.89</b>	<b>40.93</b>
<b>State</b>										
Johor	65	122,201	61.1	45.42	74.70	31	81,411	40.7	26.78	56.23
Kedah	46	89,521	54.2	39.57	68.21	35	75,522	45.8	31.79	60.43
Kelantan	65	87,756	86.6	71.38	94.32	14	15,089	14.9	7.20	28.27
Melaka	76	49,263	74.2	53.93	87.55	20	18,128	27.3	13.35	47.75
Negeri Sembilan	68	117,202	65.1	48.40	78.72	40	64,060	35.6	22.02	51.90
Pahang	87	102,490	73.1	46.50	89.51	19	37,631	26.9	10.49	53.50
Pulau Pinang	35	27,754	32.9	14.91	57.80	30	56,704	67.2	42.25	85.13
Perak	70	133,658	77.9	52.30	91.87	12	41,485	24.2	9.70	48.61
Perlis	80	21,188	77.0	68.98	83.46	25	6,326	23.0	16.54	31.02
Selangor	115	305,303	53.2	42.12	64.04	89	275,609	48.1	37.13	59.17
Terengganu	80	84,828	73.1	65.43	79.53	32	32,041	27.6	20.77	35.65
Sabah	101	209,074	70.5	58.27	80.31	33	88,584	29.9	19.75	42.40
Sarawak	104	227,042	76.0	61.62	86.25	29	73,212	24.5	14.00	39.32
WP Kuala Lumpur	28	54,747	52.0	34.95	68.65	24	50,469	48.0	31.35	65.05
WP Labuan	78	7,146	57.0	48.01	65.60	55	5,560	44.4	35.97	53.10
WP Putrajaya	93	11,948	74.9	63.65	83.59	47	5,473	34.3	25.49	44.38
<b>Location</b>										
Urban	652	1,096,507	59.2	53.45	64.64	379	777,673	42.0	36.43	47.70
Rural	539	554,614	79.0	72.68	84.18	156	149,629	21.3	16.16	27.57
<b>Sex</b>										
Male	504	690,173	62.2	55.56	68.38	240	433,322	39.0	32.79	45.68
Female	687	960,948	66.5	61.30	71.30	295	493,980	34.2	29.35	39.35
<b>Age group (Years)</b>										
0-4	126	189,149	62.7	52.42	71.86	85	115,845	38.4	29.08	48.60
5-9	102	114,152	60.7	48.33	71.76	59	82,816	44.0	32.57	56.12
10-14	53	71,618	65.7	48.60	79.55	32	37,343	34.3	20.45	51.40
15-19	41	67,311	51.3	35.02	67.39	29	63,780	48.7	32.61	64.98
20-24	42	93,789	56.6	43.02	69.33	28	72,088	43.5	30.84	57.14
25-29	41	123,598	58.3	40.90	73.81	31	88,503	41.7	26.19	59.10
30-34	78	124,885	58.7	45.46	70.73	36	92,018	43.2	31.06	56.27
35-39	68	93,840	57.9	44.36	70.28	44	68,453	42.2	29.78	55.70
40-44	57	76,920	51.2	37.54	64.73	35	75,452	50.2	36.70	63.76
45-49	67	68,703	63.1	40.29	81.23	23	40,207	36.9	18.77	59.71
50-54	87	113,607	67.3	55.95	77.00	36	55,515	32.9	23.23	44.29
55-59	99	119,046	71.3	59.27	80.88	32	49,467	29.6	19.96	41.51
60-64	102	118,675	74.6	60.12	85.09	24	39,760	25.0	14.54	39.48
65-69	91	105,866	87.4	76.74	93.60	12	15,437	12.7	6.53	23.40
70-74	79	73,426	88.6	76.84	94.82	12	11,552	13.9	7.01	25.83
75 and over	58	96,537	84.2	70.21	92.35	17	19,067	16.6	8.29	30.58
<b>Ethnicity</b>										
Malay <sup>a</sup>	832	985,552	66.5	60.84	71.68	350	508,722	34.3	29.12	39.91
Chinese	85	177,762	53.3	37.63	68.33	48	158,152	47.4	32.19	63.13
Indian	73	130,465	61.2	49.28	71.86	44	87,646	41.1	30.48	52.61
Bumiputera Sabah	94	161,837	82.7	68.77	91.21	27	33,850	17.3	8.79	31.23
Bumiputera Sarawak	83	147,698	74.6	54.77	87.65	39	52,150	26.3	13.07	45.92
Others	24	47,807	36.2	19.45	57.04	27	86,781	65.6	44.08	82.23

**Table 4.11:** Distribution of outpatient healthcare utilisation in the last 2 weeks, by sector and sociodemographic characteristics, NHMS 2019 (N=1,697) (cont'd)

Sociodemographic characteristics	Public					Private				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
Citizenship										
Malaysian	1,172	1,603,430	66.3	61.54	70.67	506	837,589	34.6	30.17	39.33
Permanent Resident	6	4,370	77.6	33.61	95.93	3	1,264	22.4	4.07	66.39
Non-Malaysian	13	43,321	33.4	16.81	55.50	26	88,448	68.2	45.45	84.72
Marital status <sup>b</sup>										
Single	138	250,269	55.1	46.08	63.83	97	204,061	44.9	36.23	53.98
Married	637	859,233	66.0	59.81	71.62	235	450,390	34.6	28.90	40.73
Widow(er)/Divorcee	152	190,849	81.8	72.00	88.72	38	46,253	19.8	12.58	29.82
Education level										
No formal education	256	354,147	67.6	59.60	74.71	123	182,684	34.9	27.60	42.93
Primary education	390	523,857	72.5	65.91	78.24	145	202,282	28.0	22.14	34.72
Secondary education	378	549,080	65.9	58.84	72.27	146	286,153	34.3	27.94	41.34
Tertiary education	161	207,705	45.2	36.09	54.71	120	256,171	55.8	46.22	64.95
Occupation										
Government employee	98	97,691	55.8	43.34	67.55	54	77,570	44.3	32.53	56.75
Private employee	136	262,111	45.7	36.71	55.08	139	313,228	54.7	45.34	63.68
Self-employed	144	180,790	66.7	51.30	79.22	45	94,507	34.9	22.37	49.88
Unpaid worker/Homemaker	198	317,197	84.1	75.47	90.06	37	62,160	16.5	10.44	25.03
Retiree	61	59,435	77.9	62.86	87.97	12	16,890	22.1	12.03	37.14
Student	169	198,860	54.7	44.75	64.23	110	165,904	45.6	36.05	55.50
Not working <sup>c</sup>	385	535,038	74.4	68.30	79.71	138	197,043	27.4	21.98	33.60
Household income group										
Less than RM 1,000	272	388,551	76.3	67.90	83.02	61	121,663	23.9	17.14	32.24
RM 1,000 - RM 1,999	257	367,761	73.8	65.57	80.64	67	135,175	27.1	20.11	35.50
RM 2,000 - RM 2,999	192	249,983	70.4	60.45	78.45	71	109,672	30.9	22.43	40.83
RM 3,000 - RM 3,999	142	229,653	65.6	54.59	74.09	67	124,332	35.5	25.69	46.68
RM 4,000 - RM 4,999	82	120,002	70.8	55.93	82.20	40	50,111	29.6	18.07	44.38
RM 5,000 - RM 5,999	65	61,457	52.6	37.43	67.34	40	56,090	48.0	33.26	63.15
RM 6,000 - RM 6,999	48	65,949	51.6	37.81	66.14	25	65,754	51.5	36.91	65.77
RM 7,000 - RM 7,999	29	37,248	50.0	26.88	73.18	29	41,398	55.6	32.62	76.43
RM 8,000 - RM 8,999	23	31,772	30.1	13.35	54.61	36	75,477	71.5	46.76	87.75
RM 9,000 - RM 9,999	9	11,047	54.2	20.16	84.70	9	9,343	45.8	15.30	79.84
RM 10,000 and above	63	66,041	32.8	18.58	51.07	85	133,722	66.4	48.16	80.81
Household income quintile										
Q1 (20% poorest)	321	448,057	76.2	68.47	82.44	75	141,160	24.0	17.69	31.67
Q2	269	384,599	73.0	64.64	79.91	72	147,912	28.1	20.94	36.47
Q3	214	328,492	68.8	59.80	76.64	86	154,611	32.4	24.47	41.48
Q4	204	253,920	63.6	54.12	72.07	112	148,304	37.1	28.42	46.75
Q5 (20% richest)	174	214,397	39.9	30.19	50.54	185	330,749	61.6	51.09	71.13
Household income category										
Bottom 40% (B40)	919	1,260,261	71.2	66.40	75.49	301	529,564	29.9	25.50	34.70
Middle 40% (M40)	199	285,807	53.4	42.81	63.62	143	254,330	47.5	37.23	57.96
Top 20% (T20)	64	83,396	37.5	22.97	54.67	86	138,844	62.4	45.18	76.99

95% CI = 95% Confidence Interval

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 4.12:** Distribution of number of outpatient healthcare facilities visited, among those who utilised in the last 2 weeks, NHMS 2019 (N=1,697)

Number of place	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
1 place	1,604	2,441,535	95.5	93.99	96.71
2 places and above	88	107,368	4.2	3.09	5.68

95% CI = 95% Confidence Interval

**Table 4.13:** Annual mean number of visits to outpatient healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Total			Public			Private		
			Mean	95% CI		Mean	95% CI		Mean	95% CI	
				Lower	Upper		Lower	Upper		Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>31,574,566</b>	<b>2.74</b>	<b>2.44</b>	<b>3.03</b>	<b>1.76</b>	<b>1.55</b>	<b>1.97</b>	<b>0.98</b>	<b>0.78</b>	<b>1.17</b>
<b>State</b>											
Johor	1,487	3,583,487	2.08	1.49	2.68	1.22	0.74	1.70	0.86	0.44	1.28
Kedah	948	2,002,593	2.20	1.70	2.70	1.22	0.71	1.72	0.98	0.62	1.34
Kelantan	1,040	1,780,805	1.74	1.12	2.35	1.49	0.95	2.03	0.25	0.05	0.44
Melaka	919	820,924	3.16	1.61	4.71	1.97	1.18	2.76	1.19	0.04	2.35
Negeri Sembilan	894	1,909,034	2.98	2.09	3.87	2.15	1.48	2.82	0.83	0.29	1.37
Pahang	994	1,527,286	3.05	1.96	4.15	2.35	1.45	3.25	0.70	0.00	1.41
Pulau Pinang	950	1,631,913	1.38	0.56	2.19	0.47	0.19	0.75	0.91	0.15	1.67
Perak	811	2,196,662	2.62	1.40	3.84	2.13	0.98	3.28	0.49	0.00	0.98
Perlis	914	231,316	4.03	3.02	5.03	3.11	2.29	3.93	0.92	0.50	1.33
Selangor	1,811	6,390,944	2.79	2.24	3.33	1.44	1.03	1.86	1.34	0.92	1.77
Terengganu	1,118	1,187,197	5.11	2.72	7.50	4.12	1.93	6.30	0.99	0.44	1.54
Sabah	1,355	3,790,738	2.84	1.70	3.98	1.72	1.21	2.23	1.12	0.05	2.18
Sarawak	1,005	2,648,630	3.81	2.49	5.13	2.72	1.90	3.55	1.09	0.29	1.88
WP Kuala Lumpur	729	1,688,285	2.26	1.11	3.42	1.27	0.36	2.17	0.99	0.50	1.49
WP Labuan	912	87,678	4.34	3.32	5.36	2.31	1.72	2.90	2.03	1.29	2.77
WP Putrajaya	801	97,074	6.36	4.47	8.25	4.69	3.07	6.31	1.67	0.89	2.44
<b>Location</b>											
Urban	10,009	23,623,015	2.68	2.32	3.04	1.56	1.31	1.82	1.12	0.86	1.37
Rural	6,679	7,951,551	2.90	2.49	3.31	2.34	1.98	2.71	0.56	0.37	0.74
<b>Sex</b>											
Male	8,043	15,738,005	2.56	2.12	2.99	1.52	1.23	1.81	1.04	0.70	1.37
Female	8,645	15,836,561	2.91	2.58	3.25	2.00	1.73	2.27	0.91	0.74	1.09
<b>Age group (Years)</b>											
0-4	1,298	2,546,160	3.66	2.86	4.46	2.34	1.66	3.02	1.32	0.90	1.73
5-9	1,565	2,469,031	2.64	1.89	3.39	1.60	1.03	2.18	1.04	0.61	1.47
10-14	1,428	2,445,646	1.39	0.95	1.82	0.94	0.58	1.31	0.44	0.20	0.69
15-19	1,094	2,727,354	1.42	0.87	1.97	0.89	0.44	1.35	0.53	0.23	0.83
20-24	1,048	3,002,365	2.01	1.14	2.88	1.35	0.55	2.16	0.66	0.37	0.95
25-29	1,121	3,147,072	1.97	1.31	2.62	1.13	0.63	1.62	0.84	0.38	1.30
30-34	1,189	2,801,848	2.63	1.74	3.51	1.59	0.87	2.31	1.03	0.51	1.56
35-39	1,254	2,428,096	2.00	1.47	2.52	1.24	0.83	1.66	0.75	0.44	1.07
40-44	1,064	1,902,132	3.54	1.44	5.64	1.30	0.84	1.77	2.23	0.18	4.29
45-49	1,062	1,716,563	2.34	1.30	3.37	1.36	0.77	1.94	0.98	0.05	1.91
50-54	1,063	1,632,323	3.37	2.38	4.36	2.11	1.49	2.72	1.26	0.57	1.95
55-59	998	1,455,774	4.15	2.98	5.32	2.89	1.90	3.88	1.26	0.61	1.90
60-64	852	1,186,746	5.44	3.22	7.66	3.81	2.56	5.05	1.63	0.00	3.32
65-69	693	871,596	4.16	3.09	5.23	3.71	2.68	4.75	0.45	0.14	0.76

**Table 4.13:** Annual mean number of visits to outpatient healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Total			Public			Private		
			Mean	95% CI		Mean	95% CI		Mean	95% CI	
				Lower	Upper		Lower	Upper		Lower	Upper
70-74	492	590,567	4.98	3.30	6.66	4.42	2.80	6.05	0.56	0.18	0.94
75 and over	467	651,295	5.45	3.38	7.52	4.61	2.60	6.63	0.84	0.28	1.40
<b>Ethnicity</b>											
Malay <sup>a</sup>	11,325	17,425,958	2.92	2.57	3.28	2.04	1.73	2.35	0.88	0.71	1.06
Chinese	1,035	2,071,061	2.01	1.18	2.83	0.80	0.50	1.09	1.21	0.41	2.01
Indian	698	1,407,413	3.79	2.60	4.98	2.43	1.51	3.35	1.36	0.87	1.85
Bumiputera Sabah	1,838	6,122,813	2.89	2.21	3.56	2.46	1.92	3.00	0.43	0.09	0.77
Bumiputera Sarawak	980	1,792,154	4.12	2.94	5.30	3.00	2.05	3.95	1.12	0.41	1.82
Others	812	2,755,167	1.66	0.85	2.47	0.54	0.22	0.85	1.12	0.42	1.83
<b>Citizenship</b>											
Malaysian	15,783	28,584,000	2.86	2.55	3.17	1.89	1.66	2.12	0.97	0.76	1.17
Permanent Resident	121	234,440	0.90	0.00	2.00	0.79	0.00	1.86	0.11	0.00	0.31
Non-Malaysian	780	2,749,951	1.61	0.80	2.42	0.47	0.16	0.77	1.14	0.42	1.86
<b>Marital status<sup>b</sup></b>											
Single	3,713	9,109,430	1.64	1.25	2.03	0.99	0.66	1.31	0.66	0.46	0.85
Married	7,938	14,095,355	3.16	2.70	3.63	2.01	1.73	2.29	1.15	0.78	1.53
Widow(er)/Divorcee	1,255	1,776,520	4.85	3.68	6.02	3.80	2.74	4.86	1.05	0.49	1.61
<b>Education level</b>											
No formal education	2,560	4,743,451	3.55	2.92	4.18	2.38	1.86	2.90	1.16	0.83	1.49
Primary education	5,111	8,762,445	2.89	2.39	3.39	2.05	1.71	2.40	0.83	0.53	1.13
Secondary education	6,091	12,172,330	2.30	1.89	2.71	1.58	1.23	1.94	0.72	0.50	0.93
Tertiary education	2,868	5,776,720	2.72	1.93	3.51	1.12	0.81	1.42	1.61	0.88	2.33
<b>Occupation</b>											
Government employee	1,225	1,583,152	3.37	2.47	4.27	1.87	1.21	2.53	1.50	0.91	2.09
Private employee	3,446	8,525,793	2.31	1.69	2.94	1.03	0.69	1.38	1.28	0.76	1.81
Self-employed	2,206	3,989,421	2.40	1.65	3.15	1.62	1.08	2.16	0.78	0.25	1.32
Unpaid worker/Homemaker	2,128	3,839,709	3.05	2.46	3.64	2.62	2.07	3.17	0.43	0.23	0.64
Retiree	548	782,603	3.37	1.83	4.90	2.65	1.21	4.10	0.71	0.24	1.19
Student	3,584	6,657,462	1.74	1.35	2.12	1.06	0.75	1.37	0.68	0.46	0.90
Not working <sup>c</sup>	3,549	6,191,008	4.17	3.47	4.87	2.94	2.47	3.41	1.23	0.80	1.67
<b>Household income group</b>											
Less than RM 1,000	2,733	5,117,600	3.34	2.66	4.03	2.49	2.02	2.97	0.85	0.38	1.32
RM 1,000 - RM 1,999	3,115	5,782,614	2.80	2.20	3.39	2.12	1.63	2.62	0.67	0.41	0.93
RM 2,000 - RM 2,999	2,713	5,120,787	2.22	1.76	2.68	1.56	1.18	1.95	0.66	0.43	0.89
RM 3,000 - RM 3,999	2,241	4,431,713	2.51	1.88	3.14	1.65	1.17	2.12	0.86	0.52	1.20
RM 4,000 - RM 4,999	1,407	2,784,248	2.17	1.41	2.94	1.58	0.95	2.20	0.60	0.15	1.05
RM 5,000 - RM 5,999	1,043	1,849,181	2.59	1.35	3.86	1.60	0.39	2.82	0.98	0.53	1.44
RM 6,000 - RM 6,999	847	1,622,340	2.47	1.58	3.35	1.28	0.75	1.80	1.19	0.59	1.79
RM 7,000 - RM 7,999	595	1,158,920	2.93	1.41	4.45	1.27	0.52	2.02	1.66	0.31	3.01
RM 8,000 - RM 8,999	470	978,428	3.06	1.74	4.38	0.92	0.27	1.56	2.14	0.91	3.37
RM 9,000 - RM 9,999	254	338,824	1.59	0.55	2.64	0.87	0.00	1.75	0.72	0.00	1.44
RM 10,000 and above	1,126	2,114,221	3.77	1.84	5.71	1.15	0.43	1.88	2.62	0.77	4.47

**Table 4.13:** Annual mean number of visits to outpatient healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Total			Public			Private		
			Mean	95% CI		Mean	95% CI		Mean	95% CI	
				Lower	Upper		Lower	Upper		Lower	Upper
Household income quintile											
Q1 (20% poorest)	3,445	6,491,507	3.00	2.44	3.56	2.24	1.85	2.64	0.76	0.38	1.14
Q2	3,219	6,113,177	2.78	2.23	3.33	2.09	1.62	2.55	0.69	0.44	0.94
Q3	3,270	6,280,863	2.55	2.04	3.07	1.75	1.33	2.17	0.80	0.54	1.07
Q4	3,302	6,163,428	2.25	1.70	2.81	1.51	1.01	2.02	0.74	0.47	1.01
Q5 (20% richest)	3,308	6,249,903	3.06	2.29	3.83	1.16	0.82	1.50	1.90	1.16	2.63
Household income category											
Bottom 40% (B40)	11,515	21,754,338	2.70	2.38	3.01	1.91	1.66	2.16	0.79	0.61	0.96
Middle 40% (M40)	3,678	7,087,612	2.60	2.07	3.14	1.52	1.05	1.98	1.09	0.72	1.45
Top 20% (T20)	1,351	2,456,927	3.41	1.74	5.07	1.04	0.53	1.55	2.37	0.74	3.99

95% CI = 95% Confidence Interval

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 4.14:** Distribution of frequency of visit to outpatient healthcare facilities, among those who utilised in the last 2 weeks, by sector, NHMS 2019 (N=1,697)

Frequency of visit (times of visit to same facility)	Public					Private				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
Once	985	1,377,510	85.2	82.16	87.86	460	775,456	85.2	79.19	89.73
Twice	106	135,757	8.4	6.34	11.05	50	92,029	10.1	6.53	15.34
More than twice	85	102,886	6.4	4.85	8.32	19	42,459	4.7	2.26	9.38

95% CI = 95% Confidence Interval

**Table 4.15:** Type of services received, among those who utilised outpatient healthcare facilities in the last 2 weeks, NHMS 2019 (N=1,697)

Type of service	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Follow-up	657	948,468	37.1	32.97	41.46
Medical check-up	452	674,615	26.4	23.18	29.89
Others	58	78,026	3.1	2.00	4.63
Related to previous health problems in the last 2 weeks	1,236	1,892,815	74.1	70.49	77.36

95% CI = 95% Confidence Interval

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

**Table 4.16:** Type of treatments received, among those who utilised outpatient healthcare facilities in the last 2 weeks, NHMS 2019 (N=1,697)

Type of treatment	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Modern	1,659	2,491,922	97.5	95.98	98.48
Traditional and Complementary Medicine	20	23,979	0.9	0.50	1.75

95% CI = 95% Confidence Interval

**Table 4.17:** Payer for outpatient healthcare utilisation, among those who utilised outpatient healthcare facilities in the last 2 weeks, NHMS 2019 (N=1,697)

Payer for outpatient healthcare	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Government GL/Government specific health fund <sup>b</sup>	328	312,820	12.2	10.20	14.63
Employer/Panel clinic/ Employer-sponsored health insurance	196	335,995	13.1	10.25	16.71
Personal health insurance	43	96,001	3.8	2.46	5.70
SOCSSO	37	59,597	2.3	1.44	3.75
Self/family/household members	1,040	1,679,663	65.7	62.09	69.20
Fee exemption	297	412,600	16.1	13.56	19.11
Others	12	29,710	1.2	0.48	2.80

95% CI = 95% Confidence Interval

GL = Guarantee Letter

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

b Government specific health fund includes Peduli Sihat Card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health schemes

**Table 4.18:** Overall population experience towards outpatient healthcare services, among those who utilised outpatient healthcare facilities in the last 2 weeks, NHMS 2019 (N=1,697)

Rating	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Excellent/Good	1,500	2,286,910	89.5	86.66	91.78
Fair/Poor/Very Poor	116	170,963	6.7	4.85	9.16

95% CI = 95% Confidence Interval

**Table 4.19:** Prevalence of inpatient healthcare utilisation in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>972</b>	<b>1,628,906</b>	<b>5.2</b>	<b>4.64</b>	<b>5.73</b>
<b>State</b>					
Johor	63	129,580	3.6	2.40	5.41
Kedah	60	129,660	6.5	4.78	8.71
Kelantan	35	57,006	3.2	2.08	4.89
Melaka	69	61,736	7.5	5.81	9.68
Negeri Sembilan	72	142,841	7.5	5.13	10.79
Pahang	55	86,994	5.7	4.08	7.90
Pulau Pinang	55	97,607	6.0	4.16	8.52
Perak	60	143,551	6.5	4.33	9.75
Perlis	74	18,892	8.2	5.64	11.69
Selangor	98	267,687	4.2	3.10	5.64
Terengganu	54	52,425	4.4	3.17	6.11
Sabah	72	188,581	5.0	3.65	6.75
Sarawak	58	158,651	6.0	4.50	7.93
WP Kuala Lumpur	36	82,324	4.9	2.76	8.48
WP Labuan	55	4,967	5.7	4.27	7.48
WP Putrajaya	56	6,404	6.6	4.74	9.10
<b>Location</b>					
Urban	584	1,218,036	5.2	4.53	5.86
Rural	388	410,870	5.2	4.34	6.15
<b>Sex</b>					
Male	394	648,928	4.1	3.49	4.86
Female	578	979,978	6.2	5.42	7.06
<b>Age group (Years)</b>					
0-4	102	168,433	6.6	4.97	8.76
5-9	39	47,210	1.9	1.30	2.81
10-14	28	62,118	2.5	1.52	4.21
15-19	34	69,435	2.5	1.62	3.97
20-24	51	111,951	3.7	2.62	5.29
25-29	86	239,992	7.6	5.60	10.31
30-34	93	182,190	6.5	4.90	8.58
35-39	96	178,203	7.3	5.27	10.13
40-44	50	74,651	3.9	2.68	5.71
45-49	50	66,814	3.9	2.68	5.62
50-54	53	69,047	4.2	3.02	5.90
55-59	69	88,707	6.1	4.37	8.43
60-64	66	75,913	6.4	4.40	9.21
65-69	58	79,574	9.1	6.39	12.89
70-74	40	42,297	7.2	4.45	11.33
75 and over	57	72,371	11.1	7.82	15.55
<b>Ethnicity</b>					
Malay <sup>a</sup>	674	958,036	5.5	4.93	6.13
Chinese	85	256,039	4.2	2.94	5.91
Indian	87	127,087	7.1	4.86	10.24
Bumiputera Sabah	68	142,034	6.9	4.99	9.36
Bumiputera Sarawak	43	85,942	6.1	4.58	8.09
Others	15	59,768	2.2*	1.03	4.51

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	949	1,563,339	5.5	4.93	6.06
Permanent Resident	8	6,467	2.8*	0.93	7.90
Non-Malaysian	15	59,100	2.1*	1.02	4.49
<b>Marital status<sup>b</sup></b>					
Single	123	269,965	3.0	2.30	3.81
Married	581	961,269	6.8	6.00	7.74
Widow(er)/Divorcee	112	151,659	8.5	6.61	10.96
<b>Education level</b>					
No formal education	171	254,394	5.4	4.22	6.79
Primary education	244	345,138	3.9	3.28	4.73
Secondary education	355	650,584	5.3	4.58	6.23
Tertiary education	200	375,267	6.5	5.21	8.07
<b>Occupation</b>					
Government employee	85	90,816	5.7	4.02	8.13
Private employee	160	325,967	3.8	3.07	4.75
Self-employed	97	138,336	3.5	2.62	4.58
Unpaid worker/ Homemaker	192	379,047	9.9	7.89	12.29
Retiree	46	65,235	8.3	5.72	11.99
Student	96	176,936	2.7	2.01	3.51
Not working <sup>c</sup>	296	452,569	7.3	6.10	8.74
<b>Household income group</b>					
Less than RM 1,000	193	273,772	5.3	4.36	6.54
RM 1,000 - RM 1,999	182	310,341	5.4	4.36	6.59
RM 2,000 - RM 2,999	124	223,483	4.4	3.30	5.76
RM 3,000 - RM 3,999	98	174,214	3.9	2.83	5.44
RM 4,000 - RM 4,999	88	153,694	5.5	4.07	7.45
RM 5,000 - RM 5,999	71	99,022	5.4	3.92	7.27
RM 6,000 - RM 6,999	51	100,934	6.2	3.72	10.23
RM 7,000 - RM 7,999	31	67,702	5.8	3.58	9.40
RM 8,000 - RM 8,999	34	67,578	6.9	4.52	10.42
RM 9,000 - RM 9,999	19	22,680	6.7*	2.69	15.70
RM 10,000 and above	69	114,105	5.4	3.59	8.05
<b>Household income quintile</b>					
Q1 (20% poorest)	227	331,828	5.1	4.22	6.18
Q2	186	338,638	5.5	4.42	6.93
Q3	139	236,100	3.8	2.85	4.94
Q4	201	324,575	5.3	4.29	6.45
Q5 (20% richest)	207	376,386	6.0	4.82	7.50
<b>Household income category</b>					
Bottom 40% (B40)	641	1,022,935	4.7	4.13	5.35
Middle 40% (M40)	231	411,717	5.8	4.71	7.14
Top 20% (T20)	88	172,875	7.0	4.98	9.85

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Does not include children aged less than 13 years old

<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution

**Table 4.20:** Distribution of inpatient healthcare utilisation in the last 12 months, by sector and sociodemographic characteristics, NHMS 2019 (N=972)

Sociodemographic characteristics	Public					Private				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>796</b>	<b>1,227,282</b>	<b>75.3</b>	<b>69.60</b>	<b>80.31</b>	<b>185</b>	<b>415,029</b>	<b>25.5</b>	<b>20.46</b>	<b>31.24</b>
<b>State</b>										
Johor	49	104,582	80.7	67.53	89.38	15	27,172	21.0	11.96	34.14
Kedah	45	94,814	73.1	55.80	85.43	15	34,845	26.9	14.57	44.20
Kelantan	32	54,021	94.8	81.27	98.69	3	2,985	5.2	1.31	18.75
Melaka	54	47,848	77.5	55.63	90.45	15	13,888	22.5	9.55	44.37
Negeri Sembilan	50	106,095	74.3	55.39	87.04	22	36,746	25.7	12.96	44.61
Pahang	47	68,298	78.5	48.48	93.41	8	18,696	21.5	6.59	51.52
Pulau Pinang	43	55,533	56.9	29.77	80.43	12	42,074	43.1	19.57	70.23
Perak	54	114,520	79.8	58.18	91.79	8	32,006	22.3	9.94	42.72
Perlis	68	17,480	92.5	84.51	96.56	7	1,510	8.0	3.82	15.95
Selangor	70	158,669	59.3	43.62	73.24	31	117,031	43.7	29.53	59.02
Terengganu	48	46,154	88.0	75.04	94.74	6	6,271	12.0	5.26	24.96
Sabah	66	170,032	90.2	76.18	96.33	6	18,548	9.8	3.67	23.82
Sarawak	55	134,491	84.8	57.65	95.79	3	24,161	15.2	4.21	42.35
WP Kuala Lumpur	24	45,487	55.3	29.12	78.78	12	36,837	44.7	21.22	70.88
WP Labuan	48	4,200	84.5	64.73	94.23	7	767	15.5	5.77	35.27
WP Putrajaya	43	5,060	79.0	62.51	89.49	15	1,490	23.3	11.96	40.35
<b>Location</b>										
Urban	447	854,979	70.2	63.19	76.36	143	372,616	30.6	24.37	37.61
Rural	349	372,303	90.6	82.64	95.14	42	42,413	10.3	5.64	18.15
<b>Sex</b>										
Male	324	511,899	78.9	71.85	84.54	79	150,435	23.2	17.39	30.20
Female	472	715,383	73.0	65.29	79.53	106	264,594	27.0	20.47	34.71
<b>Age group (Years)</b>										
0-4	87	128,019	76.0	57.10	88.29	17	42,682	25.3	12.91	43.72
5-9	35	40,678	86.2	65.78	95.28	5	8,912	18.9	7.59	39.75
10-14	25	46,844	75.4	44.41	92.17	3	15,275	24.6	7.83	55.59
15-19	29	52,267	75.3	50.85	89.96	6	17,265	24.9	10.15	49.23
20-24	42	93,556	83.6	68.86	92.13	9	18,395	16.4	7.87	31.14
25-29	74	175,207	73.0	52.73	86.77	13	66,685	27.8	13.92	47.80
30-34	75	140,434	77.1	62.46	87.18	19	41,809	22.9	12.85	37.57
35-39	70	94,855	53.2	35.44	70.24	27	87,081	48.9	31.94	66.06
40-44	36	55,568	74.4	54.92	87.44	14	19,083	25.6	12.56	45.08
45-49	37	39,037	58.4	36.36	77.56	13	27,777	41.6	22.44	63.64
50-54	41	47,885	69.4	50.07	83.62	12	21,162	30.6	16.38	49.93
55-59	57	74,522	84.0	72.17	91.41	12	14,185	16.0	8.59	27.83
60-64	55	65,212	85.9	70.93	93.84	11	10,701	14.1	6.16	29.07
65-69	49	65,763	82.6	57.22	94.43	10	14,935	18.8	6.54	43.26
70-74	37	41,596	98.3	90.20	99.74	3	700	1.7	0.26	9.80
75 and over	47	65,840	91.0	79.79	96.26	11	8,381	11.6	5.19	23.86
<b>Ethnicity</b>										
Malay <sup>a</sup>	572	787,403	82.2	76.66	86.64	108	178,634	18.6	14.17	24.14
Chinese	48	117,434	45.9	31.44	61.02	37	138,606	54.1	38.98	68.56
Indian	58	76,518	60.2	45.15	73.56	32	55,974	44.0	29.23	60.00
Bumiputera Sabah	66	138,062	97.2	84.04	99.57	2	3,972	2.8	0.43	15.96
Bumiputera Sarawak	42	78,742	91.6	60.01	98.76	1	7,200	8.4	1.24	39.99
Others	10	29,124	48.7	17.80	80.66	5	30,643	51.3	19.34	82.20

**Table 4.20:** Distribution of inpatient healthcare utilisation in the last 12 months, by sector and sociodemographic characteristics, NHMS 2019 (N=972) (cont'd)

Sociodemographic characteristics	Public					Private				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
Citizenship										
Malaysian	780	1,194,058	76.4	70.72	81.23	178	382,687	24.5	19.56	30.17
Permanent Resident	6	4,768	73.7	22.39	96.47	2	1,699	26.3	3.53	77.61
Non-Malaysian	10	28,457	48.1	17.38	80.40	5	30,643	51.9	19.60	82.62
Marital status <sup>b</sup>										
Single	102	214,258	79.4	68.74	87.06	23	57,703	21.4	13.55	32.04
Married	466	695,424	72.3	64.45	79.06	119	272,606	28.4	21.65	36.18
Widow(er)/Divorcee	93	130,007	85.7	75.02	92.31	19	21,651	14.3	7.69	24.98
Education level										
No formal education	151	209,551	82.4	68.12	91.09	23	49,490	19.5	10.53	33.14
Primary education	214	304,696	88.3	79.23	93.70	31	42,292	12.3	6.75	21.24
Secondary education	300	505,277	77.7	68.74	84.61	59	152,162	23.4	16.38	32.25
Tertiary education	129	204,236	54.4	42.06	66.26	72	171,085	45.6	33.75	57.95
Occupation										
Government employee	66	64,995	71.6	50.07	86.34	21	29,607	32.6	16.85	53.59
Private employee	111	213,404	65.5	53.51	75.75	49	112,562	34.5	24.25	46.49
Self-employed	73	96,617	69.8	56.51	80.50	25	43,569	31.5	20.67	44.79
Unpaid worker/Homemaker	165	272,453	71.9	57.59	82.79	27	106,593	28.1	17.21	42.41
Retiree	35	48,810	74.8	48.96	90.20	12	17,551	26.9	11.11	52.00
Student	82	129,282	73.1	57.02	84.73	15	47,751	27.0	15.32	43.02
Not working <sup>c</sup>	264	401,721	88.8	79.86	94.03	36	57,396	12.7	7.20	21.38
Household income group										
Less than RM 1,000	172	235,559	86.0	72.99	93.36	22	40,063	14.6	7.19	27.50
RM 1,000 - RM 1,999	171	297,828	96.0	90.72	98.30	11	12,513	4.0	1.70	9.28
RM 2,000 - RM 2,999	109	179,645	80.4	61.34	91.37	15	43,839	19.6	8.63	38.66
RM 3,000 - RM 3,999	89	134,205	77.0	52.54	91.04	11	44,083	25.3	10.88	48.47
RM 4,000 - RM 4,999	72	119,088	77.5	57.54	89.73	18	39,465	25.7	12.99	44.44
RM 5,000 - RM 5,999	55	71,418	72.1	53.29	85.44	17	27,658	27.9	14.61	46.75
RM 6,000 - RM 6,999	37	58,085	57.5	37.88	75.08	14	42,849	42.5	24.92	62.12
RM 7,000 - RM 7,999	22	47,926	70.8	40.93	89.45	9	19,775	29.2	10.55	59.07
RM 8,000 - RM 8,999	20	29,954	44.3	19.95	71.78	14	37,624	55.7	28.22	80.05
RM 9,000 - RM 9,999	7	4,878	21.5	3.75	65.83	12	17,802	78.5	34.17	96.25
RM 10,000 and above	32	30,162	26.4	12.67	47.08	38	84,037	73.6	53.00	87.39
Household income quintile										
Q1 (20% poorest)	205	293,551	88.5	77.16	94.57	23	40,127	12.1	5.88	23.25
Q2	168	289,832	85.6	71.89	93.24	18	48,807	14.4	6.76	28.11
Q3	129	206,384	87.4	64.48	96.37	12	33,790	14.3	4.79	35.68
Q4	163	244,590	75.4	63.57	84.27	41	84,897	26.2	17.18	37.69
Q5 (20% richest)	121	174,392	46.3	35.37	57.66	87	202,088	53.7	42.36	64.65
Household income category										
Bottom 40% (B40)	573	875,563	85.6	78.87	90.44	73	157,083	15.4	10.45	21.99
Middle 40% (M40)	171	276,214	67.1	56.47	76.21	61	136,628	33.2	24.09	43.74
Top 20% (T20)	42	56,972	33.0	18.68	51.27	47	115,996	67.1	48.79	81.36

95% CI = 95% Confidence Interval

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 4.21:** Distribution of number of inpatient healthcare facilities utilised, among those who were admitted in the last 12 months, NHMS 2019 (N=972)

Number of place	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
1 place	932	1,569,019	96.3	94.38	97.61
2 places and above	40	59,886	3.7	2.39	5.62

95% CI = 95% Confidence Interval

**Table 4.22:** Annual mean number of admissions to inpatient healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Total			Public			Private		
			Mean	95% CI		Mean	95% CI		Mean	95% CI	
				Lower	Upper		Lower	Upper		Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>31,574,566</b>	<b>0.07</b>	<b>0.06</b>	<b>0.08</b>	<b>0.05</b>	<b>0.04</b>	<b>0.06</b>	<b>0.02</b>	<b>0.01</b>	<b>0.02</b>
<b>State</b>											
Johor	1,487	3,583,487	0.04	0.02	0.06	0.03	0.02	0.05	0.01	0.00	0.01
Kedah	948	2,002,593	0.08	0.06	0.11	0.06	0.04	0.08	0.02	0.01	0.04
Kelantan	1,040	1,780,805	0.03	0.02	0.05	0.03	0.02	0.04	0.00	0.00	0.00
Melaka	919	820,924	0.12	0.08	0.16	0.10	0.05	0.14	0.02	0.01	0.04
Negeri Sembilan	894	1,909,034	0.08	0.05	0.11	0.06	0.04	0.08	0.02	0.00	0.04
Pahang	994	1,527,286	0.06	0.04	0.08	0.05	0.03	0.07	0.01	0.00	0.03
Pulau Pinang	950	1,631,913	0.09	0.03	0.15	0.04	0.02	0.05	0.05	0.00	0.12
Perak	811	2,196,662	0.09	0.05	0.13	0.07	0.04	0.10	0.02	0.00	0.05
Perlis	914	231,316	0.11	0.06	0.17	0.11	0.05	0.16	0.01	0.00	0.01
Selangor	1,811	6,390,944	0.05	0.04	0.07	0.03	0.02	0.05	0.02	0.01	0.03
Terengganu	1,118	1,187,197	0.07	0.04	0.10	0.06	0.04	0.09	0.01	0.00	0.02
Sabah	1,355	3,790,738	0.07	0.04	0.09	0.06	0.04	0.08	0.01	0.00	0.01
Sarawak	1,005	2,648,630	0.07	0.06	0.09	0.06	0.05	0.08	0.01	0.00	0.02
WP Kuala Lumpur	729	1,688,285	0.08	0.02	0.14	0.06	0.00	0.11	0.02	0.00	0.04
WP Labuan	912	87,678	0.06	0.04	0.08	0.05	0.03	0.07	0.01	0.00	0.02
WP Putrajaya	801	97,074	0.09	0.06	0.11	0.07	0.04	0.09	0.02	0.00	0.03
<b>Location</b>											
Urban	10,009	23,623,015	0.07	0.06	0.08	0.05	0.04	0.06	0.02	0.01	0.03
Rural	6,679	7,951,551	0.07	0.05	0.08	0.06	0.05	0.07	0.01	0.00	0.01
<b>Sex</b>											
Male	8,043	15,738,005	0.06	0.05	0.07	0.05	0.04	0.06	0.01	0.01	0.02
Female	8,645	15,836,561	0.08	0.06	0.09	0.06	0.05	0.06	0.02	0.01	0.03
<b>Age group (Years)</b>											
0-4	1,298	2,546,160	0.08	0.06	0.10	0.06	0.04	0.08	0.02	0.00	0.03
5-9	1,565	2,469,031	0.03	0.01	0.04	0.02	0.01	0.03	0.01	0.00	0.01
10-14	1,428	2,445,646	0.03	0.01	0.04	0.02	0.01	0.03	0.01	0.00	0.01
15-19	1,094	2,727,354	0.03	0.02	0.05	0.03	0.01	0.04	0.01	0.00	0.02
20-24	1,048	3,002,365	0.05	0.03	0.06	0.04	0.02	0.06	0.01	0.00	0.01
25-29	1,121	3,147,072	0.09	0.06	0.11	0.06	0.04	0.09	0.02	0.01	0.04
30-34	1,189	2,801,848	0.09	0.05	0.12	0.07	0.04	0.10	0.02	0.01	0.03
35-39	1,254	2,428,096	0.08	0.05	0.12	0.04	0.03	0.06	0.04	0.01	0.07
40-44	1,064	1,902,132	0.04	0.03	0.06	0.03	0.02	0.05	0.01	0.00	0.02
45-49	1,062	1,716,563	0.05	0.03	0.07	0.03	0.01	0.04	0.02	0.00	0.03
50-54	1,063	1,632,323	0.06	0.04	0.08	0.05	0.02	0.07	0.01	0.01	0.02
55-59	998	1,455,774	0.11	0.04	0.18	0.10	0.03	0.16	0.01	0.00	0.02
60-64	852	1,186,746	0.10	0.03	0.18	0.06	0.04	0.09	0.04	0.00	0.11
65-69	693	871,596	0.13	0.08	0.19	0.11	0.07	0.15	0.03	0.00	0.06

**Table 4.22:** Annual mean number of admissions to inpatient healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Total			Public			Private		
			Mean	95% CI		Mean	95% CI		Mean	95% CI	
				Lower	Upper		Lower	Upper		Lower	Upper
70-74	492	590,567	0.07	0.04	0.11	0.07	0.04	0.11	0.00	0.00	0.00
75 and over	467	651,295	0.19	0.11	0.27	0.16	0.09	0.23	0.03	0.00	0.06
<b>Ethnicity</b>											
Malay <sup>a</sup>	11,325	17,425,958	0.07	0.06	0.08	0.06	0.05	0.07	0.01	0.01	0.02
Chinese	1,035	2,071,061	0.06	0.03	0.09	0.03	0.01	0.05	0.03	0.01	0.05
Indian	698	1,407,413	0.09	0.05	0.12	0.05	0.04	0.07	0.03	0.01	0.06
Bumiputera Sabah	1,838	6,122,813	0.09	0.06	0.12	0.09	0.06	0.12	0.00	0.00	0.01
Bumiputera Sarawak	980	1,792,154	0.08	0.06	0.11	0.08	0.05	0.10	0.01	0.00	0.01
Others	812	2,755,167	0.02	0.01	0.04	0.01	0.00	0.02	0.01	0.00	0.03
<b>Citizenship</b>											
Malaysian	15,783	28,584,000	0.07	0.06	0.08	0.05	0.05	0.06	0.02	0.01	0.02
Permanent Resident	121	234,440	0.06	0.00	0.16	0.06	0.00	0.15	0.01	0.00	0.02
Non-Malaysian	780	2,749,951	0.02	0.01	0.04	0.01	0.00	0.02	0.01	0.00	0.03
<b>Marital status<sup>b</sup></b>											
Single	3,713	9,109,430	0.04	0.03	0.05	0.03	0.02	0.04	0.01	0.00	0.01
Married	7,938	14,095,355	0.09	0.07	0.10	0.06	0.05	0.08	0.02	0.02	0.03
Widow(er)/Divorcee	1,255	1,776,520	0.13	0.08	0.18	0.09	0.07	0.12	0.04	0.00	0.08
<b>Education level</b>											
No formal education	2,560	4,743,451	0.07	0.05	0.09	0.06	0.04	0.07	0.01	0.00	0.02
Primary education	5,111	8,762,445	0.06	0.04	0.07	0.05	0.03	0.06	0.01	0.00	0.02
Secondary education	6,091	12,172,330	0.07	0.06	0.08	0.06	0.04	0.07	0.01	0.01	0.02
Tertiary education	2,868	5,776,720	0.07	0.06	0.09	0.04	0.03	0.05	0.03	0.02	0.05
<b>Occupation</b>											
Government employee	1,225	1,583,152	0.07	0.04	0.10	0.05	0.03	0.08	0.02	0.00	0.03
Private employee	3,446	8,525,793	0.04	0.03	0.05	0.03	0.02	0.03	0.02	0.01	0.02
Self-employed	2,206	3,989,421	0.04	0.03	0.06	0.03	0.02	0.04	0.01	0.01	0.02
Unpaid worker/Homemaker	2,128	3,839,709	0.12	0.09	0.15	0.09	0.07	0.11	0.03	0.01	0.05
Retiree	548	782,603	0.15	0.03	0.27	0.12	0.01	0.24	0.03	0.00	0.07
Student	3,584	6,657,462	0.03	0.02	0.04	0.02	0.02	0.03	0.01	0.00	0.01
Not working <sup>c</sup>	3,549	6,191,008	0.11	0.09	0.14	0.09	0.07	0.11	0.02	0.00	0.03
<b>Household income group</b>											
Less than RM 1,000	2,733	5,117,600	0.08	0.05	0.10	0.07	0.04	0.09	0.01	0.00	0.02
RM 1,000 - RM 1,999	3,115	5,782,614	0.06	0.05	0.08	0.06	0.05	0.07	0.00	0.00	0.01
RM 2,000 - RM 2,999	2,713	5,120,787	0.06	0.04	0.07	0.04	0.03	0.06	0.01	0.00	0.02
RM 3,000 - RM 3,999	2,241	4,431,713	0.05	0.04	0.07	0.04	0.03	0.05	0.01	0.00	0.02
RM 4,000 - RM 4,999	1,407	2,784,248	0.07	0.05	0.09	0.05	0.04	0.07	0.02	0.00	0.03
RM 5,000 - RM 5,999	1,043	1,849,181	0.07	0.05	0.10	0.06	0.03	0.08	0.02	0.01	0.03
RM 6,000 - RM 6,999	847	1,622,340	0.07	0.03	0.12	0.04	0.02	0.06	0.04	0.00	0.07
RM 7,000 - RM 7,999	595	1,158,920	0.06	0.03	0.09	0.05	0.02	0.07	0.02	0.00	0.04
RM 8,000 - RM 8,999	470	978,428	0.09	0.05	0.12	0.04	0.01	0.07	0.04	0.01	0.08
RM 9,000 - RM 9,999	254	338,824	0.16	0.00	0.37	0.11	0.00	0.31	0.05	0.00	0.11
RM 10,000 and above	1,126	2,114,221	0.08	0.03	0.13	0.02	0.00	0.04	0.06	0.01	0.11

**Table 4.22:** Annual mean number of admissions to inpatient healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Total			Public			Private		
			Mean	95% CI		Mean	95% CI		Mean	95% CI	
				Lower	Upper		Lower	Upper		Lower	Upper
Household income quintile											
Q1 (20% poorest)	3,445	6,491,507	0.07	0.05	0.09	0.06	0.05	0.08	0.01	0.00	0.01
Q2	3,219	6,113,177	0.06	0.05	0.08	0.05	0.04	0.07	0.01	0.00	0.02
Q3	3,270	6,280,863	0.05	0.04	0.06	0.04	0.03	0.06	0.01	0.00	0.01
Q4	3,302	6,163,428	0.07	0.05	0.08	0.05	0.04	0.07	0.02	0.01	0.02
Q5 (20% richest)	3,308	6,249,903	0.08	0.06	0.11	0.04	0.02	0.05	0.04	0.02	0.06
Household income category											
Bottom 40% (B40)	11,515	1,311,176	0.06	0.05	0.07	0.05	0.04	0.06	0.01	0.01	0.01
Middle 40% (M40)	3,678	541,015	0.08	0.06	0.09	0.05	0.04	0.07	0.02	0.01	0.03
Top 20% (T20)	1,351	239,587	0.10	0.05	0.14	0.03	0.01	0.05	0.06	0.02	0.11

95% CI = 95% Confidence Interval

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 4.23:** Mean number of admissions and length of stay in inpatient healthcare facilities, among those who were admitted in the last 12 months, by sector, location and state, NHMS 2019

Type of facility/characteristics	Count	Estimated population	Mean	SD	Median	IQR	95% CI	
							Lower	Upper
Frequency of admissions (times)								
Total (Overall)	968	2,120,416	1.31	1.20	1.00	1.00 - 1.00	1.21	1.40
Sector								
Public facility	792	1,599,893	1.31	1.20	1.00	1.00 - 1.00	1.21	1.42
Private facility	185	520,522	1.25	1.15	1.00	1.00 - 1.00	1.06	1.45
Location								
Urban	583	1,593,269	1.31	1.26	1.00	1.00 - 1.00	1.20	1.43
Rural	385	527,146	1.29	0.99	1.00	1.00 - 1.00	1.17	1.41
State								
Johor	62	149,849	1.20	0.59	1.00	1.00 - 1.00	1.09	1.31
Kedah	59	163,722	1.27	0.98	1.00	1.00 - 1.00	1.04	1.49
Kelantan	34	57,228	1.03	0.17	1.00	1.00 - 1.00	0.98	1.08
Melaka	68	100,703	1.64	1.23	1.00	1.00 - 2.00	1.33	1.95
Negeri Sembilan	72	151,775	1.06	0.33	1.00	1.00 - 1.00	0.99	1.13
Pahang	55	93,224	1.07	0.44	1.00	1.00 - 1.00	0.97	1.17
Pulau Pinang	55	148,160	1.52	2.03	1.00	1.00 - 1.00	0.84	2.20
Perak	60	201,828	1.41	0.65	1.00	1.00 - 2.00	1.25	1.56
Perlis	74	26,122	1.38	0.92	1.00	1.00 - 1.00	0.92	1.84
Selangor	98	350,327	1.31	1.11	1.00	1.00 - 1.00	1.06	1.55
Terengganu	54	86,269	1.65	1.29	1.00	1.00 - 2.00	1.29	2.00
Sabah	72	249,005	1.32	0.87	1.00	1.00 - 1.00	1.12	1.52
Sarawak	58	195,141	1.23	1.05	1.00	1.00 - 1.00	1.01	1.45
WP Kuala Lumpur	36	133,468	1.62	3.15	1.00	1.00 - 1.00	0.59	2.66
WP Labuan	55	5,330	1.07	0.38	1.00	1.00 - 1.00	0.99	1.16
WP Putrajaya	56	8,265	1.29	0.64	1.00	1.00 - 1.00	1.14	1.45
Length of stay (days)								
Total (Overall)	958	11,039,277	6.86	19.91	3.00	2.00 - 6.00	5.40	8.32
Sector								
Public facility	787	8,204,702	6.74	14.32	3.00	2.00 - 7.00	5.40	8.07
Private facility	180	2,834,575	6.99	31.00	3.00	2.00 - 4.00	3.21	10.77

**Table 4.23:** Mean number of admissions and length of stay in inpatient healthcare facilities, among those who were admitted in the last 12 months, by sector, location and state, NHMS 2019 (cont'd)

Sociodemographic characteristics	Count	Estimated population	Mean	SD	Median	IQR	95% CI	
							Lower	Upper
Location								
Urban	575	8,578,562	7.13	19.60	3.00	2.00 - 6.00	5.29	8.96
Rural	383	2,460,715	6.06	20.81	3.00	2.00 - 6.00	4.10	8.02
State								
Johor	62	607,270	4.75	4.32	3.00	2.00 - 6.00	3.90	5.59
Kedah	56	845,908	7.02	31.54	3.00	2.00 - 4.00	1.44	12.60
Kelantan	35	260,153	4.56	2.84	3.00	3.00 - 7.00	3.84	5.29
Melaka	67	969,607	16.00	34.74	4.00	2.00 - 12.00	3.43	28.57
Negeri Sembilan	71	550,148	3.86	5.75	3.00	2.00 - 4.00	2.51	5.22
Pahang	55	382,308	4.40	4.74	3.00	2.00 - 5.00	2.56	6.22
Pulau Pinang	55	962,813	9.86	32.90	3.00	2.00 - 4.00	0.00	20.54
Perak	59	773,736	5.44	14.58	3.00	2.00 - 6.00	2.73	8.16
Perlis	74	262,529	13.90	38.74	4.00	3.00 - 7.00	2.93	24.86
Selangor	97	1,662,763	6.26	9.41	3.00	2.00 - 7.00	4.34	8.18
Terengganu	54	232,609	4.44	4.59	3.00	2.00 - 5.00	3.29	5.59
Sabah	72	886,675	4.70	3.87	3.00	2.00 - 7.00	3.80	5.61
Sarawak	58	1,499,846	9.45	20.28	3.00	1.00 - 7.00	3.13	15.78
WP Kuala Lumpur	34	1,096,893	13.90	47.01	3.00	2.00 - 7.00	0.00	28.08
WP Labuan	55	19,924	4.01	3.93	3.00	2.00 - 5.00	2.64	5.38
WP Putrajaya	54	26,094	4.22	3.40	3.00	2.00 - 5.00	3.35	5.09

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

**Table 4.24:** Distribution of total days spent in inpatient healthcare facilities, among those who were admitted in the last 12 months, NHMS 2019 (N=972)

Number of day	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
1 day	154	265,133	16.5	13.15	20.43
2 days	153	336,388	20.9	16.92	25.53
3 days	178	310,886	19.3	15.62	23.64
4 days	112	148,400	9.2	7.03	12.00
More than 4 days	361	548,614	34.1	29.92	38.52

95% CI = 95% Confidence Interval

**Table 4.25:** Payer for inpatient healthcare utilisation, among those who were admitted in the last 12 months, NHMS 2019 (N=972)

Payer for inpatient healthcare	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Government GL/Government specific health fund <sup>b</sup>	251	309,143	19.0	15.59	22.90
Employer/Panel clinic/ Employer-sponsored health insurance	78	160,969	9.9	6.82	14.11
Personal health insurance	90	193,507	11.9	8.76	15.92
SOCSSO	22	43,300	2.7	1.35	5.17
Self/family/household members	560	1,019,557	62.6	57.44	67.47
Fee exemption	133	179,331	11.0	8.54	14.08
Others	16	18,651	1.1	0.60	2.16

95% CI = 95% Confidence Interval

GL = Guarantee Letter

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

b Government specific health fund includes Peduli Sihat Card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health schemes

**Table 4.26:** Overall population experience towards inpatient healthcare services, among those who were admitted in the last 12 months, NHMS 2019 (N=972)

Rating	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Excellent/Good	854	1,392,785	85.5	81.71	88.62
Fair/Poor/Very Poor	70	139,136	8.5	6.13	11.78

95% CI = 95% Confidence Interval

**Table 4.27:** Prevalence of domiciliary care utilisation in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>317</b>	<b>534,334</b>	<b>1.7</b>	<b>1.32</b>	<b>2.17</b>
<b>State</b>					
Johor	26	70,134	2.0*	1.07	3.54
Kedah	15	27,799	1.4*	0.72	2.67
Kelantan	5	10,117	0.6*	0.23	1.39
Melaka	19	19,542	2.4*	1.09	5.12
Negeri Sembilan	11	26,526	1.4*	0.59	3.23
Pahang	4	3,149	0.2*	0.06	0.72
Pulau Pinang	17	10,689	0.7*	0.32	1.35
Perak	20	50,730	2.3*	1.18	4.46
Perlis	17	5,418	2.3*	0.83	6.40
Selangor	28	68,871	1.1*	0.53	2.16
Terengganu	25	27,730	2.3*	1.05	5.09
Sabah	17	41,526	1.1	0.65	1.85
Sarawak	58	153,853	5.8	3.26	10.14
WP Kuala Lumpur	6	13,240	0.8*	0.27	2.26
WP Labuan	14	1,224	1.4*	0.70	2.78
WP Putrajaya	35	3,785	3.9	2.40	6.27
<b>Location</b>					
Urban	184	381,910	1.6	1.17	2.23
Rural	133	152,423	1.9	1.36	2.69
<b>Sex</b>					
Male	101	179,778	1.1	0.80	1.64
Female	216	354,556	2.2	1.73	2.90
<b>Age group (Years)</b>					
0-4	65	107,277	4.2	2.88	6.13
5-9	7	7,653	0.3*	0.12	0.82
10-14	11	26,492	1.1*	0.40	2.88
15-19	7	24,287	0.9*	0.41	1.94
20-24	18	43,038	1.4*	0.78	2.60
25-29	39	69,731	2.2	1.27	3.84
30-34	47	90,445	3.2	2.23	4.64
35-39	36	51,123	2.1	1.27	3.47
40-44	16	21,865	1.1*	0.61	2.14
45-49	11	21,425	1.2*	0.52	2.96
50-54	14	10,593	0.6*	0.28	1.48
55-59	8	10,723	0.7*	0.33	1.64
60-64	10	15,557	1.3*	0.63	2.70
65-69	11	13,276	1.5*	0.71	3.22
70-74	9	10,580	1.8*	0.61	5.17
75 and over	8	10,268	1.6*	0.48	5.03
<b>Ethnicity</b>					
Malay <sup>a</sup>	231	324,437	1.9	1.45	2.39
Chinese	9	28,735	0.5*	0.16	1.34
Indian	10	18,935	1.1*	0.45	2.46
Bumiputera Sabah	11	23,109	1.1*	0.57	2.18
Bumiputera Sarawak	50	122,338	8.7*	4.75	15.37
Others	6	16,780	0.6*	0.22	1.69

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	310	512,559	1.8	1.39	2.32
Permanent Resident	1	635	0.3*	0.04	1.92
Non-Malaysian	6	21,140	0.8*	0.28	2.09
<b>Marital status<sup>b</sup></b>					
Single	37	86,493	0.9	0.55	1.62
Married	181	282,499	2.0	1.54	2.61
Widow(er)/Divorcee	20	31,730	1.8*	0.94	3.36
<b>Education level</b>					
No formal education	85	143,272	3.0	2.14	4.25
Primary education	57	87,695	1.0	0.65	1.54
Secondary education	99	190,466	1.6	1.07	2.28
Tertiary education	74	109,920	1.9	1.36	2.66
<b>Occupation</b>					
Government employee	40	41,568	2.6	1.53	4.48
Private employee	48	99,758	1.2	0.75	1.83
Self-employed	35	66,962	1.7	1.03	2.73
Unpaid worker/ Homemaker	69	116,598	3.0	2.16	4.26
Retiree	5	8,798	1.1*	0.45	2.79
Student	21	38,014	0.6*	0.27	1.19
Not working <sup>c</sup>	98	160,587	2.6	1.88	3.56
<b>Household income group</b>					
Less than RM 1,000	45	62,161	1.2	0.75	1.97
RM 1,000 - RM 1,999	60	128,384	2.2	1.44	3.40
RM 2,000 - RM 2,999	38	61,572	1.2	0.75	1.92
RM 3,000 - RM 3,999	47	88,322	2.0	1.18	3.36
RM 4,000 - RM 4,999	31	55,446	2.0*	0.97	4.04
RM 5,000 - RM 5,999	33	36,896	2.0*	1.06	3.72
RM 6,000 - RM 6,999	23	29,193	1.8*	0.90	3.58
RM 7,000 - RM 7,999	7	13,988	1.2*	0.37	3.82
RM 8,000 - RM 8,999	14	23,477	2.4*	0.79	7.03
RM 9,000 - RM 9,999	3	3,418	1.0*	0.14	6.74
RM 10,000 and above	15	31,355	1.5*	0.40	5.34
<b>Household income quintile</b>					
Q1 (20% poorest)	58	87,810	1.4	0.86	2.13
Q2	59	116,207	1.9	1.21	2.97
Q3	55	104,598	1.7	1.10	2.52
Q4	82	124,166	2.0	1.20	3.36
Q5 (20% richest)	62	101,431	1.6	0.93	2.83
<b>Household income category</b>					
Bottom 40% (B40)	219	355,585	1.6	1.26	2.12
Middle 40% (M40)	80	131,234	1.9	1.14	2.99
Top 20% (T20)	17	47,393	1.9*	0.80	4.59

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli<sup>b</sup> Does not include children aged less than 13 years old<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution

**Table 4.28:** Perceived need for domiciliary care services in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>4,033</b>	<b>7,427,504</b>	<b>23.5</b>	<b>21.49</b>	<b>25.69</b>
<b>State</b>					
Johor	52	144,497	4.0	2.70	5.98
Kedah	123	198,454	9.9	7.18	13.52
Kelantan	213	365,680	20.5	16.52	25.22
Melaka	396	319,179	38.9	23.18	57.28
Negeri Sembilan	160	315,035	16.5	10.50	24.98
Pahang	89	126,776	8.3	5.94	11.49
Pulau Pinang	258	367,576	22.5	16.45	30.03
Perak	200	479,945	21.8	17.38	27.09
Perlis	166	38,241	16.5	11.18	23.77
Selangor	576	1,910,936	29.9	26.46	33.59
Terengganu	461	499,280	42.1	34.23	50.30
Sabah	459	1,278,409	33.7	28.23	39.70
Sarawak	511	1,287,862	48.6	41.53	55.77
WP Kuala Lumpur	31	58,175	3.4	1.96	5.99
WP Labuan	82	6,674	7.6	5.07	11.28
WP Putrajaya	256	30,782	31.7	26.22	37.76
<b>Location</b>					
Urban	2,178	5,204,589	22.0	19.75	24.50
Rural	1,855	2,222,915	28.0	23.80	32.53
<b>Sex</b>					
Male	1,842	3,726,953	23.7	21.28	26.26
Female	2,191	3,700,551	23.4	21.20	25.68
<b>Age group (Years)</b>					
0-4	341	610,419	24.0	19.97	28.49
5-9	351	544,976	22.1	18.79	25.75
10-14	304	525,437	21.5	17.96	25.49
15-19	241	621,101	22.8	18.72	27.40
20-24	234	789,741	26.3	21.68	31.52
25-29	281	740,253	23.5	19.17	28.51
30-34	309	683,487	24.4	21.98	28.17
35-39	321	568,005	23.4	19.17	28.23
40-44	236	452,850	23.8	19.86	28.27
45-49	264	438,319	25.5	21.51	30.03
50-54	264	368,768	22.6	19.08	26.54
55-59	208	265,001	18.2	14.74	22.27
60-64	217	279,771	23.6	18.59	29.41
65-69	189	246,625	28.3	23.04	34.22
70-74	137	154,635	26.2	20.33	33.03
75 and over	136	138,117	21.2	16.23	27.21
<b>Ethnicity</b>					
Malay <sup>a</sup>	2,759	3,898,757	22.4	20.10	24.82
Chinese	298	1,085,713	17.7	13.79	22.50
Indian	198	360,013	20.1	16.09	24.78
Bumiputera Sabah	291	727,634	35.1	28.49	42.41
Bumiputera Sarawak	314	756,447	53.7	45.26	62.02
Others	173	598,938	21.7	15.15	30.17

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	3,849	6,815,753	23.8	21.74	26.09
Permanent Resident	20	23,442	10.0	4.95	19.17
Non-Malaysian	163	588,159	21.4	14.81	29.87
<b>Marital status<sup>b</sup></b>					
Single	853	2,109,531	23.2	20.31	26.27
Married	1,904	3,315,493	23.5	21.37	25.82
Widow(er)/Divorcee	379	483,505	27.2	23.43	31.36
<b>Education level</b>					
No formal education	675	1,140,426	24.0	20.43	28.07
Primary education	1,242	2,023,474	23.1	20.30	26.14
Secondary education	1,432	2,873,177	23.6	21.19	26.20
Tertiary education	672	1,365,103	23.6	20.65	26.90
<b>Occupation</b>					
Government employee	302	332,925	21.0	17.55	24.99
Private employee	734	1,893,191	22.2	19.24	25.48
Self-employed	561	1,056,847	26.5	23.18	30.09
Unpaid worker/ Homemaker	564	885,950	23.1	20.20	26.22
Retiree	132	181,408	23.2	17.96	29.38
Student	777	1,480,903	22.2	19.35	25.44
Not working <sup>c</sup>	962	1,594,229	25.8	22.61	29.16
<b>Household income group</b>					
Less than RM 1,000	809	1,407,462	27.5	23.70	31.66
RM 1,000 - RM 1,999	804	1,462,862	25.3	21.86	29.91
RM 2,000 - RM 2,999	595	1,006,433	19.7	16.67	23.03
RM 3,000 - RM 3,999	514	1,073,896	24.2	19.83	29.26
RM 4,000 - RM 4,999	329	667,380	24.0	19.53	29.05
RM 5,000 - RM 5,999	278	466,536	25.2	20.28	30.92
RM 6,000 - RM 6,999	166	323,251	19.9	14.54	26.69
RM 7,000 - RM 7,999	146	317,169	27.4	18.91	37.84
RM 8,000 - RM 8,999	117	211,291	21.6	12.46	34.78
RM 9,000 - RM 9,999	41	34,739	10.3	5.05	19.72
RM 10,000 and above	214	440,293	20.8	15.42	27.51
<b>Household income quintile</b>					
Q1 (20% poorest)	967	1,708,609	26.3	23.95	29.99
Q2	826	1,470,194	24.0	20.79	27.64
Q3	715	1,398,743	22.3	18.69	26.32
Q4	815	1,497,414	24.3	21.13	27.76
Q5 (20% richest)	690	1,336,352	21.4	17.58	25.75
<b>Household income category</b>					
Bottom 40% (B40)	2,926	5,274,922	24.2	21.99	26.66
Middle 40% (M40)	849	1,643,551	23.2	19.82	26.93
Top 20% (T20)	238	492,838	20.1	14.33	27.36

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Does not include children aged less than 13 years old

<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 4.29:** Distribution of domiciliary care providers in the last 12 months, NHMS 2019 (N=303)

Care provider	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Government	280	471,181	88.2	82.14	92.37
Private	13	13,680	2.6	1.17	5.53
Non-Government Organisation (NGO)	1	2,652	0.5	0.07	3.53

95% CI = 95% Confidence Interval

**Table 4.30:** Mean utilisation of domiciliary care, among those who received care in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=317)

Sociodemographic characteristics	Count	Estimated population	Mean	SD	Median	IQR	95% CI	
							Lower	Upper
<b>MALAYSIA</b>	<b>317</b>	<b>1,732,734</b>	<b>3.24</b>	<b>3.55</b>	<b>2.00</b>	<b>0.00 - 24.00</b>	<b>2.47</b>	<b>4.02</b>
<b>State</b>								
Johor	26	383,818	5.47	5.80	3.00	1.00 - 18.00	1.91	9.03
Kedah	15	100,162	3.60	3.17	3.00	0.00 - 10.00	2.10	5.11
Kelantan	5	64,912	6.42	8.62	5.00	1.00 - 24.00	1.11	11.72
Melaka	19	139,086	7.12	3.75	9.00	0.00 - 13.00	5.40	8.83
Negeri Sembilan	11	68,430	2.58	1.60	2.00	0.00 - 5.00	1.22	3.94
Pahang	4	13,071	4.15	6.36	1.00	0.00 - 12.00	0.41	7.89
Pulau Pinang	17	78,002	7.30	4.56	7.00	1.00 - 12.00	3.07	11.52
Perak	20	123,191	2.43	1.40	3.00	1.00 - 6.00	1.90	2.95
Perlis	17	35,631	6.58	3.82	7.00	1.00 - 10.00	4.28	8.87
Selangor	28	145,949	2.12	1.90	1.00	0.00 - 8.00	1.46	2.78
Terengganu	25	105,356	3.80	3.83	1.00	1.00 - 10.00	0.43	7.17
Sabah	17	120,055	2.89	2.18	2.00	1.00 - 7.00	1.66	4.12
Sarawak	58	268,587	1.75	1.39	1.00	0.00 - 8.00	1.29	2.20
WP Kuala Lumpur	6	69,655	5.26	3.08	3.00	1.00 - 9.00	2.15	8.37
WP Labuan	14	7,058	5.76	3.83	6.00	1.00 - 13.00	3.95	7.58
WP Putrajaya	35	9,773	2.58	2.50	2.00	0.00 - 10.00	1.97	3.20
<b>Location</b>								
Urban	184	1,279,569	3.35	3.61	2.00	0.00 - 18.00	2.34	4.36
Rural	133	453,166	2.97	3.40	2.00	0.00 - 24.00	1.96	3.98
<b>Sex</b>								
Male	101	474,994	2.64	2.65	2.00	0.00 - 15.00	2.02	3.27
Female	216	1,257,740	3.55	3.90	2.00	0.00 - 24.00	2.52	4.58
<b>Age group (Years)</b>								
0-4	65	480,135	4.48	4.12	3.00	0.00 - 18.00	3.18	5.77
5-9	7	12,876	1.68	2.25	1.00	1.00 - 10.00	0.54	2.82
10-14	11	42,164	1.59	0.80	1.00	1.00 - 3.00	0.96	2.22
15-19	7	36,830	1.52	0.95	1.00	1.00 - 3.00	0.84	2.19
20-24	18	202,228	4.70	4.53	3.00	1.00 - 15.00	2.01	7.38
25-29	39	280,031	4.02	4.42	3.00	0.00 - 15.00	1.69	6.34
30-34	47	254,246	2.81	2.69	2.00	0.00 - 13.00	1.93	3.69
35-39	36	159,301	3.12	2.52	2.00	1.00 - 13.00	2.02	4.21
40-44	16	66,619	3.05	3.13	2.00	0.00 - 10.00	1.13	4.96
45-49	11	31,864	1.49	0.85	1.00	1.00 - 3.00	0.82	2.16
50-54	14	13,938	1.32	1.21	1.00	0.00 - 6.00	0.61	2.02
55-59	8	13,556	1.26	0.47	1.00	1.00 - 2.00	0.88	1.65
60-64	10	16,984	1.09	0.94	1.00	0.00 - 4.00	0.52	1.66
65-69	11	68,717	5.18	7.36	3.00	1.00 - 24.00	1.08	9.27

**Table 4.30:** Mean utilisation of domiciliary care, among those who received care in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=317) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Mean	SD	Median	IQR	95% CI	
							Lower	Upper
70-74	9	14,022	1.33	1.10	1.00	1.00 - 12.00	0.90	1.75
75 and over	8	39,224	3.82	2.11	5.00	0.00 - 6.00	2.11	5.53
<b>Ethnicity</b>								
Malay <sup>a</sup>	231	1,311,795	4.04	4.17	3.00	0.00 - 24.00	2.94	5.15
Chinese	11	92,941	4.02	2.24	5.00	1.00 - 7.00	2.61	5.43
Indian	50	192,643	1.58	1.24	1.00	0.00 - 13.00	1.27	1.88
Bumiputera Sabah	9	92,983	3.24	1.60	3.00	1.00 - 8.00	2.37	4.11
Bumiputera Sarawak	10	26,993	1.43	1.21	1.00	0.00 - 4.00	0.74	2.11
Others	6	15,380	0.92	0.30	1.00	0.00 - 1.00	0.74	1.09
<b>Citizenship</b>								
Malaysian	310	1,705,759	3.33	3.60	2.00	0.00 - 24.00	2.51	4.14
Permanent Resident	1	635	1.00	-	1.00	1.00 - 1.00	-	-
Non-Malaysian	6	26,340	1.25	0.62	1.00	0.00 - 2.00	0.72	1.77
<b>Marital status<sup>b</sup></b>								
Single	37	147,717	1.71	1.80	1.00	0.00 - 10.00	1.21	2.21
Married	181	987,603	3.50	3.77	2.00	0.00 - 24.00	2.49	4.50
Widow(er)/Divorcee	20	74,336	2.34	2.14	1.00	0.00 - 12.00	1.09	3.59
<b>Education level</b>								
No formal education	85	527,396	3.68	3.84	3.00	0.00 - 18.00	2.66	4.71
Primary education	57	266,456	3.04	3.69	2.00	0.00 - 24.00	1.86	4.21
Secondary education	99	542,459	2.85	3.17	2.00	0.00 - 15.00	1.85	3.84
Tertiary education	74	387,556	3.53	3.70	2.00	0.00 - 15.00	2.38	4.68
<b>Occupation</b>								
Government employee	40	145,707	3.51	3.91	2.00	0.00 - 15.00	1.48	5.53
Private employee	48	206,940	2.07	2.52	1.00	0.00 - 11.00	1.08	3.07
Self-employed	35	201,500	3.01	3.69	2.00	0.00 - 15.00	1.22	4.80
Unpaid worker/Homemaker	69	461,068	3.95	3.39	3.00	0.00 - 13.00	2.89	5.02
Retiree	5	7,652	0.87	0.72	1.00	0.00 - 2.00	0.28	1.46
Student	21	63,259	1.66	1.21	1.00	1.00 - 10.00	1.12	2.21
Not working <sup>c</sup>	98	642,508	4.00	4.18	3.00	0.00 - 24.00	2.96	5.04
<b>Household income group</b>								
Less than RM 1,000	45	172,827	2.78	2.44	2.00	0.00 - 10.00	1.84	3.72
RM 1,000 - RM 1,999	60	404,905	3.15	2.74	3.00	0.00 - 13.00	2.41	3.90
RM 2,000 - RM 2,999	38	203,198	3.30	3.59	2.00	0.00 - 15.00	1.63	4.97
RM 3,000 - RM 3,999	47	248,211	2.81	2.87	2.00	0.00 - 15.00	1.72	3.90
RM 4,000 - RM 4,999	31	206,425	3.72	4.88	1.00	0.00 - 15.00	0.34	7.11
RM 5,000 - RM 5,999	33	180,800	4.90	5.52	3.00	0.00 - 24.00	2.02	7.78
RM 6,000 - RM 6,999	23	52,316	1.79	1.72	2.00	0.00 - 13.00	0.73	2.85
RM 7,000 - RM 7,999	7	104,910	7.50	7.51	2.00	1.00 - 18.00	0.00	15.54
RM 8,000 - RM 8,999	14	80,336	3.42	2.13	3.00	0.00 - 8.00	1.87	4.97
RM 9,000 - RM 9,999	3	30,680	8.98	0.26	9.00	7.00 - 9.00	8.91	9.04
RM 10,000 and above	15	47,149	1.50	0.87	1.00	0.00 - 3.00	1.24	1.77
<b>Household income quintile</b>								
Q1 (20% poorest)	58	243,342	2.77	2.59	2.00	0.00 - 12.00	1.81	3.73
Q2	59	390,166	3.36	2.69	3.00	0.00 - 13.00	2.59	4.13
Q3	55	295,330	2.82	3.05	2.00	0.00 - 15.00	1.41	4.23
Q4	82	487,527	3.93	4.82	2.00	0.00 - 24.00	1.94	5.92
Q5 (20% richest)	62	315,391	3.11	3.75	2.00	0.00 - 18.00	1.68	4.54

**Table 4.30:** Mean utilisation of domiciliary care, among those who received care in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=317) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Mean	SD	Median	IQR	95% CI	
							Lower	Upper
Household income category								
Bottom 40% (B40)	219	1,141,295	3.21	3.31	2.00	0.00 - 15.00	2.26	4.16
Middle 40% (M40)	80	501,700	3.82	4.53	2.00	0.00 - 24.00	2.23	5.41
Top 20% (T20)	17	88,762	1.87	1.12	1.00	0.00 - 5.00	0.98	2.77

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 4.31:** Type of services received, among those who utilised domiciliary care in the last 12 months, NHMS 2019 (N=317)

Type of service	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Child healthcare	132	233,973	43.8	33.78	54.33
Antenatal or postnatal care	125	217,502	40.7	31.53	50.58
Health check	108	177,323	33.2	25.65	41.69
Care related to medication	56	89,891	16.8	11.08	24.72
Treatment at home	34	55,837	10.4	6.70	15.93
Rehabilitation care	24	39,464	7.4	4.37	12.23
Others	39	60,825	11.4	6.19	20.02

95% CI = 95% Confidence Interval

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

**Table 4.32:** Payer for domiciliary care utilisation, among those who received care in the last 12 months, NHMS 2019 (N=317)

Payer for domiciliary care	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Government GL/Government specific health fund <sup>b</sup>	47	56,195	10.5	6.25	17.16
Employer/Panel clinic/ Employer-sponsored health insurance	14	39,882	7.5	4.20	12.93
Personal health insurance	3	7,347	1.4	0.22	8.12
SOCISO	12	30,353	5.7	2.99	10.53
Self/family/household members	74	144,884	27.1	20.25	35.27
Fee exemption	168	273,811	51.2	42.42	59.99
Others	35	79,160	14.8	8.52	24.52

95% CI = 95% Confidence Interval

GL = Guarantee Letter

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

b Government specific health fund includes Peduli Sihat Card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health schemes

**Table 4.33:** Overall population experience towards domiciliary care services, among those who received care in the last 12 months, NHMS 2019 (N=317)

Rating	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Excellent	89	131,858	24.7	18.45	32.18
Good	193	350,833	65.7	58.06	72.53
Fair	7	9,958	1.9	0.73	4.68

95% CI = 95% Confidence Interval

**Table 4.34:** Prevalence of getting medical check-up in the last 12 months, among population aged 18 years old and over, by sociodemographic characteristics, NHMS 2019 (N=11,674)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>4,536</b>	<b>7,443,869</b>	<b>33.3</b>	<b>31.48</b>	<b>35.13</b>
<b>State</b>					
Johor	246	535,138	21.0	16.63	26.15
Kedah	302	596,755	42.5	36.84	48.43
Kelantan	178	215,452	19.3	16.37	22.55
Melaka	290	263,484	45.0	35.76	54.63
Negeri Sembilan	333	686,147	52.1	45.98	58.24
Pahang	287	371,703	35.3	30.84	39.96
Pulau Pinang	307	485,430	38.7	28.98	49.51
Perak	274	686,469	43.7	38.75	48.77
Perlis	297	68,943	42.8	37.22	48.50
Selangor	447	1,337,818	28.8	25.68	32.08
Terengganu	236	221,097	29.2	25.13	33.73
Sabah	313	790,821	29.5	24.76	34.81
Sarawak	316	735,700	39.3	34.62	44.24
WP Kuala Lumpur	192	393,516	30.6	23.92	38.24
WP Labuan	282	25,529	42.1	36.78	47.66
WP Putrajaya	236	29,869	52.1	47.72	56.42
<b>Location</b>					
Urban	2,735	5,578,701	33.0	30.87	35.17
Rural	1,801	1,865,168	34.2	30.92	37.61
<b>Sex</b>					
Male	1,983	3,416,712	30.6	28.34	32.94
Female	2,553	4,027,157	36.0	33.75	38.24
<b>Age group (Years)</b>					
18-19	59	126,666	12.9	8.88	18.44
20-24	228	538,745	17.9	14.89	21.46
25-29	292	752,021	23.9	20.21	28.02
30-34	357	733,247	26.2	22.91	29.72
35-39	441	790,245	32.5	28.57	36.79
40-44	372	598,419	31.5	27.22	36.03
45-49	412	639,478	37.3	33.30	41.38
50-54	485	730,966	44.8	40.39	49.25
55-59	478	702,856	48.3	43.38	53.22
60-64	476	643,143	54.2	48.29	59.98
65-69	395	519,395	59.6	53.34	65.55
70-74	288	294,374	49.8	42.93	56.77
75 and over	253	374,315	57.5	49.85	64.75
<b>Ethnicity</b>					
Malay <sup>a</sup>	2,952	3,919,843	34.1	32.09	36.23
Chinese	574	1,661,453	34.7	30.37	39.24
Indian	350	522,059	38.7	34.06	43.47
Bumiputera Sabah	241	428,796	31.4	26.10	37.24
Bumiputera Sarawak	224	387,292	40.4	34.07	47.02
Others	195	524,425	21.7	17.15	27.10

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	4,316	6,868,644	34.8	32.98	36.62
Permanent Resident	36	34,438	16.3*	8.76	28.42
Non-Malaysian	183	540,637	22.5	17.99	27.84
<b>Marital status</b>					
Single	565	1,277,632	19.6	17.26	22.23
Married	3,319	5,317,167	37.8	35.63	40.05
Widow(er)/Divorcee	649	842,562	47.5	43.05	52.00
<b>Education level</b>					
No formal education	303	417,104	34.9	28.33	42.00
Primary education	1,142	1,698,321	38.6	35.13	42.13
Secondary education	1,963	3,392,753	31.1	28.85	33.53
Tertiary education	1,111	1,899,028	33.0	30.04	36.00
<b>Occupation</b>					
Government employee	589	718,565	45.4	41.03	49.86
Private employee	1,087	2,296,838	27.3	24.71	29.97
Self-employed	707	1,138,149	28.8	25.67	32.09
Unpaid worker/ Homemaker	865	1,403,624	37.1	33.49	40.87
Retiree	304	419,692	53.9	46.37	61.21
Student	71	171,844	19.3	13.13	27.40
Not working <sup>b</sup>	913	1,295,158	44.0	40.36	47.67
<b>Household income group</b>					
Less than RM 1,000	898	1,398,656	39.1	35.10	43.22
RM 1,000 - RM 1,999	836	1,369,458	32.4	29.01	36.01
RM 2,000 - RM 2,999	710	1,173,773	32.1	28.52	35.80
RM 3,000 - RM 3,999	520	883,878	27.8	24.20	31.64
RM 4,000 - RM 4,999	372	673,216	34.9	30.22	39.89
RM 5,000 - RM 5,999	260	375,015	28.7	23.60	34.36
RM 6,000 - RM 6,999	185	345,442	29.6	23.87	35.97
RM 7,000 - RM 7,999	141	223,026	27.0	20.06	35.30
RM 8,000 - RM 8,999	133	238,229	36.2	28.44	44.77
RM 9,000 - RM 9,999	81	106,158	44.1	31.75	57.18
RM 10,000 and above	361	591,360	41.3	33.81	49.23
<b>Household income quintile</b>					
Q1 (20% poorest)	1,087	1,729,246	37.6	34.07	41.29
Q2	851	1,381,229	31.3	28.24	34.63
Q3	807	1,368,592	30.3	27.20	33.54
Q4	848	1,387,717	32.0	28.67	35.52
Q5 (20% richest)	904	1,511,426	34.8	30.73	39.00
<b>Household income category</b>					
Bottom 40% (B40)	3,141	5,121,869	32.7	30.71	34.71
Middle 40% (M40)	927	1,510,952	31.6	28.64	34.66
Top 20% (T20)	429	745,389	42.6	35.84	49.66

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Does not include children aged less than 13 years old

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution

**Table 4.35:** Type of facility where medical check-up was received, among those who went for medical check-up in the last 12 months, NHMS 2019 (N=4,536)

Type of facility	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Public hospital/clinic	3,266	4,810,216	64.6	61.12	67.97
Private hospital/clinic	1,210	2,530,505	34.0	30.70	37.45
Community pharmacy	113	203,328	2.7	2.03	3.66
Others	73	107,717	1.4	0.99	2.12

95% CI = 95% Confidence Interval

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

**Table 4.36:** Prevalence of dietary supplements purchased in the last 1 month, among population aged 18 years old and over, by sociodemographic characteristics, NHMS 2019 (N=11,674)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>1,640</b>	<b>3,090,828</b>	<b>13.8</b>	<b>12.60</b>	<b>15.14</b>
<b>State</b>					
Johor	155	357,339	14.0	10.47	18.52
Kedah	67	126,730	9.0	6.41	12.57
Kelantan	53	63,030	5.6	4.18	7.56
Melaka	69	58,477	10.0	6.94	14.18
Negeri Sembilan	108	228,831	17.4	12.08	24.39
Pahang	99	146,883	13.9	9.55	19.89
Pulau Pinang	106	262,113	20.9	12.94	32.01
Perak	82	234,285	14.9	10.77	20.29
Perlis	112	24,218	15.0	11.46	19.45
Selangor	215	701,199	15.1	12.50	18.09
Terengganu	89	82,178	10.9	8.22	14.24
Sabah	99	271,211	10.1	7.45	13.64
Sarawak	116	349,004	18.7	14.68	23.42
WP Kuala Lumpur	79	164,810	12.8	9.53	17.03
WP Labuan	73	6,834	11.3	7.25	17.12
WP Putrajaya	118	13,687	23.9	19.87	28.38
<b>Location</b>					
Urban	1,113	2,500,371	14.8	13.30	16.41
Rural	527	590,457	10.8	8.97	13.00
<b>Sex</b>					
Male	596	1,217,194	10.9	9.45	12.54
Female	1,044	1,873,633	16.7	15.19	18.40
<b>Age group (Years)</b>					
18-19	17	46,377	4.7	2.64	8.35
20-24	77	230,723	7.7	5.63	10.40
25-29	121	374,639	11.9	9.22	15.23
30-34	170	363,655	13.0	10.41	16.07
35-39	166	312,158	12.9	10.13	16.18
40-44	168	290,081	15.3	12.41	18.60
45-49	159	289,840	16.9	13.42	21.03
50-54	186	306,185	18.8	15.39	22.66
55-59	162	250,971	17.2	13.88	21.21
60-64	149	224,183	18.9	14.41	24.37
65-69	120	176,796	20.3	14.78	27.19

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
70-74	77	111,102	18.8	12.86	26.67
75 and over	68	114,117	17.5	11.96	24.93
<b>Ethnicity</b>					
Malay <sup>a</sup>	1,096	1,579,952	13.8	12.35	15.29
Chinese	252	894,412	18.7	15.32	22.55
Indian	119	202,700	15.0	11.49	19.37
Bumiputera Sabah	66	126,337	9.3	6.65	12.74
Bumiputera Sarawak	62	130,640	13.6	9.42	19.29
Others	45	156,787	6.5	4.46	9.36
<b>Citizenship</b>					
Malaysian	1,582	2,903,551	14.7	13.38	16.13
Permanent Resident	11	23,848	11.3*	4.51	25.61
Non-Malaysian	46	163,279	6.8	4.74	9.69
<b>Marital status</b>					
Single	218	629,912	9.7	7.98	11.68
Married	1,216	2,181,006	15.5	13.99	17.16
Widow(er)/Divorcee	206	279,909	15.8	12.40	19.87
<b>Education level</b>					
No formal education	58	111,646	9.3	6.38	13.46
Primary education	268	445,092	10.1	8.35	12.20
Secondary education	660	1,275,671	11.7	10.27	13.33
Tertiary education	651	1,239,686	21.5	19.26	23.95
<b>Occupation</b>					
Government employee	281	341,161	21.6	17.97	25.65
Private employee	424	1,087,411	12.9	11.18	14.86
Self-employed	257	504,249	12.7	10.42	15.51
Unpaid worker/ Homemaker	291	538,044	14.2	11.85	16.99
Retiree	138	230,048	29.5	23.23	36.72
Student	22	51,435	5.8	3.20	10.17
Not working <sup>b</sup>	226	336,430	11.4	9.30	13.95
<b>Household income group</b>					
Less than RM 1,000	266	509,458	14.2	11.64	17.31
RM 1,000 - RM 1,999	184	318,240	7.5	6.05	9.34
RM 2,000 - RM 2,999	210	378,827	10.3	8.39	12.70
RM 3,000 - RM 3,999	202	441,294	13.9	11.22	17.01
RM 4,000 - RM 4,999	138	285,306	14.8	11.46	18.88

**Table 4.36:** Prevalence of dietary supplements purchased in the last 1 month, among population aged 18 years old and over, by sociodemographic characteristics, NHMS 2019 (N=11,674) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
RM 5,000 - RM 5,999	118	190,906	14.6	10.40	20.12
RM 6,000 - RM 6,999	117	263,049	22.5	17.11	29.03
RM 7,000 - RM 7,999	76	149,965	18.2	12.35	25.89
RM 8,000 - RM 8,999	63	94,728	14.4	9.26	21.70
RM 9,000 - RM 9,999	34	68,171	28.3	18.27	41.08
RM 10,000 and above	221	358,151	25.0	19.69	31.23
<b>Household income quintile</b>					
Q1 (20% poorest)	304	574,501	12.5	10.36	15.00
Q2	211	362,473	8.2	6.66	10.12
Q3	271	561,792	12.4	10.32	14.90
Q4	332	625,266	14.4	12.21	16.95
Q5 (20% richest)	511	934,064	21.5	18.62	24.64
<b>Household income category</b>					
Bottom 40% (B40)	984	1,895,127	12.1	10.82	13.48
Middle 40% (M40)	416	775,294	16.2	13.61	19.17
Top 20% (T20)	229	387,675	22.2	18.41	26.43

95% CI = 95% Confidence Interval

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution

**Table 4.37:** Source of dietary supplements purchased in the last 1 month, NHMS 2019 (N=1,640)

Source of dietary supplements	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Community pharmacy	869	1,734,037	56.1	52.08	60.05
Direct sales	493	886,866	28.7	25.05	32.64
Online pharmacy	175	336,128	10.9	8.61	13.65
Hospital/clinic	142	251,255	8.1	6.45	10.19
Others	59	77,639	2.5	1.62	3.88

95% CI = 95% Confidence Interval

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

# Utilisation of Oral Healthcare

# Utilisation of Oral Healthcare

## Introduction

Regular dental visit is important for prevention and early detection of oral diseases. As oral health is integral to general health, timely dental visit is essential to maintain good oral health and general well-being. The Ministry of Health Malaysia recommends visiting the dentist at least once a year.

This report includes outpatient oral health check-up and treatment at clinics, hospitals, school oral health programme, and mobile dental services.

### Operational definition

- Oral health problems were defined as the presence of oral diseases such as toothache or sensitive tooth, swollen gums with or without pus discharge, loss of teeth, denture problems, mouth ulcers, or jaw pain, in the last two weeks prior to interview.
- For oral healthcare utilisation, it only included outpatient oral health care in the last 12 months prior to interview.
- The oral healthcare included oral health check-up, treatment for toothache or sensitive tooth, swollen gums with or without pus discharge, loss of teeth, denture problems, irregularly aligned teeth, mouth ulcers and jaw pain.
- Healthcare facilities include dental clinics, dental clinics in hospitals, school dental care, mobile dental services, emergency departments, pharmacies and *kedai gigi*.
- Healthcare providers include modern, traditional and complementary medicine practitioners (e.g. spiritual healer, Chinese herbalist, Ayurvedic practitioner and Islamic medicine practitioner).
- It covered respondents in all age groups.

## Objectives

### General objective

To determine the prevalence and patterns of reported oral health problems, oral health seeking behaviour and oral healthcare utilisation.

### Specific objectives

To determine the:

1. prevalence of reported oral health problems in the last two weeks by sociodemographic characteristics.
2. type of care sought among those who experienced oral health problems in the last two weeks.
3. distribution of perceived necessity to seek treatment or medication or advice from healthcare practitioner, among those who experienced oral health problems and did not seek treatment or medication or advice from healthcare practitioners in the last two weeks.
4. distribution of main reason for not seeking treatment or medication or advice from healthcare practitioner, among those who experienced oral health problems and did not seek treatment or medication or advice from healthcare practitioners in the last two weeks.
5. prevalence of oral healthcare utilisation based on timing of last visit.
6. prevalence of oral healthcare utilisation in the last 12 months by sociodemographic characteristics.
7. distribution of oral healthcare utilisation in the last 12 months by sector and sociodemographic characteristics.
8. distribution of number of oral healthcare facilities visited among those who utilised in the last 12 months.
9. annual mean number of visits to oral healthcare facilities per capita by sector and sociodemographic characteristics.
10. type of services received among those who utilised oral healthcare facilities in the last 12 months.
11. percentage of oral healthcare utilisation related to previous oral health problems in the last two weeks among those who utilised oral healthcare facilities in the last 12 months.
12. payer for oral healthcare utilisation among those who utilised oral healthcare facilities in the last 12 months.
13. overall population experience towards oral healthcare services among those who utilised oral healthcare facilities in the last 12 months.

## Findings

### Prevalence of reported oral health problems

A total of 16,688 (100.0%) respondents responded to this section. Overall, 8.7% (95% CI = 7.91, 9.47) of the population reported recent oral health problems in the last two weeks prior to the interview. The state of Sarawak (15.9%, 95% CI = 13.40, 18.69) had the highest prevalence of population with oral health problems, followed by Perlis (14.7%; 95% CI = 11.51, 18.69) and Wilayah Persekutuan Putrajaya (14.4%; 95% CI = 11.90, 17.38) (Table 5.1).

Population from rural areas (9.8%; 95% CI = 8.64, 11.10) reported more oral health problems as compared with population from urban areas (8.3%; 95% CI = 7.37, 9.27). By sex, females (9.7%; 95% CI = 8.75, 10.79) reported more oral health problems than males (7.6%; 95% CI = 6.68, 8.60) (Table 5.1).

### Health seeking behaviour in relation to oral health problems

#### Type of oral health seeking behaviour

Among those who had oral health problems within two weeks prior to the interview, the overall percentage of those who sought treatment or medication or advice from healthcare practitioner was 23.0% (95% CI = 20.10, 26.18), while those who obtained advice from sources other than healthcare practitioner was 8.7% (95% CI = 6.50, 11.54). 5.4% (95% CI = 4.04, 7.05) got advice from other resources while 10.1% (95% CI = 8.25, 12.33) practiced self-medication for their recent oral health problems (Table 5.2).

#### Perceived need to seek treatment or medication or advice from healthcare practitioner

A total of 29.9% (95% CI = 23.20, 37.63) of the population perceived the necessity to seek care from a healthcare practitioner for their recent oral health problems but did not do so (Table 5.3).

#### Main reason for not seeking treatment or medication or advice for recent oral health problems

The main reasons for not seeking care were the perception that they were not sick enough and did not need treatment (29.2%; 95% CI = 23.40, 35.66), while 17.9% (95% CI = 13.10, 23.91) perceived they were not sick enough and self-medicated. Work commitment or could not take time off work or had other commitments was stated by 20.9% (95% CI = 14.85, 28.49) of the population as their reason for not seeking care (Table 5.4).

### Utilisation of oral healthcare

#### Timing of last visit for oral healthcare utilisation

The prevalence of the population who had utilised oral healthcare between one year to two years was 8.7% (95% CI = 7.89, 9.55), while 49.8% (95% CI = 48.12, 51.51) had oral healthcare more than two years ago.

Overall, 15.0% (95% CI = 13.74, 16.40) of the population claimed that they had never received oral healthcare before (Table 5.5).

#### Prevalence of oral healthcare utilisation

Overall, the prevalence of the population who had utilised oral healthcare in the last 12 months was 23.7% (95% CI = 22.34, 25.18). Utilisation of oral healthcare services were highest among population from the age group of 10-14 years (69.8%; 95% CI = 65.88, 73.42), followed by 5-9 years (61.3%; 95% CI = 57.29, 65.18) and 15-19 years (40.2%; 95% CI = 35.26, 45.44). Among those aged 0-4 years old, only 10.1% (95% CI = 7.96, 12.82) utilised oral healthcare services in the last 12 months. Utilisation of oral healthcare services by population from age groups 20 years and over were all less than 20% (Table 5.6).

#### Oral healthcare utilisation by sector

Approximately four in five people in the population utilised public oral healthcare services (80.7%; 95% CI = 77.78, 83.27) in the last 12 months prior to the interview. Utilisation of private oral healthcare services were higher among urban population (24.0%; 95% CI = 20.61, 27.67) as compared with rural population (7.1%; 95% CI = 5.13, 9.84) (Table 5.7).

More than 80% of the population across household income quintiles of Q1 to Q4 utilised public oral healthcare services. There was a slight drop in the utilisation of public oral healthcare services among household income quintile of Q5 (65.5%; 95% CI = 59.51, 71.04). Utilisation of private oral healthcare services increases along with the increase in socioeconomic status. The Q5 population (35.6%; 95% CI = 30.07, 41.59) utilised private oral healthcare services the most (Table 5.7).

#### Number of oral healthcare facilities visited

Majority of the population utilised one oral healthcare facility (98.2%; 95% CI = 97.48, 98.73) in the last 12 months prior to the interview (Table 5.8).

### Annual mean number of visits to oral healthcare facilities (per capita)

Overall annual mean number of visits per capita to oral healthcare facilities were 0.29 visits (SD = 0.71, median = 0.00, IQR = 0.00 – 0.00). The mean number of visits per capita to public oral healthcare facilities was 0.23 visits (SD = 0.64, median = 0.00, IQR = 0.00 – 0.00) and mean number of visits per capita to private oral healthcare facilities was 0.06 visits (SD = 0.36, median = 0.00, IQR = 0.00 – 0.00) (Table 5.9). The composition of utilisation of oral healthcare services showed 79.5% in public sector and 20.5% in private sector (Figure 5.1).

### Type of services received

Majority of the population utilised oral healthcare services for oral health check-ups (63.3%; 95% CI = 60.52, 65.93). About one third of the population who utilised oral healthcare services received oral health treatments (33.8%; 95% CI = 31.08, 36.53) (Table 5.10).

Among the population who utilised oral healthcare services in the last 12 months, 23.4% (95% CI = 21.33, 25.68) stated that their visit was due to oral health problems that they experienced two weeks ago (Table 5.10).

### Payer for oral healthcare utilisation

Most of the oral healthcare utilisation in the last 12 months were given fee exemption (44.6%; 95% CI = 41.62, 47.52). About two in five of the population paid for oral healthcare utilisation themselves or using money sourced from family/household members (38.7%; 95% CI = 36.05, 41.49). Payment done by employer/panel clinic/employer-sponsored health insurance was 4.5% (95% CI = 3.45, 5.80) and by personal health insurance was 1.6% (95% CI = 1.04, 2.35) (Table 5.11).

### Overall population experience towards oral healthcare services

Majority of the population had excellent or good experience with oral healthcare services in Malaysia (94.3%; 95% CI = 93.10, 95.29) (Table 5.12).

The key findings of the survey are summarised in the illustration in Figure 5.2.

## Discussions

The findings of this study show an increase in burden of acute oral health illness, defined as the presence of oral health problems in the last two weeks prior to the interview. In contrast to the findings in the previous study (NHMS 2015), the prevalence of the population who practiced self-medication for acute oral health illness reduced from 46.1% to 10.1% in this study (1).

Generally, utilisation of oral healthcare was low in Malaysia, especially among the adults and younger children. Only about one in four of the population had utilised oral healthcare in the last 12 months prior to the interview in NHMS 2019 and similar prevalence rates were reported since NHMS 2011 (Figure 5.3). Almost half of the population had their last oral healthcare more than two years ago which saw a slight increase compared with the findings in NHMS 2015 (1). Approximately three in twenty of the population had never utilised oral healthcare. The overall public perception on oral healthcare needs is still low and there is a lack of awareness on the need for regular dental visits to maintain optimal oral health. High prevalence of those who perceived they were not sick enough to seek care and those who self-medicated when they were sick deterred the use of oral healthcare (2, 3). Work or other commitments and the inability to take time off from work contributes partly to the low utilisation of oral healthcare. Irregular dental visits contribute to poor oral health and could lead to serious consequences such as painful and costly dental procedures in the future (4-6).

The Alliance for a Cavity-Free Future (ACFF) Malaysian Chapter was founded in 2013 to improve the oral health status in Malaysia (7). One of the goals of ACFF was to have every child born in 2026 and thereafter stay cavity-free during their lifetime, where priority for oral healthcare should be extended to younger age groups such as toddlers and preschool children. Epidemiological studies showed the burden of oral diseases was highest among pre-school children and adults (8-10). These groups of the population should be given priority for access to oral healthcare.

The findings also show that the public sector is still the main provider of oral healthcare and it remained constant over the years (Figure 5.4). In addition, all quintiles used public services, with the highest proportion among the 20% poorest and lowest proportion among the 20% richest in the population. This suggests a need for planning future financial arrangements where public oral healthcare policies target priority population subgroups. The capacity of public oral healthcare services is limited by the availability of dental clinics. Over the past few years, there was little change in the number of dental clinics available in the Ministry of Health, from 1,692 in 2013 reduced to 1,662 in 2018 with a 12.1% increase in numbers of dental chairs. On the other hand, the number of private dental clinics had increased by

31.5% from 1,758 to 2,311 for the same period (11, 12). As such, identifying and creating new opportunities for public-private partnership could reduce the burden of oral healthcare in the public sector by leveraging resources from the private sector.

The proportion of private oral healthcare services utilisation in the last 12 months of the richest quintile was three times more than the poorest quintile. This suggests that affordability may be an issue for other quintiles when it comes to private oral healthcare services.

Among the age groups, noticeably the school-going children utilised oral healthcare services the most. However, the high percentage were contributed mostly by public school children through incremental school oral healthcare programme which is an initiative of the Ministry of Health Malaysia (13). The coverage of incremental school oral healthcare programme to private schools remains considerably low in Malaysia. The main provider for incremental school oral healthcare programme in Malaysia is the public sector. Private oral healthcare facilities in Malaysia focuses mainly on outpatient services targeting mostly the adult population (14).

Provision of oral healthcare services in the public sector in Malaysia is highly subsidised by the government (14). A bulk of the population pay for private oral healthcare services using their own money or money sourced from family or household members. Coverage provided by personal health insurance, employer sponsored health insurance, and panel clinic remains very low. Most personal health insurance does not include oral healthcare as part of their health coverage which may incur additional burden for expenditure on oral healthcare to policyholders. Majority of the population had to pay for oral healthcare services out of their pocket when they are not eligible for fee exemption.

Further comparison of findings between recent national surveys in Malaysia are summarised in **Table 5.13**.

## Recommendations

- Expansion of school oral healthcare programme to cover private schools and encourage provision of oral healthcare to private school children by private dental practitioners could pave the way for higher coverage of schoolchildren and ensure the private school children are not left out in terms of oral healthcare. Collaboration with other ministries (e.g. Ministry of Defence, Ministry of Education, Ministry of Women, Family and Community Development), private sector, and non-governmental organisations for provision of oral healthcare to the underserved population would be helpful to increase accessibility to oral healthcare which hopefully would increase the rate of oral healthcare utilisation especially by the adult population.
- As the public perception on the importance of regular dental visits remains low, initiatives should be taken to improve the oral health literacy of the people and build their capacity to perceive the necessity of good oral health and the benefits of regular dental visits so that they will access oral healthcare services in a timely manner.
- To further motivate utilisation of oral healthcare, employers should be encouraged to give time relief or allowance for dental check-up and oral healthcare. Employee medical benefits should also be extended for oral healthcare.
- Expanding coverage of personal health insurance to include oral healthcare would relieve financial burden of policy holders and encourage them to utilise oral healthcare at a regular basis. Inclusion of oral healthcare as part of personal health insurance coverage may also attract more people to purchase them, creating a win-win situation to both insurance companies and the policy holders.
- Income tax relief for oral health examination for self, spouse, or child and oral healthcare expenses for parent(s) could be implemented in a similar way to that of medical healthcare to promote utilisation of oral healthcare services in the country.
- In line with the universal health coverage agenda, dental check-up and basic oral healthcare should be included as part of the primary healthcare benefits package in any effort to strengthen healthcare financial mechanisms.

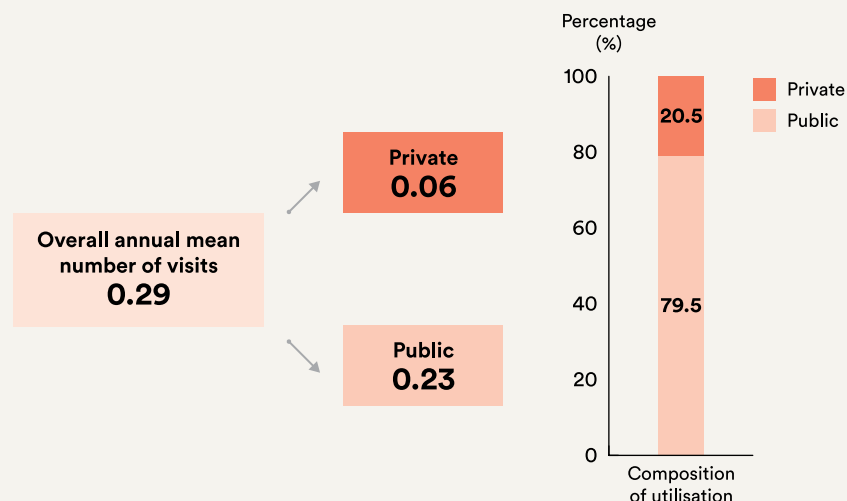
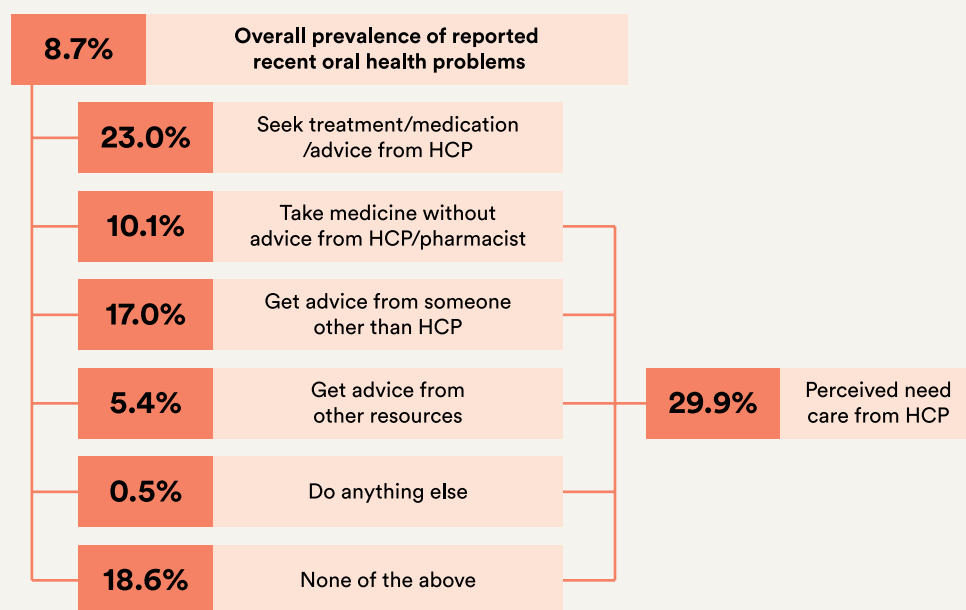
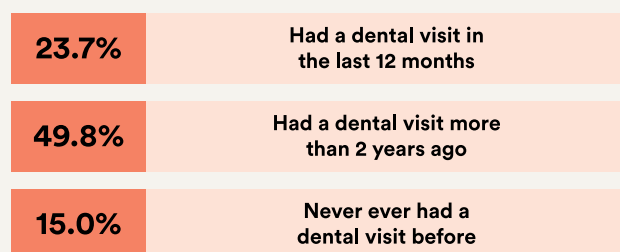


Figure 5.1: Composition of oral healthcare services utilisation by sectors, NHMS 2019

#### A. Reported oral health problems in the last 2 weeks



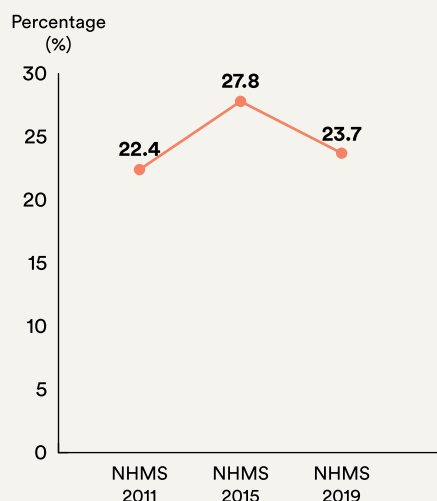
#### B. Utilisation of oral healthcare



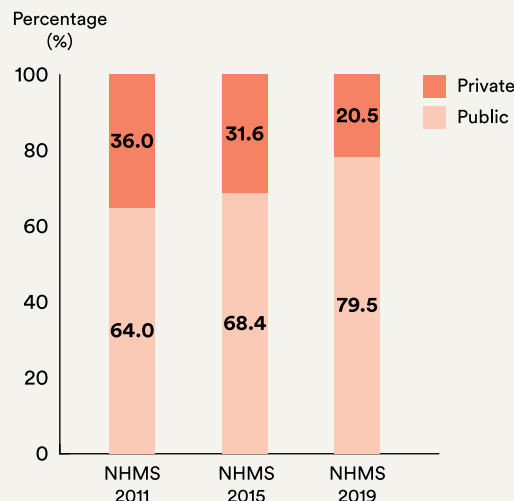
#### C. Main provider of oral healthcare



Figure 5.2: Summary of oral health problems, oral health seeking behaviour and oral healthcare utilisation



**Figure 5.3:** Oral healthcare services utilisation, NHMS 2011- 2019



Source: Authors' analysis of NHMS 2011, NHMS 2015 and NHMS 2019.

**Figure 5.4:** Public-private composition for oral healthcare services utilisation, NHMS 2011-2019 (based on overall annual mean number of visits)

#### References:

1. Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) (2015). National Health and Morbidity Survey 2015 (NHMS 2015). Vol III: Healthcare Demand.
2. Varenne, B, Petersen, PE, Fournet, F, Msellati, P, Gary, J, Ouattara, S, et al. (2006). Illness-related behaviour and utilization of oral health services among adult city-dwellers in Burkina Faso: evidence from a household survey. *BMC health services research*, 6(1), 164.
3. Agbor, MA, & Azodo, CC. (2011). Self medication for oral health problems in Cameroon. *International dental journal*, 61(4), 204-209.
4. Thomson, WM, Williams, SM, Broadbent, JM, Poulton, R, & Locker, D. (2010). Long-term dental visiting patterns and adult oral health. *Journal of dental research*, 89(3), 307-311.
5. Aarabi, G, Valdez, R, Spinler, K, Walther, C, Seedorf, U, Heydecke, G, et al. (2019). Determinants of Postponed Dental Visits Due to Costs: Evidence from the Survey of Health, Ageing, and Retirement in Germany. *International Journal of Environmental research and public health*, 16(18), 3344.
6. Griffin, SO, Jones, JA, Brunson, D, Griffin, PM, & Bailey, WD. (2012). Burden of oral disease among older adults and implications for public health priorities. *American journal of public health*, 102(3), 411-418.
7. ALLIANCE FOR A CAVITY FREE FUTURE. Chapter Spotlight [Internet]. Available from: <https://www.acffglobal.org/chapters/chapters-spotlight/>. Accessed on December 7, 2019.
8. Oral Health Division, Ministry of Health Malaysia (2013). National Oral Health Survey of Adults 2010 (NOHSA 2010).
9. Oral Health Division, Ministry of Health Malaysia (2017). National Oral Health Survey of Preschool Children 2015 (NOHPS 2015).
10. Oral Health Division, Ministry of Health Malaysia (2017). National Oral Health Survey of Schoolchildren 2017 (NOHSS 2017).
11. Health Facts 2014 [Internet]. Health Informatics Centre Planning and Development Division Ministry of Health Malaysia. 2014. Available from: <http://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/HEALTH%20FACTS/HEALTH%20FACTS%202014.pdf>. Accessed on January 30, 2019.
12. Health Facts 2019 [Internet] (2019). Health Informatics Centre, Planning Division, Ministry of Health Malaysia. Available from: [http://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/HEALTH%20FACTS/Health%20Facts%202019\\_Booklet.pdf](http://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/HEALTH%20FACTS/Health%20Facts%202019_Booklet.pdf). Accessed on March 23, 2020.
13. Oral Health Division, Ministry of Health Malaysia (2006). Oral Healthcare for School Children in Malaysia.
14. Oral Health Division, Ministry of Health Malaysia (2005). Oral Healthcare in Malaysia.
15. Institute of Public Health 2008. The Third National Health and Morbidity Survey (NHMS III) 2006. Load of Illness.
16. Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) (2012). National Health and Morbidity Survey 2011 (NHMS 2011). Vol. III: Healthcare Demand and Out-of-Pocket Health Expenditure.

**Table 5.1:** Prevalence of reported oral health problems in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>1,552</b>	<b>2,732,957</b>	<b>8.7</b>	<b>7.91</b>	<b>9.47</b>
<b>State</b>					
Johor	110	256,492	7.2	5.15	9.86
Kedah	41	79,669	4.0	2.65	5.94
Kelantan	71	121,038	6.8	5.06	9.08
Melaka	117	105,021	12.8	8.90	18.06
Negeri Sembilan	112	253,257	13.3	10.27	16.98
Pahang	72	111,922	7.3	4.53	11.65
Pulau Pinang	65	86,212	5.3	3.30	8.37
Perak	76	207,438	9.4	6.52	13.50
Perlis	115	34,102	14.7	11.51	18.69
Selangor	147	449,063	7.0	5.58	8.81
Terengganu	105	107,381	9.0	7.34	11.09
Sabah	138	350,039	9.2	7.58	11.21
Sarawak	143	420,197	15.9	13.40	18.69
WP Kuala Lumpur	65	131,434	7.8	5.58	10.76
WP Labuan	62	5,687	6.5	4.27	9.73
WP Putrajaya	113	14,004	14.4	11.90	17.38
<b>Location</b>					
Urban	946	1,953,865	8.3	7.37	9.27
Rural	606	779,091	9.8	8.64	11.10
<b>Sex</b>					
Male	653	1,193,173	7.6	6.68	8.60
Female	899	1,539,783	9.7	8.75	10.79
<b>Age group (Years)</b>					
0-4	47	74,631	2.9	1.98	4.32
5-9	217	335,730	13.6	11.15	16.48
10-14	163	285,929	11.7	9.50	14.30
15-19	98	199,988	7.3	5.50	9.72
20-24	81	200,072	6.7	4.95	8.91
25-29	104	296,524	9.4	7.26	12.15
30-34	94	187,454	6.7	5.00	8.89
35-39	120	202,346	8.3	6.45	10.70
40-44	98	191,912	10.1	7.31	13.76
45-49	98	155,853	9.1	6.90	11.86
50-54	132	207,482	12.7	9.98	16.05
55-59	101	150,349	10.3	7.74	13.65
60-64	82	102,249	8.6	6.10	12.03
65-69	61	76,502	8.8	5.98	12.70
70-74	32	38,093	6.5	4.06	10.09
75 and over	24	27,843	4.3	2.40	7.50
<b>Ethnicity</b>					
Malay <sup>a</sup>	1,084	1,521,809	8.7	7.90	9.65
Chinese	141	493,910	8.1	6.21	10.42
Indian	94	131,900	7.4	5.33	10.07
Bumiputera Sabah	89	218,546	10.6	8.79	12.62
Bumiputera Sarawak	91	227,987	16.2	12.55	20.65
Others	53	138,803	5.0	3.47	7.27

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	1,499	2,578,603	9.0	8.23	9.88
Permanent Resident	7	5,624	2.4*	0.82	6.81
Non-Malaysian	46	148,730	5.4	3.72	7.81
<b>Marital status<sup>b</sup></b>					
Single	311	693,977	7.6	6.41	9.03
Married	760	1,317,359	9.3	8.17	10.68
Widow(er)/Divorcee	105	122,665	6.9	5.35	8.87
<b>Education level</b>					
No formal education	169	266,731	5.6	4.44	7.10
Primary education	531	885,198	10.1	8.91	11.44
Secondary education	541	998,587	8.2	7.10	9.47
Tertiary education	310	582,416	10.1	8.52	11.90
<b>Occupation</b>					
Government employee	135	172,348	10.9	8.31	14.13
Private employee	288	676,700	7.9	6.45	9.74
Self-employed	185	301,255	7.6	6.11	9.30
Unpaid worker/ Homemaker	206	338,649	8.8	7.11	10.89
Retiree	61	88,803	11.3	7.94	15.96
Student	446	779,860	11.7	10.12	13.52
Not working <sup>c</sup>	231	375,343	6.1	4.94	7.42
<b>Household income group</b>					
Less than RM 1,000	271	479,382	9.4	7.84	11.15
RM 1,000 - RM 1,999	239	406,834	7.0	5.64	8.74
RM 2,000 - RM 2,999	265	487,772	9.5	7.97	11.35
RM 3,000 - RM 3,999	198	343,261	7.7	6.34	9.43
RM 4,000 - RM 4,999	152	267,928	9.6	7.60	12.11
RM 5,000 - RM 5,999	95	141,037	7.6	5.36	10.75
RM 6,000 - RM 6,999	76	116,447	7.2	5.01	10.19
RM 7,000 - RM 7,999	62	116,657	10.1	6.42	15.43
RM 8,000 - RM 8,999	43	112,174	11.5	8.31	15.62
RM 9,000 - RM 9,999	25	24,136	7.1	4.19	11.85
RM 10,000 and above	119	206,313	9.8	6.71	13.99
<b>Household income quintile</b>					
Q1 (20% poorest)	323	573,437	8.8	7.51	10.36
Q2	258	436,891	7.1	5.95	8.57
Q3	312	578,397	9.2	7.76	10.90
Q4	327	537,489	8.7	7.36	10.30
Q5 (20% richest)	325	575,727	9.2	7.53	11.22
<b>Household income category</b>					
Bottom 40% (B40)	1,057	1,768,526	8.13	7.36	8.98
Middle 40% (M40)	350	664,490	9.38	7.92	11.07
Top 20% (T20)	138	268,925	10.95	8.29	14.32

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Does not include children aged less than 13 years old

<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution

**Table 5.2:** Type of care sought, among those who experienced oral health problems in the last 2 weeks, NHMS 2019 (N=1,552)

Type of care	Count <sup>b</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Seek treatment or medication or advice from healthcare practitioner	412	628,524	23.0	20.10	26.18
Take medicine without advice from healthcare practitioner <sup>a</sup>	160	276,231	10.1	8.25	12.33
Get advice from sources other than healthcare practitioner	129	237,596	8.7	6.50	11.54
Get advice from other resources	99	146,254	5.4	4.04	7.05
Do anything else	7	12,600	0.5	0.13	1.58
None of the above	1,004	1,863,068	68.2	64.50	71.62

95% CI = 95% Confidence Interval

<sup>a</sup> Take medicine without advice from healthcare practitioner refers to self-medication<sup>b</sup> Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated**Table 5.3:** Distribution of perceived necessity to seek treatment or medication or advice from healthcare practitioner, among those who experienced oral health problems in the last 2 weeks, NHMS 2019 (N=414)

Perceived necessity	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Yes	104	230,481	29.9	23.20	37.63
No	305	535,638	69.5	61.83	76.25

95% CI = 95% Confidence Interval

**Table 5.4:** Distribution of main reason for not seeking treatment or medication or advice from healthcare practitioner, among those who experienced oral health problems in the last 2 weeks, NHMS 2019 (N=414)

Main reason	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Perceived not sick enough and do not need treatment	139	224,610	29.2	23.40	35.66
Work commitment or could not take time off work or had other commitments	64	160,697	20.9	14.85	28.49
Perceived not sick enough and self-medicate	91	137,700	17.9	13.10	23.91
Cannot afford to pay for the treatment	15	36,277	4.7	2.43	8.91
No transport	5	7,405	1.0	0.30	3.01
Could not afford the cost of transport	1	5,950	0.8	0.11	5.27
You tried but were denied healthcare	1	2,757	0.4	0.05	2.51
Others	39	78,948	10.2	6.53	15.73

95% CI = 95% Confidence Interval

**Table 5.5:** Prevalence of oral healthcare utilisation based on timing of last visit, NHMS 2019 (N=16,688)

Timing of visit	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Between 1 year to 2 years	1,392	2,741,824	8.7	7.89	9.55
More than 2 years	8,003	15,728,732	49.8	48.12	51.51
Never received	2,373	4,742,359	15.0	13.74	16.40

95% CI = 95% Confidence Interval

**Table 5.6:** Prevalence of oral healthcare utilisation in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>4,398</b>	<b>7,493,581</b>	<b>23.7</b>	<b>22.34</b>	<b>25.18</b>
<b>State</b>					
Johor	297	711,061	19.8	16.07	24.24
Kedah	177	362,853	18.1	13.71	23.56
Kelantan	181	322,535	18.1	15.19	21.46
Melaka	287	259,254	31.6	26.22	37.49
Negeri Sembilan	279	610,546	32.0	27.66	36.64
Pahang	149	248,942	16.3	12.45	21.05
Pulau Pinang	230	351,043	21.5	16.51	27.53
Perak	234	606,210	27.6	21.92	34.11
Perlis	250	69,975	30.3	25.39	35.60
Selangor	429	1,432,079	22.4	19.70	25.37
Terengganu	400	426,222	35.9	30.48	41.71
Sabah	344	845,502	22.3	17.69	27.72
Sarawak	310	863,526	32.6	28.91	36.53
WP Kuala Lumpur	144	306,407	18.1	14.11	23.04
WP Labuan	274	28,651	32.7	27.94	37.80
WP Putrajaya	413	48,776	50.2	46.62	53.87
<b>Location</b>					
Urban	2,729	5,566,958	23.6	21.92	25.29
Rural	1,669	1,926,623	24.2	21.72	26.93
<b>Sex</b>					
Male	1,887	3,332,227	21.2	19.48	22.97
Female	2,511	4,161,355	26.3	24.60	28.03
<b>Age group (Years)</b>					
0-4	168	258,111	10.1	7.96	12.82
5-9	1,059	1,513,650	61.3	57.29	65.18
10-14	1,029	1,706,663	69.8	65.88	73.42
15-19	492	1,097,611	40.2	35.26	45.44
20-24	167	373,975	12.5	9.82	15.67
25-29	183	511,835	16.3	12.39	21.05
30-34	225	452,321	16.1	12.89	20.03
35-39	237	358,593	14.8	12.06	17.96
40-44	159	238,765	12.6	10.04	15.59
45-49	174	280,858	16.4	13.33	19.93
50-54	167	250,972	15.4	12.37	18.95
55-59	119	170,207	11.7	8.94	15.14
60-64	104	138,273	11.7	8.76	15.34
65-69	62	62,800	7.2	5.03	10.23
70-74	32	38,634	6.5	3.93	10.69
75 and over	21	40,314	6.2	3.62	10.39
<b>Ethnicity</b>					
Malay <sup>a</sup>	3,177	4,532,774	26.0	24.40	27.69
Chinese	367	1,243,367	20.3	17.12	23.91
Indian	251	478,937	26.7	22.65	31.24
Bumiputera Sabah	315	577,834	27.9	23.51	32.77
Bumiputera Sarawak	216	450,005	32.0	27.08	37.30
Others	72	210,665	7.6*	4.01	14.09

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	4,318	7,238,939	25.3	23.97	26.73
Permanent Resident	16	18,463	7.9*	3.64	16.21
Non-Malaysian	63	236,083	8.6*	4.69	15.19
<b>Marital status<sup>b</sup></b>					
Single	1,150	2,413,338	26.5	23.94	29.21
Married	1,222	2,049,735	14.5	13.00	16.23
Widow(er)/Divorcee	125	140,215	7.9	6.20	10.00
<b>Education level</b>					
No formal education	493	728,492	15.4	13.30	17.67
Primary education	2,114	3,355,858	38.3	35.53	41.14
Secondary education	1,107	2,144,589	17.6	15.90	19.48
Tertiary education	677	1,253,779	21.7	19.12	24.53
<b>Occupation</b>					
Government employee	306	366,073	23.1	19.59	27.08
Private employee	495	1,130,266	13.3	11.12	15.74
Self-employed	244	436,452	10.9	9.03	13.20
Unpaid worker/ Homemaker	343	577,371	15.0	12.89	17.46
Retiree	89	111,330	14.2	10.45	19.07
Student	2,429	4,090,750	61.4	58.29	64.51
Not working <sup>c</sup>	492	781,339	12.6	10.92	14.54
<b>Household income group</b>					
Less than RM 1,000	617	1,183,458	23.1	20.45	26.03
RM 1,000 - RM 1,999	697	1,220,558	21.1	18.29	24.23
RM 2,000 - RM 2,999	690	1,122,270	21.9	19.31	24.76
RM 3,000 - RM 3,999	607	1,016,813	22.9	20.02	26.16
RM 4,000 - RM 4,999	366	708,737	25.5	21.82	29.47
RM 5,000 - RM 5,999	307	467,189	25.3	21.22	29.78
RM 6,000 - RM 6,999	255	363,049	22.4	17.63	27.97
RM 7,000 - RM 7,999	190	322,545	27.8	22.03	34.48
RM 8,000 - RM 8,999	151	335,421	34.3	28.46	40.62
RM 9,000 - RM 9,999	80	87,100	25.7	18.49	34.55
RM 10,000 and above	411	619,888	29.3	24.38	34.80
<b>Household income quintile</b>					
Q1 (20% poorest)	758	1,450,253	22.3	19.85	25.05
Q2	764	1,303,383	21.3	18.73	24.17
Q3	842	1,373,371	21.9	19.52	24.41
Q4	914	1,572,427	25.5	23.04	28.15
Q5 (20% richest)	1,093	1,747,593	28.0	25.11	31.01
<b>Household income category</b>					
Bottom 40% (B40)	2,851	4,779,259	22.0	20.42	23.60
Middle 40% (M40)	1,089	1,941,930	27.4	25.05	29.88
Top 20% (T20)	431	725,839	29.5	25.07	34.45

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Does not include children aged less than 13 years old

<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution

**Table 5.7:** Distribution of oral healthcare utilisation in the last 12 months, by sector and sociodemographic characteristics, NHMS 2019 (N=4,398)

Sociodemographic characteristics	Public					Private				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>3,731</b>	<b>6,045,368</b>	<b>80.7</b>	<b>77.78</b>	<b>83.27</b>	<b>692</b>	<b>1,471,303</b>	<b>19.6</b>	<b>17.01</b>	<b>22.55</b>
<b>State</b>										
Johor	253	578,545	81.4	73.80	87.12	40	118,612	16.7	11.15	24.20
Kedah	147	297,559	82.0	75.58	87.03	27	60,723	16.7	11.87	23.07
Kelantan	167	297,038	92.1	87.19	95.22	14	25,498	7.9	4.78	12.81
Melaka	251	211,808	81.7	69.45	89.76	39	51,040	19.7	11.33	31.99
Negeri Sembilan	242	554,431	90.8	83.52	95.07	40	60,407	9.9	5.13	18.23
Pahang	129	222,576	89.4	84.50	92.90	22	27,866	11.2	7.66	16.08
Pulau Pinang	179	226,657	64.6	44.04	80.84	53	133,386	38.0	20.59	59.16
Perak	200	483,874	79.8	70.80	86.58	33	117,272	19.3	12.36	28.97
Perlis	231	65,389	93.4	88.29	96.42	21	5,252	7.5	4.11	13.33
Selangor	306	1,015,492	70.9	63.88	77.06	128	428,890	29.9	23.97	36.70
Terengganu	363	383,858	90.1	86.94	92.50	40	44,930	10.5	7.84	14.02
Sabah	308	691,468	81.8	66.39	91.07	37	156,350	18.5	9.18	33.75
Sarawak	283	752,036	87.1	75.55	93.64	28	116,450	13.5	6.82	24.92
WP Kuala Lumpur	101	200,663	65.5	51.37	77.32	46	110,376	36.0	23.74	50.45
WP Labuan	233	24,184	84.4	79.03	88.61	42	4,477	15.6	11.44	20.98
WP Putrajaya	338	39,793	81.6	69.26	89.70	82	9,775	20.0	11.85	31.84
<b>Location</b>										
Urban	2,197	4,250,819	76.4	72.69	79.67	551	1,333,871	24.0	20.61	27.67
Rural	1,534	1,794,549	93.1	90.45	95.12	141	137,433	7.1	5.13	9.84
<b>Sex</b>										
Male	1,625	2,634,618	79.1	74.23	83.20	267	697,134	20.9	16.74	25.82
Female	2,106	3,410,750	82.0	78.99	84.59	425	774,169	18.6	15.91	21.64
<b>Age group (Years)</b>										
0-4	148	212,240	82.2	71.43	89.54	20	44,964	17.4	10.16	28.24
5-9	1,016	1,426,598	94.2	91.34	96.22	50	89,726	5.9	4.01	8.68
10-14	1,013	1,684,756	98.7	97.37	99.38	16	21,557	1.3	0.59	2.70
15-19	468	1,037,505	94.5	91.02	96.71	26	64,044	5.8	3.58	9.38
20-24	112	232,591	62.2	49.42	73.47	56	142,194	38.0	26.73	50.78
25-29	119	270,407	52.8	37.18	67.95	67	243,121	47.5	32.40	63.07
30-34	148	254,379	56.2	43.85	67.89	80	203,820	45.1	33.33	57.36
35-39	165	226,150	63.1	52.41	72.59	71	128,557	35.9	26.41	46.53
40-44	97	133,120	55.8	43.47	67.38	64	108,622	45.5	33.83	57.67
45-49	107	149,313	53.2	41.77	64.24	69	135,046	48.1	36.98	59.38
50-54	107	144,407	57.5	45.58	68.67	62	112,243	44.7	33.35	56.67
55-59	78	95,375	56.0	41.41	69.68	41	73,350	43.1	29.46	57.86
60-64	69	83,195	60.2	43.98	74.40	38	58,308	42.2	27.82	57.97
65-69	42	42,681	68.0	48.88	82.47	20	17,919	28.5	15.09	47.28
70-74	26	22,577	58.4	29.84	82.30	7	17,590	45.5	21.21	72.19
75 and over	16	30,072	74.6	43.63	91.76	5	10,241	25.4	8.24	56.37
<b>Ethnicity</b>										
Malay <sup>a</sup>	2,754	3,857,025	85.1	82.57	87.31	442	687,746	15.2	12.94	17.72
Chinese	262	828,788	66.7	58.41	74.00	106	414,655	33.3	25.83	41.83
Indian	189	350,594	73.2	61.80	82.18	66	133,086	27.8	18.67	39.21
Bumiputera Sabah	289	515,653	89.2	80.99	94.16	27	64,496	11.2	6.19	19.30
Bumiputera Sarawak	198	423,371	94.1	86.84	97.45	19	31,594	7.0	3.35	14.13
Others	39	69,938	33.2	16.17	56.14	32	139,727	66.3	43.29	83.56

**Table 5.7:** Distribution of oral healthcare utilisation in the last 12 months, by sector and sociodemographic characteristics, NHMS 2019 (N=4,398) (cont'd)

Sociodemographic characteristics	Public					Private				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
Citizenship										
Malaysian	3,688	5,959,359	82.3	79.82	84.58	656	1,303,670	18.0	15.72	20.55
Permanent Resident	11	10,580	57.3	25.00	84.38	5	7,883	42.7	15.62	75.00
Non-Malaysian	31	75,332	31.9	16.43	52.77	31	159,750	67.7	46.69	83.33
Marital status <sup>b</sup>										
Single	1,006	2,027,600	84.0	80.07	87.30	148	395,833	16.4	13.02	20.45
Married	800	1,173,039	57.2	51.03	63.21	436	890,250	43.4	37.42	49.65
Widow(er)/Divorcee	99	104,820	74.8	61.55	84.56	27	36,928	26.3	16.40	39.45
Education level										
No formal education	437	610,112	83.7	77.40	88.58	56	116,934	16.1	11.26	22.36
Primary education	2,035	3,217,351	95.9	94.18	97.09	89	144,923	4.3	3.10	5.98
Secondary education	875	1,605,342	74.9	68.58	80.24	238	544,824	25.4	20.00	31.69
Tertiary education	378	601,725	48.0	41.42	54.64	308	664,596	53.0	46.29	59.61
Occupation										
Government employee	206	230,165	62.9	52.93	71.83	103	137,962	37.7	28.75	47.55
Private employee	263	497,067	44.0	35.67	52.63	238	639,646	56.6	47.98	64.83
Self-employed	166	257,453	59.0	49.04	68.26	78	178,998	41.0	31.74	50.96
Unpaid worker/Homemaker	275	450,582	78.0	70.62	84.01	70	126,186	21.9	16.03	29.06
Retiree	56	62,058	55.7	38.68	71.55	35	49,482	44.4	28.85	61.22
Student	2,345	3,917,962	95.8	93.82	97.13	93	180,257	4.4	3.05	6.33
Not working <sup>c</sup>	420	630,081	80.6	75.05	85.23	75	158,773	20.3	15.46	26.24
Household income group										
Less than RM 1,000	561	1,065,239	90.0	85.28	93.34	57	120,812	10.2	7.00	14.65
RM 1,000 - RM 1,999	644	1,053,263	86.3	74.61	93.10	56	171,051	14.0	7.18	25.55
RM 2,000 - RM 2,999	623	972,324	86.6	82.37	90.00	71	153,045	13.6	10.26	17.91
RM 3,000 - RM 3,999	520	846,134	83.2	77.18	87.90	85	166,719	16.4	11.74	22.43
RM 4,000 - RM 4,999	322	599,202	84.5	75.86	90.50	47	110,500	15.6	9.62	24.28
RM 5,000 - RM 5,999	247	352,729	75.5	66.07	82.98	62	112,187	24.0	16.79	33.11
RM 6,000 - RM 6,999	217	290,492	80.0	68.24	88.18	41	75,115	20.7	12.43	32.40
RM 7,000 - RM 7,999	154	229,346	71.1	59.87	80.23	37	91,649	28.4	19.42	39.53
RM 8,000 - RM 8,999	101	188,975	56.3	41.05	70.51	54	155,309	46.3	31.92	61.32
RM 9,000 - RM 9,999	62	65,174	74.8	60.45	85.25	19	23,086	26.5	15.80	40.93
RM 10,000 and above	259	351,204	56.7	46.34	66.43	158	277,336	44.7	34.86	55.05
Household income quintile										
Q1 (20% poorest)	691	1,302,435	89.8	85.52	92.93	68	150,411	10.4	7.34	14.46
Q2	700	1,128,632	86.6	75.78	93.02	68	178,600	13.7	7.25	24.39
Q3	740	1,146,018	83.4	78.48	87.45	104	227,320	16.6	12.53	21.55
Q4	780	1,292,215	82.2	77.39	86.14	138	277,982	17.7	13.77	22.41
Q5 (20% richest)	799	1,144,781	65.5	59.51	71.04	309	622,496	35.6	30.07	41.59
Household income category										
Bottom 40% (B40)	2,538	4,059,944	84.9	81.49	87.86	324	727,881	15.2	12.32	18.68
Middle 40% (M40)	886	1,521,078	78.3	73.12	82.77	210	423,676	21.8	17.38	27.02
Top 20% (T20)	286	433,059	59.7	50.78	67.95	153	305,252	42.1	33.73	50.86

95% CI = 95% Confidence Interval

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 5.8:** Distribution of number of oral healthcare facilities visited, among those who utilised in the last 12 months, NHMS 2019 (N=4,398)

Number of place	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
1 place	4,290	7,359,196	98.2	97.48	98.73
2 places	102	123,768	1.7	1.17	2.33
More than 2 places	4	7,916	0.1	0.02	0.51

95% CI = 95% Confidence Interval

**Table 5.9:** Annual mean number of visits to oral healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Total								95% CI	
			Mean	SD	Median	IQR	Min	Max			Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>9,291,343</b>	<b>0.29</b>	<b>0.71</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>25.00</b>			<b>0.27</b>	<b>0.32</b>
<b>State</b>												
Johor	1,487	755,432	0.21	0.45	0.00	0.00 - 0.00	0.00	5.00			0.16	0.26
Kedah	948	387,963	0.19	0.49	0.00	0.00 - 0.00	0.00	13.00			0.14	0.25
Kelantan	1,040	339,726	0.19	0.42	0.00	0.00 - 0.00	0.00	3.00			0.16	0.22
Melaka	919	342,579	0.42	0.76	0.00	0.00 - 1.00	0.00	12.00			0.35	0.48
Negeri Sembilan	894	908,996	0.48	1.03	0.00	0.00 - 1.00	0.00	12.00			0.38	0.57
Pahang	994	273,056	0.18	0.44	0.00	0.00 - 0.00	0.00	5.00			0.12	0.24
Pulau Pinang	950	399,961	0.25	0.51	0.00	0.00 - 0.00	0.00	8.00			0.19	0.30
Perak	811	792,619	0.36	0.87	0.00	0.00 - 1.00	0.00	13.00			0.26	0.46
Perlis	914	92,552	0.40	0.77	0.00	0.00 - 1.00	0.00	7.00			0.32	0.48
Selangor	1,811	1,669,462	0.26	0.55	0.00	0.00 - 0.00	0.00	7.00			0.23	0.30
Terengganu	1,118	515,591	0.43	0.69	0.00	0.00 - 1.00	0.00	5.00			0.36	0.51
Sabah	1,355	1,057,800	0.28	0.80	0.00	0.00 - 0.00	0.00	25.00			0.21	0.35
Sarawak	1,005	1,110,402	0.42	0.79	0.00	0.00 - 1.00	0.00	11.00			0.35	0.48
WP Kuala Lumpur	729	526,410	0.31	1.20	0.00	0.00 - 0.00	0.00	20.00			0.19	0.44
WP Labuan	912	31,975	0.36	0.58	0.00	0.00 - 1.00	0.00	4.00			0.30	0.43
WP Putrajaya	801	86,820	0.89	1.49	1.00	0.00 - 1.00	0.00	12.00			0.74	1.05
<b>Location</b>												
Urban	10,009	6,843,841	0.29	0.70	0.00	0.00 - 0.00	0.00	25.00			0.27	0.31
Rural	6,679	2,447,502	0.31	0.76	0.00	0.00 - 0.00	0.00	13.00			0.26	0.35
<b>Sex</b>												
Male	8,043	3,915,265	0.25	0.57	0.00	0.00 - 0.00	0.00	13.00			0.23	0.27
Female	8,645	5,376,078	0.34	0.83	0.00	0.00 - 1.00	0.00	25.00			0.31	0.37
<b>Age group (Years)</b>												
0-4	1,298	294,828	0.12	0.37	0.00	0.00 - 0.00	0.00	3.00			0.09	0.14
5-9	1,565	1,645,095	0.67	0.60	1.00	0.00 - 1.00	0.00	4.00			0.62	0.72
10-14	1,428	1,901,651	0.78	0.70	1.00	0.00 - 1.00	0.00	11.00			0.73	0.83
15-19	1,094	1,344,461	0.49	0.99	0.00	0.00 - 1.00	0.00	20.00			0.41	0.57
20-24	1,048	436,274	0.15	0.45	0.00	0.00 - 0.00	0.00	12.00			0.11	0.18
25-29	1,121	761,259	0.24	0.73	0.00	0.00 - 0.00	0.00	12.00			0.17	0.31
30-34	1,189	560,605	0.20	0.55	0.00	0.00 - 0.00	0.00	12.00			0.16	0.24
35-39	1,254	499,938	0.21	0.91	0.00	0.00 - 0.00	0.00	25.00			0.15	0.26
40-44	1,064	329,006	0.17	0.62	0.00	0.00 - 0.00	0.00	12.00			0.13	0.22
45-49	1,062	456,070	0.27	0.90	0.00	0.00 - 0.00	0.00	13.00			0.18	0.35
50-54	1,063	338,751	0.21	0.57	0.00	0.00 - 0.00	0.00	5.00			0.16	0.26
55-59	998	256,645	0.18	0.59	0.00	0.00 - 0.00	0.00	7.00			0.11	0.24
60-64	852	276,120	0.23	0.88	0.00	0.00 - 0.00	0.00	10.00			0.13	0.33
65-69	693	80,275	0.09	0.42	0.00	0.00 - 0.00	0.00	7.00			0.06	0.13
70-74	492	56,137	0.10	0.41	0.00	0.00 - 0.00	0.00	4.00			0.05	0.14
75 and over	467	54,228	0.08	0.37	0.00	0.00 - 0.00	0.00	5.00			0.04	0.13
<b>Ethnicity</b>												
Malay <sup>a</sup>	11,325	5,554,300	0.32	0.70	0.00	0.00 - 1.00	0.00	13.00			0.29	0.34
Chinese	1,838	1,626,877	0.27	0.72	0.00	0.00 - 0.00	0.00	15.00			0.21	0.32
Indian	980	588,649	0.33	0.77	0.00	0.00 - 1.00	0.00	20.00			0.27	0.38
Bumiputera Sabah	1,035	689,280	0.33	0.60	0.00	0.00 - 1.00	0.00	5.00			0.28	0.39
Bumiputera Sarawak	698	534,258	0.38	0.73	0.00	0.00 - 1.00	0.00	11.00			0.32	0.44
Others	812	297,979	0.11	0.79	0.00	0.00 - 0.00	0.00	25.00			0.03	0.19

**Table 5.9:** Annual mean number of visits to oral healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Total									
			Mean	SD	Median	IQR	Min	Max	95% CI			
									Lower	Upper		
Citizenship												
Malaysian	15,783	8,951,426	0.31	0.71	0.00	0.00 - 1.00		0.00	20.00	0.29	0.33	
Permanent Resident	121	19,163	0.08	0.29	0.00	0.00 - 0.00		0.00	2.00	0.02	0.14	
Non-Malaysian	780	320,657	0.12	0.79	0.00	0.00 - 0.00		0.00	25.00	0.03	0.20	
Marital status <sup>b</sup>												
Single	3,713	2,988,136	0.33	0.78	0.00	0.00 - 1.00		0.00	20.00	0.29	0.37	
Married	7,938	2,909,833	0.21	0.71	0.00	0.00 - 0.00		0.00	25.00	0.18	0.24	
Widow(er)/Divorcee	1,255	198,512	0.11	0.48	0.00	0.00 - 0.00		0.00	10.00	0.08	0.14	
Education level												
No formal education	2,560	868,058	0.18	0.57	0.00	0.00 - 0.00		0.00	12.00	0.15	0.22	
Primary education	5,111	3,909,447	0.45	0.80	0.00	0.00 - 1.00		0.00	25.00	0.41	0.48	
Secondary education	6,091	2,766,055	0.23	0.67	0.00	0.00 - 0.00		0.00	20.00	0.20	0.25	
Tertiary education	2,868	1,736,920	0.30	0.74	0.00	0.00 - 0.00		0.00	12.00	0.25	0.35	
Occupation												
Government employee	1,225	476,675	0.30	0.70	0.00	0.00 - 0.00		0.00	12.00	0.24	0.36	
Private employee	3,446	1,549,431	0.18	0.62	0.00	0.00 - 0.00		0.00	12.00	0.15	0.22	
Self-employed	2,206	612,568	0.15	0.53	0.00	0.00 - 0.00		0.00	13.00	0.12	0.19	
Unpaid worker/Homemaker	2,128	899,545	0.23	0.93	0.00	0.00 - 0.00		0.00	25.00	0.18	0.29	
Retiree	548	154,297	0.20	0.61	0.00	0.00 - 0.00		0.00	7.00	0.13	0.26	
Student	3,584	4,635,457	0.70	0.82	1.00	0.00 - 1.00		0.00	20.00	0.65	0.74	
Not working <sup>c</sup>	3,549	963,370	0.16	0.47	0.00	0.00 - 0.00		0.00	5.00	0.13	0.18	
Household income group												
Less than RM 1,000	2,733	1,425,563	0.28	0.60	0.00	0.00 - 0.00		0.00	12.00	0.24	0.32	
RM 1,000 - RM 1,999	3,115	1,481,320	0.26	0.60	0.00	0.00 - 0.00		0.00	11.00	0.22	0.30	
RM 2,000 - RM 2,999	2,713	1,421,644	0.28	0.69	0.00	0.00 - 0.00		0.00	20.00	0.24	0.32	
RM 3,000 - RM 3,999	2,241	1,311,606	0.30	0.98	0.00	0.00 - 0.00		0.00	25.00	0.24	0.35	
RM 4,000 - RM 4,999	1,407	830,393	0.30	0.59	0.00	0.00 - 1.00		0.00	10.00	0.25	0.35	
RM 5,000 - RM 5,999	1,043	604,106	0.33	0.81	0.00	0.00 - 0.00		0.00	12.00	0.25	0.40	
RM 6,000 - RM 6,999	847	433,792	0.27	0.58	0.00	0.00 - 0.00		0.00	10.00	0.20	0.33	
RM 7,000 - RM 7,999	595	406,373	0.35	0.70	0.00	0.00 - 1.00		0.00	7.00	0.27	0.43	
RM 8,000 - RM 8,999	470	445,248	0.46	0.87	0.00	0.00 - 1.00		0.00	7.00	0.34	0.57	
RM 9,000 - RM 9,999	254	121,761	0.36	1.06	0.00	0.00 - 1.00		0.00	12.00	0.19	0.53	
RM 10,000 and above	1,126	744,661	0.35	0.64	0.00	0.00 - 1.00		0.00	12.00	0.29	0.41	
Household income quintile												
Q1 (20% poorest)	3,445	1,705,222	0.26	0.57	0.00	0.00 - 0.00		0.00	12.00	0.23	0.29	
Q2	3,219	1,674,802	0.27	0.68	0.00	0.00 - 0.00		0.00	13.00	0.23	0.31	
Q3	3,270	1,722,735	0.27	0.81	0.00	0.00 - 0.00		0.00	25.00	0.23	0.31	
Q4	3,302	1,938,051	0.31	0.78	0.00	0.00 - 1.00		0.00	15.00	0.27	0.36	
Q5 (20% richest)	3,308	2,185,658	0.35	0.71	0.00	0.00 - 1.00		0.00	12.00	0.31	0.39	
Household income category												
Bottom 40% (B40)	11,515	5,953,297	0.27	0.72	0.00	0.00 - 0.00		0.00	25.00	0.25	0.30	
Middle 40% (M40)	3,678	2,380,467	0.34	0.71	0.00	0.00 - 1.00		0.00	12.00	0.30	0.37	
Top 20% (T20)	1,351	892,704	0.36	0.70	0.00	0.00 - 1.00		0.00	10.00	0.29	0.44	

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli<sup>b</sup> Does not include children aged less than 13 years old<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 5.9:** Annual mean number of visits to oral healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Public								95% CI	
			Mean	SD	Median	IQR	Min	Max			Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>9,291,343</b>	<b>0.23</b>	<b>0.64</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>25.00</b>			<b>0.22</b>	<b>0.25</b>
<b>State</b>												
Johor	1,487	755,432	0.18	0.43	0.00	0.00 - 0.00	0.00	5.00			0.14	0.21
Kedah	948	387,963	0.16	0.47	0.00	0.00 - 0.00	0.00	13.00			0.12	0.20
Kelantan	1,040	339,726	0.18	0.41	0.00	0.00 - 0.00	0.00	3.00			0.14	0.21
Melaka	919	342,579	0.33	0.68	0.00	0.00 - 1.00	0.00	12.00			0.25	0.41
Negeri Sembilan	894	908,996	0.43	0.99	0.00	0.00 - 1.00	0.00	12.00			0.34	0.53
Pahang	994	273,056	0.16	0.42	0.00	0.00 - 0.00	0.00	5.00			0.11	0.21
Pulau Pinang	950	399,961	0.15	0.38	0.00	0.00 - 0.00	0.00	3.00			0.11	0.19
Perak	811	792,619	0.30	0.84	0.00	0.00 - 0.00	0.00	13.00			0.21	0.39
Perlis	914	92,552	0.36	0.71	0.00	0.00 - 1.00	0.00	6.00			0.30	0.43
Selangor	1,811	1,669,462	0.18	0.46	0.00	0.00 - 0.00	0.00	7.00			0.15	0.21
Terengganu	1,118	515,591	0.38	0.64	0.00	0.00 - 1.00	0.00	5.00			0.32	0.45
Sabah	1,355	1,057,800	0.23	0.77	0.00	0.00 - 0.00	0.00	25.00			0.18	0.28
Sarawak	1,005	1,110,402	0.35	0.71	0.00	0.00 - 1.00	0.00	11.00			0.29	0.41
WP Kuala Lumpur	729	526,410	0.19	0.83	0.00	0.00 - 0.00	0.00	20.00			0.11	0.26
WP Labuan	912	31,975	0.31	0.56	0.00	0.00 - 1.00	0.00	4.00			0.25	0.37
WP Putrajaya	801	86,820	0.64	0.98	0.00	0.00 - 1.00	0.00	9.00			0.52	0.75
<b>Location</b>												
Urban	10,009	6,843,841	0.22	0.59	0.00	0.00 - 0.00	0.00	25.00			0.20	0.24
Rural	6,679	2,447,502	0.29	0.75	0.00	0.00 - 0.00	0.00	13.00			0.25	0.33
<b>Sex</b>												
Male	8,043	3,915,265	0.19	0.51	0.00	0.00 - 0.00	0.00	13.00			0.18	0.21
Female	8,645	5,376,078	0.27	0.74	0.00	0.00 - 0.00	0.00	25.00			0.25	0.30
<b>Age group (Years)</b>												
0-4	1,298	294,828	0.10	0.35	0.00	0.00 - 0.00	0.00	3.00			0.07	0.12
5-9	1,565	1,645,095	0.62	0.57	1.00	0.00 - 1.00	0.00	4.00			0.57	0.67
10-14	1,428	1,901,651	0.77	0.70	1.00	0.00 - 1.00	0.00	11.00			0.72	0.82
15-19	1,094	1,344,461	0.45	0.83	0.00	0.00 - 1.00	0.00	20.00			0.38	0.51
20-24	1,048	436,274	0.09	0.36	0.00	0.00 - 0.00	0.00	5.00			0.07	0.12
25-29	1,121	761,259	0.14	0.59	0.00	0.00 - 0.00	0.00	6.00			0.08	0.20
30-34	1,189	560,605	0.12	0.47	0.00	0.00 - 0.00	0.00	9.00			0.09	0.15
35-39	1,254	499,938	0.14	0.83	0.00	0.00 - 0.00	0.00	25.00			0.08	0.19
40-44	1,064	329,006	0.10	0.54	0.00	0.00 - 0.00	0.00	12.00			0.06	0.13
45-49	1,062	456,070	0.16	0.82	0.00	0.00 - 0.00	0.00	13.00			0.08	0.23
50-54	1,063	338,751	0.12	0.46	0.00	0.00 - 0.00	0.00	5.00			0.08	0.17
55-59	998	256,645	0.10	0.45	0.00	0.00 - 0.00	0.00	6.00			0.06	0.14
60-64	852	276,120	0.16	0.74	0.00	0.00 - 0.00	0.00	6.00			0.07	0.26
65-69	693	80,275	0.07	0.36	0.00	0.00 - 0.00	0.00	7.00			0.04	0.09
70-74	492	56,137	0.06	0.31	0.00	0.00 - 0.00	0.00	4.00			0.03	0.09
75 and over	467	54,228	0.07	0.35	0.00	0.00 - 0.00	0.00	5.00			0.02	0.11
<b>Ethnicity</b>												
Malay <sup>a</sup>	11,325	5,554,300	0.27	0.65	0.00	0.00 - 0.00	0.00	13.00			0.25	0.29
Chinese	1,838	1,626,877	0.17	0.50	0.00	0.00 - 0.00	0.00	12.00			0.13	0.20
Indian	980	588,649	0.24	0.71	0.00	0.00 - 0.00	0.00	20.00			0.19	0.29
Bumiputera Sabah	1,035	689,280	0.30	0.58	0.00	0.00 - 0.00	0.00	5.00			0.25	0.34
Bumiputera Sarawak	698	534,258	0.35	0.70	0.00	0.00 - 1.00	0.00	11.00			0.28	0.41
Others	812	297,979	0.05	0.72	0.00	0.00 - 0.00	0.00	25.00			0.01	0.09

**Table 5.9:** Annual mean number of visits to oral healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Public								
			Mean	SD	Median	IQR	Min	Max	95% CI		
									Lower	Upper	
Citizenship											
Malaysian	15,783	8,951,426	0.25	0.63	0.00	0.00 - 0.00	0.00	20.00	0.23	0.27	
Permanent Resident	121	19,163	0.05	0.23	0.00	0.00 - 0.00	0.00	2.00	0.00	0.09	
Non-Malaysian	780	320,657	0.05	0.72	0.00	0.00 - 0.00	0.00	25.00	0.01	0.09	
Marital status <sup>b</sup>											
Single	3,713	2,988,136	0.27	0.66	0.00	0.00 - 0.00	0.00	20.00	0.24	0.30	
Married	7,938	2,909,833	0.13	0.62	0.00	0.00 - 0.00	0.00	25.00	0.10	0.15	
Widow(er)/Divorcee	1,255	198,512	0.08	0.43	0.00	0.00 - 0.00	0.00	10.00	0.06	0.11	
Education level											
No formal education	2,560	868,058	0.15	0.54	0.00	0.00 - 0.00	0.00	12.00	0.12	0.19	
Primary education	5,111	3,909,447	0.42	0.77	0.00	0.00 - 1.00	0.00	25.00	0.39	0.46	
Secondary education	6,091	2,766,055	0.17	0.56	0.00	0.00 - 0.00	0.00	20.00	0.15	0.19	
Tertiary education	2,868	1,736,920	0.16	0.59	0.00	0.00 - 0.00	0.00	10.00	0.12	0.19	
Occupation											
Government employee	1,225	476,675	0.20	0.61	0.00	0.00 - 0.00	0.00	9.00	0.14	0.25	
Private employee	3,446	1,549,431	0.09	0.47	0.00	0.00 - 0.00	0.00	12.00	0.06	0.11	
Self-employed	2,206	612,568	0.09	0.44	0.00	0.00 - 0.00	0.00	13.00	0.07	0.12	
Unpaid worker/Homemaker	2,128	899,545	0.19	0.89	0.00	0.00 - 0.00	0.00	25.00	0.14	0.24	
Retiree	548	154,297	0.12	0.51	0.00	0.00 - 0.00	0.00	7.00	0.07	0.17	
Student	3,584	4,635,457	0.66	0.74	1.00	0.00 - 1.00	0.00	20.00	0.61	0.70	
Not working <sup>c</sup>	3,549	963,370	0.13	0.43	0.00	0.00 - 0.00	0.00	5.00	0.10	0.15	
Household income group											
Less than RM 1,000	2,733	1,425,563	0.25	0.56	0.00	0.00 - 0.00	0.00	12.00	0.22	0.28	
RM 1,000 - RM 1,999	3,115	1,481,320	0.22	0.58	0.00	0.00 - 0.00	0.00	11.00	0.19	0.26	
RM 2,000 - RM 2,999	2,713	1,421,644	0.24	0.65	0.00	0.00 - 0.00	0.00	20.00	0.20	0.27	
RM 3,000 - RM 3,999	2,241	1,311,606	0.23	0.81	0.00	0.00 - 0.00	0.00	25.00	0.19	0.28	
RM 4,000 - RM 4,999	1,407	830,393	0.24	0.53	0.00	0.00 - 0.00	0.00	10.00	0.20	0.29	
RM 5,000 - RM 5,999	1,043	604,106	0.26	0.78	0.00	0.00 - 0.00	0.00	12.00	0.18	0.33	
RM 6,000 - RM 6,999	847	433,792	0.22	0.53	0.00	0.00 - 0.00	0.00	5.00	0.15	0.28	
RM 7,000 - RM 7,999	595	406,373	0.24	0.58	0.00	0.00 - 0.00	0.00	7.00	0.17	0.30	
RM 8,000 - RM 8,999	470	445,248	0.26	0.76	0.00	0.00 - 0.00	0.00	7.00	0.14	0.39	
RM 9,000 - RM 9,999	254	121,761	0.29	1.04	0.00	0.00 - 0.00	0.00	12.00	0.12	0.46	
RM 10,000 and above	1,126	744,661	0.18	0.45	0.00	0.00 - 0.00	0.00	6.00	0.13	0.24	
Household income quintile											
Q1 (20% poorest)	3,445	1,705,222	0.23	0.53	0.00	0.00 - 0.00	0.00	12.00	0.20	0.26	
Q2	3,219	1,674,802	0.24	0.66	0.00	0.00 - 0.00	0.00	13.00	0.20	0.28	
Q3	3,270	1,722,735	0.23	0.77	0.00	0.00 - 0.00	0.00	25.00	0.19	0.26	
Q4	3,302	1,938,051	0.25	0.60	0.00	0.00 - 0.00	0.00	12.00	0.21	0.28	
Q5 (20% richest)	3,308	2,185,658	0.23	0.60	0.00	0.00 - 0.00	0.00	12.00	0.19	0.26	
Household income category											
Bottom 40% (B40)	11,515	5,953,297	0.23	0.64	0.00	0.00 - 0.00	0.00	25.00	0.21	0.25	
Middle 40% (M40)	3,678	2,380,467	0.26	0.65	0.00	0.00 - 0.00	0.00	12.00	0.23	0.29	
Top 20% (T20)	1,351	892,704	0.21	0.56	0.00	0.00 - 0.00	0.00	6.00	0.14	0.27	

95% CI = 95% Confidence Interval

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 5.9:** Annual mean number of visits to oral healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Private								95% CI	
			Mean	SD	Median	IQR	Min	Max			Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>9,291,343</b>	<b>0.06</b>	<b>0.36</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>15.00</b>			<b>0.05</b>	<b>0.07</b>
<b>State</b>												
Johor	1,487	755,432	0.03	0.19	0.00	0.00 - 0.00	0.00	2.00			0.02	0.05
Kedah	948	387,963	0.03	0.18	0.00	0.00 - 0.00	0.00	2.00			0.01	0.05
Kelantan	1,040	339,726	0.02	0.13	0.00	0.00 - 0.00	0.00	2.00			0.01	0.02
Melaka	919	342,579	0.09	0.41	0.00	0.00 - 0.00	0.00	4.00			0.03	0.14
Negeri Sembilan	894	908,996	0.04	0.34	0.00	0.00 - 0.00	0.00	8.00			0.01	0.08
Pahang	994	273,056	0.02	0.14	0.00	0.00 - 0.00	0.00	2.00			0.01	0.03
Pulau Pinang	950	399,961	0.10	0.36	0.00	0.00 - 0.00	0.00	8.00			0.03	0.16
Perak	811	792,619	0.06	0.29	0.00	0.00 - 0.00	0.00	4.00			0.03	0.09
Perlis	914	92,552	0.04	0.34	0.00	0.00 - 0.00	0.00	7.00			0.01	0.07
Selangor	1,811	1,669,462	0.08	0.34	0.00	0.00 - 0.00	0.00	4.00			0.06	0.10
Terengganu	1,118	515,591	0.05	0.31	0.00	0.00 - 0.00	0.00	4.00			0.03	0.08
Sabah	1,355	1,057,800	0.05	0.24	0.00	0.00 - 0.00	0.00	3.00			0.01	0.08
Sarawak	1,005	1,110,402	0.07	0.41	0.00	0.00 - 0.00	0.00	4.00			0.02	0.12
WP Kuala Lumpur	729	526,410	0.13	0.89	0.00	0.00 - 0.00	0.00	15.00			0.03	0.22
WP Labuan	912	31,975	0.05	0.24	0.00	0.00 - 0.00	0.00	2.00			0.03	0.07
WP Putrajaya	801	86,820	0.26	1.23	0.00	0.00 - 0.00	0.00	12.00			0.12	0.40
<b>Location</b>												
Urban	10,009	6,843,841	0.07	0.40	0.00	0.00 - 0.00	0.00	15.00			0.06	0.09
Rural	6,679	2,447,502	0.02	0.17	0.00	0.00 - 0.00	0.00	8.00			0.01	0.03
<b>Sex</b>												
Male	8,043	3,915,265	0.05	0.30	0.00	0.00 - 0.00	0.00	12.00			0.04	0.07
Female	8,645	5,376,078	0.07	0.41	0.00	0.00 - 0.00	0.00	15.00			0.05	0.08
<b>Age group (Years)</b>												
0-4	1,298	294,828	0.02	0.13	0.00	0.00 - 0.00	0.00	1.00			0.01	0.03
5-9	1,565	1,645,095	0.05	0.30	0.00	0.00 - 0.00	0.00	4.00			0.03	0.07
10-14	1,428	1,901,651	0.01	0.10	0.00	0.00 - 0.00	0.00	2.00			0.00	0.02
15-19	1,094	1,344,461	0.05	0.58	0.00	0.00 - 0.00	0.00	15.00			0.01	0.09
20-24	1,048	436,274	0.05	0.28	0.00	0.00 - 0.00	0.00	12.00			0.03	0.08
25-29	1,121	761,259	0.10	0.46	0.00	0.00 - 0.00	0.00	12.00			0.05	0.15
30-34	1,189	560,605	0.08	0.31	0.00	0.00 - 0.00	0.00	12.00			0.05	0.11
35-39	1,254	499,938	0.07	0.39	0.00	0.00 - 0.00	0.00	12.00			0.04	0.10
40-44	1,064	329,006	0.07	0.33	0.00	0.00 - 0.00	0.00	10.00			0.04	0.11
45-49	1,062	456,070	0.11	0.42	0.00	0.00 - 0.00	0.00	4.00			0.07	0.15
50-54	1,063	338,751	0.08	0.36	0.00	0.00 - 0.00	0.00	4.00			0.05	0.12
55-59	998	256,645	0.08	0.40	0.00	0.00 - 0.00	0.00	5.00			0.04	0.12
60-64	852	276,120	0.07	0.49	0.00	0.00 - 0.00	0.00	10.00			0.03	0.11
65-69	693	80,275	0.03	0.21	0.00	0.00 - 0.00	0.00	6.00			0.01	0.04
70-74	492	56,137	0.04	0.24	0.00	0.00 - 0.00	0.00	2.00			0.00	0.08
75 and over	467	54,228	0.02	0.12	0.00	0.00 - 0.00	0.00	1.00			0.00	0.03
<b>Ethnicity</b>												
Malay <sup>a</sup>	11,325	5,554,300	0.05	0.29	0.00	0.00 - 0.00	0.00	12.00			0.04	0.06
Chinese	1,838	1,626,877	0.10	0.54	0.00	0.00 - 0.00	0.00	15.00			0.06	0.14
Indian	980	588,649	0.09	0.36	0.00	0.00 - 0.00	0.00	4.00			0.05	0.13
Bumiputera Sabah	1,035	689,280	0.04	0.21	0.00	0.00 - 0.00	0.00	2.00			0.01	0.06
Bumiputera Sarawak	698	534,258	0.03	0.25	0.00	0.00 - 0.00	0.00	3.00			0.00	0.06
Others	812	297,979	0.06	0.33	0.00	0.00 - 0.00	0.00	8.00			0.01	0.11

**Table 5.9:** Annual mean number of visits to oral healthcare facilities per capita, by sector and sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Private							
			Mean	SD	Median	IQR	Min	Max	95% CI	
									Lower	Upper
Citizenship										
Malaysian	15,783	8,951,426	0.06	0.36	0.00	0.00 - 0.00	0.00	15.00	0.05	0.07
Permanent Resident	121	19,163	0.03	0.18	0.00	0.00 - 0.00	0.00	1.00	0.00	0.07
Non-Malaysian	780	320,657	0.07	0.34	0.00	0.00 - 0.00	0.00	8.00	0.02	0.12
Marital status <sup>b</sup>										
Single	3,713	2,988,136	0.06	0.44	0.00	0.00 - 0.00	0.00	15.00	0.04	0.08
Married	7,938	2,909,833	0.08	0.37	0.00	0.00 - 0.00	0.00	10.00	0.06	0.10
Widow(er)/Divorcee	1,255	198,512	0.03	0.20	0.00	0.00 - 0.00	0.00	4.00	0.01	0.04
Education level										
No formal education	2,560	868,058	0.03	0.20	0.00	0.00 - 0.00	0.00	4.00	0.02	0.04
Primary education	5,111	3,909,447	0.02	0.27	0.00	0.00 - 0.00	0.00	10.00	0.01	0.04
Secondary education	6,091	2,766,055	0.06	0.38	0.00	0.00 - 0.00	0.00	15.00	0.04	0.07
Tertiary education	2,868	1,736,920	0.15	0.49	0.00	0.00 - 0.00	0.00	12.00	0.12	0.18
Occupation										
Government employee	1,225	476,675	0.10	0.39	0.00	0.00 - 0.00	0.00	12.00	0.07	0.13
Private employee	3,446	1,549,431	0.09	0.42	0.00	0.00 - 0.00	0.00	12.00	0.07	0.12
Self-employed	2,206	612,568	0.06	0.32	0.00	0.00 - 0.00	0.00	6.00	0.04	0.09
Unpaid worker/Homemaker	2,128	899,545	0.05	0.31	0.00	0.00 - 0.00	0.00	8.00	0.03	0.06
Retiree	548	154,297	0.08	0.35	0.00	0.00 - 0.00	0.00	7.00	0.04	0.12
Student	3,584	4,635,457	0.04	0.42	0.00	0.00 - 0.00	0.00	15.00	0.02	0.06
Not working <sup>c</sup>	3,549	963,370	0.03	0.20	0.00	0.00 - 0.00	0.00	4.00	0.02	0.04
Household income group										
Less than RM 1,000	2,733	1,425,563	0.03	0.24	0.00	0.00 - 0.00	0.00	8.00	0.02	0.04
RM 1,000 - RM 1,999	3,115	1,481,320	0.03	0.21	0.00	0.00 - 0.00	0.00	8.00	0.01	0.06
RM 2,000 - RM 2,999	2,713	1,421,644	0.04	0.26	0.00	0.00 - 0.00	0.00	4.00	0.02	0.06
RM 3,000 - RM 3,999	2,241	1,311,606	0.06	0.58	0.00	0.00 - 0.00	0.00	15.00	0.03	0.10
RM 4,000 - RM 4,999	1,407	830,393	0.05	0.31	0.00	0.00 - 0.00	0.00	4.00	0.02	0.08
RM 5,000 - RM 5,999	1,043	604,106	0.07	0.30	0.00	0.00 - 0.00	0.00	5.00	0.04	0.10
RM 6,000 - RM 6,999	847	433,792	0.05	0.26	0.00	0.00 - 0.00	0.00	10.00	0.03	0.08
RM 7,000 - RM 7,999	595	406,373	0.11	0.45	0.00	0.00 - 0.00	0.00	4.00	0.06	0.16
RM 8,000 - RM 8,999	470	445,248	0.19	0.51	0.00	0.00 - 0.00	0.00	4.00	0.10	0.28
RM 9,000 - RM 9,999	254	121,761	0.07	0.26	0.00	0.00 - 0.00	0.00	2.00	0.03	0.11
RM 10,000 and above	1,126	744,661	0.17	0.50	0.00	0.00 - 0.00	0.00	12.00	0.12	0.22
Household income quintile										
Q1 (20% poorest)	3,445	1,705,222	0.03	0.23	0.00	0.00 - 0.00	0.00	8.00	0.02	0.04
Q2	3,219	1,674,802	0.03	0.21	0.00	0.00 - 0.00	0.00	8.00	0.01	0.05
Q3	3,270	1,722,735	0.05	0.29	0.00	0.00 - 0.00	0.00	12.00	0.03	0.06
Q4	3,302	1,938,051	0.07	0.52	0.00	0.00 - 0.00	0.00	15.00	0.04	0.10
Q5 (20% richest)	3,308	2,185,658	0.12	0.43	0.00	0.00 - 0.00	0.00	12.00	0.10	0.15
Household income category										
Bottom 40% (B40)	11,515	5,953,297	0.04	0.35	0.00	0.00 - 0.00	0.00	15.00	0.03	0.06
Middle 40% (M40)	3,678	2,380,467	0.07	0.34	0.00	0.00 - 0.00	0.00	12.00	0.06	0.09
Top 20% (T20)	1,351	892,704	0.16	0.48	0.00	0.00 - 0.00	0.00	10.00	0.11	0.20

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli<sup>b</sup> Does not include children aged less than 13 years old<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 5.10:** Type of services received, among those who utilised oral healthcare facilities in the last 12 months, NHMS 2019 (N=4,398)

Type of service	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Oral health check-up	2,772	4,741,041	63.3	60.52	65.93
Oral health treatment	1,514	2,529,211	33.8	31.08	36.53
Others	59	113,436	1.5	1.09	2.11
Related to previous oral health problems in the last 2 weeks	991	1,756,063	23.4	21.33	25.68

95% CI = 95% Confidence Interval

**Table 5.11:** Payer for oral healthcare utilisation, among those who utilised oral healthcare facilities in the last 12 months, NHMS 2019 (N=4,398)

Payer for oral healthcare	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Government GL/Government specific health fund <sup>b</sup>	598	703,019	9.4	7.85	11.17
Employer/Panel clinic/Employer-sponsored health insurance	175	336,007	4.5	3.45	5.80
Personal health insurance	50	117,173	1.6	1.04	2.35
SOCSSO	30	60,293	0.8	0.46	1.41
Self/family/household members	1,545	2,902,687	38.7	36.05	41.49
Fee exemption	2,025	3,338,430	44.6	41.62	47.52
Others	29	59,572	0.8	0.47	1.33

95% CI = 95% Confidence Interval

GL = Guarantee Letter

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

b Government specific health fund includes Peduli Sihat Card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health schemes

**Table 5.12:** Overall population experience towards oral healthcare services, among those who utilised oral healthcare facilities in the last 12 months, NHMS 2019 (N=4,398)

Rating	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Excellent/Good	4,138	7,065,896	94.3	93.10	95.29
Fair/Poor/Very Poor	134	216,927	2.9	2.25	3.71

95% CI = 95% Confidence Interval

**Table 5.13:** Comparison of oral health problems, oral health seeking behaviour and oral healthcare utilisation from recent surveys in Malaysia

Survey	NHMS III(15)	NOHSA 2010(8)	NHMS 2011(16)	NHMS 2015(1)	NHMS 2019
<b>Population with recent oral health problems</b>					
Recall period for survey	4 weeks	na	2 weeks	2 weeks	2 weeks
Estimated percentage of population with recent oral health problems	10.0%	na	5.7%	5.2%	8.7%
<b>Oral health seeking behaviour</b>					
Recall period for survey	1 year	Less than 1 year	2 weeks	2 weeks	2 weeks
Estimated percentage of population who had sought oral healthcare	19.5%	27.4%	21.9%	26.6%	23.0%
Most common source of oral healthcare/oral HCP and estimated percentage of population	Government dental clinic (53.7%)	Government dental clinic (56.1%)	Self-care (28.1%)	Self-medicate (46.1%)	Seek treatment/ medication or advice from HCP (23.0%)
Preferred oral HCP and estimated percentage of population	na	Government dental clinic (66.3%)	Government dental clinic (63.3%)	Government dental clinic (56.9%)	Government dental clinic (80.7%)
<b>Oral healthcare utilisation</b>					
Estimated percentage of population who had never ever sought oral healthcare	28.3%	7.8%	33.6%	37.0%	15.0%
Estimated percentage of population who had a dental visit within last 12 months	19.5%	27.4%	22.4%	27.8%	23.7%

na = not available; HCP = healthcare practitioner



# Informal Care

# Informal Care

## Introduction

Informal care is the provision of unpaid care or support to others who need help due to long term health conditions, to the elderly or to people who were unable to care for themselves due to disability (1). Informal care could be provided by family members, relatives, friends or neighbours, but excludes care provided by professionals or through organised voluntary services (2).

Care provided includes: (a) personal care, such as assisting in walking, feeding, dressing, toileting and bathing; (b) healthcare, such as bringing to the doctor or any health facility and managing medications; and (c) other assistance, such as financial support, supervision and food preparation.

Long-term caring roles may compromise the health and disrupt daily activity of the caregivers. Previous study conducted in Malaysia had revealed that the care-giving responsibilities affected the emotional, financial, social and/or physical well-being of the informal caregivers (3).

### Operational definition

- In this study, informal care was defined as the respondent's experience in providing care to people with long term health conditions (such as stroke, diabetes, kidney disease, heart conditions, mental illness, dementia and others), elderly or unable to care for themselves, in the last 12 months prior to interview.
- The care had to be provided for at least three months and did not involve wage or salary, community service and volunteer activity.
- This section was only applicable to respondents aged 13 years and over.

## Objectives

### General objective

To determine the prevalence and patterns of informal care.

### Specific objectives

To determine the:

1. prevalence of informal caregiver in the last 12 months by sociodemographic characteristics.
2. mean number of informal care recipients per caregiver in the last 12 months.
3. percentage of co-resident informal caregivers in the last 12 months.
4. type of care provided by informal caregivers in the last 12 months.
5. percentage of informal caregivers in the last 12 months, by type of care and sociodemographic characteristics.
6. type of assistance received by informal caregivers in the last 12 months.
7. perceived effect of caring role to informal caregivers in the last 12 months.
8. duration of informal care provision.
9. age of informal care recipients in the last 12 months.
10. training received by informal caregivers in the last 12 months.

## Findings

### Prevalence of informal caregiver

A total of 12,915 (100.0%) respondents responded to this section. Overall, 5.3% (95% CI = 4.70, 6.06) of the population provided informal care to those with long-term illness, disability or the elderly in the last 12 months prior to the interview (**Table 6.1**).

Majority of the caregivers were females (6.6%; 95% CI = 5.67, 7.58) as compared with males (4.1%; 95% CI = 3.45, 4.91). Informal caregivers were highest among population in the 50-54 age group (9.3%; 95% CI = 6.72, 12.73), followed by those in the 65-69 (7.9%; 95% CI = 5.51, 11.11) and 55-59 (7.8%; 95% CI = 5.67, 10.70) age groups (**Table 6.1**).

Among the Malaysian citizens, 5.8% (95% CI = 5.11, 6.66) provided informal care in the last 12 months. Bumiputera Sabah (9.0%; 95% CI = 6.77, 11.95) had the highest percentage of informal caregivers, followed by Indian (7.4%; 95% CI = 4.66, 11.68) and Bumiputera Sarawak (6.6%; 95% CI = 3.97, 10.67) (**Table 6.1**).

Widow(er)/divorcee population (7.0%; 95% CI = 4.49, 10.66) provided informal care more than those who were married (6.1%; 95% CI = 5.29, 7.12) and single (3.8%; 95% CI = 2.98, 4.84). Population with no formal education (6.0%; 95% CI = 3.66, 9.81) had higher percentage of informal caregivers followed by those with secondary education (5.8%; 95% CI = 4.98, 6.83) and tertiary education (5.0%; 95% CI = 3.83, 6.38) (**Table 6.1**).

A large number of informal caregivers were unpaid workers or homemakers (8.0%; 95% CI = 6.44, 9.94), followed by those who were not working (6.9%; 95% CI = 5.16, 9.13) and government employees (6.6%; 95% CI = 4.62, 9.21). Students (2.4%; 95% CI = 1.52, 3.70) constitute the lowest percentage of informal caregivers (**Table 6.1**).

Majority of the informal caregivers were from the household income quintile of Q1 (7.3%; 95% CI = 5.82, 9.02) (**Table 6.1**).

### Mean number of informal care recipients per caregiver

Overall, the mean number of care recipients per caregiver were 1.12 care recipients (SD = 0.47, median = 1.00, IQR = 1.00 – 1.00) (**Table 6.2**).

### Percentage of co-resident informal caregivers

Majority of the informal care provided in the last 12 months prior to the interview were given to household members (85.0%; 95% CI = 79.70, 89.17) as compared with non-household members (16.8%; 95% CI = 12.51, 22.18) (**Table 6.3**).

### Type of informal care provided

Healthcare (81.8%; 95% CI = 76.67, 85.98) constituted a bulk of the informal care provided in the last 12 months, followed by personal care (75.7%; 95% CI = 70.39, 80.37) (**Table 6.4**, **Table 6.5**).

### Type of assistance received

Most of the caregivers received assistance from other family members (65.5%; 95% CI = 59.78, 70.79) during provision of informal care, while 31.7% (95% CI = 26.53, 37.37) of the caregivers did not receive any assistance (**Table 6.6**).

### Perceived effect of caring role to informal caregivers

Majority of the caregivers perceived that provision of informal care affected their daily, work or school activities (25.7%; 95% CI = 20.86, 31.11), followed by social activities and others (21.2%; 95% CI = 16.85, 26.22), and health (physical and/or mental) (16.4%; 95% CI = 12.91, 20.69). Whilst, 58.7% (95% CI = 53.60, 63.50) of the caregivers reported that the provision of informal care had no effect to them (**Table 6.7**).

### Duration of informal care provision

The mean duration of informal caregiving was 5.20 years (SD = 7.71, median = 2.00, IQR = 1.00 – 5.00) (**Table 6.8**). The mean duration of caregiving time in hours per week was 24.46 hours (SD = 33.69, median = 12.00, IQR = 5.00 – 24.00) (**Table 6.9**).

Majority of the caregivers provided informal care for less than 10 hours per week (38.2%; 95% CI = 32.77, 44.02), followed by 10-19 hours (18.2%; 95% CI = 14.24, 22.95), 20-34 hours (17.8%; 95% CI = 14.00, 22.29), 35-49 hours (6.6%; 95% CI = 4.38, 9.83), and 50-100 hours (5.2%; 95% CI = 3.02, 8.87) per week (**Table 6.10**).

### Age of informal care recipients

The mean age of informal care recipients in the last 12 months was 63.9 years (SD = 23.56), with a median of 70.00 years (IQR = 57.00 – 80.00) (**Table 6.11**).

Informal care recipients were mainly those older than 80 years old (22.6%; 95% CI = 17.78, 28.23), followed by those aged 71-80 years old (21.0%; 95% CI = 16.45, 26.36) and 61-70 years old (20.5%; 95% CI = 16.62, 25.13) (**Table 6.12**).

### Training received by informal caregivers

Majority of the caregivers (76.1%; 95% CI = 70.82, 80.69) had received no training and only a small number (15.4%; 95% CI = 11.72, 20.09) were trained by healthcare providers (**Table 6.13**).

## Discussions

Findings from the study show that informal care provision is low in Malaysia. Prevalence of informal caregivers was highest among Malaysian women, pre-elderly aged 50-54 years old, those who were unpaid workers or homemakers, widow(ers) or divorcees and those who had no formal education. Most of the caregivers spent less than ten hours a week in provision of informal care while some spent more than 50 hours a week.

Most of the caregivers were from lower socioeconomic backgrounds which suggests the probability of experiencing poverty due to informal care provision, especially among women (1). Inability to juggle between work and informal care activities could lead to job dissatisfaction and absenteeism which may be the cause of unemployment (4).

This study shows most of the informal care provided in the last 12 months were given to household members which suggests a strong emphasis on filial obligation among the Asian population (5). Population aged 80 years and older were the group who needed informal care the most and health related care was the main reason for provision of informal care which corresponds with the increase in chronic diseases as the ageing population in Malaysia increases (6, 7).

Majority of the informal caregivers were not trained in the care they provided which suggests the need for training programmes to empower the population with the necessary basics in knowledge for healthcare provision specific to the needs of the care recipients. Other family members provided the most assistance to informal caregivers while some did not get any help. This could be the most economical and feasible method of engaging assistance for informal care among the population compared with hiring a domestic helper or a nurse for the job.

Provision of informal care mostly affected the caregiver in terms of daily, work, school, and social activities (8). Some of the informal caregivers were affected physically or mentally as provision of informal care could have a major impact on work effort and health especially for individuals providing a high intensity of care. Burden due to isolation and lack of support among informal caregivers may cause distress or mental health problems, which sparks concern regarding increased psychological distress, strain and overall health deterioration endured by informal caregivers (1).

In general, the caregivers were mainly among the elderly, females, widow(ers) or divorcees and unpaid workers or homemakers. As the caregiver ages, the care might be affected, not only in terms of tasks and hours of care, but also in the nature of the support needed for caregivers themselves (9).

A large percentage of caregivers did not receive any training and only a minority were trained by healthcare providers. The health of the older caregivers might be compromised; this added burden of handling their health in addition to the recipients under their care is a concern and should be addressed (10).

## Recommendations

- Supportive policies to address the effects faced by most caregivers such as counselling and physiological support could help sustain informal care as an important resource of our healthcare system (11). Physicians play a role in identifying, treating, and reviewing the health problems faced by caregivers including pain and anxiety or depression, particularly among deprived and high time-commitment carers. For further support, access to healthcare for caregivers should be improved.
- In order to lighten the workload of these caregivers, government or NGOs could support by providing caregiver training on skills on care for people with various challenges in physical, mental and special care needs. In addition, care facilities providing support, e.g. respite care will be needed to offload this burden (9).
- Additionally, empowering trained personnel to train others, self-help groups and tax exemptions for caregivers may help to lighten their burden (12) and this might encourage sustainability of informal care.

### References:

- Colombo, F, Llana-Nozal, A, Mercier, J, & Tjadens, F. (2011). Help Wanted?: Providing and Paying for Long-Term Care, OECD Health Policy Studies, OECD Publishing, Paris. Available from: <https://doi.org/10.1787/9789264097759-en>. OECD (2019), Health at a Glance 2019: OECD Indicators, OECD Publishing, Paris. Accessed on January 30, 2020.
- Oudijk, D, de Boer, A, Woittiez, I, Timmermans, J, & de Klerk, M. (2010). In the spotlight: informal care in the Netherlands Institute for Social Research. Available from: [https://www.academia.edu/22007272/In\\_the\\_spotlight\\_informal\\_care\\_in\\_the\\_Netherlands](https://www.academia.edu/22007272/In_the_spotlight_informal_care_in_the_Netherlands). Accessed on January 30, 2020.
- Abu Bakar, SH, Weatherley, R, Omar, N, Abdullah, F, & Mohamad Aun, NS. (2014). Projecting social support needs of informal caregivers in Malaysia. Health & social care in the community, 22(2), 144-154.
- Gignac, MA, Kelloway, EK, & Gottlieb, BH. (1996). The Impact of Caregiving on Employment: A Mediation Model of Work-Family Conflict. Canadian Journal on Aging/La Revue Canadienne du Vieillessement, 15(4), 525-542.
- Lai, DW, & Leonenko, W. (2007). Effects of Caregiving on Employment and Economic Costs of Chinese Family Caregivers in Canada. Journal of Family and Economic Issues, 28(3), 411.
- Ramli, AS, & Taher, SW. (2008). Managing Chronic Diseases in The Malaysian Primary Health Care—A Need for Change. Malaysian Family Physician: The Official Journal of The Academy of Family Physicians of Malaysia, 3(1), 7.
- The Office of Chief Statistician Malaysia, Department of Statistics, Malaysia (2016). Press Release Population Projection (Revised), Malaysia, 2010-2040. November 4, 2016. Available from: [https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=118&bul\\_id=Y3kwU2tSNVFDOWp1Ym tZY n h U e V B E d z O 9 & menu\\_id=L0pheU43NWJwRWVSZklWdzQ4TlhUUT09](https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=118&bul_id=Y3kwU2tSNVFDOWp1Ym tZY n h U e V B E d z O 9 & menu_id=L0pheU43NWJwRWVSZklWdzQ4TlhUUT09). Accessed on December 18, 2019.
- Thomas, GP, Saunders, CL, Roland, MO, & Paddison, CA. (2015). Informal Carers' Health-Related Quality of Life and Patient Experience In Primary Care: Evidence from 195,364 Carers in England Responding to a National Survey. BMC family practice, 16(1), 62.
- Triantafyllou, J, Naiditch, M, Repkova, K, Stiehr, K, Carretero, S, Emilsson, T, et al. (2010). Informal care in the long-term care system. European Overview paper. Athens/Vienna: Interlinks. Available from: <http://interlinks.euro.centre.org>. Accessed on January 30, 2020.
- Mafauzy, M. (2000). The Problems and Challenges of the Aging Population of Malaysia. The Malaysian Journal of Medical Sciences, 7(1), 1.
- Verbakel, E, Tamlaagronning, S, Winstone, L, Fjær, EL, & Eikemo, TA. (2017). Informal care in Europe: findings from the European Social Survey (2014) special module on the social determinants of health. The European Journal of Public Health, 27(suppl\_1), 90-95.
- Diputación Foral de Gipuzkoa (2010) Sendian Program webpage. Available from: <http://www.gipuzkoa.net/gizartekintza/sendian/index-i.html>. Accessed on March 15, 2015.

**Table 6.1:** Prevalence of informal caregiver in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=12,915)

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>730</b>	<b>1,336,134</b>	<b>5.3</b>	<b>4.70</b>	<b>6.06</b>
<b>State</b>					
Johor	44	98,834	3.5	2.28	5.23
Kedah	58	94,694	6.1	4.19	8.83
Kelantan	50	85,401	6.5	4.79	8.76
Melaka	47	55,054	8.5	4.74	14.92
Negeri Sembilan	35	91,193	6.1	4.44	8.38
Pahang	20	19,144	1.6	0.98	2.59
Pulau Pinang	40	59,215	4.3*	1.79	9.99
Perak	50	129,289	7.1	4.60	10.83
Perlis	53	12,980	7.2	4.73	10.92
Selangor	79	239,091	4.7	3.28	6.75
Terengganu	50	52,459	6.1	3.87	9.51
Sabah	77	188,800	6.3	4.59	8.53
Sarawak	59	167,531	8.0	5.68	11.04
WP Kuala Lumpur	22	37,443	2.7	1.74	4.05
WP Labuan	17	1,490	2.2*	0.68	6.89
WP Putrajaya	29	3,516	5.4*	2.85	9.91
<b>Location</b>					
Urban	442	980,450	5.2	4.42	6.12
Rural	288	355,684	5.8	4.90	6.76
<b>Sex</b>					
Male	285	513,796	4.1	3.45	4.91
Female	445	822,339	6.6	5.67	7.58
<b>Age group (Years)</b>					
13-14	9	16,296	1.8*	0.74	4.44
15-19	31	78,175	2.9	1.80	4.55
20-24	40	129,779	4.3	2.69	6.88
25-29	41	98,963	3.1	2.08	4.73
30-34	59	159,764	5.7	4.06	7.96
35-39	60	102,371	4.2	3.10	5.71
40-44	84	140,899	7.4	5.71	9.56
45-49	71	109,278	6.4	4.50	8.94
50-54	82	151,775	9.3	6.72	12.73
55-59	79	113,880	7.8	5.67	10.70
60-64	73	92,761	7.8	5.64	10.74
65-69	53	68,567	7.9	5.51	11.11
70-74	28	34,552	5.9	3.32	10.11
75 and over	20	39,073	6.0*	2.19	15.40
<b>Ethnicity</b>					
Malay <sup>a</sup>	486	744,401	5.7	4.92	6.62
Chinese	76	206,791	3.9	2.77	5.49
Indian	64	111,564	7.4	4.66	11.68
Bumiputera Sabah	61	141,785	9.0	6.77	11.95
Bumiputera Sarawak	28	71,845	6.6	3.97	10.67
Others	15	59,749	2.4*	1.07	5.18

Sociodemographic characteristics	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>Citizenship</b>					
Malaysian	714	1,290,670	5.8	5.11	6.66
Permanent Resident	5	7,676	3.6*	1.09	11.17
Non-Malaysian	11	37,788	1.5*	0.64	3.54
<b>Marital status</b>					
Single	152	346,747	3.8	2.98	4.84
Married	500	865,538	6.1	5.29	7.12
Widow(er)/Divorcee	78	123,849	7.0	4.49	10.66
<b>Education level</b>					
No formal education	37	74,502	6.0	3.66	9.81
Primary education	178	264,827	4.6	3.63	5.89
Secondary education	371	709,853	5.8	4.98	6.83
Tertiary education	143	285,640	5.0	3.83	6.38
<b>Occupation</b>					
Government employee	72	103,700	6.6	4.62	9.21
Private employee	164	360,503	4.2	3.34	5.35
Self-employed	131	234,525	5.9	4.67	7.40
Unpaid worker/ Homemaker	167	307,317	8.0	6.44	9.94
Retiree	35	42,099	5.4	3.45	8.32
Student	34	76,821	2.4	1.52	3.70
Not working <sup>b</sup>	127	211,170	6.9	5.16	9.13
<b>Household income group</b>					
Less than RM 1,000	183	332,544	8.1	6.46	10.07
RM 1,000 - RM 1,999	146	252,806	5.5	4.06	7.29
RM 2,000 - RM 2,999	113	201,750	4.9	3.63	6.58
RM 3,000 - RM 3,999	84	148,655	4.2	3.02	5.87
RM 4,000 - RM 4,999	71	155,867	7.1	4.65	10.75
RM 5,000 - RM 5,999	35	52,487	3.6	2.13	6.08
RM 6,000 - RM 6,999	24	52,588	4.1*	2.13	7.78
RM 7,000 - RM 7,999	17	21,481	2.3*	0.95	5.54
RM 8,000 - RM 8,999	12	32,765	4.4*	2.00	9.30
RM 9,000 - RM 9,999	5	7,922	3.2*	0.98	9.65
RM 10,000 and above	38	75,321	4.7	2.67	8.28
<b>Household income quintile</b>					
Q1 (20% poorest)	207	378,803	7.3	5.82	9.02
Q2	155	266,492	5.4	4.12	7.07
Q3	134	250,110	5.0	3.88	6.49
Q4	136	248,704	5.1	3.67	7.07
Q5 (20% richest)	96	190,076	3.9	2.76	5.59
<b>Household income category</b>					
Bottom 40% (B40)	552	987,805	5.6	4.89	6.52
Middle 40% (M40)	136	262,555	4.9	3.65	6.49
Top 20% (T20)	40	83,825	4.3	2.64	7.01

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

\* Relative Standard Error (RSE) more than 30%. Results should be interpreted with caution

**Table 6.2:** Mean number of informal care recipients per caregiver in the last 12 months, NHMS 2019 (N=730)

Count	Mean	SD	Median	IQR	Min	Max	95% CI	
							Lower	Upper
721	1.12	0.47	1.00	1.00 - 1.00	1.00	6.00	1.07	1.17

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

**Table 6.3:** Percentage of co-resident informal caregivers in the last 12 months, NHMS 2019 (N=730)

Care recipient	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Household member	633	1,136,220	85.0	79.70	89.17
Non-household member	113	224,387	16.8	12.51	22.18

95% CI = 95% Confidence Interval

**Table 6.4:** Type of care provided by informal caregivers in the last 12 months, NHMS 2019 (N=730)

Type of care	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Personal care	570	1,011,791	75.7	70.39	80.37
Healthcare	609	1,092,713	81.8	76.67	85.98
Others	12	21,297	1.6	0.62	4.06

95% CI = 95% Confidence Interval

**Table 6.5:** Percentage of informal caregivers in the last 12 months, by type of care and sociodemographic characteristics, NHMS 2019 (N=730)

Sociodemographic characteristics	Personal care					Healthcare				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>570</b>	<b>1,011,791</b>	<b>75.7</b>	<b>70.39</b>	<b>80.37</b>	<b>609</b>	<b>1,092,713</b>	<b>81.8</b>	<b>76.67</b>	<b>85.98</b>
<b>State</b>										
Johor	37	83,988	85.0	64.31	94.67	37	80,468	81.4	62.82	91.91
Kedah	44	70,615	74.6	60.62	84.82	55	92,227	97.4	91.50	99.24
Kelantan	31	50,673	59.3	42.07	74.57	41	72,063	84.4	70.94	92.28
Melaka	40	47,889	87.0	76.37	93.25	38	47,087	85.5	68.80	94.06
Negeri Sembilan	29	78,050	85.6	65.25	94.95	26	63,380	69.5	44.56	86.60
Pahang	13	10,595	55.3	27.24	80.40	14	14,103	73.7	44.48	90.71
Pulau Pinang	36	53,261	89.9	62.86	97.93	37	58,834	99.4	96.58	99.88
Perak	35	89,901	69.5	41.82	87.88	41	109,118	84.4	67.75	93.30
Perlis	48	12,004	92.5	76.77	97.86	47	11,584	89.2	79.92	94.53
Selangor	67	187,435	78.4	62.54	88.75	74	222,465	93.0	79.61	97.87
Terengganu	41	42,549	81.1	61.68	91.97	38	34,073	65.0	53.10	75.21
Sabah	57	136,163	72.1	57.76	83.03	64	152,616	80.8	67.40	89.59
Sarawak	43	117,617	70.2	52.70	83.29	37	97,123	58.0	40.28	73.83
WP Kuala Lumpur	15	27,626	73.8	51.78	88.06	19	33,245	88.8	69.29	96.53
WP Labuan	14	1,026	68.9	49.57	83.26	13	999	67.1	55.03	77.21
WP Putrajaya	20	2,399	68.2	57.26	77.48	28	3,328	94.6	78.73	98.83
<b>Location</b>										
Urban	336	725,151	74.0	67.09	79.83	367	800,625	81.7	75.22	86.72
Rural	234	286,640	80.6	73.64	86.05	242	292,088	82.1	73.38	88.44
<b>Sex</b>										
Male	222	387,639	75.4	68.22	81.48	242	425,769	82.9	76.06	88.05
Female	348	624,151	75.9	68.86	81.77	367	666,944	81.1	74.04	86.59
<b>Age group (Years)</b>										
13-14	5	8,665	53.2	16.70	86.55	5	11,238	69.0	30.03	92.00
15-19	24	54,913	70.2	46.94	86.30	18	38,614	49.4	30.98	67.97
20-24	30	94,626	72.9	54.31	85.91	33	107,724	83.0	64.95	92.95
25-29	29	69,397	70.1	49.92	84.68	34	87,807	88.7	71.45	96.12
30-34	47	120,033	75.1	54.46	88.41	50	132,272	82.8	66.70	92.04
35-39	44	80,638	78.8	64.73	88.23	47	81,341	79.5	64.36	89.23
40-44	67	107,948	76.6	62.63	86.49	75	128,831	91.4	81.51	96.28
45-49	54	76,137	69.7	49.38	84.40	60	87,423	80.0	55.78	92.69
50-54	66	111,016	73.1	53.61	86.52	78	146,894	96.8	88.32	99.17
55-59	62	87,091	76.5	59.20	87.93	63	81,930	71.9	52.70	85.51
60-64	59	80,649	86.9	75.26	93.58	60	73,999	79.8	61.49	90.69
65-69	44	55,766	81.3	65.79	90.80	45	53,192	77.6	57.61	89.80
70-74	24	31,344	90.7	72.88	97.26	26	31,502	91.2	65.80	98.23
75 and over	15	33,567	85.9	55.75	96.72	15	29,947	76.6	35.58	95.12
<b>Ethnicity</b>										
Malay <sup>a</sup>	377	562,017	75.5	68.67	81.25	412	611,594	82.2	74.62	87.82
Chinese	61	155,387	75.1	56.88	87.38	64	176,804	85.5	71.17	93.37
Indian	53	87,658	78.6	61.00	89.58	55	100,481	90.1	75.62	96.36
Bumiputera Sabah	44	94,158	66.4	49.21	80.13	50	117,879	83.1	69.86	91.30
Bumiputera Sarawak	22	54,805	76.3	52.86	90.22	16	35,214	49.0	36.81	61.34
Others	13	57,766	96.7	81.58	99.48	12	50,741	84.9	46.86	97.30

Sociodemographic characteristics	Others				
	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>12</b>	<b>21,297</b>	<b>1.6</b>	<b>0.62</b>	<b>4.06</b>
<b>State</b>					
Johor	0	-	-	-	-
Kedah	0	-	-	-	-
Kelantan	1	1,254	1.5	0.21	9.55
Melaka	0	-	-	-	-
Negeri Sembilan	0	-	-	-	-
Pahang	1	568	3.0	0.51	15.50
Pulau Pinang	0	-	-	-	-
Perak	0	-	-	-	-
Perlis	2	256	2.0	0.43	8.49
Selangor	1	2,050	0.9	0.12	6.00
Terengganu	0	-	-	-	-
Sabah	3	3,253	1.7	0.44	6.51
Sarawak	4	13,916	8.3	2.20	26.72
WP Kuala Lumpur	0	-	-	-	-
WP Labuan	0	-	-	-	-
WP Putrajaya	0	-	-	-	-
<b>Location</b>					
Urban	5	14,256	1.5	0.38	5.44
Rural	7	7,040	2.0	0.79	4.88
<b>Sex</b>					
Male	3	2,749	0.5	0.12	2.44
Female	9	18,548	2.3	0.77	6.45
<b>Age group (Years)</b>					
13-14	0	-	-	-	-
15-19	1	4,143	5.3	0.73	29.93
20-24	0	-	-	-	-
25-29	1	7,000	7.1	1.00	36.41
30-34	0	-	-	-	-
35-39	0	-	-	-	-
40-44	1	2,050	1.5	0.20	9.74
45-49	1	846	0.8	0.11	5.37
50-54	1	1,113	0.7	0.10	5.13
55-59	2	256	0.2	0.05	0.93
60-64	5	5,889	6.3	2.27	16.53
65-69	0	-	-	-	-
70-74	0	-	-	-	-
75 and over	0	-	-	-	-
<b>Ethnicity</b>					
Malay <sup>a</sup>	6	4,468	0.6	0.20	1.79
Chinese	0	-	-	-	-
Indian	0	-	-	-	-
Bumiputera Sabah	2	2,913	2.1	0.47	8.59
Bumiputera Sarawak	3	6,916	9.6	1.59	41.23
Others	1	7,000	11.7	1.47	54.06

**Table 6.5:** Percentage of informal caregivers in the last 12 months, by type of care and sociodemographic characteristics, NHMS 2019 (N=730) (cont'd)

Sociodemographic characteristics	Personal care					Healthcare				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
Citizenship										
Malaysian	557	972,179	75.3	69.87	80.07	597	1,060,126	82.1	76.98	86.34
Permanent Resident	4	3,807	49.6	8.97	90.76	4	3,807	49.6	8.97	90.76
Non-Malaysian	9	35,805	94.8	71.97	99.22	8	28,780	76.2	30.88	95.81
Marital status										
Single	107	242,731	70.0	59.72	78.60	114	252,416	72.8	62.32	81.23
Married	400	665,753	76.9	69.63	82.89	427	735,314	85.0	79.29	89.28
Widow(er)/Divorcee	63	103,306	83.4	68.18	92.19	68	104,983	84.8	68.68	93.39
Education level										
No formal education	32	70,040	94.0	82.55	98.12	28	49,696	66.7	38.03	86.74
Primary education	139	183,103	69.1	55.86	79.87	140	198,862	75.1	62.40	84.56
Secondary education	292	550,370	77.5	71.24	82.78	312	586,763	82.7	76.50	87.47
Tertiary education	106	206,965	72.5	59.21	82.66	128	256,081	89.7	80.55	94.77
Occupation										
Government employee	47	67,595	65.2	48.42	78.88	64	93,251	89.9	78.20	95.69
Private employee	128	288,386	80.0	69.72	87.41	139	296,600	82.3	72.88	89.39
Self-employed	99	168,776	72.0	59.70	81.65	110	201,490	85.9	75.82	92.23
Unpaid worker/Homemaker	138	225,941	73.5	59.93	83.75	137	250,340	81.5	70.24	89.11
Retiree	28	29,041	69.0	44.87	85.87	32	37,681	89.5	70.17	96.87
Student	26	58,652	76.3	57.56	88.48	20	39,718	51.7	32.72	70.21
Not working <sup>b</sup>	104	173,400	82.1	69.43	90.27	107	173,632	82.2	71.57	89.47
Household income group										
Less than RM 1,000	141	260,533	78.3	69.03	85.45	151	261,283	78.6	68.20	86.24
RM 1,000 - RM 1,999	116	183,239	72.5	58.48	83.12	115	208,450	82.5	71.82	89.66
RM 2,000 - RM 2,999	87	139,739	69.3	56.63	79.55	90	162,059	80.3	68.49	88.46
RM 3,000 - RM 3,999	70	128,242	86.3	73.01	93.59	79	140,957	94.8	83.85	98.48
RM 4,000 - RM 4,999	57	121,875	78.2	60.39	89.40	57	103,414	66.3	41.88	84.36
RM 5,000 - RM 5,999	25	38,791	73.9	52.50	87.89	32	48,266	92.0	74.15	97.85
RM 6,000 - RM 6,999	14	20,734	39.4	16.08	68.85	20	38,805	73.8	40.73	92.02
RM 7,000 - RM 7,999	16	21,427	99.8	97.89	99.97	15	16,948	78.9	38.61	95.70
RM 8,000 - RM 8,999	9	24,509	74.8	47.83	90.58	9	29,070	88.7	56.13	97.98
RM 9,000 - RM 9,999	5	7,922	100.0	-	-	4	7,800	98.5	86.65	99.84
RM 10,000 and above	29	64,080	85.1	63.70	94.88	35	73,711	97.9	89.49	99.60
Household income quintile										
Q1 (20% poorest)	160	302,717	79.9	71.42	86.36	172	305,982	80.8	71.15	87.74
Q2	122	177,077	66.4	54.18	76.84	120	215,392	80.8	70.48	88.16
Q3	108	201,076	80.4	69.18	88.22	117	218,292	87.3	76.81	93.42
Q4	106	191,549	77.0	66.07	85.22	115	184,762	74.3	56.14	86.71
Q5 (20% richest)	73	138,672	73.0	52.83	86.66	83	166,334	87.5	74.34	94.41
Household income category										
Bottom 40% (B40)	434	760,046	76.9	71.23	81.81	458	822,227	83.2	78.20	87.30
Middle 40% (M40)	104	179,018	68.2	54.67	79.20	115	190,413	72.5	56.06	84.52
Top 20% (T20)	31	72,027	85.9	65.15	95.22	34	78,122	93.2	78.11	98.13

95% CI = 95% Confidence Interval

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

Sociodemographic characteristics	Others				
	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Citizenship					
Malaysian	11	14,297	1.1	0.39	3.13
Permanent Resident	0	-	-	-	-
Non-Malaysian	1	7,000	18.5	2.32	68.50
Marital status					
Single	1	131	0.0	0.01	0.27
Married	10	19,099	2.2	0.78	6.06
Widow(er)/Divorcee	1	2,067	1.7	0.22	11.38
Education level					
No formal education	3	3,446	4.6	1.11	17.32
Primary education	2	2,228	0.8	0.18	3.86
Secondary education	6	15,492	2.2	0.70	6.64
Tertiary education	1	131	0.0	0.01	0.33
Occupation					
Government employee	4	4,140	4.0	1.23	12.22
Private employee	1	7,000	1.9	0.27	12.65
Self-employed	2	1,379	0.6	0.10	3.41
Unpaid worker/Homemaker	2	5,803	1.9	0.26	12.32
Retiree	1	568	1.4	0.18	9.35
Student	0	-	-	-	-
Not working <sup>b</sup>	2	2,407	1.1	0.20	6.19
Household income group					
Less than RM 1,000	3	8,385	2.5	0.49	12.02
RM 1,000 - RM 1,999	4	6,711	2.7	0.50	12.88
RM 2,000 - RM 2,999	2	2,192	1.1	0.17	6.75
RM 3,000 - RM 3,999	1	2,050	1.4	0.19	9.33
RM 4,000 - RM 4,999	1	846	0.5	0.07	3.88
RM 5,000 - RM 5,999	0	-	-	-	-
RM 6,000 - RM 6,999	1	1,113	2.1	0.27	14.84
RM 7,000 - RM 7,999	0	-	-	-	-
RM 8,000 - RM 8,999	0	-	-	-	-
RM 9,000 - RM 9,999	0	-	-	-	-
RM 10,000 and above	0	-	-	-	-
Household income quintile					
Q1 (20% poorest)	3	8,385	2.2	0.43	10.71
Q2	4	6,711	2.5	0.47	12.28
Q3	2	2,192	0.9	0.13	5.50
Q4	2	2,896	1.2	0.25	5.18
Q5 (20% richest)	1	1,113	0.6	0.08	4.21
Household income category					
Bottom 40% (B40)	10	19,338	2.0	0.74	5.07
Middle 40% (M40)	2	1,959	0.7	0.18	3.07
Top 20% (T20)	0	-	-	-	-

**Table 6.6:** Type of assistance received by informal caregivers in the last 12 months, NHMS 2019 (N=730)

Type of assistance	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Other family members	491	875,097	65.5	59.78	70.79
Nurse	25	54,236	4.1	2.47	6.60
Domestic helper	17	50,069	3.7	1.75	7.82
Day-care	17	23,951	1.8	0.92	3.46
Others	5	14,532	1.1	0.38	3.11
None of the above	221	423,552	31.7	26.53	37.37

95% CI = 95% Confidence Interval

**Table 6.7:** Perceived effect of caring role to informal caregivers in the last 12 months, NHMS 2019 (N=730)

Type of effect	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Daily, work or school activities	167	342,767	25.7	20.86	31.11
Social activities and others	137	282,693	21.2	16.85	26.22
Health (physical and/or mental)	116	219,614	16.4	12.91	20.69
No effect <sup>a</sup>	453	783,745	58.7	53.60	63.50

95% CI = 95% Confidence Interval

<sup>a</sup> No effect includes those who reported no effect on daily, work or school activities, social activities and others, and health.

**Table 6.8:** Mean years of care provision, among informal caregivers in the last 12 months, NHMS 2019 (N=730)

Count	Mean	SD	Median	IQR	Min	Max	95% CI	
							Lower	Upper
675	5.20	7.71	2.00	1.00 - 5.00	0.01	48.00	4.34	6.05

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

**Table 6.9:** Mean duration of informal care (in hours per week) in the last 12 months, NHMS 2019 (N=730)

Count	Mean	SD	Median	IQR	Min	Max	95% CI	
							Lower	Upper
671	24.46	33.69	12.00	5.00 - 24.00	1.00	168.00	20.16	28.76

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

**Table 6.10:** Distribution of duration of informal care provided (in hours per week) in the last 12 months, NHMS 2019 (N=730)

Duration of care	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Less than 10 hours	299	510,935	38.2	32.77	44.02
10-19 hours	126	243,061	18.2	14.24	22.95
20-34 hours	127	237,400	17.8	14.00	22.29
35-49 hours	39	88,132	6.6	4.38	9.83
50-100 hours	42	69,775	5.2	3.02	8.87
More than 100 hours	38	70,104	5.2	2.86	9.42

95% CI = 95% Confidence Interval

**Table 6.11:** Mean age of informal care recipients (years) in the last 12 months, NHMS 2019 (N=730)

Count	Mean	SD	Median	IQR	Min	Max	95% CI	
							Lower	Upper
685	63.90	23.56	70.00	57.00 - 80.00	1.00	103.00	60.61	67.19

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

**Table 6.12:** Distribution of age of informal care recipients in the last 12 months, NHMS 2019 (N=730)

Age of care recipient	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
10 years old and below	27	66,409	5.0	2.65	9.13
11-20 years	21	52,797	4.0	1.85	8.26
21-30 years	27	32,988	2.5	1.40	4.33
31-40 years	38	54,449	4.1	2.38	6.89
41-50 years	29	51,065	3.8	2.10	6.85
51-60 years	62	108,153	8.1	5.64	11.49
61-70 years	171	274,544	20.5	16.62	25.13
71-80 years	152	280,309	21.0	16.45	26.36
More than 80 years	158	301,712	22.6	17.78	28.23

95% CI = 95% Confidence Interval

**Table 6.13:** Training received by informal caregivers in the last 12 months, NHMS 2019 (N=730)

Training received	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Yes, by healthcare practitioner	124	206,358	15.4	11.72	20.09
Yes, by non-healthcare practitioner	25	42,562	3.2	1.81	5.55
No	553	1,016,812	76.1	70.82	80.69

95% CI = 95% Confidence Interval



NHMS 2019

# Family Doctor

# Family Doctor

## Introduction

The Ministry of Health initiated the Family Doctor Concept (FDC) in 2013 with the aim of ‘One Family One Doctor’ to strengthen primary healthcare services by providing comprehensive service throughout the whole life-course from “womb to tomb” (1). It offers a proactive approach by providing personalized care to all members of the population within the operational service areas. This personalized care will help to create a good patient-doctor relationship, providing longitudinal care which can help the delivery of preventive care, enhance the quality, continuity of care and client’s compliance towards the treatment and management provided.

Services provided by the health provider includes more opportunity for early screening, risk identification, risk intervention packages and clinical management of chronic diseases. Eventually, FDC will also strengthen the gatekeeping role and will reduce inappropriate referrals to secondary care and unnecessary costs to the client.

As this is the first episode of its data collection at national survey, the findings will serve as a baseline for FDC among households in Malaysia.

### Operational definition

- In this study, family doctor concept was measured by two approaches, namely:
  - » household members visiting the same clinic.
  - » household members seeing the same doctor.

## Objectives

### General objective

To determine the percentage of household visiting the same clinic or seeing the same doctor.

### Specific objectives

To determine the:

1. percentage of household visiting the same clinic by sector and sociodemographic characteristics.
2. percentage of household seeing the same doctor by sociodemographic characteristics.

## Findings

### Households visiting the same clinic

A total of 5,180 (99.5%) households responded to this section. The overall percentage of households visiting the same clinic was 47.1% (95% CI = 44.35, 49.92) (**Table 7.1**).

Wilayah Persekutuan Putrajaya had the highest percentage of households visiting the same clinic at 70.8% (95% CI = 62.99, 77.61), followed by Terengganu (68.0%; 95% CI = 58.56, 76.16) and Kelantan (66.9%; 95% CI = 59.91, 73.14). States which had the lowest percentage of households visiting the same clinic were Pulau Pinang (33.6%; 95% CI = 23.61, 45.31) and Johor (34.9%; 95% CI = 25.48, 45.60) (**Table 7.2**).

Rural population had a higher percentage of households visiting the same clinic at 58.4% (95% CI = 53.73, 62.95) as compared with urban population 44.3% (95% CI = 41.15, 47.51). By household income quintile, the highest percentage was observed among the Q4 households (50.8%; 95% CI = 45.33, 56.18) (**Table 7.2**).

Among the 2,700 households that visited the same clinic, 54.2% (95% CI = 49.00, 59.25) utilised public clinics and 45.8% (95% CI = 40.68, 50.94) utilised private clinics (**Table 7.2**).

Among the households that visited the same clinic, Pulau Pinang had the highest proportion of them visited private clinics at 70.5% (95% CI = 51.81, 84.20) while Kelantan had the highest proportion visited public clinics at 83.2% (95% CI = 71.21, 90.82). More rural households visited public clinics (67.6%; 95% CI = 54.56, 78.42) as compared with private clinics (32.1%; 95% CI = 21.28, 45.23). By household income quintile and household income category, households from a higher economic status had a higher proportion visited private clinics (**Table 7.2**).

## Households seeing the same doctor

The percentage of households seeing the same doctor was 24.1% (95% CI = 21.47, 26.86) (Table 7.1).

Highest was in Terengganu at 47.8% (95% CI = 36.77, 59.06) while the lowest was in Selangor at 14.9% (95% CI = 11.26, 19.49). The percentage of households seeing the same doctor was higher among rural households (32.7%; 95% CI = 25.83, 40.37) as compared with urban households (21.9%; 95% CI = 19.37, 24.67) (Table 7.3).

## Discussions

There is an increase of attendances in public primary care services throughout the years which is translated into increase in demand for primary healthcare services in Malaysia. Malaysia is also facing the challenge of ageing population with high prevalence of chronic non-communicable disease (NCD) as well as re-emerging communicable diseases. To combat these challenges, the Family Doctor Concept (FDC) was introduced by the Ministry of Health in 2013 to strengthen its primary healthcare services (2).

FDC aims to achieve person-centred care. Implementation

of FDC has shown to improve health performance indicators on maternal and child health, chronic disease and outpatient services as well as detecting and treating diseases at an early stage (1, 3). Feedback from monitoring activities discovered that familiarity between patients and clinic staff can build trust, rapport and foster closer patient-provider relationships; subsequently having better community health outcomes (4).

The Ministry of Health Malaysia has upgraded FDC into the Family Health Team intervention under the Enhanced Primary Healthcare (EnPHC) initiative, by involving other healthcare providers into the fold. The EnPHC evaluation study showed that both patients and healthcare providers were keen for the intervention as it developed a closer interpersonal relationship due to familiarity reasons, which encourages continuity and compliance to care (4).

## Recommendations

- National registry of all populations residing within an operational service area is required to optimise Family Doctor Concept on a full scale.
- Expanding Family Doctor Concept by getting private health providers' involvement.

**Table 7.1:** Family doctor concept, NHMS 2019 (N=5,206)

Family doctor concept	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>Households visiting the same clinic</b>	2,700	4,526,376	47.1	44.35	49.92
Public clinic	1,747	2,451,705	54.2	49.00	59.25
Private clinic	948	2,071,415	45.8	40.68	50.94
<b>Households seeing the same doctor</b>	1,280	2,311,138	24.1	21.47	26.86

95% CI = 95% Confidence Interval

## References:

1. Safurah, J, Nor Asiah, M, Normi, M, Muhamad Irfan Yasin, AU, Subashini, A, Nazrila, HN, et al. (2018). Working Towards Universal Health Coverage Through the Family Doctor Concept in Malaysia. *International Journal of Medical and Health Sciences*, 7, 98–106.
2. Datuk Dr Noor Hisham Abdullah. Improving Malaysia's Healthcare System to Meet Future Needs. [Internet]. June 22, 2019. Available from: <https://kpkeshatan.com/2015/06/23/improving-malaysias-healthcare-system-to-meet-future-needs/>. Accessed on March 2, 2020.
3. Subramaniam, S. Role empowerment for family doctor [Internet]. October 21, 2013. Available from: <https://fms-malay-sia.org/2013/10/21/role-empower-ment-for-family-doctor-dr-s-subramaniam/>. Accessed on January 30, 2020.
4. Institute for Health Systems Research (IHSR) (2019). EnPHC-PE. Evaluation of Enhanced Primary Healthcare Volume 4: Process Evaluation. Selangor MYS: Institute for Health Systems Research (IHSR), Ministry of Health Malaysia.

**Table 7.2:** Percentage of households visiting the same clinic, by sector and by sociodemographic characteristics, NHMS 2019 (N=5,206)

Sociodemographic characteristics	Households visiting the same clinic					Public clinic				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>2,700</b>	<b>4,526,376</b>	<b>47.1</b>	<b>44.35</b>	<b>49.92</b>	<b>1,747</b>	<b>2,451,705</b>	<b>54.2</b>	<b>49.00</b>	<b>59.25</b>
<b>State</b>										
Johor	189	374,721	34.9	25.48	45.60	110	204,175	54.5	41.87	66.55
Kedah	142	246,383	47.5	38.39	56.75	89	142,582	57.9	41.77	72.46
Kelantan	182	231,345	66.9	59.91	73.14	149	192,442	83.2	71.21	90.82
Melaka	171	130,144	56.7	46.27	66.52	119	84,820	65.2	54.60	74.44
Negeri Sembilan	156	226,192	52.7	43.90	61.39	120	156,852	69.3	51.08	83.05
Pahang	190	237,904	56.0	48.71	63.01	123	139,830	58.8	42.21	73.57
Pulau Pinang	116	197,185	33.6	23.61	45.31	74	58,101	29.5	15.80	48.19
Perak	128	346,447	49.0	41.03	56.96	96	258,858	74.7	58.79	85.96
Perlis	164	31,272	53.0	42.14	63.61	132	24,287	77.7	66.20	86.06
Selangor	323	1,047,791	43.3	37.72	49.06	161	444,006	42.4	32.09	53.36
Terengganu	199	169,939	68.0	58.56	76.16	135	116,929	68.8	55.48	79.61
Sabah	202	617,877	55.5	46.39	64.34	123	273,363	44.2	26.65	63.41
Sarawak	202	387,179	50.5	43.29	57.73	93	232,574	60.1	45.65	72.93
WP Kuala Lumpur	106	252,596	40.2	32.72	48.17	58	105,163	41.6	29.50	54.87
WP Labuan	126	13,287	45.9	39.45	52.42	58	5,799	43.6	35.12	52.55
WP Putrajaya	150	16,115	70.8	62.99	77.61	107	11,926	74.0	64.15	81.92
<b>Location</b>										
Urban	1,570	3,404,937	44.3	41.15	47.51	901	1,693,328	49.7	44.06	55.41
Rural	1,130	1,121,439	58.4	53.73	62.95	846	758,377	67.6	54.56	78.42
<b>Household income group</b>										
Less than RM 1,000	584	934,468	49.2	43.39	55.10	449	627,619	67.2	54.98	77.40
RM 1,000 - RM 1,999	596	988,583	47.0	41.15	52.93	426	581,455	58.8	46.36	70.24
RM 2,000 - RM 2,999	406	657,721	43.4	38.23	48.65	283	411,538	62.6	54.29	70.17
RM 3,000 - RM 3,999	348	663,079	52.3	46.67	57.88	214	354,224	53.4	44.57	62.06
RM 4,000 - RM 4,999	202	337,251	48.4	40.13	56.72	112	160,621	47.6	36.99	58.49
RM 5,000 - RM 5,999	136	219,459	46.5	35.79	57.56	71	97,890	44.6	28.99	61.36
RM 6,000 - RM 6,999	101	174,564	43.0	31.58	55.18	57	71,865	41.2	25.15	59.30
RM 7,000 - RM 7,999	75	143,212	50.3	34.82	65.69	36	45,732	31.9	16.24	53.17
RM 8,000 - RM 8,999	54	85,112	37.7	28.42	47.98	21	10,764	12.6	5.98	24.80
RM 9,000 - RM 9,999	38	38,152	40.7	22.83	61.49	18	19,644	51.5	27.21	75.09
RM 10,000 and above	145	263,967	49.4	39.40	59.46	53	65,679	24.9	15.65	37.16
<b>Household income quintile</b>										
Q1 (20% poorest)	742	1,225,787	50.1	44.77	55.34	559	791,638	64.6	53.48	74.31
Q2	562	900,846	43.4	38.04	48.98	397	532,233	59.1	48.49	68.89
Q3	495	877,732	47.1	42.21	52.00	329	530,268	60.4	52.83	67.53
Q4	472	795,286	50.8	45.33	56.18	270	379,209	47.7	40.16	55.31
Q5 (20% richest)	414	705,918	45.7	38.94	52.57	185	213,685	30.3	22.26	39.69
<b>Household income category</b>										
Bottom 40% (B40)	2,047	3,426,690	46.7	43.69	49.75	1,416	1,997,454	58.3	52.07	64.26
Middle 40% (M40)	478	821,488	51.4	45.31	57.46	263	368,434	44.8	36.58	53.41
Top 20% (T20)	160	257,391	45.5	37.42	53.87	61	81,145	31.5	22.16	42.68

95% CI = 95% Confidence Interval

Sociodemographic characteristics	Private clinic				
	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>948</b>	<b>2,071,415</b>	<b>45.8</b>	<b>40.68</b>	<b>50.94</b>
<b>State</b>					
Johor	78	169,740	45.3	33.20	57.98
Kedah	53	103,801	42.1	27.54	58.23
Kelantan	32	37,610	16.3	8.72	28.28
Melaka	52	45,324	34.8	25.56	45.40
Negeri Sembilan	36	69,340	30.7	16.95	48.92
Pahang	67	98,074	41.2	26.43	57.79
Pulau Pinang	42	139,084	70.5	51.81	84.20
Perak	31	86,789	25.1	13.83	41.05
Perlis	30	6,627	21.2	12.91	32.78
Selangor	162	603,785	57.6	46.64	67.91
Terengganu	64	53,010	31.2	20.39	44.52
Sabah	79	344,514	55.8	36.59	73.35
Sarawak	63	154,605	39.9	27.07	54.35
WP Kuala Lumpur	48	147,433	58.4	45.13	70.50
WP Labuan	68	7,488	56.4	47.45	64.88
WP Putrajaya	43	4,189	26.0	18.08	35.85
<b>Location</b>					
Urban	669	1,711,609	50.3	44.59	55.94
Rural	279	359,806	32.1	21.28	45.23
<b>Household income group</b>					
Less than RM 1,000	134	306,715	32.8	22.58	45.01
RM 1,000 - RM 1,999	168	405,029	41.0	29.53	53.48
RM 2,000 - RM 2,999	122	245,958	37.4	29.80	45.67
RM 3,000 - RM 3,999	133	308,055	46.5	37.82	55.31
RM 4,000 - RM 4,999	90	176,630	52.4	41.51	63.01
RM 5,000 - RM 5,999	65	121,569	55.4	38.64	71.01
RM 6,000 - RM 6,999	44	102,698	58.8	40.70	74.85
RM 7,000 - RM 7,999	39	97,480	68.1	46.83	83.76
RM 8,000 - RM 8,999	33	74,348	87.4	75.20	94.02
RM 9,000 - RM 9,999	20	18,508	48.5	24.91	72.79
RM 10,000 and above	92	198,288	75.1	62.84	84.35
<b>Household income quintile</b>					
Q1 (20% poorest)	182	434,015	35.4	25.68	46.51
Q2	163	366,515	40.7	30.86	51.32
Q3	165	347,239	39.6	32.44	47.15
Q4	201	415,277	52.2	44.58	59.75
Q5 (20% richest)	229	492,233	69.7	60.31	77.74
<b>Household income category</b>					
Bottom 40% (B40)	627	1,426,780	41.6	35.67	47.86
Middle 40% (M40)	214	452,253	55.1	46.48	63.34
Top 20% (T20)	99	176,246	68.5	57.32	77.84

**Table 7.3:** Percentage of households seeing the same doctor, by sociodemographic characteristics, NHMS 2019 (N=5,206)

Sociodemographic characteristics	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
<b>MALAYSIA</b>	<b>1,280</b>	<b>2,311,138</b>	<b>24.1</b>	<b>21.47</b>	<b>26.86</b>
<b>State</b>					
Johor	94	192,996	18.0	12.84	24.54
Kedah	53	90,237	17.4	11.53	25.38
Kelantan	100	128,224	37.1	30.66	43.94
Melaka	78	63,997	27.9	19.59	37.99
Negeri Sembilan	83	122,205	28.5	19.25	39.96
Pahang	130	159,734	37.6	30.43	45.34
Pulau Pinang	32	69,031	11.8	4.45	27.62
Perak	84	208,794	29.5	22.69	37.39
Perlis	40	9,071	15.4	11.01	21.07
Selangor	102	360,951	14.9	11.26	19.49
Terengganu	137	119,480	47.8	36.77	59.06
Sabah	143	435,346	39.1	27.81	51.77
Sarawak	70	165,864	21.6	15.29	29.71
WP Kuala Lumpur	65	177,844	28.3	20.84	37.18
WP Labuan	48	5,003	17.3	12.16	23.93
WP Putrajaya	21	2,362	10.4	5.34	19.21
<b>Location</b>					
Urban	748	1,683,380	21.9	19.37	24.67
Rural	532	627,758	32.7	25.83	40.37
<b>Household income group</b>					
Less than RM 1,000	289	513,345	27.0	21.44	33.49
RM 1,000 - RM 1,999	266	466,301	22.2	17.80	27.25
RM 2,000 - RM 2,999	178	305,927	20.2	16.23	24.78
RM 3,000 - RM 3,999	161	324,319	25.6	21.13	30.62
RM 4,000 - RM 4,999	101	163,054	23.4	18.03	29.76
RM 5,000 - RM 5,999	66	136,113	28.8	19.26	40.80
RM 6,000 - RM 6,999	48	98,650	24.3	15.38	36.15
RM 7,000 - RM 7,999	30	57,690	20.3	11.07	34.14
RM 8,000 - RM 8,999	37	68,223	30.2	21.49	40.66
RM 9,000 - RM 9,999	15	19,549	20.9	10.03	38.44
RM 10,000 and above	81	147,717	27.6	19.23	38.02
<b>Household income quintile</b>					
Q1 (20% poorest)	360	646,517	26.4	21.78	31.61
Q2	245	404,612	19.5	15.62	24.09
Q3	233	444,842	23.9	19.91	28.31
Q4	223	413,086	26.4	21.56	31.81
Q5 (20% richest)	211	391,830	25.4	20.12	31.41
<b>Household income category</b>					
Bottom 40% (B40)	922	1,698,011	23.1	20.22	26.35
Middle 40% (M40)	256	453,833	28.4	23.70	33.62
Top 20% (T20)	94	149,045	26.4	20.19	33.61

95% CI = 95% Confidence Interval

# Healthcare Expenditure

# Healthcare Expenditure

## Introduction

Healthcare services in Malaysia are provided by both the public and private sectors. The Ministry of Health Malaysia provides the bulk of healthcare services in the public sector which is tax-funded, highly subsidized and charges a nominal fee for the services rendered (1, 2). Healthcare services are delivered free of charge to vulnerable groups such as children and the elderly (3). On the contrary, provision of healthcare services in the private sector is mainly through fee-for-service curative primary and secondary care (4).

Out-of-pocket (OOP) payments are direct payments made by individuals to healthcare providers at the time of service use (5). OOP expenditure for healthcare is considerably high in Malaysia. According to the Malaysia National Health Account, 29-38% of the total expenditure in health over the last two decades were due to OOP expenditure (6).

Sources of out-of-pocket payment for healthcare were used to measure how a household copes with OOP healthcare expenditure. The need to sell household/personal items, borrow money from non-household family members/friends, getting loans from banks/others to pay for healthcare were identified as indicators of hardship in healthcare financing (7).

A household is said to suffer from catastrophic expenditure when they spend a large proportion of their household expenditure on healthcare which may cause them to drop below the poverty line (8).

## Objectives

### General Objective

To identify sources of out-of-pocket payment and estimate the total household out-of-pocket (OOP) health expenditure.

### Specific Objectives

To determine the:

1. monthly household expenditure.
2. sources of out-of-pocket payment for healthcare.
3. percentage of usual payer for healthcare services.
4. supplementary financial coverage for healthcare services.
5. quantum and distribution of household out-of-pocket expenditure on community pharmacy, outpatient healthcare, inpatient healthcare, oral healthcare, domiciliary care, self-care (purchase of dietary supplements) and others, by sociodemographic characteristics.

## Findings

### Monthly household expenditure

Overall, the mean monthly household expenditure in the last one month prior to the interview was RM 1,620.00 (SD = RM 2,019.00). Household expenditures were mainly for food (Mean = RM 590.00, SD = RM 2,252.00), followed by others (Mean = RM 360.00, SD = RM 788.00) and utilities (Mean = RM 349.00, SD = RM 662.00). Mean monthly household expenditure for healthcare was estimated at RM 82.00 (SD = RM 723.00), which made up about 5.1% of total household monthly expenditure (**Figure 8.1**) (**Table 8.1**).

### Household financial sources of payment for healthcare

Majority (81.4%; 95% CI = 78.99, 83.61) of the households reported used current income to pay for healthcare, while 35.8% (95% CI = 32.92, 38.87) used savings. Healthcare financing by insurance reimbursement was reported in 8.1% (95% CI = 6.86, 9.44) of the households (**Table 8.2**).

Households in the household income group of RM 10,000 and above reported the highest usage of insurance at a prevalence of 28.4% (95% CI = 21.43, 36.67). By household income quintile, households in Q1 reported the highest prevalence (21.9%; 95% CI = 18.87, 25.27) of using money sourced from their family/friends as a source for healthcare payment (**Table 8.3**).

### Usual payer for healthcare services

Majority of the population reported the most common payers for their healthcare were self/family/household members (81.2%; 95% CI = 79.63, 82.71), followed by personal health insurance (16.5%; 95% CI = 14.36, 19.00), employer or panel clinic/hospital (13.6%; 95% CI = 12.02, 15.35) and government GL/government specific health fund (11.9%; 95% CI = 10.67, 13.28) (**Table 8.4**).

Government GL/Government specific health funds were the most common payer for the population aged 75 years and over (22.8%; 95% CI = 15.35, 32.59) and government employees (68.9%; 95% CI = 64.34, 73.16) (**Table 8.5**).

Employer-sponsored health insurance were the most common payer for population in the 30-34 age group (15.9%; 95% CI = 12.63, 19.72) and private employees (22.3%; 95% CI = 19.71, 25.18) (**Table 8.5**).

Employer or panel clinic/hospital were the most common payer for those in the 35-39 age group (28.3%; 95% CI = 23.72, 33.42) and private employees (36.8%; 95% CI = 33.22, 40.51) (**Table 8.5**).

SOCSSO were the most common payer for those in the 30-34 age group (22.2%; 95% CI = 18.76, 26.13) and private employees (35.2%; 95% CI = 31.65, 39.02) (**Table 8.5**).

Population in the 45-49 age group using personal health insurance to pay for healthcare the most (24.7%; 95% CI = 18.96, 31.40). Majority of the population who paid for healthcare using personal health insurance were government employees (30.8%; 95% CI = 26.34, 35.64) (**Table 8.5**).

Self/family/household members were the most common payer for those aged 50-54 years old (83.9%; 95% CI = 80.01, 87.18) and unpaid workers or homemakers (86.2%; 95% CI = 83.53, 88.57) (**Table 8.5**).

### Supplementary financial coverage for healthcare services

Supplementary financial coverage refers to additional financial coverage of the population other than the tax funded healthcare coverage provided by the government.

Personal health insurance (20.5%; 95% CI = 18.17, 23.15) were the main supplementary financial coverage for healthcare among Malaysia population, followed by government GL/government specific health fund (19.4%; 95% CI = 17.66, 21.32), employer-sponsored health insurance (18.0%; 95% CI = 16.26, 19.85) and SOCSSO (15.6%; 95% CI = 14.45, 16.90) (**Table 8.6**).

The use of employer-sponsored insurance (34.7%; 95% CI = 28.39, 41.50) and SOCSSO (23.2%; 95% CI = 20.83, 25.73) as supplementary financial coverage for healthcare services were most prevalent among the population in Wilayah Persekutuan Labuan. Government GL/Government specific health funds (88.5%; 95% CI = 78.16, 94.26) were the main supplementary financial coverage for healthcare services among the population in Wilayah Persekutuan Putrajaya. Personal health insurance coverage were highest among population in Wilayah Persekutuan Kuala Lumpur (37.1%; 95% CI = 27.58, 47.84), followed by Wilayah Persekutuan Putrajaya (32.3%; 95% CI = 25.54, 39.91) and Selangor (30.0%; 95% CI = 23.36, 37.54) (**Table 8.7**).

Government GL/Government specific health funds mostly covered those aged 75 years and over (30.5%; 95% CI = 22.84, 39.51) while SOCSSO covered those in the 25-29 age group (30.6%; 95% CI = 25.92, 35.82). Personal health insurance covered mostly those in the 45-49 age group (29.5%; 95% CI = 23.73, 36.08) whereas employer-sponsored health insurance covered mostly those in the 35-39 age group (34.3%; 95% CI = 29.53, 39.48) (**Table 8.7**).

Financial coverage for health of government employees were mainly through government GL/government specific health fund (89.0%; 95% CI = 85.53, 91.68) and personal health insurance (39.5%; 95% CI = 34.56, 44.62), whereas private employees were mainly covered through employer-sponsored health insurance (45.6%; 95% CI = 41.95, 49.29) and SOCSSO (47.4%; 95% CI = 43.37, 51.40) (**Table 8.7**).

Those in the household income quintile of Q5 had higher supplementary financial health coverage from government GL/government specific health fund (34.1%; 95% CI = 29.39, 39.12), employer-sponsored health insurance (29.7%; 95% CI = 26.57, 33.08), SOCSSO (22.2%; 95% CI = 19.56, 25.03), and personal health insurance (47.4%; 95% CI = 42.37, 52.52), as compared with population in other household income quintiles (**Table 8.7**).

## Reasons for not owning personal health insurance

The main reasons given by respondents for not owning personal health insurance was “cannot afford” (43.3%; 95% CI = 40.80, 45.75), followed by “not needed” (35.9%; 95% CI = 33.74, 38.02). Coverage provided by employer/SOCSSO (8.2%; 95% CI = 7.28, 9.32) and government (6.7%; 95% CI = 5.84, 7.61) were also the reasons given for not having personal health insurance (Table 8.8).

Pulau Pinang had the highest percentage of population who could not afford personal health insurance (52.6%; 95% CI = 38.65, 66.14). Those who could not afford personal health insurance were mostly the elderly aged 70-74 years old (50.1%; 95% CI = 42.69, 57.59), population with primary education as their highest education level (51.1%; 95% CI = 47.94, 54.25), unpaid workers or homemakers (55.1%; 95% CI = 50.46, 59.72), and population in household income quintile of Q1 (56.8%; 95% CI = 53.28, 60.23) (Table 8.9).

Wilayah Persekutuan Labuan had the highest percentage of the population who said they did not need personal health insurance (55.4%; 95% CI = 45.89, 64.58). Personal health insurance were deemed not needed mostly by population of 0-4 years old (43.5%; 95% CI = 38.77, 48.43), Chinese (49.7%; 95% CI = 43.52, 55.79), individuals who were single (39.4%; 95% CI = 36.26, 42.54), retirees (46.8%; 95% CI = 39.46, 54.29), and those in household income quintile of Q5 (48.9%; 95% CI = 44.00, 53.86) (Table 8.9).

## Out-of-pocket health expenditure

Total OOP health expenditure for the whole population (estimated at 31.6 millions people in 2019) was estimated at RM 20,545 million. The per capita OOP health expenditure for Malaysia was estimated to be RM 650.70 (95% CI = RM 394.56, RM 906.84) (Table 8.10).

Negeri Sembilan had the highest per capita OOP expenditure with RM 2,622.33 (95% CI = RM 0, RM 6,543.22) in contrast to Terengganu with only RM 228.70 (95% CI = RM 152.62, RM 304.78) (Table 8.10).

There was more OOP expenditure among the Chinese compared with other ethnic groups (RM 1,752.01; 95% CI = RM 492.92, RM 3011.11), as well as in those with tertiary education (RM 989.09; 95% CI = RM 704.96, RM 1,273.21) compared with other education level groups (Table 8.10).

Households with household income of RM 10,000 and above had the highest OOP expenditure with RM 1,266.62 (95% CI = RM 706.64, RM 1,826.59). In terms of occupation, retirees showed higher OOP expenditure (RM 1,536.93; 95% CI = RM 618.02, RM 2,455.84) (Table 8.10).

Overall, the highest proportion of OOP health expenditure was spending on outpatient healthcare (40.4%), followed by purchase of dietary supplements (24.5%), community pharmacy (19.7%), inpatient healthcare (7.7%), oral healthcare (3.3%), medical check-up and private medical laboratory (4.5%) as well as domiciliary care (0.03%) (Figure 8.2).

## Outpatient healthcare

The total OOP health expenditure for the whole population was estimated at RM 8,299 million for outpatient healthcare or 40.4% of the total OOP health expenditure (Figure 8.2). The mean per capita OOP for outpatient healthcare was RM 262.86 (95% CI = RM 18.07, RM 507.65) (Table 8.11). Among those who sought outpatient healthcare, the mean OOP expenditure was RM 3,247.95 (95% CI = RM 247.61, RM 6,248.30) (Table 8.12).

The population aged 75 years and over had the highest expenditure at RM 6,345.00 (95% CI = RM 0, RM 17,608.67). By ethnicity, the Chinese showed higher per capita OOP expenditure (RM 897.70; 95% CI = RM 0, RM 2,131.46) for outpatient healthcare (Table 8.11).

By occupation, those who were not working paid more for outpatient healthcare with per capita OOP expenditure of RM 829.50 (95% CI = RM 0, RM 2,033.18) as compared with other occupation groups (Table 8.11).

## Inpatient healthcare

The total OOP health expenditure for inpatient healthcare for the whole population was estimated at RM 1,571 million or 7.7% of the total OOP health expenditure (Figure 8.2). The mean per capita OOP for inpatient was RM 49.77 (95% CI = RM 19.57, RM 79.98) (Table 8.13). Among those who utilised inpatient healthcare, the mean OOP expenditure was RM 964.83 (95% CI = RM 404.09, RM 1,525.57) (Table 8.14).

The urban population spent four times higher OOP expenditure (RM 61.95; 95% CI = RM 21.72, RM 102.18) for inpatient healthcare as compared with the rural population (RM 13.60; 95% CI = RM 3.75, RM 23.45). OOP expenditure among males (RM 56.78; 95% CI = RM 0.69, RM 112.87) was higher than females (RM 42.81; 95% CI = RM 19.47, RM 66.16). Population aged 65–69 years old paid more OOP (RM 420.20; 95% CI = RM 0, RM 1,147.11) than the other age groups. Widow(er)/divorcee population on average spent RM 148.20 (95% CI = RM 0, RM 324.57) (Table 8.13).

By ethnic group, Chinese showed higher OOP expenditure (RM 152.30; 95% CI = RM 3.30, RM 301.22) compared with others. Population with tertiary education paid more than other education level groups (RM 142.70; 95% CI = RM 0, RM 292.64) (Table 8.13).

In terms of occupation, retirees (RM 426.80; 95% CI = RM 0, RM 1,228.70) spent more OOP for hospitalization as compared with other occupation groups. On the other hand, those in household income group of RM 6,000 – RM 6,999 showed higher per capita OOP expenditure with RM 200.30 (95% CI = RM 0, RM 565.68) and household income quintile of Q5 showed higher per capita OOP expenditure with RM 126.90 (95% CI = RM 16.46, RM 237.36) (**Table 8.13**).

### Oral healthcare

The total OOP expenditure for oral healthcare was estimated at RM 672 million or 3.27% of the total OOP health expenditure (**Figure 8.2**). The mean per capita OOP for oral healthcare was RM 21.29 (95% CI = RM 0, RM 43.28) (**Table 8.15**). The mean OOP expenditure among those who sought oral healthcare was RM 89.69 (95% CI = RM 0, RM 182.20) (**Table 8.16**).

Population in the 15-19 age group had the highest OOP expenditure estimated at RM 143.50 (95% CI = RM 0, RM 395.95) (**Table 8.15**).

Those in the household income group of RM 8,000 – RM 8,999 (RM 372.30; 95% CI = RM 0, RM 1,068.49) and household income quintile of Q5 (RM 70.60; 95% CI = RM 0, RM 180.65) showed higher OOP expenditure per capita on oral healthcare (**Table 8.15**).

### Community pharmacy

The total OOP health expenditure for community pharmacy utilisation was estimated at RM 4,037 million with per capita expenditure of RM 127.87 (95% CI = RM 99.35, RM 156.38) (**Table 8.17**). OOP expenditure for community pharmacy utilisation was 19.7% of the total OOP health expenditure (**Figure 8.2**) and the mean OOP expenditure among those who utilised community pharmacy was RM 1,775.24 (95% CI = RM 1,453.80, RM 2,096.67) (**Table 8.18**).

The urban population spent more with per capita OOP expenditure of RM 149.50 (95% CI = RM 112.12, RM 186.79) than the rural population with per capita OOP expenditure of RM 63.73 (95% CI = RM 41.71, RM 85.75). Population aged 65-69 years old (RM 540.70; 95% CI = RM 199.05, RM 882.40) paid more than other age groups. Chinese (RM 204.10; 95% CI = RM 99.80, RM 308.35) spent more OOP in the community pharmacies as compared with other ethnic groups. Those who were married had higher per capita OOP expenditure of RM 206.10 (95% CI = RM 151.55, RM 260.70) (**Table 8.17**).

Those with tertiary education (RM 281.90; 95% CI = RM 187.63, RM 376.12) had the highest per capita OOP expenditure. Retirees (RM 540.70; 95% CI = RM 184.97, RM 896.45) had higher per capita OOP expenditure as compared with those from other occupation groups. Those in the household income group of RM 10,000 and above (RM 302.20; 95% CI = RM 115.55, RM 488.81) and household income quintile of Q5 (RM 226.30; 95% CI = RM 126.62, RM 325.89) spent more (**Table 8.17**).

### Domiciliary care

The total OOP health expenditure for domiciliary care for the whole population was estimated at RM 6 million (**Table 8.19**). Expenditure for domiciliary care was 0.03% of the total OOP health expenditure (**Figure 8.2**) and the mean OOP expenditure among those who received domiciliary care was RM 12.24 (95% CI = RM 2.59, RM 21.89) (**Table 8.20**).

### Self-care (purchase of dietary supplements)

The total OOP expenditure for purchase of dietary supplements expenditure was estimated at RM 5,038 million with per capita expenditure of RM 159.58 (95% CI = RM 122.01, RM 197.16) (**Table 8.21**). Expenditure on purchase dietary supplements was 24.5% of the total OOP health expenditure (**Figure 8.2**). The mean OOP expenditure among those who purchased dietary supplements was RM 1,630.22 (95% CI = RM 1,294.49, RM 1,965.96) (**Table 8.22**).

The urban population spent more with per capita OOP expenditure of RM 193.40 (95% CI = RM 143.43, RM 243.31) than the rural population with per capita OOP expenditure of RM 59.21 (95% CI = RM 45.06, RM 73.35). Population aged 50-54 years old (RM 459.30; 95% CI = RM 217.50, RM 701.08) spent more on dietary supplements compared with other age groups. By ethnicity, Chinese spent the most on dietary supplements with OOP expenditure of RM 386.80 (95% CI = RM 217.07, RM 556.55). Widow(er)/divorcee population (RM 271.60; 95% CI = RM 134.28, RM 408.93) spent more on dietary supplements compared with those who were single and married (**Table 8.21**).

Those with tertiary education had the highest per capita OOP expenditure (RM 367.80; 95% CI = RM 283.70, RM 451.87). Retirees had higher per capita OOP expenditure (RM 457.10; 95% CI = RM 321.83, RM 592.45) as compared with the other occupation groups. Those in the household income group of RM 9,000 – RM 9,999 (RM 483.50; 95% CI = RM 107.34, RM 859.56) and household income quintile of Q5 (RM 295.40; 95% CI = RM 216.67, RM 374.07) had higher expenditure on dietary supplements (**Table 8.21**).

### Others

Other OOP health expenditures including expenditure for medical check-ups which was estimated at RM 481 million and expenditure for private medical laboratory services which was estimated at RM 438 million. Expenditures for both medical check-ups and private medical laboratory services were 4.5% of the total OOP health expenditure (**Figure 8.2**).

For medical check-ups, the overall per capita OOP was RM 15.25 (95% CI = RM 8.62, RM 21.88) (**Table 8.23**) and the mean OOP expenditure among those who did medical check-ups was RM 64.67 (95% CI = RM 36.85, RM 92.50) (**Table 8.24**). Chinese had the highest OOP expenditure for medical check-ups (RM 46.84; 95% CI = RM 14.45, RM 79.23), followed by Indian population (RM 18.59; 95% CI = RM 10.49, RM 26.69). Those with tertiary education (RM 38.69; 95% CI = RM 5.47, RM 71.92) paid more on medical check-ups as compared with those from other education levels. Unpaid workers or homemakers (RM 34.76; CI = RM 0, RM 84.28) had higher OOP expenditure on medical check-ups as compared with those from other occupation groups. Those in the household income group of RM10,000 and above showed higher per capita OOP expenditure on medical check-ups with RM 40.76 (95% CI = RM 25.10, RM 56.42) and those in the household income quintile of Q5 showed higher per capita OOP expenditure on medical check-ups with RM 27.54 (95% CI = RM 17.27, RM 37.82) (**Table 8.23**).

For private medical laboratory services, the overall per capita OOP was RM 13.88 (95% CI = RM 3.69, RM 24.06) (**Table 8.25**) and the mean OOP expenditure for private medical laboratory services were RM 291.36 (95% CI = RM 84.89, RM 497.82) (**Table 8.26**). Chinese had the highest OOP expenditure on private medical laboratory services (RM 44.14; 95% CI = RM 0, RM 94.43). Those in the household income group of RM10,000 and above had the highest per capita OOP expenditure with RM 99.60 (95% CI = RM 0, RM 240.21) and those in household income quintile of Q5 had the highest per capita OOP expenditure with RM 49.32 (95% CI = RM 0, RM 98.66) (**Table 8.25**).

## Discussions

Current or Nominal value of health expenditure refers to expenditures reported for a particular year, unadjusted for inflation. Constant value estimates indicate what expenditure would have been when anchored to a particular year value, such as 2016 values applied to all years. As a result, expenditures in different years can be compared on a Ringgit for-Ringgit basis, using this as a measure of changes in the volume of health goods and services. Constant expenditure adjusts current or nominal values which aim to remove the effects of inflation (9). Hence, when making health expenditure comparisons over a time series it is more meaningful to use constant values rather than current or nominal values (**Figure 8.3**).

The percentage of household income (81.4%), savings (35.8%) and insurance reimbursement (8.1%) as source of payment for healthcare decreased in this study when compared with the findings from NHMS 2015 [household income (90.5%), savings (44.3%) and insurance reimbursement (13.8%)] (10). It is worth noting that the elderly (population aged 65 years and over) used their savings and borrowed money from family/

friends (non-household) to pay for their healthcare more than the working age groups (aged 15 to 64 years old).

The main supplementary financial coverage for healthcare was private personal health insurance, followed by government GL/government specific health fund, employer-sponsored insurance and SOCSO. The current income of a household was still the main source of payment for healthcare.

The healthcare coverage provided by government GL (12.5%), employer-sponsored insurance (13.0%) and private personal health insurance (19.7%) saw a decreasing trend when compared with the findings from NHMS 2015 (10).

In NHMS 2015, the total OOP health expenditure was estimated at RM 11,683 million with per capita expenditure of RM 397.74. This included expenditure on hospitalisation, outpatient healthcare, oral healthcare and health appliances (9). In NHMS 2019, the total OOP increased to an estimated RM 20,545 million with per capita expenditure of RM 650.70. Almost half of the expenditure was for outpatient healthcare and only 7.7% were spent for inpatient healthcare.

The OOP health expenditure had clearly increased in recent years and the trend was consistent with the Malaysia National Health Account's estimate of OOP expenditure (6). A high OOP payment is common in low- and middle-income countries and often associated with the risk of financial disruption and could eventually worsen to cause impoverishment (11). Nevertheless, the OOP health expenditure should be interpreted with caution as it might be overestimated. These expenditures could have included other charges indirectly related to the intended care such as medical check-up packages which are usually subjected to other non-health charges as a package.

This finding, however, gives valuable information for policymakers to table policies that aim for better mechanisms to meet the ever-growing need of care especially to those without financial assistance and those living under the poverty line.

## Recommendations

- Many elderly (aged 65 years and over) used their savings and borrowed money from family/friends (non-household) to pay for their healthcare. Furthermore, a high percentage of the population with lower income did not have any supplementary financial coverage. Many of them pay for their healthcare by borrowing from non-household members. As such there is dire need for policy improvement to help the elderly and those from lower income groups, so that they can afford supplementary financial coverage to prevent the risk of catastrophic healthcare expenditure.
- Prepayment and risk pooling health financial mechanisms could be promoted as an alternative means of healthcare financial security but there is a need to make it more affordable especially to those of lower income groups. This could provide an option to supplement out-of-pocket expenditure or complete reliance on the public health system which is based on general taxation/revenue.
- Providing incentives to employers who offer health benefits to their employees could increase the number of people with supplementary healthcare financial coverage.

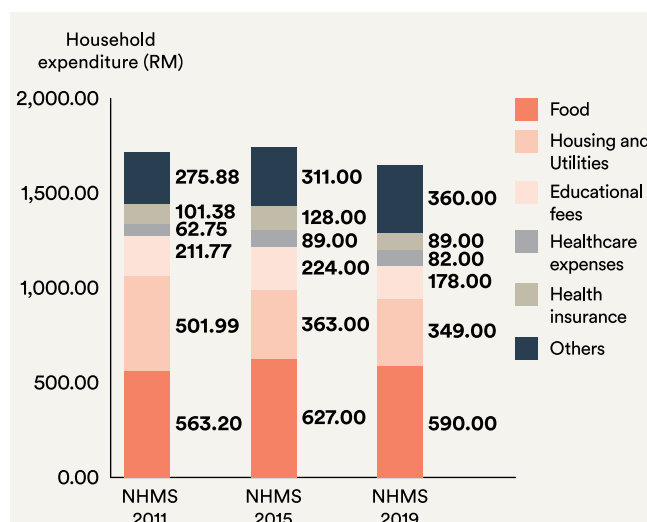


Figure 8.1: Monthly household expenditure by category, NHMS 2011-2019

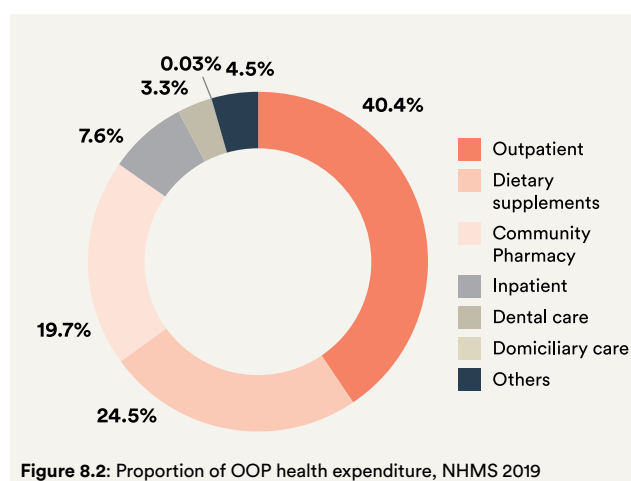


Figure 8.2: Proportion of OOP health expenditure, NHMS 2019

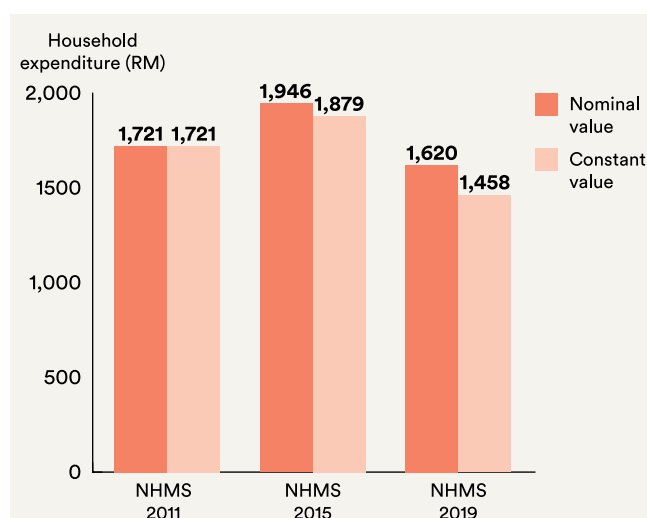


Figure 8.3: Monthly household expenditure (Nominal vs Constant), NHMS 2011-2019

# References:

1. Thomas, S, Beh, L, & Nordin, RB. (2011). Health care delivery in Malaysia: changes, challenges and champions. *Journal of public health in Africa*, 2(2), e23.
2. Kananatu, K. (2002). Healthcare Financing in Malaysia. *Asia-Pacific journal of public health / Asia-Pacific Academic Consortium for Public Health*, 14, 23-8.
3. Bahagian Kewangan, Kementerian Kesihatan Malaysia. Pengecualian Caj Perubatan [Internet]. Available from: <http://hpermai.moh.gov.my/sites/default/files/docs/Pengecualian.pdf>. Accessed on February 6, 2020.
4. World Health Organization (2012). Malaysia health system review. Available from: [https://iris.wpro.who.int/bitstream/handle/10665.1/5283/9789290615842\\_eng.pdf?sequence=1](https://iris.wpro.who.int/bitstream/handle/10665.1/5283/9789290615842_eng.pdf?sequence=1). Accessed on February 6, 2020.
5. World Health Organization (WHO). Health Financing - Out-of-pocket payments, user fees and catastrophic expenditure [Internet]. Available from: [https://www.who.int/health\\_financing/topics/financial-protection/out-of-pocket-payments/en/](https://www.who.int/health_financing/topics/financial-protection/out-of-pocket-payments/en/). Accessed on February 6, 2020.
6. Ministry of Health Malaysia (2019). Malaysia National Health Accounts - Health Expenditure Report 1997-2017 [Internet]. Available from: [http://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/Laporan\\_MNHA\\_Health\\_Expenditure\\_Report\\_1997-2017\\_03122019.pdf](http://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/MNHA/Laporan_MNHA_Health_Expenditure_Report_1997-2017_03122019.pdf). Accessed on February 6, 2020.
7. Kruk, ME, Gage, AD, Arsenaault, C, Jordan, K, Leslie, HH, Roder-DeWan, S, et al. (2018). High-quality health systems in the Sustainable Development Goals era: time for a revolution. *The Lancet Global Health*, 6(11), e1196-e1252.
8. Li, Y, Wu, Q, Xu, L, Legge, D, Hao, Y, Gao, L, et al. (2012). Factors affecting catastrophic health expenditure and impoverishment from medical expenses in China: policy implications of universal health insurance. *Bulletin of the World Health Organization*, 90, 664-671.
9. Ministry of Health Malaysia (2018). Malaysia National Health Accounts. Health Expenditure Report 1997-2016. Malaysia National Health Accounts Section. Planning Division. Ministry of Health Malaysia.
10. Institute for Public Health (IPH) & Institute for Health Systems Research (IHSR) (2015). National Health and Morbidity Survey 2015 (NHMS 2015). Vol III: Healthcare Demand.
11. Nemati, E, Nosratnejad, S, Doshmangir, L, & Gavvani, VZ. (2019). The out of pocket payments in low and middle-income countries and the affecting factors: a systematic review and meta-analysis. *Bali Medical Journal*, 8(3), 617-624.

**Table 8.1:** Monthly household expenditure (in Ringgit Malaysia, RM) in the last 1 month, NHMS 2019 (N=5,206)

Type of expenditure	Mean	SD	Median	IQR	Count
<b>MALAYSIA</b>	<b>1,620.00</b>	<b>2,019.00</b>	<b>1,100.00</b>	<b>650.00 - 2,000.00</b>	<b>5,063</b>
Food	590.00	2,252.00	400.00	300.00 - 650.00	5,105
Utilities	349.00	662.00	200.00	100.00 - 400.00	5,115
Educational fees	178.00	571.00	0.00	0.00 - 200.00	5,090
Health insurance	89.00	287.00	0.00	0.00 - 0.00	5,077
Healthcare expenses	82.00	723.00	0.00	0.00 - 50.00	5,063
Others	360.00	788.00	200.00	50.00 - 400.00	5,022

SD = Standard Deviation; IQR = Inter Quartile Range

**Table 8.2:** Sources of out-of-pocket payment for healthcare in the last 12 months, NHMS 2019 (N=5,206)

Source of payment	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Current income	4,212	7,819,448	81.4	78.99	83.61
Savings	1,828	3,442,580	35.8	32.92	38.87
Family/friends (non-household)	715	1,049,571	10.9	9.63	12.38
Insurance reimbursement	346	773,650	8.1	6.86	9.44
Borrowed from bank or others	53	93,011	1.0	0.64	1.47
Sold items	45	83,869	0.9	0.58	1.31
Other reasons	66	108,345	1.1	0.70	1.81

95% CI = 95% Confidence Interval

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

**Table 8.3:** Sources of out-of-pocket payment for healthcare in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=5,206)

Sociodemographic characteristics	Current income					Savings				
	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>4,212</b>	<b>7,819,448</b>	<b>81.4</b>	<b>78.99</b>	<b>83.61</b>	<b>1,828</b>	<b>3,442,580</b>	<b>35.8</b>	<b>32.92</b>	<b>38.87</b>
<b>State</b>										
Johor	401	925,473	86.1	79.90	90.63	271	600,861	55.9	48.61	62.96
Kedah	236	438,523	84.5	71.16	92.35	128	248,255	47.8	36.68	59.23
Kelantan	233	291,764	84.3	79.60	88.12	85	100,064	28.9	22.16	36.76
Melaka	178	139,343	60.7	46.78	73.05	112	95,735	41.7	29.78	54.66
Negeri Sembilan	252	357,249	83.3	72.22	90.51	90	153,510	35.8	26.52	46.25
Pahang	286	376,292	88.6	81.14	93.30	65	75,340	17.7	14.79	21.11
Pulau Pinang	186	405,946	69.2	53.32	81.50	153	319,508	54.4	36.79	71.04
Perak	204	564,416	79.8	72.14	85.74	78	210,255	29.7	22.23	38.49
Perlis	234	47,488	80.5	71.52	87.17	139	29,866	50.6	40.54	60.68
Selangor	537	1,949,769	80.6	74.54	85.46	296	1,004,475	41.5	36.25	46.97
Terengganu	239	202,901	81.2	68.30	89.63	111	87,452	35.0	22.89	49.40
Sabah	355	1,017,953	91.5	86.80	94.65	68	201,446	18.1	12.96	24.73
Sarawak	235	564,246	73.6	65.62	80.33	60	125,428	16.4	9.64	26.41
WP Kuala Lumpur	198	493,128	78.5	73.02	83.09	84	182,231	29.0	21.88	37.34
WP Labuan	274	26,724	92.2	86.66	95.61	44	3,742	12.9	8.77	18.63
WP Putrajaya	164	18,232	80.1	73.60	85.38	44	4,412	19.4	13.92	26.36
<b>Location</b>										
Urban	2,627	6,202,659	80.7	77.81	83.32	1,117	2,885,074	37.5	34.10	41.11
Rural	1,585	1,616,789	84.2	80.58	87.28	711	557,506	29.0	24.94	33.49
<b>Household income group</b>										
Less than RM 1,000	785	1,344,054	70.8	65.93	75.25	425	666,614	35.1	30.85	39.65
RM 1,000 - RM 1,999	926	1,730,809	82.3	77.58	86.17	383	657,288	31.2	26.15	36.84
RM 2,000 - RM 2,999	686	1,251,244	82.5	77.02	86.89	276	500,561	33.0	28.02	38.40
RM 3,000 - RM 3,999	520	1,072,433	84.6	79.40	88.67	205	446,503	35.2	29.58	41.31
RM 4,000 - RM 4,999	319	562,197	80.6	70.84	87.73	132	245,115	35.2	28.32	42.67
RM 5,000 - RM 5,999	226	417,581	88.5	80.55	93.46	101	181,061	38.4	29.35	48.27
RM 6,000 - RM 6,999	173	347,326	85.5	77.42	91.05	61	149,585	36.8	26.45	48.59
RM 7,000 - RM 7,999	128	254,233	89.3	79.37	94.72	54	157,998	55.5	41.31	68.80
RM 8,000 - RM 8,999	103	202,814	89.8	78.59	95.51	37	70,472	31.2	19.89	45.34
RM 9,000 - RM 9,999	56	85,233	91.0	77.55	96.73	22	36,342	38.8	20.55	60.84
RM 10,000 and above	245	467,073	87.4	79.26	92.67	107	277,564	52.0	42.50	61.27
<b>Household income quintile</b>										
Q1 (20% poorest)	1,007	1,737,103	70.9	66.36	75.12	517	814,714	33.3	29.10	37.72
Q2	931	1,766,115	85.1	81.00	88.52	389	710,927	34.3	29.20	39.74
Q3	788	1,543,637	82.8	77.31	87.18	314	616,553	33.1	28.76	37.69
Q4	735	1,331,372	85.0	79.80	89.02	302	554,949	35.4	30.50	40.68
Q5 (20% richest)	706	1,356,769	87.8	83.58	91.02	281	691,960	44.8	38.22	51.50
<b>Household income category</b>										
Bottom 40% (B40)	3,117	5,850,444	79.7	76.97	82.27	1,388	2,512,715	34.3	31.37	37.26
Middle 40% (M40)	765	1,387,971	86.9	82.95	89.97	299	621,218	38.9	32.50	45.65
Top 20% (T20)	285	496,582	87.8	79.97	92.88	116	255,169	45.1	35.30	55.35

95% CI = 95% Confidence Interval

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

Sociodemographic characteristics	Insurance reimbursement					Family/friends (non-household)				
	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>346</b>	<b>773,650</b>	<b>8.1</b>	<b>6.86</b>	<b>9.44</b>	<b>715</b>	<b>1,049,571</b>	<b>10.9</b>	<b>9.63</b>	<b>12.38</b>
<b>State</b>										
Johor	45	134,913	12.6	9.06	17.14	59	124,565	11.6	7.96	16.58
Kedah	35	62,224	12.0	7.99	17.62	20	33,031	6.4	3.31	11.90
Kelantan	8	8,064	2.3	1.02	5.23	47	50,088	14.5	9.99	20.52
Melaka	32	26,073	11.4	5.36	22.47	76	73,274	31.9	20.48	46.03
Negeri Sembilan	21	28,325	6.6	3.74	11.39	17	30,170	7.0	3.86	12.49
Pahang	18	28,038	6.6	3.68	11.56	17	13,821	3.3	1.64	6.33
Pulau Pinang	11	49,214	8.4	4.45	15.25	41	58,989	10.1	4.43	21.23
Perak	14	48,553	6.9	3.13	14.41	40	77,737	11.0	8.04	14.84
Perlis	10	1,825	3.1	1.73	5.47	75	13,295	22.5	16.79	29.56
Selangor	54	215,788	8.9	6.38	12.34	90	235,529	9.7	7.19	13.05
Terengganu	20	22,307	8.9	4.73	16.20	65	55,663	22.3	15.75	30.51
Sabah	10	32,559	2.9	1.15	7.26	63	150,644	13.5	9.88	18.29
Sarawak	14	38,197	5.0	2.11	11.33	34	62,721	8.2	5.03	13.04
WP Kuala Lumpur	28	75,228	12.0	7.30	19.02	40	67,639	10.8	7.73	14.80
WP Labuan	4	156	0.5	0.19	1.54	25	1,716	5.9	3.81	9.09
WP Putrajaya	22	2,187	9.6	5.63	15.94	6	688	3.0	1.45	6.21
<b>Location</b>										
Urban	267	706,367	9.2	7.76	10.86	399	793,573	10.3	8.81	12.07
Rural	79	67,283	3.5	2.32	5.27	316	255,998	13.3	11.33	15.63
<b>Household income group</b>										
Less than RM 1,000	40	84,307	4.4	2.57	7.56	319	484,380	25.5	21.94	29.46
RM 1,000 - RM 1,999	47	111,381	5.3	3.15	8.76	152	194,078	9.2	7.29	11.61
RM 2,000 - RM 2,999	38	91,340	6.0	3.84	9.34	80	104,643	6.9	4.80	9.82
RM 3,000 - RM 3,999	36	81,070	6.4	4.26	9.48	64	106,101	8.4	5.54	12.45
RM 4,000 - RM 4,999	19	56,766	8.1	5.00	13.00	25	33,202	4.8	2.80	8.00
RM 5,000 - RM 5,999	35	59,082	12.5	6.76	22.05	18	16,118	3.4	1.76	6.51
RM 6,000 - RM 6,999	25	57,247	14.1	7.90	23.89	15	25,809	6.4	2.97	13.10
RM 7,000 - RM 7,999	16	28,643	10.1	4.84	19.72	13	33,179	11.6	4.89	25.28
RM 8,000 - RM 8,999	17	30,571	13.5	7.68	22.77	7	14,069	6.2	2.80	13.30
RM 9,000 - RM 9,999	8	11,558	12.3	4.74	28.48	3	3,390	3.6	0.53	20.93
RM 10,000 and above	61	151,938	28.4	21.43	36.67	12	25,656	4.8	1.76	12.42
<b>Household income quintile</b>										
Q1 (20% poorest)	50	122,481	5.0	2.85	8.64	361	536,338	21.9	18.87	25.27
Q2	49	96,262	4.6	3.12	6.85	133	177,423	8.6	6.57	11.07
Q3	44	105,123	5.6	3.61	8.71	100	149,525	8.0	5.72	11.13
Q4	72	160,079	10.2	7.35	14.04	64	75,236	4.8	3.27	7.00
Q5 (20% richest)	127	279,957	18.1	14.70	22.12	50	102,103	6.6	3.95	10.86
<b>Household income category</b>										
Bottom 40% (B40)	181	420,454	5.7	4.51	7.25	624	904,607	12.3	10.84	14.00
Middle 40% (M40)	102	206,195	12.9	10.15	16.27	67	109,740	6.9	4.33	10.73
Top 20% (T20)	59	137,253	24.3	17.73	32.29	17	26,278	4.6	1.96	10.64

**Table 8.4:** Percentage of usual payer for healthcare services, NHMS 2019 (N=16,688)

Source of payment	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Government GL/Government specific health fund <sup>b</sup>	2,969	3,761,101	11.9	10.67	13.28
Employer-sponsored health insurance	983	2,410,654	7.6	6.74	8.63
Employer or panel clinic/hospital	2,000	4,295,505	13.6	12.02	15.35
SOCSSO	1,563	3,587,913	11.4	10.34	12.47
Personal health insurance	2,054	5,225,313	16.5	14.36	19.00
Self/family/household members	13,187	25,644,116	81.2	79.63	82.71

95% CI = 95% Confidence Interval

GL = Guarantee Letter

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

b Government specific health fund includes Peduli Sihat Card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health schemes



**Table 8.5:** Percentage of usual payer for healthcare services, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic Characteristics	Government GL/Government specific health fund <sup>a</sup>					Employer-sponsored health insurance					Employer or panel clinic/hospital				
	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>2,969</b>	<b>3,761,101</b>	<b>11.9</b>	<b>10.67</b>	<b>13.28</b>	<b>983</b>	<b>2,410,654</b>	<b>7.6</b>	<b>6.74</b>	<b>8.63</b>	<b>2,000</b>	<b>4,295,505</b>	<b>13.6</b>	<b>12.02</b>	<b>15.35</b>
<b>State</b>															
Johor	188	401,341	11.2	7.42	16.55	123	335,914	9.4	6.73	12.92	136	372,992	10.4	7.80	13.76
Kedah	145	315,704	15.8	10.24	23.49	36	82,831	4.1	1.60	10.28	81	204,550	10.2	6.54	15.62
Kelantan	143	223,069	12.5	8.96	17.23	20	29,484	1.7	0.91	3.00	27	41,599	2.3	1.28	4.24
Melaka	186	119,111	14.5	9.58	21.37	53	57,720	7.0	4.98	9.85	92	104,372	12.7	8.50	18.60
Negeri Sembilan	163	339,709	17.8	12.88	24.06	71	134,700	7.1	4.71	10.43	92	171,453	9.0	6.09	13.04
Pahang	82	99,541	6.5	4.46	9.44	92	169,123	11.1	6.65	17.87	140	240,705	15.8	9.46	25.10
Pulau Pinang	150	154,747	9.5	5.21	16.64	62	149,915	9.2	5.34	15.35	147	288,755	17.7	11.64	25.97
Perak	104	247,336	11.3	7.97	15.67	39	138,600	6.3	3.74	10.46	56	203,035	9.2	6.35	13.26
Perlis	241	57,063	24.7	17.76	33.18	15	5,123	2.2	1.06	4.55	51	13,274	5.7	3.66	8.90
Selangor	310	797,544	12.5	9.42	16.35	208	836,062	13.1	10.95	15.56	372	1,477,609	23.1	19.76	26.86
Terengganu	151	154,132	13.0	8.59	19.16	57	59,798	5.0	3.02	8.30	110	123,189	10.4	7.41	14.34
Sabah	114	308,963	8.2	5.82	11.30	26	96,606	2.5	1.59	4.06	113	441,566	11.6	5.54	22.87
Sarawak	139	349,406	13.2	9.37	18.26	48	159,925	6.0	4.16	8.70	78	244,839	9.2	6.36	13.25
WP Kuala Lumpur	59	102,569	6.1	3.81	9.56	62	146,140	8.7	6.25	11.87	137	327,737	19.4	14.35	25.72
WP Labuan	188	19,013	21.7	15.99	28.72	46	5,217	6.0	3.50	9.93	251	26,398	30.1	23.82	37.24
WP Putrajaya	606	71,853	74.0	64.63	81.63	25	3,496	3.6	2.16	5.94	117	13,434	13.8	8.85	20.99
<b>Location</b>															
Urban	2,029	2,865,050	12.1	10.63	13.80	714	2,068,599	8.8	7.65	10.01	1,445	3,531,002	14.9	13.26	16.80
Rural	940	896,051	11.3	9.30	13.59	269	342,055	4.3	3.23	5.70	555	764,503	9.6	6.21	14.60
<b>Sex</b>															
Male	1,409	1,745,369	11.1	9.76	12.58	637	1,578,576	10.0	8.70	11.54	1,152	2,546,348	16.2	14.12	18.48
Female	1,560	2,015,732	12.7	11.34	14.26	346	832,078	5.3	4.43	6.22	848	1,749,157	11.0	9.63	12.63
<b>Age Group (Years)</b>															
0-4	214	248,075	9.7	7.42	12.69	29	55,530	2.2	1.35	3.49	113	155,924	6.1	4.40	8.46
5-9	339	355,297	14.4	11.73	17.54	27	44,209	1.8	1.10	2.90	131	158,819	6.4	4.78	8.60
10-14	260	313,426	12.8	10.36	15.76	22	47,188	1.9	1.02	3.62	83	116,593	4.8	3.37	6.71
15-19	140	217,440	8.0	6.11	10.34	15	50,745	1.9	0.94	3.63	68	186,008	6.8	3.31	13.55
20-24	83	166,332	5.5	4.05	7.53	97	231,955	7.7	5.99	9.91	189	489,326	16.3	13.47	19.58
25-29	103	205,860	6.5	4.72	9.00	149	447,656	14.2	11.31	17.74	248	678,089	21.5	17.73	25.92
30-34	205	313,997	11.2	8.71	14.31	141	444,216	15.9	12.63	19.72	264	703,587	25.1	20.89	29.86
35-39	269	284,697	11.7	9.39	14.55	134	365,692	15.1	11.89	18.89	274	687,567	28.3	23.72	33.42
40-44	204	288,699	15.2	12.15	18.81	117	236,349	12.4	9.83	15.58	192	373,969	19.7	16.03	23.88
45-49	207	231,996	13.5	10.85	16.72	106	214,787	12.5	9.67	16.05	179	337,123	19.6	15.90	24.01
50-54	222	257,200	15.8	13.00	18.97	88	163,876	10.0	7.46	13.39	138	227,878	14.0	10.64	18.11
55-59	199	260,081	17.9	14.23	22.19	37	66,977	4.6	2.89	7.25	69	101,820	7.0	4.97	9.76
60-64	181	198,228	16.7	12.95	21.28	13	25,883	2.2	1.11	4.24	34	50,508	4.3	2.55	7.01
65-69	170	180,133	20.7	16.51	25.55	2	1,560	0.2	0.03	1.21	9	13,582	1.6	0.53	4.46
70-74	89	90,864	15.4	10.94	21.20	3	5,252	0.9	0.25	3.12	5	6,344	1.1	0.36	3.20
75 and over	84	148,776	22.8	15.35	32.59	3	8,778	1.3	0.37	4.76	4	8,367	1.3	0.33	4.89
<b>Ethnicity</b>															
Malay <sup>c</sup>	2,505	2,938,267	16.9	15.09	18.79	636	1,302,640	7.5	6.42	8.69	1,310	2,332,185	13.4	11.81	15.13
Chinese	91	199,622	3.3	2.22	4.76	114	528,338	8.6	6.74	10.99	169	763,408	12.5	9.83	15.69
Indian	96	128,200	7.2	4.86	10.40	66	141,534	7.9	5.18	11.86	112	229,541	12.8	9.51	17.04
Bumiputera Sabah	139	262,868	12.7	9.96	16.05	29	54,989	2.7	1.56	4.48	109	76,115	3.7	2.30	5.83
Bumiputera Sarawak	117	196,534	14.0	8.29	22.56	40	73,379	5.2	3.25	8.27	103	156,555	11.1	6.74	17.82
Others	21	35,610	1.3	0.61	2.71	98	309,774	11.2	7.29	16.95	197	737,702	26.8	18.25	37.46
<b>Citizenship</b>															
Malaysian	2,954	3,730,381	13.1	11.74	14.48	870	2,058,726	7.2	6.36	8.15	1,784	3,501,059	12.2	10.99	13.63
Permanent Resident	4	4,563	1.9	0.46	7.78	7	20,509	8.7	2.79	24.23	13	55,421	23.6	10.08	46.08
Non-Malaysian	10	26,060	0.9	0.37	2.38	106	331,419	12.1	7.91	17.94	203	739,026	26.9	18.34	37.55
<b>Marital status<sup>d</sup></b>															
Single	424	688,694	7.6	6.32	9.02	255	770,326	8.5	6.92	10.29	491	1,334,430	14.6	12.51	17.08
Married	1,610	1,992,626	14.1	12.59	15.83	620	1,444,353	10.2	8.88	11.80	1,143	2,472,483	17.5	15.31	20.03
Widow(er)/Divorcee	206	262,362	14.8	11.55	18.70	40	76,720	4.3	2.91	6.37	64	99,252	5.6	3.99	7.77

Sociodemographic Characteristics	SOCSCO					Personal health insurance					Self/family/household members				
	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>1,563</b>	<b>3,587,913</b>	<b>11.4</b>	<b>10.34</b>	<b>12.47</b>	<b>2,054</b>	<b>5,225,313</b>	<b>16.5</b>	<b>14.36</b>	<b>19.00</b>	<b>13,187</b>	<b>25,644,116</b>	<b>81.2</b>	<b>79.63</b>	<b>82.71</b>
<b>State</b>															
Johor	154	399,218	11.1	8.73	14.12	251	748,523	20.9	15.67	27.28	1,090	2,593,398	72.4	66.21	77.79
Kedah	46	113,819	5.7	3.51	9.07	114	266,888	13.3	7.50	22.58	749	1,659,165	82.9	75.85	88.14
Kelantan	61	98,429	5.5	4.03	7.54	59	79,712	4.5	2.66	7.43	844	1,435,066	80.6	71.66	87.20
Melaka	87	89,102	10.9	6.06	18.69	131	146,921	17.9	9.12	32.15	709	647,703	78.9	69.56	85.95
Negeri Sembilan	117	214,146	11.2	8.17	15.21	147	279,073	14.6	9.31	22.21	722	1,521,809	79.7	73.10	85.04
Pahang	152	258,526	16.9	11.62	24.00	119	221,189	14.5	9.87	20.75	746	1,133,346	74.2	69.74	78.22
Pulau Pinang	172	315,136	19.3	13.13	27.49	161	445,888	27.3	16.43	41.83	827	1,479,441	90.7	85.43	94.14
Perak	65	218,592	10.0	6.56	14.82	78	384,233	17.5	9.45	30.11	640	1,769,768	80.6	72.99	86.41
Perlis	55	13,171	5.7	3.61	8.88	48	12,965	5.6	3.38	9.16	741	185,620	80.2	74.48	84.97
Selangor	263	1,030,129	16.1	13.70	18.87	340	1,606,139	25.1	18.79	32.76	1,504	5,360,312	83.9	80.67	86.64
Terengganu	52	70,717	6.0	4.10	8.58	77	82,464	6.9	4.60	10.35	981	1,012,779	85.3	81.13	88.69
Sabah	64	216,240	5.7	3.84	8.41	50	133,381	3.5	2.02	6.06	1,186	3,288,576	86.8	82.35	90.19
Sarawak	91	278,410	10.5	7.45	14.64	82	221,875	8.4	5.18	13.27	828	2,151,658	81.2	75.83	85.66
WP Kuala Lumpur	109	265,189	15.7	12.93	18.96	226	577,591	34.2	24.84	45.00	546	1,292,394	76.6	72.04	80.53
WP Labuan	47	3,925	4.5	2.63	7.51	38	3,328	3.8	1.89	7.48	681	64,739	73.8	66.10	80.33
WP Putrajaya	28	3,164	3.3	1.93	5.46	133	15,142	15.6	9.32	24.94	393	48,343	49.8	41.16	58.46
<b>Location</b>															
Urban	1,030	3,002,376	12.7	11.44	14.09	1,599	4,784,673	20.3	17.43	23.41	7,807	19,295,465	81.7	79.76	83.46
Rural	533	585,536	7.4	6.02	8.98	455	440,640	5.5	4.18	7.31	5,380	6,348,651	79.8	76.97	82.43
<b>Sex</b>															
Male	983	2,206,427	14.0	12.64	15.52	1,025	2,763,484	17.6	15.14	20.27	6,236	12,602,852	80.1	78.08	81.94
Female	580	1,381,486	8.7	7.53	10.09	1,029	2,461,830	15.5	13.23	18.19	6,951	13,041,264	82.3	80.58	83.99
<b>Age Group (Years)</b>															
0-4	9	11,073	0.4	0.20	0.95	137	360,293	14.2	10.21	19.28	983	2,002,186	78.6	74.82	82.01
5-9	12	15,065	0.6	0.30	1.25	186	388,227	15.7	12.15	20.11	1,184	1,989,197	80.6	77.32	83.45
10-14	9	11,728	0.5	0.22	1.05	148	341,618	14.0	9.91	19.33	1,127	2,018,317	82.5	79.23	85.39
15-19	43	101,596	3.7	2.55	5.40	100	313,611	11.5	7.87	16.50	885	2,252,127	82.6	78.64	85.92
20-24	174	411,154	13.7	10.88	17.10	111	384,346	12.8	9.20	17.55	842	2,441,611	81.3	77.80	84.40
25-29	251	676,918	21.5	17.55	26.08	139	496,517	15.8	11.92	20.59	862	2,508,116	79.7	75.77	83.13
30-34	221	622,784	22.2	18.76	26.13	182	593,082	21.2	16.73	26.41	882	2,196,266	78.4	74.55	81.79
35-39	204	536,342	22.1	18.25	26.47	218	548,274	22.6	18.12	27.77	987	2,003,029	82.5	79.03	85.49
40-44	185	384,266	20.2	16.83	24.05	194	401,752	21.1	17.07	25.83	844	1,581,487	83.1	79.79	86.04
45-49	167	308,303	18.0	14.81	21.62	174	423,223	24.7	18.96	31.40	861	1,419,897	82.7	79.14	85.79
50-54	156	269,602	16.5	13.40	20.20	171	350,775	21.5	17.13	26.60	879	1,369,777	83.9	80.01	87.18
55-59	78	133,992	9.2	6.73	12.46	128	274,256	18.8	15.08	23.27	815	1,200,867	82.5	78.78	85.67
60-64	31	51,067	4.3	2.74	6.69	82	179,565	15.1	11.03	20.41	681	945,260	79.7	74.92	83.69
65-69	17	32,150	3.7	1.82	7.35	48	104,506	12.0	6.97	19.86	559	701,787	80.5	76.07	84.31
70-74	5	20,996	3.6	1.00	11.85	27	51,768	8.8	5.08	14.71	410	493,682	83.6	77.66	88.19
75 and over	1	877	0.1	0.02	0.95	9	13,503	2.1	0.77	5.47	386	520,509	79.9	73.43	85.14
<b>Ethnicity</b>															
Malay <sup>c</sup>	1,061	1,992,305	11.4	10.27	12.70	1,050	1,860,387	10.7	9.15	12.43	8,762	13,772,076	79.0	77.15	80.79
Chinese	214	896,064	14.6	12.00	17.73	678	2,727,267	44.5	39.11	50.11	1,538	5,257,281	85.9	82.08	88.96
Indian	120	276,664	15.4	11.74	20.04	245	469,265	26.2	20.19	33.22	821	1,493,723	83.3	77.51	87.91
Bumiputera Sabah	56	148,139	7.2	4.76	10.61	37	74,371	3.6	1.94	6.56	889	1,802,525	87.0	81.71	90.98
Bumiputera Sarawak	70	163,299	11.6	7.49	17.54	26	49,906	3.5	1.83	6.76	549	1,142,500	81.2	74.38	86.50
Others	42	111,442	4.0	2.30	7.03	18	44,118	1.6	0.53	4.71	628	2,176,010	79.0	73.36	83.68
<b>Citizenship</b>															
Malaysian	1,515	3,453,334	12.1	11.03	13.22	2,029	5,156,270	18.0	15.69	20.65	12,481	23,305,572	81.5	79.90	83.06
Permanent Resident	7	19,613	8.4	3.54	18.52	7	12,140	5.2	1.99	12.81	95	108,042	46.1	28.43	64.78
Non-Malaysian	40	114,816	4.2	2.36	7.27	17	56,753	2.1	0.79	5.26	607	2,224,326	80.9	75.59	85.26
<b>Marital status<sup>d</sup></b>															
Single	452	1,215,256	13.3	11.35	15.62	427	1,381,037	15.2	12.57	18.18	2,952	7,377,772	81.0	78.70	83.08
Married	1,008	2,200,921	15.6	14.10	17.26	1,112	2,695,924	19.1	16.61	21.92	6,292	11,439,453	81.2	79.25	82.93
Widow(er)/Divorcee	74	135,180	7.6	5.44	10.54	92	170,324	9.6	7.20	12.66	1,055	1,533,267	86.3	83.30	88.85

**Table 8.5:** Percentage of usual payer for healthcare services, by sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic Characteristics	Government GL/Government specific health fund <sup>b</sup>					Employer-sponsored health insurance					Employer or panel clinic/hospital				
	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper				Lower	Upper
<b>Education level</b>															
No formal education	406	459,835	9.7	7.80	11.99	50	102,463	2.2	1.48	3.14	184	315,125	6.6	4.35	10.02
Primary education	774	960,329	11.0	9.42	12.71	120	278,672	3.2	2.32	4.35	333	690,369	7.9	5.67	10.85
Secondary education	904	1,205,746	9.9	8.54	11.47	406	986,919	8.1	6.86	9.56	805	1,708,865	14.0	12.19	16.11
Tertiary education	878	1,128,010	19.5	17.08	22.23	400	1,007,291	17.4	15.17	19.96	666	1,538,573	26.6	23.45	30.08
<b>Occupation</b>															
Government employee	905	1,091,187	68.9	64.34	73.16	115	208,529	13.2	10.38	16.57	197	309,461	19.5	16.03	23.62
Private employee	142	246,349	2.9	2.19	3.80	726	1,903,290	22.3	19.71	25.18	1,244	3,136,547	36.8	33.22	40.51
Self employed	164	201,306	5.0	3.96	6.40	28	73,534	1.8	1.05	3.21	42	85,356	2.1	1.20	3.78
Unpaid worker/ Homemaker	249	336,309	8.8	7.19	10.63	13	25,845	0.7	0.34	1.34	99	199,973	5.2	3.63	7.42
Retiree	286	353,912	45.2	38.04	52.61	4	7,014	0.9	0.32	2.47	15	17,257	2.2	1.00	4.77
Student	671	816,799	12.3	10.38	14.45	47	98,982	1.5	0.88	2.49	236	305,560	4.6	3.57	5.88
Not working <sup>e</sup>	551	713,188	11.5	9.73	13.59	50	93,460	1.5	1.03	2.21	167	241,350	3.9	3.01	5.03
<b>Household Income Group</b>															
Less than RM 1,000	255	362,326	7.1	5.61	8.90	33	107,538	2.1	1.01	4.32	71	225,011	4.4	2.34	8.12
RM 1,000 - RM 1,999	263	371,027	6.4	5.08	8.07	125	315,784	5.5	3.89	7.62	271	623,490	10.8	8.04	14.31
RM 2,000 - RM 2,999	337	459,445	9.0	7.23	11.09	144	292,015	5.7	4.41	7.34	288	516,876	10.1	8.17	12.41
RM 3,000 - RM 3,999	336	462,957	10.4	8.23	13.17	148	374,971	8.5	6.56	10.85	300	730,047	16.5	13.11	20.49
RM 4,000 - RM 4,999	340	491,557	17.7	13.48	22.78	108	264,202	9.5	7.05	12.66	210	459,897	16.5	13.09	20.63
RM 5,000 - RM 5,999	268	275,768	14.9	10.93	20.02	87	210,696	11.4	8.09	15.82	177	339,280	18.3	14.53	22.90
RM 6,000 - RM 6,999	276	340,351	21.0	15.92	27.13	73	196,589	12.1	8.58	16.85	151	347,479	21.4	16.90	26.76
RM 7,000 - RM 7,999	186	194,123	16.8	11.15	24.39	49	102,833	8.9	6.21	12.52	108	223,011	19.2	14.10	25.69
RM 8,000 - RM 8,999	154	211,156	21.6	14.69	30.54	58	131,891	13.5	9.91	18.09	119	257,685	26.3	19.44	34.63
RM 9,000 - RM 9,999	112	102,032	30.1	18.53	44.95	27	40,865	12.1	6.04	22.63	49	58,093	17.1	10.69	26.36
RM 10,000 and above	421	440,705	20.8	15.50	27.44	127	360,014	17.0	12.98	22.03	243	492,994	23.3	18.26	29.28
<b>Household Income Quintile</b>															
Q1 (20% poorest)	308	451,770	7.0	5.63	8.57	68	217,359	3.3	1.95	5.68	125	384,226	5.9	3.57	9.66
Q2	299	380,184	6.2	5.02	7.69	135	312,787	5.1	3.92	6.65	297	590,428	9.7	7.50	12.35
Q3	428	608,926	9.7	7.88	11.87	183	426,347	6.8	5.43	8.46	395	898,418	14.3	11.63	17.47
Q4	754	972,072	15.8	13.07	18.92	259	608,713	9.9	7.94	12.22	496	1,007,569	16.3	14.07	18.91
Q5 (20% richest)	1,159	1,298,496	20.8	17.43	24.57	334	832,192	13.3	11.27	15.66	674	1,393,223	22.3	19.45	25.42
<b>Household Income Category</b>															
Bottom 40% (B40)	1,515	1,847,609	8.5	7.37	9.77	532	1,359,285	6.2	5.34	7.30	1,143	2,623,506	12.1	10.17	14.25
Middle 40% (M40)	951	1,272,300	18.0	14.95	21.40	321	749,377	10.6	8.72	12.77	595	1,197,611	16.9	14.49	19.62
Top 20% (T20)	482	591,540	24.1	19.28	29.62	126	288,735	11.8	8.80	15.53	249	452,748	18.4	14.71	22.84

95% CI = 95% Confidence Interval

GL = Guarantee Letter

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

b Government specific health fund includes Peduli Sihat Card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health schemes

c Malay includes Orang Asli

d Does not include children aged less than 13 years old

e Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

Sociodemographic Characteristics	SOCSO					Personal health insurance					Self/family/household members				
	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper				Lower	Upper
<b>Education level</b>															
No formal education	28	42,082	0.9	0.56	1.40	211	520,637	11.0	7.98	14.91	1,995	3,816,288	80.5	77.49	83.11
Primary education	132	252,366	2.9	2.21	3.75	424	970,404	11.1	8.60	14.16	4,137	7,220,345	82.4	80.16	84.44
Secondary education	816	1,768,146	14.5	13.06	16.13	659	1,779,158	14.6	12.28	17.31	4,856	9,895,063	81.3	79.15	83.26
Tertiary education	581	1,495,866	25.9	22.67	29.41	757	1,933,224	33.5	29.65	37.51	2,157	4,624,665	80.1	77.49	82.40
<b>Occupation</b>															
Government employee	147	278,596	17.6	14.36	21.38	328	487,532	30.8	26.34	35.64	820	1,114,235	70.4	66.29	74.17
Private employee	1,244	3,004,709	35.2	31.65	39.02	568	1,808,857	21.2	17.83	25.05	2,669	6,764,734	79.3	76.82	81.66
Self Employed	67	122,873	3.1	2.10	4.50	224	616,616	15.5	12.07	19.58	1,842	3,372,340	84.5	81.74	86.96
Unpaid worker/ Homemaker	17	40,265	1.0	0.52	2.12	169	423,790	11.0	8.81	13.74	1,817	3,311,566	86.2	83.53	88.57
Retiree	14	22,652	2.9	1.52	5.44	69	148,208	18.9	13.61	25.73	401	595,220	76.1	70.49	80.86
Student	28	45,074	0.7	0.36	1.26	430	1,107,754	16.6	12.95	21.12	2,829	5,494,197	82.5	80.13	84.69
Not working <sup>a</sup>	46	73,744	1.2	0.81	1.75	265	629,190	10.2	7.85	13.06	2,808	4,989,775	80.6	78.16	82.83
<b>Household Income Group</b>															
Less than RM 1,000	42	98,320	1.9	1.03	3.54	166	478,077	9.3	6.92	12.50	2,279	4,290,808	83.8	80.89	86.42
RM 1,000 - RM 1,999	233	454,674	7.9	6.39	9.65	98	244,284	4.2	2.97	5.98	2,545	4,740,317	82.0	79.44	84.26
RM 2,000 - RM 2,999	282	619,114	12.1	10.08	14.44	158	408,585	8.0	5.62	11.22	2,179	4,136,104	80.8	77.42	83.73
RM 3,000 - RM 3,999	247	570,670	12.9	10.77	15.33	234	652,643	14.7	11.36	18.88	1,817	3,651,473	82.4	79.58	84.89
RM 4,000 - RM 4,999	188	467,282	16.8	13.43	20.77	168	459,710	16.5	12.01	22.28	1,066	2,209,889	79.4	75.94	82.43
RM 5,000 - RM 5,999	138	322,759	17.5	13.86	21.74	217	504,249	27.3	20.71	34.99	798	1,504,130	81.3	76.96	85.05
RM 6,000 - RM 6,999	108	282,888	17.4	12.76	23.38	209	512,303	31.6	23.93	40.38	646	1,290,134	79.5	74.66	83.66
RM 7,000 - RM 7,999	72	155,705	13.4	9.51	18.64	128	359,302	31.0	22.59	40.90	427	915,208	79.0	72.22	84.43
RM 8,000 - RM 8,999	77	179,466	18.3	13.94	23.75	143	312,932	32.0	24.88	40.03	332	735,831	75.2	68.68	80.75
RM 9,000 - RM 9,999	28	42,611	12.6	6.27	23.61	60	120,095	35.4	23.56	49.44	180	284,430	83.9	75.10	90.07
RM 10,000 and above	140	377,965	17.9	14.11	22.39	453	1,109,227	52.5	43.52	61.25	815	1,669,205	79.0	72.75	84.05
<b>Household Income Quintile</b>															
Q1 (20% poorest)	78	168,083	2.6	1.70	3.92	192	549,076	8.5	6.42	11.07	2,856	5,421,157	83.5	80.75	85.95
Q2	277	549,804	9.0	7.34	10.97	134	319,069	5.2	3.86	7.03	2,623	4,979,840	81.5	78.60	84.02
Q3	347	832,901	13.3	11.42	15.35	227	658,682	10.5	7.84	13.89	2,635	5,090,208	81.0	78.26	83.55
Q4	426	976,717	15.8	13.76	18.19	488	1,220,720	19.8	16.37	23.76	2,558	5,011,658	81.3	78.96	83.46
Q5 (20% richest)	427	1,043,949	16.7	14.44	19.24	993	2,413,859	38.6	33.66	43.83	2,412	4,924,666	78.8	75.49	81.77
<b>Household Income Category</b>															
Bottom 40% (B40)	920	2,141,198	9.8	8.71	11.10	854	2,349,568	10.8	9.13	12.73	9,266	17,816,222	81.9	80.21	83.47
Middle 40% (M40)	478	1,074,323	15.2	13.26	17.28	726	1,839,883	26.0	21.10	31.49	2,817	5,689,056	80.3	77.38	82.87
Top 20% (T20)	157	355,932	14.5	11.46	18.15	454	971,955	39.6	33.64	45.80	1,001	1,922,251	78.2	73.91	82.02

Table 8.6: Supplementary financial coverage for healthcare services, NHMS 2019 (N=16,688)

Type of supplementary financial coverage	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Government GL/Government specific health fund <sup>b</sup>	4,406	6,132,602	19.4	17.66	21.32
Employer-sponsored health insurance or panel clinic/hospital	2,669	5,679,425	18.0	16.26	19.85
SOCISO	2,290	4,937,438	15.6	14.45	16.90
Personal health insurance	2,802	6,487,679	20.5	18.17	23.15

95% CI = 95% Confidence Interval

GL = Guarantee Letter

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

b Government specific health fund includes Peduli Sihat Card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health schemes

**Table 8.7:** Supplementary financial coverage for healthcare services, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Government GL/Government specific health fund <sup>b</sup>					Employer-sponsored health insurance or panel clinic/hospital				
	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>4,406</b>	<b>6,132,602</b>	<b>19.4</b>	<b>17.66</b>	<b>21.32</b>	<b>2,669</b>	<b>5,679,425</b>	<b>18.0</b>	<b>16.26</b>	<b>19.85</b>
<b>State</b>										
Johor	291	651,060	18.2	13.22	24.45	223	607,122	16.9	13.44	21.13
Kedah	236	486,417	24.3	16.34	34.51	105	251,204	12.5	8.09	18.94
Kelantan	259	403,716	22.7	17.16	29.32	44	68,750	3.9	2.35	6.27
Melaka	270	176,794	21.5	14.66	30.49	153	160,964	19.6	13.99	26.77
Negeri Sembilan	258	541,473	28.4	21.45	36.47	153	273,964	14.4	10.46	19.38
Pahang	157	226,699	14.8	11.04	19.66	185	326,773	21.4	12.79	33.57
Pulau Pinang	190	201,350	12.3	7.33	20.04	178	364,742	22.4	15.55	31.02
Perak	169	452,105	20.6	13.49	30.11	86	310,521	14.1	10.39	18.95
Perlis	329	80,823	34.9	26.32	44.67	74	21,600	9.3	6.63	13.01
Selangor	411	1,123,765	17.6	13.64	22.37	442	1,741,861	27.3	23.59	31.26
Terengganu	294	302,553	25.5	20.09	31.75	143	155,284	13.1	9.56	17.65
Sabah	237	604,078	15.9	11.65	21.42	155	592,485	15.6	8.90	25.99
Sarawak	238	575,570	21.7	16.23	28.46	119	368,297	13.9	9.86	19.26
WP Kuala Lumpur	105	196,559	11.6	7.89	16.86	164	386,500	22.9	17.30	29.65
WP Labuan	240	23,762	27.1	20.25	35.24	293	30,386	34.7	28.39	41.50
WP Putrajaya	722	85,876	88.5	78.16	94.26	152	18,973	19.5	13.33	27.73
<b>Location</b>										
Urban	2,889	4,577,713	19.4	17.27	21.68	1,926	4,693,518	19.9	17.97	21.92
Rural	1,517	1,554,889	19.6	16.58	22.92	743	985,907	12.4	8.78	17.22
<b>Sex</b>										
Male	2,118	2,880,126	18.3	16.42	20.35	1,535	3,321,776	21.1	18.87	23.54
Female	2,288	3,252,476	20.5	18.61	22.61	1,134	2,357,649	14.9	13.28	16.66
<b>Age group (Years)</b>										
0-4	340	478,919	18.8	15.53	22.59	147	216,931	8.5	6.49	11.11
5-9	542	709,715	28.7	24.79	33.05	176	231,670	9.4	7.38	11.86
10-14	419	595,423	24.3	20.84	28.23	120	190,335	7.8	5.98	10.07
15-19	254	443,988	16.3	13.44	19.58	99	270,061	9.9	5.94	16.05
20-24	143	296,630	9.9	7.64	12.69	251	656,468	21.9	18.47	25.69
25-29	173	356,883	11.3	8.91	14.33	338	921,532	29.3	24.99	33.98
30-34	303	474,665	16.9	13.60	20.90	332	858,280	30.6	26.14	35.53
35-39	375	449,555	18.5	15.23	22.32	348	833,601	34.3	29.53	39.48
40-44	272	390,007	20.5	16.91	24.63	252	494,291	26.0	22.10	30.29
45-49	297	366,715	21.4	17.56	25.73	231	421,844	24.6	20.54	29.11
50-54	300	367,314	22.5	19.11	26.30	184	302,140	18.5	14.76	22.96
55-59	280	353,124	24.3	20.21	28.83	109	151,552	10.4	7.97	13.49
60-64	240	275,408	23.2	18.59	28.57	45	70,453	5.9	3.85	9.05
65-69	215	242,932	27.9	22.24	34.30	20	30,562	3.5	1.71	7.06
70-74	120	132,433	22.4	16.80	29.27	11	15,661	2.7	1.20	5.75
75 and over	133	198,893	30.5	22.84	39.51	6	14,045	2.2	0.75	6.01
<b>Ethnicity</b>										
Malay <sup>c</sup>	3,635	4,625,499	26.5	24.19	29.04	1,745	3,070,082	17.6	15.77	19.63
Chinese	157	400,100	6.5	4.74	8.94	239	1,024,969	16.7	13.94	19.97
Indian	157	252,135	14.1	9.42	20.49	164	340,504	19.0	15.11	23.61
Bumiputera Sabah	237	489,919	23.7	18.99	29.06	149	164,039	7.9	5.61	11.06
Bumiputera Sarawak	185	312,782	22.2	14.15	33.13	137	217,160	15.4	10.14	22.77
Others	35	52,168	1.9	0.91	3.89	235	862,670	31.3	22.36	41.91

Sociodemographic characteristics	SOCSCO					Personal health insurance				
	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>2,290</b>	<b>4,937,438</b>	<b>15.6</b>	<b>14.45</b>	<b>16.90</b>	<b>2,802</b>	<b>6,487,679</b>	<b>20.5</b>	<b>18.17</b>	<b>23.15</b>
<b>State</b>										
Johor	207	544,440	15.2	12.10	18.91	277	809,323	22.6	17.07	29.25
Kedah	116	309,873	15.5	10.02	23.13	165	374,524	18.7	11.17	29.62
Kelantan	69	108,446	6.1	4.45	8.28	65	87,495	4.9	2.94	8.11
Melaka	144	164,573	20.0	15.80	25.10	189	208,090	25.3	15.39	38.79
Negeri Sembilan	171	306,362	16.0	12.09	20.99	214	418,912	21.9	15.46	30.18
Pahang	161	273,865	17.9	12.34	25.32	145	260,158	17.0	11.88	23.82
Pulau Pinang	197	364,839	22.4	15.59	30.98	175	479,125	29.4	17.66	44.61
Perak	96	349,451	15.9	11.31	21.91	96	464,257	21.1	12.53	33.38
Perlis	75	18,831	8.1	5.55	11.79	70	22,372	9.7	5.98	15.28
Selangor	326	1,252,985	19.6	16.98	22.53	429	1,915,404	30.0	23.36	37.54
Terengganu	68	90,550	7.6	5.64	10.25	106	115,277	9.7	6.77	13.75
Sabah	118	400,111	10.6	8.00	13.81	98	259,674	6.9	3.98	11.54
Sarawak	142	441,004	16.7	12.42	21.96	140	404,044	15.3	9.15	24.34
WP Kuala Lumpur	119	283,354	16.8	14.06	19.92	250	627,192	37.1	27.58	47.84
WP Labuan	212	20,333	23.2	20.83	25.73	107	10,470	11.9	8.13	17.21
WP Putrajaya	69	8,420	8.7	5.98	12.43	276	31,362	32.3	25.54	39.91
<b>Location</b>										
Urban	1,581	4,158,845	17.6	16.13	19.18	2,189	5,886,938	24.9	21.87	28.24
Rural	709	778,593	9.8	8.29	11.53	613	600,741	7.6	5.96	9.54
<b>Sex</b>										
Male	1,440	3,029,910	19.3	17.68	20.93	1,378	3,340,151	21.2	18.63	24.07
Female	850	1,907,528	12.0	10.68	13.56	1,424	3,147,528	19.9	17.37	22.64
<b>Age group (Years)</b>										
0-4	17	24,703	1.0	0.53	1.75	204	473,339	18.6	14.34	23.75
5-9	17	18,350	0.7	0.39	1.39	262	491,181	19.9	16.00	24.45
10-14	12	17,897	0.7	0.38	1.40	200	420,982	17.2	12.80	22.75
15-19	67	163,576	6.0	4.41	8.11	129	374,693	13.7	9.96	18.65
20-24	260	635,200	21.2	17.56	25.26	144	474,438	15.8	11.85	20.76
25-29	357	964,408	30.6	25.92	35.82	201	656,391	20.9	16.61	25.85
30-34	338	857,118	30.6	26.82	34.64	260	713,987	25.5	20.87	30.71
35-39	316	705,846	29.1	24.95	33.57	306	671,885	27.7	23.09	32.77
40-44	262	491,503	25.8	21.69	30.48	258	510,594	26.8	22.26	31.98
45-49	239	392,128	22.8	19.27	26.86	233	506,994	29.5	23.73	36.08
50-54	200	328,671	20.1	16.87	23.86	218	425,442	26.1	21.60	31.08
55-59	125	203,367	14.0	11.26	17.21	163	317,547	21.8	17.88	26.33
60-64	49	68,140	5.7	3.98	8.21	113	232,267	19.6	15.13	24.94
65-69	23	39,191	4.5	2.43	8.17	63	133,698	15.3	9.87	23.07
70-74	6	25,596	4.3	1.09	15.70	33	67,948	11.5	7.19	17.91
75 and over	2	1,744	0.3	0.07	1.06	15	16,292	2.5	1.08	5.68
<b>Ethnicity</b>										
Malay <sup>c</sup>	1,504	2,693,303	15.5	14.08	16.94	1,529	2,505,547	14.4	12.51	16.47
Chinese	295	1,185,283	19.4	16.22	22.93	792	3,113,319	50.8	45.47	56.21
Indian	169	383,319	21.4	17.54	25.82	308	579,135	32.3	26.01	39.34
Bumiputera Sabah	135	239,775	11.6	8.39	15.77	94	126,681	6.1	4.02	9.19
Bumiputera Sarawak	127	241,682	17.2	12.13	23.75	55	105,938	7.5	5.00	11.18
Others	60	194,077	7.0	4.80	10.23	24	57,059	2.1	0.84	4.99

**Table 8.7:** Supplementary financial coverage for healthcare services, by sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Government GL/Government specific health fund <sup>b</sup>					Employer-sponsored health insurance or panel clinic/hospital				
	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
Citizenship										
Malaysian	4,371	6,071,203	21.2	19.41	23.19	2,405	4,747,177	16.6	15.17	18.15
Permanent Resident	12	12,942	5.5	2.43	12.07	18	72,107	30.8	15.69	51.46
Non-Malaysian	22	48,360	1.8	0.79	3.87	246	860,141	31.3	22.30	41.92
Marital status <sup>d</sup>										
Single	705	1,224,978	13.4	11.66	15.47	657	1,758,162	19.3	16.92	21.93
Married	2,238	2,940,468	20.9	18.78	23.11	1,520	3,217,879	22.8	20.45	25.40
Widow(er)/Divorcee	296	362,397	20.4	16.91	24.39	86	133,574	7.5	5.73	9.81
Education level										
No formal education	639	883,469	18.6	15.86	21.75	250	455,680	9.6	7.01	13.03
Primary education	1,229	1,657,828	18.9	16.72	21.34	474	952,147	10.9	8.48	13.83
Secondary education	1,347	1,934,903	15.9	14.05	17.93	1,065	2,272,487	18.7	16.62	20.91
Tertiary education	1,183	1,649,148	28.5	25.34	31.99	866	1,953,248	33.8	30.54	37.25
Occupation										
Government employee	1,122	1,408,584	89.0	85.53	91.68	286	448,480	28.3	24.42	32.59
Private employee	317	587,598	6.9	5.70	8.32	1,584	3,887,181	45.6	41.95	49.29
Self-employed	301	381,739	9.6	8.07	11.31	84	199,872	5.0	3.31	7.51
Unpaid worker/Homemaker	382	564,092	14.7	12.50	17.19	130	261,678	6.8	5.02	9.19
Retiree	334	415,464	53.1	45.59	60.45	26	30,749	3.9	2.28	6.68
Student	1,097	1,580,502	23.7	20.98	26.74	329	491,728	7.4	5.95	9.14
Not working <sup>e</sup>	852	1,192,575	19.3	16.88	21.89	230	359,738	5.8	4.71	7.15
Household income group										
Less than RM 1,000	380	564,042	11.0	8.89	13.59	108	303,757	5.9	3.66	9.49
RM 1,000 - RM 1,999	403	602,365	10.4	8.53	12.66	337	739,662	12.8	9.91	16.36
RM 2,000 - RM 2,999	537	800,615	15.6	12.85	18.89	389	739,537	14.4	11.94	17.36
RM 3,000 - RM 3,999	516	755,075	17.0	13.90	20.71	416	952,255	21.5	17.78	25.73
RM 4,000 - RM 4,999	503	764,907	27.5	22.14	33.54	288	640,567	23.0	18.94	27.65
RM 5,000 - RM 5,999	378	454,007	24.6	19.10	30.97	232	433,163	23.4	18.81	28.76
RM 6,000 - RM 6,999	392	537,517	33.1	26.15	40.94	199	453,370	27.9	22.86	33.66
RM 7,000 - RM 7,999	283	319,689	27.6	18.82	38.49	151	325,428	28.1	21.40	35.89
RM 8,000 - RM 8,999	213	322,012	32.9	23.20	44.34	147	333,843	34.1	26.70	42.40
RM 9,000 - RM 9,999	150	150,526	44.4	30.51	59.27	68	72,972	21.5	14.43	30.89
RM 10,000 and above	609	781,282	37.0	28.50	46.29	316	653,964	30.9	25.52	36.92
Household income quintile										
Q1 (20% poorest)	458	702,263	10.8	8.92	13.06	175	495,528	7.6	5.12	11.23
Q2	486	695,410	11.4	9.38	13.73	377	748,820	12.2	9.72	15.33
Q3	671	1,012,582	16.1	13.31	19.39	537	1,184,302	18.9	15.90	22.22
Q4	1,090	1,511,518	24.5	21.10	28.31	676	1,362,275	22.1	19.42	25.04
Q5 (20% richest)	1,659	2,130,265	34.1	29.39	39.12	886	1,857,592	29.7	26.57	33.08
Household income category										
Bottom 40% (B40)	2,205	2,950,481	13.6	11.98	15.32	1,496	3,315,945	15.2	13.23	17.51
Middle 40% (M40)	1,449	2,128,870	30.0	26.23	34.14	824	1,696,601	23.9	21.12	27.00
Top 20% (T20)	710	972,687	39.6	31.93	47.80	331	635,970	25.9	21.57	30.72

95% CI = 95% Confidence Interval

GL = Guarantee Letter

a Count = number of respondents who answered affirmative for this section, and this is not the total sample unless otherwise stated

b Government specific health fund includes Peduli Sihat Card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health schemes

c Malay includes Orang Asli

d Does not include children aged less than 13 years old

e Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

Sociodemographic characteristics	SOCISO					Personal health insurance				
	Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI		Count <sup>a</sup>	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
Citizenship										
Malaysian	2,222	4,716,957	16.5	15.27	17.81	2,770	6,399,950	22.4	19.87	25.13
Permanent Resident	10	44,459	19.0	7.33	40.92	9	17,310	7.4	3.17	16.28
Non-Malaysian	57	175,872	6.4	4.21	9.60	22	70,269	2.6	1.14	5.62
Marital status <sup>d</sup>										
Single	657	1,764,581	19.4	16.98	22.01	568	1,698,154	18.6	15.79	21.87
Married	1,480	2,928,336	20.8	19.08	22.58	1,519	3,343,808	23.7	21.04	26.64
Widow(er)/Divorcee	108	185,786	10.5	7.95	13.64	115	198,970	11.2	8.74	14.25
Education level										
No formal education	49	88,549	1.9	1.19	2.93	315	687,785	14.5	11.26	18.47
Primary education	206	409,913	4.7	3.75	5.83	559	1,179,474	13.5	10.79	16.66
Secondary education	1,181	2,435,499	20.0	18.24	21.90	882	2,240,114	18.4	15.90	21.20
Tertiary education	846	1,970,216	34.1	30.78	37.60	1,043	2,358,415	40.8	36.80	44.98
Occupation										
Government employee	211	393,768	24.9	20.93	29.28	479	625,054	39.5	34.56	44.62
Private employee	1,824	4,038,452	47.4	43.37	51.40	756	2,195,804	25.8	22.14	29.74
Self-employed	98	231,533	5.8	3.87	8.63	295	784,759	19.7	15.99	23.95
Unpaid worker/Homemaker	31	56,447	1.5	0.85	2.54	231	533,380	13.9	11.45	16.75
Retiree	18	31,213	4.0	2.34	6.73	88	178,233	22.8	17.12	29.62
Student	38	62,744	0.9	0.56	1.58	570	1,323,332	19.9	15.86	24.62
Not working <sup>e</sup>	70	123,280	2.0	1.41	2.81	382	843,750	13.6	11.14	16.58
Household income group										
Less than RM 1,000	64	141,672	2.8	1.75	4.35	215	575,645	11.2	8.65	14.50
RM 1,000 - RM 1,999	347	718,781	12.4	10.54	14.60	148	338,692	5.9	4.42	7.72
RM 2,000 - RM 2,999	423	880,954	17.2	14.89	19.80	215	518,437	10.1	7.62	13.33
RM 3,000 - RM 3,999	352	775,442	17.5	15.06	20.23	322	821,492	18.5	15.01	22.67
RM 4,000 - RM 4,999	265	596,418	21.4	17.87	25.46	241	583,516	21.0	16.09	26.83
RM 5,000 - RM 5,999	204	404,748	21.9	17.85	26.54	287	593,299	32.1	25.03	40.06
RM 6,000 - RM 6,999	158	387,229	23.9	18.57	30.11	285	654,788	40.4	31.80	49.56
RM 7,000 - RM 7,999	102	231,114	19.9	15.14	25.81	182	442,659	38.2	29.55	47.66
RM 8,000 - RM 8,999	97	226,308	23.1	18.33	28.74	189	450,092	46.0	35.69	56.67
RM 9,000 - RM 9,999	52	60,458	17.8	11.24	27.15	90	147,654	43.6	30.10	58.08
RM 10,000 and above	209	473,871	22.4	18.26	27.19	596	1,266,844	59.9	50.99	68.23
Household income quintile										
Q1 (20% poorest)	123	285,813	4.4	3.29	5.87	255	669,721	10.3	8.12	13.02
Q2	402	802,237	13.1	11.09	15.47	187	423,721	6.9	5.44	8.80
Q3	512	1,170,500	18.6	16.44	21.06	318	849,322	13.5	10.79	16.82
Q4	614	1,252,361	20.3	18.09	22.74	666	1,486,527	24.1	20.40	28.28
Q5 (20% richest)	622	1,386,083	22.2	19.56	25.03	1,344	2,963,826	47.4	42.37	52.52
Household income category										
Bottom 40% (B40)	1,355	2,952,840	13.6	12.32	14.93	1,179	2,892,608	13.3	11.53	15.28
Middle 40% (M40)	689	1,449,805	20.5	18.37	22.72	1,000	2,274,967	32.1	27.15	37.48
Top 20% (T20)	229	494,349	20.1	16.17	24.76	591	1,225,542	49.9	43.05	56.72

**Table 8.8:** Reasons for not owning personal health insurance, NHMS 2019 (N=13,803)

Reason	Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper
Cannot afford	5,663	10,780,377	43.3	40.80	45.75
Not needed	4,714	8,933,957	35.9	33.74	38.02
Covered by government	1,537	1,662,598	6.7	5.84	7.61
Covered by employer/SOCSSO	1,109	2,054,921	8.2	7.28	9.32
Declined by insurance company	86	199,444	0.8	0.54	1.19
Others	71	222,007	0.9	0.59	1.33

95% CI = 95% Confidence Interval



**Table 8.9:** Reasons for not owning personal health insurance, by sociodemographic characteristics, NHMS 2019 (N=13,803)

Sociodemographic characteristics	Covered by government					Covered by employer/SOCSSO				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>1,537</b>	<b>1,662,598</b>	<b>6.7</b>	<b>5.84</b>	<b>7.61</b>	<b>1,109</b>	<b>2,054,921</b>	<b>8.2</b>	<b>7.28</b>	<b>9.32</b>
<b>State</b>										
Johor	93	189,396	7.1	4.40	11.19	102	253,086	9.5	6.85	12.91
Kedah	58	118,424	7.3	5.48	9.76	44	106,411	6.6	3.14	13.35
Kelantan	77	114,380	6.8	4.39	10.31	8	12,162	0.7	0.37	1.40
Melaka	93	58,747	9.7	6.51	14.26	68	65,624	10.9	7.91	14.72
Negeri Sembilan	51	111,325	7.6	4.78	11.76	47	77,364	5.3	3.45	7.92
Pahang	30	35,219	2.8	1.47	5.17	109	197,024	15.5	9.84	23.67
Pulau Pinang	77	64,665	5.5	3.31	9.04	99	151,936	12.9	6.58	23.92
Perak	35	81,588	4.7	3.25	6.69	22	57,149	3.3	1.79	5.91
Perlis	192	44,803	21.6	14.94	30.11	58	14,222	6.8	4.58	10.12
Selangor	140	348,054	7.8	5.58	10.77	143	493,778	11.1	8.92	13.61
Terengganu	72	75,763	7.1	4.31	11.40	66	63,987	6.0	3.83	9.21
Sabah	46	118,430	3.4	2.01	5.65	67	224,941	6.4	4.52	9.06
Sarawak	85	213,779	9.6	6.00	14.89	66	219,385	9.8	6.82	13.92
WP Kuala Lumpur	18	33,495	3.2	1.64	6.10	40	99,874	9.5	6.21	14.26
WP Labuan	89	9,202	12.0	7.85	17.96	123	11,475	15.0	10.94	20.17
WP Putrajaya	381	45,328	69.8	60.09	78.06	47	6,502	10.0	5.96	16.36
<b>Location</b>										
Urban	1,062	1,290,728	7.3	6.24	8.55	708	1,621,375	9.2	7.96	10.57
Rural	475	371,869	5.1	4.09	6.39	401	433,547	6.0	4.60	7.71
<b>Sex</b>										
Male	737	798,746	6.5	5.52	7.57	668	1,235,673	10.0	8.70	11.48
Female	800	863,851	6.9	5.93	7.95	441	819,248	6.5	5.45	7.79
<b>Age group (Years)</b>										
0-4	124	111,569	5.4	3.96	7.40	40	67,763	3.3	2.03	5.32
5-9	185	160,111	8.1	6.11	10.73	41	50,632	2.6	1.69	3.88
10-14	124	119,649	6.0	4.29	8.30	28	31,892	1.6	0.95	2.68
15-19	66	82,595	3.6	2.40	5.29	35	76,356	3.3	2.07	5.23
20-24	36	70,633	2.8	1.66	4.73	118	241,425	9.6	7.31	12.52
25-29	58	71,563	2.9	1.82	4.50	167	392,449	15.8	12.31	19.93
30-34	105	144,411	7.0	4.92	9.86	154	346,949	16.8	13.36	20.95
35-39	133	119,053	6.8	4.95	9.30	147	280,935	16.1	12.54	20.37
40-44	86	130,163	9.4	6.66	12.98	119	206,843	14.9	11.64	18.80
45-49	95	107,706	8.9	6.68	11.85	112	154,956	12.9	9.91	16.51
50-54	100	104,890	8.6	6.42	11.38	71	103,549	8.5	5.90	12.01
55-59	115	126,104	11.1	8.28	14.75	48	60,800	5.4	3.55	8.00
60-64	109	104,619	11.2	8.42	14.83	18	24,097	2.6	1.18	5.59
65-69	99	96,106	13.1	9.80	17.22	11	16,275	2.2	0.93	5.17
70-74	52	44,118	8.5	5.00	14.00	0	0	0.0	0.00	0.00
75 and over	50	69,306	11.1	7.66	15.82	0	0	0.0	0.00	0.00
<b>Ethnicity</b>										
Malay <sup>a</sup>	1,341	1,314,570	8.9	7.78	10.16	772	1,206,785	8.2	7.02	9.49
Chinese	35	73,389	2.4	1.43	4.10	52	189,450	6.3	4.02	9.63
Indian	24	31,557	2.6	1.43	4.63	53	115,262	9.5	6.67	13.24
Bumiputera Sabah	60	102,757	5.4	3.47	8.16	61	111,228	5.8	3.57	9.27
Bumiputera Sarawak	68	132,763	10.3	5.64	18.17	70	119,677	9.3	5.60	15.10
Others	9	7,562	0.3	0.09	0.91	101	312,518	11.6	7.95	16.53

Sociodemographic characteristics	Cannot afford					Not needed				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>MALAYSIA</b>	<b>5,663</b>	<b>10,780,377</b>	<b>43.3</b>	<b>40.80</b>	<b>45.75</b>	<b>4,714</b>	<b>8,933,957</b>	<b>35.9</b>	<b>33.74</b>	<b>38.02</b>
<b>State</b>										
Johor	442	896,633	33.5	24.67	43.64	455	1,121,521	41.9	34.60	49.57
Kedah	258	457,347	28.3	21.24	36.73	350	824,723	51.1	43.29	58.89
Kelantan	469	780,867	46.2	38.78	53.87	364	671,905	39.8	33.60	46.33
Melaka	245	236,392	39.1	26.93	52.81	243	191,589	31.7	22.70	42.30
Negeri Sembilan	327	729,014	49.5	40.47	58.56	207	425,612	28.9	19.91	39.92
Pahang	262	389,710	30.7	24.16	38.21	420	609,957	48.1	41.22	55.08
Pulau Pinang	350	617,054	52.6	38.65	66.14	238	325,407	27.7	18.01	40.14
Perak	363	815,856	46.8	39.13	54.56	261	723,290	41.5	34.91	48.33
Perlis	340	84,422	40.6	30.81	51.30	167	44,328	21.3	17.89	25.25
Selangor	643	2,083,854	46.6	41.37	51.98	364	1,249,757	28.0	24.33	31.93
Terengganu	496	471,929	44.1	36.15	52.34	335	407,359	38.1	31.14	45.49
Sabah	680	1,777,803	50.8	44.35	57.21	384	1,154,814	33.0	27.39	39.12
Sarawak	456	1,125,241	50.3	42.05	58.56	218	583,981	26.1	21.06	31.89
WP Kuala Lumpur	141	295,722	28.1	20.77	36.84	239	552,041	52.5	44.09	60.72
WP Labuan	149	12,877	16.8	12.72	21.88	431	42,457	55.4	45.89	64.58
WP Putrajaya	42	5,656	8.7	4.06	17.73	38	5,217	8.0	4.89	12.95
<b>Location</b>										
Urban	2,764	6,966,860	39.5	36.41	42.60	2,844	6,772,609	38.4	35.71	41.09
Rural	2,899	3,813,518	52.5	48.76	56.21	1,870	2,161,348	29.8	26.68	33.03
<b>Sex</b>										
Male	2,584	5,196,293	42.1	39.22	44.98	2,272	4,440,872	36.0	33.49	38.49
Female	3,079	5,584,085	44.4	41.67	47.23	2,442	4,493,086	35.8	33.28	38.30
<b>Age group (Years)</b>										
0-4	427	821,178	40.0	35.16	44.95	428	894,753	43.5	38.77	48.43
5-9	533	876,427	44.5	39.97	49.08	471	759,794	38.6	34.53	42.75
10-14	499	919,849	46.0	41.31	50.83	481	797,953	39.9	35.54	44.50
15-19	391	1,028,313	44.5	38.55	50.64	386	965,137	41.8	36.64	47.11
20-24	356	1,074,276	42.7	37.70	47.90	336	958,312	38.1	33.06	43.43
25-29	333	1,041,618	41.8	36.41	47.40	302	824,075	33.1	28.52	37.96
30-34	308	791,185	38.3	32.66	44.36	317	702,727	34.1	29.32	39.13
35-39	373	780,405	44.6	39.37	50.04	255	486,624	27.8	23.80	32.26
40-44	342	592,536	42.6	37.31	48.03	233	411,425	29.6	25.23	34.32
45-49	351	524,390	43.5	38.62	48.51	226	352,811	29.3	24.83	34.14
50-54	390	578,017	47.3	42.17	52.45	260	386,161	31.6	27.09	36.45
55-59	336	456,796	40.2	35.15	45.53	289	436,387	38.4	33.19	43.97
60-64	321	425,354	45.6	39.38	52.05	238	319,118	34.2	28.45	40.56
65-69	261	309,725	42.1	36.17	48.31	216	262,267	35.7	30.14	41.61
70-74	223	261,073	50.1	42.69	57.59	148	183,691	35.3	27.88	43.46
75 and over	219	299,237	47.9	40.24	55.75	128	192,724	30.9	24.20	38.46
<b>Ethnicity</b>										
Malay <sup>a</sup>	3,801	6,046,880	41.0	38.11	43.85	3,264	5,357,111	36.3	33.76	38.88
Chinese	365	1,075,616	35.5	29.35	42.26	526	1,502,545	49.7	43.52	55.79
Indian	335	623,270	51.1	43.47	58.71	214	385,743	31.6	25.06	39.04
Bumiputera Sabah	444	952,548	49.6	40.95	58.30	330	635,700	33.1	26.03	41.04
Bumiputera Sarawak	312	729,573	56.8	46.46	66.52	168	259,259	20.2	15.80	25.39
Others	406	1,352,491	50.1	42.88	57.24	212	793,598	29.4	23.86	35.57

**Table 8.9:** Reasons for not owning personal health insurance, by sociodemographic characteristics, NHMS 2019 (N=13,803) (cont'd)

Sociodemographic characteristics	Covered by government					Covered by employer/SOCSO				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
Citizenship										
Malaysian	1,530	1,657,077	7.5	6.63	8.54	996	1,714,946	7.8	6.85	8.85
Permanent Resident	1	25	0.0	0.00	0.09	5	17,195	8.0	2.16	25.42
Non-Malaysian	5	5,399	0.2	0.05	0.85	108	322,780	12.0	8.22	17.32
Marital status <sup>b</sup>										
Single	206	287,303	3.9	3.02	5.08	292	693,439	9.5	7.80	11.45
Married	822	911,834	8.5	7.38	9.79	674	1,161,030	10.8	9.40	12.45
Widow(er)/Divorcee	121	122,887	7.9	6.00	10.21	42	58,714	3.8	2.43	5.75
Education level										
No formal education	221	202,912	5.0	3.85	6.59	71	148,901	3.7	2.51	5.42
Primary education	405	413,967	5.5	4.47	6.74	166	293,716	3.9	2.83	5.34
Secondary education	509	607,708	6.2	5.13	7.38	555	1,005,355	10.2	8.80	11.79
Tertiary education	402	438,011	12.9	10.74	15.31	312	596,596	17.5	14.74	20.67
Occupation										
Government employee	438	500,979	51.1	45.29	56.91	77	129,580	13.2	9.45	18.19
Private employee	48	57,930	0.9	0.55	1.53	813	1,594,395	25.3	22.11	28.70
Self-employed	81	93,825	2.9	2.17	3.97	34	44,921	1.4	0.85	2.32
Unpaid worker/Homemaker	145	171,115	5.2	4.02	6.79	35	70,756	2.2	1.14	4.09
Retiree	170	189,964	31.6	25.60	38.17	7	7,734	1.3	0.48	3.37
Student	337	350,951	6.7	5.25	8.44	77	103,003	2.0	1.36	2.82
Not working <sup>c</sup>	317	295,783	5.6	4.56	6.80	66	104,532	2.0	1.35	2.87
Household income group										
Less than RM 1,000	126	123,725	2.8	1.94	3.92	43	92,157	2.1	1.25	3.37
RM 1,000 - RM 1,999	158	211,530	3.9	2.95	5.19	203	364,948	6.8	5.14	8.86
RM 2,000 - RM 2,999	192	246,283	5.4	4.14	6.97	213	398,056	8.7	7.03	10.72
RM 3,000 - RM 3,999	192	204,105	5.7	4.29	7.47	184	393,522	10.9	8.33	14.22
RM 4,000 - RM 4,999	191	245,869	11.2	7.99	15.59	125	258,256	11.8	9.02	15.32
RM 5,000 - RM 5,999	135	125,618	9.8	7.07	13.45	88	129,787	10.1	7.30	13.90
RM 6,000 - RM 6,999	132	133,495	13.8	9.24	20.19	74	157,658	16.3	10.92	23.72
RM 7,000 - RM 7,999	107	86,670	12.3	6.70	21.56	49	78,843	11.2	7.54	16.35
RM 8,000 - RM 8,999	68	78,316	14.5	9.12	22.16	41	74,937	13.8	8.92	20.82
RM 9,000 - RM 9,999	57	27,741	14.6	8.17	24.86	17	13,764	7.3	3.35	15.03
RM 10,000 and above	170	168,034	20.3	13.72	28.94	68	88,812	10.7	6.96	16.17
Household income quintile										
Q1 (20% poorest)	163	187,803	3.3	2.42	4.37	79	152,458	2.6	1.81	3.85
Q2	174	197,586	3.5	2.65	4.63	222	413,568	7.3	5.68	9.44
Q3	249	318,220	5.9	4.64	7.43	273	575,323	10.6	8.76	12.85
Q4	407	448,467	9.6	7.61	12.00	281	494,117	10.6	8.62	12.88
Q5 (20% richest)	535	499,312	15.3	12.41	18.72	250	415,274	12.7	10.29	15.63
Household income category										
Bottom 40% (B40)	858	865,942	4.6	3.92	5.45	734	1,467,274	7.8	6.79	9.03
Middle 40% (M40)	463	572,787	11.9	9.63	14.67	288	455,292	9.5	7.70	11.61
Top 20% (T20)	207	212,657	17.4	12.79	23.22	83	128,173	10.5	7.56	14.37

95% CI = 95% Confidence Interval

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

Sociodemographic characteristics	Cannot afford					Not needed				
	Count	Estimated population	Percentage (%)	95% CI		Count	Estimated population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
Citizenship										
Malaysian	5,217	9,346,602	42.4	39.97	44.96	4,475	8,061,942	36.6	34.43	38.86
Permanent Resident	65	72,817	33.8	20.38	50.49	30	75,054	34.9	19.62	53.98
Non-Malaysian	380	1,360,858	50.8	43.51	58.06	208	791,133	29.5	24.27	35.40
Marital status <sup>b</sup>										
Single	1,251	3,019,227	41.2	37.81	44.75	1,165	2,881,783	39.4	36.26	42.54
Married	2,570	4,632,200	43.2	40.40	46.05	2,004	3,429,081	32.0	29.56	34.50
Widow(er)/Divorcee	564	846,263	54.1	49.07	59.00	335	442,864	28.3	24.01	33.03
Education level										
No formal education	1,031	1,848,524	46.0	41.47	50.56	774	1,543,191	38.4	34.32	42.61
Primary education	2,197	3,849,971	51.1	47.94	54.25	1,446	2,416,080	32.1	29.19	35.09
Secondary education	2,029	4,170,680	42.3	39.41	45.24	1,817	3,596,303	36.5	33.90	39.13
Tertiary education	386	858,992	25.2	21.88	28.84	657	1,352,203	39.7	35.99	43.48
Occupation										
Government employee	59	82,796	8.4	5.85	12.06	163	237,894	24.3	19.68	29.54
Private employee	910	2,430,989	38.5	34.72	42.46	787	1,877,617	29.7	26.71	32.98
Self-employed	997	1,663,440	52.1	48.16	56.09	677	1,195,170	37.5	33.59	41.49
Unpaid worker/Homemaker	978	1,801,099	55.1	50.46	59.72	638	1,086,432	33.3	29.17	37.62
Retiree	72	95,221	15.8	11.58	21.23	180	281,816	46.8	39.46	54.29
Student	1,170	2,226,053	42.3	38.61	46.09	1,212	2,240,470	42.6	39.25	45.98
Not working <sup>c</sup>	1,477	2,480,780	46.8	43.53	50.05	1,057	2,014,558	38.0	34.90	41.16
Household income group										
Less than RM 1,000	1,429	2,550,901	56.9	52.86	60.83	752	1,458,532	32.5	28.99	36.28
RM 1,000 - RM 1,999	1,579	2,934,641	54.4	50.68	58.07	840	1,599,916	29.7	26.49	33.04
RM 2,000 - RM 2,999	1,078	2,081,079	45.5	41.76	49.29	866	1,650,438	36.1	32.84	39.47
RM 3,000 - RM 3,999	730	1,520,597	42.2	37.39	47.24	677	1,247,711	34.7	31.03	38.48
RM 4,000 - RM 4,999	368	736,103	33.7	28.52	39.22	412	785,552	35.9	30.59	41.62
RM 5,000 - RM 5,999	191	383,577	29.9	23.59	37.19	311	545,654	42.6	36.15	49.32
RM 6,000 - RM 6,999	85	157,350	16.3	12.24	21.39	235	437,937	45.4	37.98	52.97
RM 7,000 - RM 7,999	68	158,792	22.6	13.04	36.18	164	318,802	45.3	35.51	55.51
RM 8,000 - RM 8,999	38	77,517	14.3	8.28	23.60	129	264,912	48.9	39.97	57.89
RM 9,000 - RM 9,999	14	17,777	9.4	4.06	20.22	67	121,744	64.3	49.62	76.67
RM 10,000 and above	46	84,827	10.2	6.33	16.16	223	433,553	52.3	42.01	62.48
Household income quintile										
Q1 (20% poorest)	1,808	3,270,942	56.8	53.28	60.23	931	1,838,429	31.9	28.86	35.14
Q2	1,519	2,896,063	51.4	47.78	54.99	935	1,829,861	32.5	29.11	36.02
Q3	1,225	2,440,855	45.1	41.11	49.18	1,012	1,813,215	33.5	30.49	36.68
Q4	820	1,589,530	34.0	29.96	38.23	971	1,786,741	38.2	34.39	42.13
Q5 (20% richest)	254	505,771	15.5	12.13	19.60	827	1,596,505	48.9	44.00	53.86
Household income category										
Bottom 40% (B40)	4,878	9,308,796	49.7	47.28	52.17	3,218	6,098,667	32.6	30.52	34.70
Middle 40% (M40)	671	1,247,448	26.0	22.06	30.30	1,101	2,123,131	44.2	40.07	48.40
Top 20% (T20)	77	146,917	12.0	8.33	17.04	357	642,953	52.6	45.12	59.96

**Table 8.10:** Per capita total out-of-pocket health expenditure (in Ringgit Malaysia, RM) for outpatient healthcare, inpatient healthcare, oral healthcare, community pharmacy, domiciliary care, dietary supplements and others (medical check-up & private medical laboratory), in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>31,574,566</b>	<b>20,545,711,011</b>	<b>650.70</b>	<b>10,469.00</b>	<b>0.00</b>	<b>0.00 - 5.00</b>	<b>0.00</b>	<b>782,142.86</b>	<b>394.56</b>	<b>906.84</b>
<b>State</b>											
Johor	1,487	3,583,487	1,749,156,562	488.12	2,498.89	0.00	0.00 - 0.00	0.00	53,707.14	268.60	707.63
Kedah	948	2,002,593	582,844,413	291.04	1,060.60	0.00	0.00 - 20.00	0.00	14,084.33	192.58	389.51
Kelantan	1,040	1,780,805	545,850,059	306.52	9,355.73	0.00	0.00 - 0.00	0.00	421,071.43	0.00	716.47
Melaka	919	820,924	497,827,147	606.42	7,893.33	0.00	0.00 - 20.00	0.00	182,500.00	0.00	1,295.46
Negeri Sembilan	894	1,909,034	5,006,122,316	2,622.33	39,493.03	0.00	0.00 - 12.17	0.00	782,142.86	0.00	6,543.22
Pahang	994	1,527,286	596,037,078	390.26	2,737.30	0.00	0.00 - 0.00	0.00	73,001.00	197.94	582.58
Pulau Pinang	950	1,631,913	1,517,778,778	930.06	5,246.52	0.00	0.00 - 120.00	0.00	90,800.00	248.54	1,611.59
Perak	811	2,196,662	1,279,413,911	582.44	2,848.58	0.00	0.00 - 40.00	0.00	27,861.43	106.62	1,058.25
Perlis	914	231,316	108,950,954	471.00	2,112.15	0.00	0.00 - 52.14	0.00	46,764.76	280.17	661.84
Selangor	1,811	6,390,944	4,890,610,649	765.24	4,300.85	0.00	0.00 - 50.00	0.00	106,285.71	469.81	1,060.67
Terengganu	1,118	1,187,197	271,509,335	228.70	910.12	0.00	0.00 - 4.00	0.00	13,383.33	152.62	304.78
Sabah	1,355	3,790,738	1,192,160,704	314.49	2,028.49	0.00	0.00 - 10.00	0.00	33,621.71	63.82	565.17
Sarawak	1,005	2,648,630	1,359,686,805	513.35	2,802.77	0.00	0.00 - 52.14	0.00	36,630.36	172.12	854.59
WP Kuala Lumpur	729	1,688,285	837,935,160	496.32	2,710.88	0.00	0.00 - 1.00	0.00	39,257.14	272.13	720.51
WP Labuan	912	87,678	43,521,792	496.38	4,878.33	0.00	0.00 - 3.00	0.00	100,164.29	31.21	961.55
WP Putrajaya	801	97,074	66,305,349	683.04	2,446.40	0.00	0.00 - 338.93	0.00	31,595.24	441.86	924.22
<b>Location</b>											
Urban	10,009	23,623,015	18,221,221,636	771.33	11,741.26	0.00	0.00 - 26.07	0.00	782,142.86	433.46	1,109.21
Rural	6,679	7,951,551	2,324,489,376	292.33	5,049.61	0.00	0.00 - 1.00	0.00	421,071.43	130.05	454.61
<b>Sex</b>											
Male	8,043	15,738,005	12,470,984,197	792.41	14,210.28	0.00	0.00 - 1.00	0.00	782,142.86	293.54	1,291.29
Female	8,645	15,836,561	8,074,726,814	509.88	4,220.99	0.00	0.00 - 35.00	0.00	421,071.43	403.89	615.86
<b>Age group (Years)</b>											
0-4	1,298	2,546,160	553,681,228	217.46	4,533.34	0.00	0.00 - 0.00	0.00	182,500.00	0.68	434.23
5-9	1,565	2,469,031	353,103,866	143.01	3,309.61	0.00	0.00 - 0.00	0.00	106,285.71	0.00	345.25
10-14	1,428	2,445,646	117,711,984	48.13	457.36	0.00	0.00 - 0.00	0.00	6,648.21	4.70	91.56
15-19	1,094	2,727,354	742,352,126	272.19	3,242.57	0.00	0.00 - 0.00	0.00	64,001.00	0.00	558.84
20-24	1,048	3,002,365	633,840,211	211.11	840.04	0.00	0.00 - 3.00	0.00	11,865.29	147.85	274.38
25-29	1,121	3,147,072	1,501,923,608	477.24	2,488.80	0.00	0.00 - 81.00	0.00	36,630.36	184.12	770.37
30-34	1,189	2,801,848	1,165,511,584	415.98	1,291.30	0.00	0.00 - 150.00	0.00	15,642.86	301.66	530.30
35-39	1,254	2,428,096	1,750,531,391	720.95	2,816.78	0.00	0.00 - 180.00	0.00	27,861.43	289.27	1,152.63
40-44	1,064	1,902,132	1,540,162,516	809.70	3,846.46	0.00	0.00 - 250.00	0.00	100,164.29	405.49	1,213.92
45-49	1,062	1,716,563	1,846,003,382	1,075.41	5,624.43	0.00	0.00 - 260.71	0.00	55,342.86	92.51	2,058.30
50-54	1,063	1,632,323	1,640,002,320	1,004.70	3,724.25	1.00	0.00 - 292.00	0.00	39,607.14	636.71	1,372.70
55-59	998	1,455,774	840,375,392	577.27	1,511.58	0.00	0.00 - 300.00	0.00	30,590.48	448.89	705.65
60-64	852	1,186,746	1,766,467,910	1,488.50	7,988.59	0.00	0.00 - 351.93	0.00	90,800.00	461.08	2,515.91
65-69	693	871,596	1,303,376,482	1,495.39	5,442.26	0.00	0.00 - 400.00	0.00	41,366.67	618.38	2,372.40
70-74	492	590,567	256,708,174	434.68	1,017.32	0.00	0.00 - 300.00	0.00	13,001.00	279.51	589.86
75 and over	467	651,295	4,533,958,839	6,961.45	68,671.84	0.00	0.00 - 12.17	0.00	782,142.86	0.00	18,210.35
<b>Ethnicity</b>											
Malay <sup>a</sup>	11,325	17,425,958	7,140,386,215	409.76	4,271.98	0.00	0.00 - 1.00	0.00	421,071.43	305.87	513.64
Chinese	1,838	6,122,813	10,727,259,927	1,752.01	22,469.30	0.00	0.00 - 200.00	0.00	782,142.86	492.92	3,011.11
Indian	980	1,792,154	1,276,252,208	712.13	4,483.64	0.00	0.00 - 100.00	0.00	106,285.71	311.90	1,112.36
Bumiputera Sabah	1,035	2,071,061	399,420,555	192.86	840.93	0.00	0.00 - 4.00	0.00	10,269.76	89.47	296.24
Bumiputera Sarawak	698	1,407,413	265,348,569	188.54	652.86	0.00	0.00 - 10.00	0.00	8,170.00	113.16	263.91
Others	812	2,755,167	737,043,537	267.51	1,374.31	0.00	0.00 - 0.00	0.00	53,707.14	159.28	375.75

**Table 8.10:** Per capita total out-of-pocket health expenditure (in Ringgit Malaysia, RM) for outpatient healthcare, inpatient healthcare, oral healthcare, community pharmacy, domiciliary care, dietary supplements and others (medical check-up & private medical laboratory), in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI		
										Lower	Upper	
Citizenship												
Malaysian	15,783	28,584,000	19,746,138,576	690.81	10,993.65	0.00	0.00 - 10.00	0.00	782,142.86	408.82	972.80	
Permanent Resident	121	234,440	132,517,017	565.25	1,282.89	0.00	0.00 - 495.36	0.00	9,495.00	105.21	1,025.29	
Non-Malaysian	780	2,749,951	666,894,406	242.51	1,351.95	0.00	0.00 - 0.00	0.00	53,707.14	133.65	351.37	
Marital status <sup>b</sup>												
Single	3,713	9,109,430	3,244,776,323	356.20	2,475.18	0.00	0.00 - 0.00	0.00	64,001.00	216.60	495.80	
Married	7,938	14,095,355	14,588,647,099	1,035.00	14,906.21	0.00	0.00 - 200.00	0.00	782,142.86	477.91	1,592.08	
Widow(er)/Divorcee	1,255	1,776,520	1,704,321,186	959.36	10,306.43	0.00	0.00 - 132.36	0.00	421,071.43	395.11	1,523.61	
Education level												
No formal education	2,560	4,743,451	1,151,636,601	242.78	4,125.02	0.00	0.00 - 0.00	0.00	182,500.00	81.87	403.70	
Primary education	5,111	8,762,445	6,132,349,292	699.84	18,898.28	0.00	0.00 - 0.00	0.00	782,142.86	0.00	1,551.59	
Secondary education	6,091	12,172,330	7,483,091,770	614.76	3,835.73	0.00	0.00 - 26.07	0.00	79,517.86	412.59	816.93	
Tertiary education	2,868	5,776,720	5,713,669,576	989.09	3,484.17	0.00	0.00 - 521.43	0.00	100,164.29	704.96	1,273.21	
Occupation												
Government employee	1,225	1,583,152	972,645,802	614.37	1,529.39	0.00	0.00 - 425.83	0.00	30,590.48	473.92	754.82	
Private employee	3,446	8,525,793	4,529,986,471	531.33	2,406.57	0.00	0.00 - 80.00	0.00	100,164.29	354.61	708.04	
Self-employed	2,206	3,989,421	2,893,417,588	725.27	3,990.69	0.00	0.00 - 130.36	0.00	55,342.86	285.11	1,165.44	
Unpaid worker/ Homemaker	2,128	3,839,709	2,563,278,134	667.57	4,109.42	0.00	0.00 - 153.95	0.00	79,517.86	367.27	967.87	
Retiree	548	782,603	1,202,805,458	1,536.93	5,265.46	0.00	0.00 - 1,042.86	0.00	41,366.67	618.02	2,455.84	
Student	3,584	6,657,462	1,041,108,389	156.38	2,118.34	0.00	0.00 - 0.00	0.00	64,001.00	38.14	274.62	
Not working <sup>c</sup>	3,549	6,191,008	7,340,972,741	1,185.75	22,820.80	0.00	0.00 - 0.00	0.00	782,142.86	0.00	2,405.32	
Household income group												
Less than RM 1,000	2,733	5,117,600	5,998,228,066	1,172.08	24,624.64	0.00	0.00 - 1.00	0.00	782,142.86	0.00	2,627.94	
RM 1,000 - RM 1,999	3,115	5,782,614	1,549,017,304	267.87	2,821.79	0.00	0.00 - 1.00	0.00	79,517.86	81.69	454.06	
RM 2,000 - RM 2,999	2,713	5,120,787	1,326,632,758	259.07	1,224.41	0.00	0.00 - 1.00	0.00	26,836.67	190.92	327.21	
RM 3,000 - RM 3,999	2,241	4,431,713	1,949,674,534	439.94	2,743.35	0.00	0.00 - 1.00	0.00	73,001.00	245.84	634.04	
RM 4,000 - RM 4,999	1,407	2,784,248	1,029,368,936	369.71	1,347.68	0.00	0.00 - 2.00	0.00	15,642.86	226.50	512.92	
RM 5,000 - RM 5,999	1,043	1,849,181	1,125,180,378	608.47	5,501.67	0.00	0.00 - 10.00	0.00	182,500.00	279.75	937.20	
RM 6,000 - RM 6,999	847	1,622,340	1,468,544,640	905.20	3,463.25	0.00	0.00 - 182.50	0.00	27,861.43	348.58	1,461.82	
RM 7,000 - RM 7,999	595	1,158,920	1,432,279,709	1,235.87	6,510.58	0.00	0.00 - 100.00	0.00	55,342.86	0.00	2,607.94	
RM 8,000 - RM 8,999	470	978,428	824,697,875	842.88	5,039.85	0.00	0.00 - 150.00	0.00	64,001.00	128.67	1,557.09	
RM 9,000 - RM 9,999	254	338,824	324,979,505	959.14	2,341.36	0.00	0.00 - 633.33	0.00	17,680.95	422.50	1,495.77	
RM 10,000 and above	1,126	2,114,221	2,677,903,839	1,266.62	5,583.47	0.00	0.00 - 300.00	0.00	100,164.29	706.64	1,826.59	
Household income quintile												
Q1 (20% poorest)	3,445	6,491,507	6,111,261,108	941.42	21,868.35	0.00	0.00 - 1.00	0.00	782,142.86	0.00	2,090.04	
Q2	3,219	6,113,177	1,916,700,775	313.54	2,788.80	0.00	0.00 - 1.00	0.00	79,517.86	135.16	491.92	
Q3	3,270	6,280,863	1,955,865,397	311.40	1,536.86	0.00	0.00 - 1.00	0.00	26,836.67	222.12	400.68	
Q4	3,302	6,163,428	2,990,051,724	485.13	3,724.79	0.00	0.00 - 3.00	0.00	182,500.00	314.80	655.46	
Q5 (20% richest)	3,308	6,249,903	6,732,628,541	1,077.24	5,079.83	0.00	0.00 - 200.00	0.00	100,164.29	733.83	1,420.65	
Household income category												
Bottom 40% (B40)	11,515	21,754,338	11,806,705,803	542.73	12,122.78	0.00	0.00 - 1.00	0.00	782,142.86	193.12	892.33	
Middle 40% (M40)	3,678	7,087,612	5,001,264,996	705.63	4,632.72	0.00	0.00 - 12.17	0.00	182,500.00	419.41	991.86	
Top 20% (T20)	1,351	2,456,927	2,898,536,745	1,179.74	5,185.95	0.00	0.00 - 350.00	0.00	100,164.29	730.58	1,628.91	

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.11:** Per capita health expenditure (in Ringgit Malaysia, RM) for outpatient healthcare, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>31,574,566</b>	<b>8,299,759,494</b>	<b>262.86</b>	<b>10,163.95</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>782,142.86</b>	<b>18.07</b>	<b>507.65</b>
<b>State</b>											
Johor	1,487	3,583,487	550,859,858	153.70	1,760.00	0.00	0.00 - 0.00	0.00	53,707.00	31.45	276.00
Kedah	948	2,002,593	69,486,817	34.70	291.00	0.00	0.00 - 0.00	0.00	5,214.00	15.88	53.52
Kelantan	1,040	1,780,805	394,820,396	221.70	8,684.00	0.00	0.00 - 0.00	0.00	391,071.00	0.00	597.65
Melaka	919	820,924	315,453,509	384.30	7,840.00	0.00	0.00 - 0.00	0.00	182,500.00	0.00	1,071.32
Negeri Sembilan	894	1,909,034	4,499,752,045	2357.00	39,487.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	6,263.94
Pahang	994	1,527,286	79,348,531	51.95	462.70	0.00	0.00 - 0.00	0.00	5,996.00	0.00	117.06
Pulau Pinang	950	1,631,913	48,005,966	29.42	337.70	0.00	0.00 - 0.00	0.00	5,996.00	0.00	64.37
Perak	811	2,196,662	41,714,169	18.99	182.10	0.00	0.00 - 0.00	0.00	2,216.00	0.00	45.00
Perlis	914	231,316	13,217,145	57.14	399.80	0.00	0.00 - 0.00	0.00	5,214.00	30.18	84.10
Selangor	1,811	6,390,944	1,554,860,065	243.30	3,321.00	0.00	0.00 - 0.00	0.00	104,286.00	0.00	488.51
Terengganu	1,118	1,187,197	50,366,023	42.42	313.90	0.00	0.00 - 0.00	0.00	5,214.00	23.80	61.05
Sabah	1,355	3,790,738	536,482,855	141.50	1,740.00	0.00	0.00 - 0.00	0.00	31,286.00	0.00	324.42
Sarawak	1,005	2,648,630	115,241,549	43.51	490.50	0.00	0.00 - 0.00	0.00	7,821.00	0.86	86.16
WP Kuala Lumpur	729	1,688,285	18,096,779	10.72	131.30	0.00	0.00 - 0.00	0.00	2,607.00	1.25	20.19
WP Labuan	912	87,678	4,025,145	45.91	364.90	0.00	0.00 - 0.00	0.00	7,821.00	17.06	74.75
WP Putrajaya	801	97,074	8,028,640	82.71	491.60	0.00	0.00 - 0.00	0.00	5,084.00	38.24	127.17
<b>Location</b>											
Urban	10,009	23,623,015	7,168,949,019	303.50	11,427.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	626.41
Rural	6,679	7,951,551	1,130,810,474	142.20	4,720.00	0.00	0.00 - 0.00	0.00	391,071.00	0.00	298.46
<b>Sex</b>											
Male	8,043	15,738,005	6,602,619,543	419.50	13,985.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	903.18
Female	8,645	15,836,561	1,697,139,950	107.20	3,401.00	0.00	0.00 - 0.00	0.00	391,071.00	27.15	187.18
<b>Age group (Years)</b>											
0-4	1,298	2,546,160	479,542,466	188.30	4,526.00	0.00	0.00 - 0.00	0.00	182,500.00	0.00	402.78
5-9	1,565	2,469,031	330,010,860	133.70	3,245.00	0.00	0.00 - 0.00	0.00	104,286.00	0.00	331.92
10-14	1,428	2,445,646	59,977,608	24.52	296.90	0.00	0.00 - 0.00	0.00	6,648.00	4.04	45.01
15-19	1,094	2,727,354	281,881,043	103.40	1,507.00	0.00	0.00 - 0.00	0.00	26,071.00	0.00	240.83
20-24	1,048	3,002,365	112,505,676	37.47	328.60	0.00	0.00 - 0.00	0.00	5,240.00	14.93	60.01
25-29	1,121	3,147,072	136,125,136	43.25	363.60	0.00	0.00 - 0.00	0.00	5,214.00	9.27	77.24
30-34	1,189	2,801,848	210,124,969	75.00	809.20	0.00	0.00 - 0.00	0.00	15,643.00	0.00	156.49
35-39	1,254	2,428,096	59,074,172	24.33	334.00	0.00	0.00 - 0.00	0.00	10,429.00	8.10	40.56
40-44	1,064	1,902,132	491,574,920	258.40	2,446.00	0.00	0.00 - 0.00	0.00	31,286.00	0.00	602.71
45-49	1,062	1,716,563	829,432,300	483.20	4,934.00	0.00	0.00 - 0.00	0.00	52,143.00	0.00	1,382.91
50-54	1,063	1,632,323	329,468,172	201.80	2,031.00	0.00	0.00 - 0.00	0.00	39,107.00	36.33	367.35
55-59	998	1,455,774	96,408,868	66.23	542.20	0.00	0.00 - 0.00	0.00	10,429.00	33.37	99.08
60-64	852	1,186,746	645,354,760	543.80	6,000.00	0.00	0.00 - 0.00	0.00	79,518.00	0.00	1,420.50
65-69	693	871,596	79,979,256	91.76	1,020.00	0.00	0.00 - 0.00	0.00	18,302.00	0.00	191.50
70-74	492	590,567	25,947,135	43.94	390.10	0.00	0.00 - 0.00	0.00	6,518.00	3.30	84.57
75 and over	467	651,295	4,132,352,154	6344.83	68,451.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	17,608.67
<b>Ethnicity</b>											
Malay <sup>a</sup>	11,325	17,425,958	1,914,067,417	109.80	3,635.00	0.00	0.00 - 0.00	0.00	391,071.00	30.49	189.19
Chinese	1,838	6,122,813	5,496,731,514	897.70	22,122.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	2,131.46
Indian	980	1,792,154	487,768,939	272.20	4,046.00	0.00	0.00 - 0.00	0.00	104,286.00	0.00	551.08
Bumiputera Sabah	1,035	2,071,061	86,886,917	41.95	389.40	0.00	0.00 - 0.00	0.00	7,821.00	0.00	86.33
Bumiputera Sarawak	698	1,407,413	47,286,526	33.60	335.20	0.00	0.00 - 0.00	0.00	6,779.00	11.05	56.14
Others	812	2,755,167	267,018,180	96.92	1,148.00	0.00	0.00 - 0.00	0.00	53,707.00	13.20	180.63

**Table 8.11:** Per capita health expenditure (in Ringgit Malaysia, RM) for outpatient healthcare, by sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
Citizenship											
Malaysian	15,783	28,584,000	8,040,342,277	281.30	10,676.00	0.00	0.00 - 0.00	0.00	782,143.00	11.18	551.40
Permanent Resident	121	234,440	2,597,993	11.08	110.70	0.00	0.00 - 0.00	0.00	1,825.00	0.00	25.42
Non-Malaysian	780	2,749,951	256,819,224	93.39	1,142.00	0.00	0.00 - 0.00	0.00	53,707.00	10.19	176.59
Marital status <sup>b</sup>											
Single	3,713	9,109,430	554,030,174	60.82	918.90	0.00	0.00 - 0.00	0.00	26,071.00	18.01	103.63
Married	7,938	14,095,355	6,413,244,640	455.00	14,686.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	997.07
Widow(er)/Divorcee	1,255	1,776,520	470,921,269	265.10	8,716.00	0.00	0.00 - 0.00	0.00	391,071.00	0.00	649.28
Education level											
No formal education	2,560	4,743,451	815,427,321	171.90	4,059.00	0.00	0.00 - 0.00	0.00	182,500.00	17.23	326.58
Primary education	5,111	8,762,445	4,525,962,383	516.50	18,725.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	1,364.11
Secondary education	6,091	12,172,330	2,289,883,863	188.10	2,852.00	0.00	0.00 - 0.00	0.00	79,518.00	29.36	346.89
Tertiary education	2,868	5,776,720	668,357,044	115.70	1,441.00	0.00	0.00 - 0.00	0.00	31,286.00	0.95	230.45
Occupation											
Government employee	1,225	1,583,152	131,799,438	83.25	562.30	0.00	0.00 - 0.00	0.00	6,596.00	24.40	142.11
Private employee	3,446	8,525,793	929,455,671	109.00	1,384.00	0.00	0.00 - 0.00	0.00	31,286.00	24.18	193.85
Self-employed	2,206	3,989,421	925,054,436	231.90	3,256.00	0.00	0.00 - 0.00	0.00	52,143.00	0.00	626.99
Unpaid worker/ Homemaker	2,128	3,839,709	714,439,035	186.10	3,447.00	0.00	0.00 - 0.00	0.00	79,518.00	0.00	461.50
Retiree	548	782,603	38,681,874	49.43	383.20	0.00	0.00 - 0.00	0.00	5,996.00	14.51	84.34
Student	3,584	6,657,462	424,850,508	63.82	996.50	0.00	0.00 - 0.00	0.00	26,071.00	6.91	120.72
Not working <sup>c</sup>	3,549	6,191,008	5,135,478,531	829.50	22,551.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	2,033.18
Household income group											
Less than RM 1,000	2,733	5,117,600	4,369,772,029	853.90	24,491.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	2,304.24
RM 1,000 - RM 1,999	3,115	5,782,614	759,118,933	131.30	2,747.00	0.00	0.00 - 0.00	0.00	79,518.00	0.00	314.16
RM 2,000 - RM 2,999	2,713	5,120,787	223,299,561	43.61	362.30	0.00	0.00 - 0.00	0.00	10,429.00	25.83	61.38
RM 3,000 - RM 3,999	2,241	4,431,713	309,027,218	69.73	1,109.00	0.00	0.00 - 0.00	0.00	26,071.00	0.00	151.55
RM 4,000 - RM 4,999	1,407	2,784,248	160,443,479	57.63	799.40	0.00	0.00 - 0.00	0.00	15,643.00	0.00	139.47
RM 5,000 - RM 5,999	1,043	1,849,181	425,387,688	230.00	5,365.00	0.00	0.00 - 0.00	0.00	182,500.00	0.00	532.47
RM 6,000 - RM 6,999	847	1,622,340	212,041,577	130.70	1,381.00	0.00	0.00 - 0.00	0.00	26,071.00	0.00	274.80
RM 7,000 - RM 7,999	595	1,158,920	855,066,557	737.80	6,019.00	0.00	0.00 - 0.00	0.00	52,143.00	0.00	2,036.23
RM 8,000 - RM 8,999	470	978,428	56,668,414	57.92	478.80	0.00	0.00 - 0.00	0.00	6,518.00	7.67	108.17
RM 9,000 - RM 9,999	254	338,824	15,101,932	44.57	321.60	0.00	0.00 - 0.00	0.00	2,607.00	0.00	101.56
RM 10,000 and above	1,126	2,114,221	618,627,918	292.60	2,476.00	0.00	0.00 - 0.00	0.00	31,286.00	0.00	603.89
Household income quintile											
Q1 (20% poorest)	3,445	6,491,507	4,386,003,458	675.70	21,748.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	1,819.47
Q2	3,219	6,113,177	820,057,425	134.10	2,677.00	0.00	0.00 - 0.00	0.00	79,518.00	0.00	307.20
Q3	3,270	6,280,863	405,835,508	64.61	956.00	0.00	0.00 - 0.00	0.00	26,071.00	6.01	123.22
Q4	3,302	6,163,428	635,093,974	103.00	2,991.00	0.00	0.00 - 0.00	0.00	182,500.00	4.83	201.25
Q5 (20% richest)	3,308	6,249,903	1,757,564,941	281.20	3,061.00	0.00	0.00 - 0.00	0.00	52,143.00	16.45	545.98
Household income category											
Bottom 40% (B40)	11,515	21,754,338	5,802,321,725	266.70	11,981.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	611.94
Middle 40% (M40)	3,678	7,087,612	1,621,275,309	228.70	3,746.00	0.00	0.00 - 0.00	0.00	182,500.00	0.00	460.24
Top 20% (T20)	1,351	2,456,927	580,958,272	236.50	2,242.00	0.00	0.00 - 0.00	0.00	31,286.00	0.00	502.40

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

<sup>a</sup> Malay includes Orang Asli<sup>b</sup> Does not include children aged less than 13 years old<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.12:** Annual health expenditure (in Ringgit Malaysia, RM) for outpatient healthcare users in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>1,697</b>	<b>2,555,381</b>	<b>8,299,759,494</b>	<b>3,247.95</b>	<b>35,601.02</b>	<b>26.07</b>	<b>0.00 - 365.00</b>	<b>0.00</b>	<b>782,142.86</b>	<b>247.61</b>	<b>6,248.30</b>
<b>State</b>											
Johor	95	200,155	550,859,858	2,752.00	6,984.00	26.07	0.00 - 1,512.00	0.00	53,707.00	553.42	4,950.92
Kedah	81	165,043	69,486,817	421.00	935.10	26.07	0.00 - 521.40	0.00	5,214.00	207.25	634.80
Kelantan	77	101,391	394,820,396	3,894.00	36,418.00	26.07	0.00 - 260.70	0.00	391,071.00	0.00	10,214.61
Melaka	93	66,432	315,453,509	4,749.00	27,312.00	0.00	0.00 - 26.07	0.00	182,500.00	0.00	12,758.09
Negeri Sembilan	106	180,130	4,499,752,045	24,981.00	126,858.00	26.07	0.00 - 651.80	0.00	782,143.00	0.00	64,087.91
Pahang	106	140,122	79,348,531	566.30	1,435.00	0.00	0.00 - 26.07	0.00	5,996.00	4.08	1,128.49
Pulau Pinang	64	84,411	48,005,966	568.70	1,388.00	0.00	0.00 - 26.07	0.00	5,996.00	0.00	1,177.93
Perak	81	171,642	41,714,169	243.00	611.50	0.00	0.00 - 26.07	0.00	2,216.00	0.00	546.99
Perlis	105	27,514	13,217,145	480.40	1,072.00	26.07	0.00 - 625.70	0.00	5,214.00	262.76	698.00
Selangor	201	573,480	1,554,860,065	2,711.00	10,803.00	26.07	0.00 - 1,304.00	0.00	104,286.00	20.22	5,402.33
Terengganu	111	116,112	50,366,023	433.80	918.80	26.07	0.00 - 234.60	0.00	5,214.00	246.04	621.50
Sabah	133	296,683	536,482,855	1,808.00	5,994.00	26.07	0.00 - 782.10	0.00	31,286.00	0.00	4,062.23
Sarawak	132	298,573	115,241,549	386.00	1,420.00	26.07	0.00 - 26.07	0.00	7,821.00	11.58	760.37
WP Kuala Lumpur	52	105,216	18,096,779	172.00	503.60	0.00	0.00 - 26.07	0.00	2,607.00	25.82	318.18
WP Labuan	131	12,531	4,025,145	321.20	921.20	0.00	0.00 - 26.07	0.00	7,821.00	127.17	515.28
WP Putrajaya	129	15,948	8,028,640	503.40	1,126.00	0.00	0.00 - 260.70	0.00	5,084.00	271.42	735.44
<b>Location</b>											
Urban	1,009	1,853,356	7,168,949,019	3,868.00	40,646.00	26.07	0.00 - 782.10	0.00	782,143.00	0.00	7,951.58
Rural	688	702,025	1,130,810,474	1,611.00	15,820.00	26.07	0.00 - 26.07	0.00	391,071.00	0.00	3,341.41
<b>Sex</b>											
Male	729	1,109,935	6,602,619,543	5,949.00	52,381.00	26.07	0.00 - 1,043.00	0.00	782,143.00	0.00	12,727.71
Female	968	1,445,445	1,697,139,950	1,174.00	11,205.00	26.07	0.00 - 104.30	0.00	391,071.00	311.99	2,036.27
<b>Age group (Years)</b>											
0-4	203	301,894	479,542,466	1,588.00	13,086.00	26.07	0.00 - 912.50	0.00	182,500.00	0.00	3,384.30
5-9	154	188,182	330,010,860	1,754.00	11,667.00	26.07	26.07 - 782.10	0.00	104,286.00	0.00	4,332.57
10-14	85	108,961	59,977,608	550.40	1,307.00	26.07	0.00 - 104.30	0.00	6,648.00	139.72	961.17
15-19	70	131,091	281,881,043	2,150.00	6,591.00	26.07	0.00 - 1,043.00	0.00	26,071.00	0.00	4,864.84
20-24	69	165,576	112,505,676	679.50	1,242.00	26.07	0.00 - 782.10	0.00	5,240.00	348.02	1,010.94
25-29	72	212,100	136,125,136	641.80	1,264.00	26.07	0.00 - 521.40	0.00	5,214.00	186.75	1,096.85
30-34	112	212,871	210,124,969	987.10	2,789.00	26.07	0.00 - 1,173.00	0.00	15,643.00	0.00	1,985.04
35-39	111	162,181	59,074,172	364.20	1,249.00	0.00	0.00 - 26.07	0.00	10,429.00	135.75	592.75
40-44	90	150,158	491,574,920	3,274.00	8,160.00	26.07	0.00 - 1,304.00	0.00	31,286.00	0.00	7,252.81
45-49	90	108,910	829,432,300	7,616.00	18,241.00	26.07	0.00 - 26.07	0.00	52,143.00	0.00	20,230.60
50-54	122	168,712	329,468,172	1,953.00	6,064.00	26.07	0.00 - 782.10	0.00	39,107.00	435.38	3,470.32
55-59	129	167,032	96,408,868	577.20	1,511.00	26.07	0.00 - 26.07	0.00	10,429.00	303.72	850.66
60-64	126	159,131	645,354,760	4,055.00	15,999.00	0.00	0.00 - 130.40	0.00	79,518.00	0.00	10,364.71
65-69	102	121,104	79,979,256	660.40	2,678.00	0.00	0.00 - 26.07	0.00	18,302.00	0.00	1,352.10
70-74	88	82,848	25,947,135	313.20	1,005.00	0.00	0.00 - 0.00	0.00	6,518.00	31.07	595.31
75 and over	74	114,629	4,132,352,154	36,050.00	160,760.00	0.00	0.00 - 0.00	0.00	782,143.00	0.00	98,832.09
<b>Ethnicity</b>											
Malay <sup>a</sup>	1,161	1,482,547	1,914,067,417	1,291.00	12,407.00	26.07	0.00 - 130.40	0.00	391,071.00	376.07	2,206.06
Chinese	131	333,555	5,496,731,514	16,479.00	93,749.00	26.07	0.00 - 1,825.00	0.00	782,143.00	0.00	38,296.12
Indian	115	213,277	487,768,939	2,287.00	11,574.00	26.07	0.00 - 1,304.00	0.00	104,286.00	140.38	4,433.66
Bumiputera Sabah	121	195,687	86,886,917	444.00	1,199.00	26.07	0.00 - 547.50	0.00	7,821.00	49.92	838.10
Bumiputera Sarawak	120	198,092	47,286,526	238.70	868.50	26.07	0.00 - 26.07	0.00	6,779.00	68.43	408.99
Others	49	132,222	267,018,180	2,019.00	4,900.00	782.10	0.00 - 2,607.00	0.00	53,707.00	483.98	3,554.97

**Table 8.12:** Annual health expenditure (in Ringgit Malaysia, RM) for outpatient healthcare users in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI		
										Lower	Upper	
Citizenship												
Malaysian	1,650	2,420,144	8,040,342,277	3,322.00	36,563.00	26.07	0.00 - 156.40	0.00	782,143.00	156.50	6,488.02	
Permanent Resident	9	5,634	2,597,993	461.10	579.40	0.00	0.00 - 1,017.00	0.00	1,825.00	0.00	957.52	
Non-Malaysian	38	129,603	256,819,224	1,982.00	4,952.00	521.40	0.00 - 2,086.00	0.00	53,707.00	400.85	3,562.33	
Marital status <sup>b</sup>												
Single	234	454,030	554,030,174	1,220.00	3,948.00	26.07	0.00 - 1,043.00	0.00	26,071.00	386.22	2,054.28	
Married	863	1,302,582	6,413,244,640	4,923.00	48,108.00	26.07	0.00 - 182.50	0.00	782,143.00	0.00	10,708.19	
Widow(er)/Divorcee	186	233,287	470,921,269	2,019.00	24,034.00	0.00	0.00 - 26.07	0.00	391,071.00	0.00	4,921.36	
Education level												
No formal education	365	523,809	815,427,321	1,557.00	12,140.00	26.07	0.00 - 651.80	0.00	182,500.00	171.09	2,942.36	
Primary education	528	722,500	4,525,962,383	6,264.00	64,988.00	26.07	0.00 - 52.14	0.00	782,143.00	0.00	16,494.07	
Secondary education	520	833,540	2,289,883,863	2,747.00	10,582.00	26.07	0.00 - 521.40	0.00	79,518.00	493.54	5,000.82	
Tertiary education	277	459,187	668,357,044	1,456.00	4,925.00	0.00	0.00 - 1,069.00	0.00	31,286.00	51.90	2,859.14	
Occupation												
Government employee	150	175,101	131,799,438	752.70	1,539.00	0.00	0.00 - 52.14	0.00	6,596.00	281.42	1,223.99	
Private employee	274	572,947	929,455,671	1,622.00	5,113.00	26.07	0.00 - 1,173.00	0.00	31,286.00	408.04	2,836.43	
Self-employed	184	271,008	925,054,436	3,413.00	12,079.00	26.07	0.00 - 130.40	0.00	52,143.00	0.00	8,762.75	
Unpaid worker/ Homemaker	233	377,266	714,439,035	1,894.00	10,871.00	26.07	0.00 - 26.07	0.00	79,518.00	0.00	4,582.08	
Retiree	73	76,325	38,681,874	506.80	1,135.00	0.00	0.00 - 234.60	0.00	5,996.00	172.23	841.38	
Student	272	363,770	424,850,508	1,168.00	4,116.00	26.07	0.00 - 1,043.00	0.00	26,071.00	162.36	2,173.46	
Not working <sup>c</sup>	511	718,964	5,135,478,531	7,143.00	65,889.00	26.07	0.00 - 182.50	0.00	782,143.00	0.00	17,427.82	
Household income group												
Less than RM 1,000	331	509,382	4,369,772,029	8,579.00	77,303.00	26.07	0.00 - 130.40	0.00	782,143.00	0.00	23,021.07	
RM 1,000 - RM 1,999	320	498,355	759,118,933	1,523.00	9,255.00	26.07	0.00 - 52.14	0.00	79,518.00	0.00	3,609.18	
RM 2,000 - RM 2,999	260	355,232	223,299,561	628.60	1,237.00	26.07	0.00 - 782.10	0.00	10,429.00	411.62	845.59	
RM 3,000 - RM 3,999	205	350,318	309,027,218	882.10	3,860.00	26.07	0.00 - 52.14	0.00	26,071.00	0.00	1,896.20	
RM 4,000 - RM 4,999	117	169,567	160,443,479	946.20	3,119.00	0.00	0.00 - 26.07	0.00	15,643.00	0.00	2,209.19	
RM 5,000 - RM 5,999	100	116,795	425,387,688	3,642.00	21,150.00	26.07	0.00 - 782.10	0.00	182,500.00	0.00	8,364.80	
RM 6,000 - RM 6,999	72	127,771	212,041,577	1,660.00	4,684.00	26.07	0.00 - 1,825.00	0.00	26,071.00	26.76	3,292.33	
RM 7,000 - RM 7,999	56	74,437	855,066,557	11,487.00	21,156.00	26.07	0.00 - 2,346.00	0.00	52,143.00	0.00	28,684.55	
RM 8,000 - RM 8,999	58	105,568	56,668,414	536.80	1,377.00	0.00	0.00 - 130.40	0.00	6,518.00	49.13	1,024.47	
RM 9,000 - RM 9,999	18	20,390	15,101,932	740.70	1,125.00	0.00	0.00 - 2,086.00	0.00	2,607.00	0.00	1,585.96	
RM 10,000 and above	146	201,345	618,627,918	3,072.00	7,493.00	26.07	0.00 - 1,825.00	0.00	31,286.00	0.00	6,149.01	
Household income quintile												
Q1 (20% poorest)	394	588,385	4,386,003,458	7,454.00	71,966.00	26.07	0.00 - 104.30	0.00	782,143.00	0.00	19,973.66	
Q2	336	527,208	820,057,425	1,555.00	9,007.00	26.07	0.00 - 182.50	0.00	79,518.00	0.00	3,525.91	
Q3	296	477,182	405,835,508	850.50	3,376.00	26.07	0.00 - 130.40	0.00	26,071.00	97.68	1,603.28	
Q4	304	399,479	635,093,974	1,590.00	11,664.00	26.07	0.00 - 130.40	0.00	182,500.00	106.22	3,073.40	
Q5 (20% richest)	353	536,906	1,757,564,941	3,274.00	9,977.00	26.07	0.00 - 1,564.00	0.00	52,143.00	311.26	6,235.76	
Household income category												
Bottom 40% (B40)	1,196	1,771,092	5,802,321,725	3,276.00	41,887.00	26.07	0.00 - 130.40	0.00	782,143.00	0.00	7,499.15	
Middle 40% (M40)	338	535,606	1,621,275,309	3,027.00	13,332.00	26.07	0.00 - 990.70	0.00	182,500.00	100.75	5,953.24	
Top 20% (T20)	149	222,462	580,958,272	2,611.00	7,041.00	26.07	0.00 - 1,721.00	0.00	31,286.00	0.00	5,404.06	

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.13:** Per capita health expenditure (in Ringgit Malaysia, RM) for inpatient healthcare, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>31,547,134</b>	<b>1,571,619,657</b>	<b>49.77</b>	<b>1,003.64</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>46,000.00</b>	<b>19.57</b>	<b>79.98</b>
<b>State</b>											
Johor	1,487	3,583,487	37,584,348	10.49	237.30	0.00	0.00 - 0.00	0.00	8,000.00	0.00	23.95
Kedah	948	2,002,593	91,813,029	45.85	527.00	0.00	0.00 - 0.00	0.00	8,000.00	0.00	103.54
Kelantan	1,040	1,780,805	15,379,487	8.64	333.20	0.00	0.00 - 0.00	0.00	15,000.00	0.00	23.22
Melaka	919	820,924	41,006,404	49.95	584.40	0.00	0.00 - 0.00	0.00	15,000.00	3.09	96.82
Negeri Sembilan	894	1,909,034	68,000,706	35.62	866.20	0.00	0.00 - 0.00	0.00	32,200.00	0.00	80.20
Pahang	994	1,527,286	54,921,420	35.96	367.40	0.00	0.00 - 0.00	0.00	5,000.00	0.00	84.77
Pulau Pinang	950	1,631,913	496,454,249	304.20	3,491.00	0.00	0.00 - 0.00	0.00	45,800.00	0.00	728.82
Perak	811	2,196,662	369,750,491	168.30	1,695.00	0.00	0.00 - 0.00	0.00	20,000.00	0.00	427.69
Perlis	914	231,316	22,059,207	95.36	1,617.00	0.00	0.00 - 0.00	0.00	46,000.00	0.00	214.42
Selangor	1,811	6,390,944	126,884,354	19.85	366.50	0.00	0.00 - 0.00	0.00	16,000.00	2.56	37.15
Terengganu	1,118	1,187,197	7,401,812	6.24	121.30	0.00	0.00 - 0.00	0.00	3,800.00	0.00	14.19
Sabah	1,355	3,790,738	97,600,235	25.75	299.80	0.00	0.00 - 0.00	0.00	5,000.00	1.07	50.43
Sarawak	1,005	2,648,630	51,673,745	19.51	220.00	0.00	0.00 - 0.00	0.00	3,000.00	0.00	49.12
WP Kuala Lumpur	729	1,688,285	82,837,748	49.07	584.70	0.00	0.00 - 0.00	0.00	16,000.00	0.00	106.23
WP Labuan	912	87,678	2,077,454	23.69	369.50	0.00	0.00 - 0.00	0.00	13,000.00	0.00	47.86
WP Putrajaya	801	97,074	6,174,966	63.61	848.00	0.00	0.00 - 0.00	0.00	21,000.00	0.94	126.28
<b>Location</b>											
Urban	10,009	23,623,015	1,463,478,158	61.95	1,149.00	0.00	0.00 - 0.00	0.00	46,000.00	21.72	102.18
Rural	6,679	7,951,551	108,141,499	13.60	273.80	0.00	0.00 - 0.00	0.00	15,000.00	3.75	23.45
<b>Sex</b>											
Male	8,043	15,738,005	893,591,497	56.78	1,153.00	0.00	0.00 - 0.00	0.00	46,000.00	0.69	112.87
Female	8,645	15,836,561	678,028,160	42.81	828.80	0.00	0.00 - 0.00	0.00	45,800.00	19.47	66.16
<b>Age group (Years)</b>											
0-4	1,298	2,546,160	71,402,715	28.04	281.20	0.00	0.00 - 0.00	0.00	3,500.00	0.00	63.65
5-9	1,565	2,469,031	18,043,317	7.31	150.90	0.00	0.00 - 0.00	0.00	4,000.00	0.00	17.30
10-14	1,428	2,445,646	55,557,787	22.72	349.40	0.00	0.00 - 0.00	0.00	6,000.00	0.00	61.18
15-19	1,094	2,727,354	15,540,489	5.70	122.70	0.00	0.00 - 0.00	0.00	3,000.00	0.00	15.51
20-24	1,048	3,002,365	32,543,390	10.84	162.30	0.00	0.00 - 0.00	0.00	9,000.00	2.45	19.22
25-29	1,121	3,147,072	135,412,343	43.03	389.20	0.00	0.00 - 0.00	0.00	5,500.00	5.56	80.50
30-34	1,189	2,801,848	102,819,955	36.70	393.80	0.00	0.00 - 0.00	0.00	10,200.00	8.04	65.36
35-39	1,254	2,428,096	393,649,982	162.10	1,638.00	0.00	0.00 - 0.00	0.00	20,000.00	0.00	410.97
40-44	1,064	1,902,132	52,668,014	27.69	594.50	0.00	0.00 - 0.00	0.00	16,000.00	0.00	61.44
45-49	1,062	1,716,563	28,735,097	16.74	338.90	0.00	0.00 - 0.00	0.00	8,000.00	0.00	44.59
50-54	1,063	1,632,323	12,772,438	7.83	139.80	0.00	0.00 - 0.00	0.00	5,000.00	0.99	14.66
55-59	998	1,455,774	17,466,031	12.00	212.00	0.00	0.00 - 0.00	0.00	7,000.00	1.46	22.54
60-64	852	1,186,746	198,608,036	167.40	2,480.00	0.00	0.00 - 0.00	0.00	45,800.00	0.00	426.74
65-69	693	871,596	366,223,819	420.20	4,005.00	0.00	0.00 - 0.00	0.00	40,000.00	0.00	1,147.11
70-74	492	590,567	2,725,894	4.62	112.60	0.00	0.00 - 0.00	0.00	13,000.00	1.41	7.82
75 and over	467	651,295	67,450,350	103.60	1,410.00	0.00	0.00 - 0.00	0.00	46,000.00	13.25	193.88
<b>Ethnicity</b>											
Malay <sup>a</sup>	11,325	17,425,958	312,439,477	17.93	364.20	0.00	0.00 - 0.00	0.00	46,000.00	10.58	25.28
Chinese	1,838	6,122,813	932,253,273	152.30	2,083.00	0.00	0.00 - 0.00	0.00	45,800.00	3.30	301.22
Indian	980	1,792,154	152,806,034	85.26	1,057.00	0.00	0.00 - 0.00	0.00	32,200.00	12.02	158.51
Bumiputera Sabah	1,035	2,071,061	18,335,614	8.85	87.05	0.00	0.00 - 0.00	0.00	1,500.00	1.35	16.35
Bumiputera Sarawak	698	1,407,413	5,676,503	4.03	44.64	0.00	0.00 - 0.00	0.00	8,000.00	1.68	6.38
Others	812	2,755,167	150,108,755	54.48	548.10	0.00	0.00 - 0.00	0.00	16,000.00	6.03	102.93

**Table 8.13:** Per capita health expenditure (in Ringgit Malaysia, RM) for inpatient healthcare, by sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI		
										Lower	Upper	
Citizenship												
Malaysian	15,783	28,584,000	1,420,643,569	49.70	1,041.00	0.00	0.00 - 0.00	0.00	46,000.00	16.62	82.79	
Permanent Resident	121	234,440	934,127	3.99	53.54	0.00	0.00 - 0.00	0.00	2,500.00	0.00	9.90	
Non-Malaysian	780	2,749,951	150,041,961	54.56	548.60	0.00	0.00 - 0.00	0.00	16,000.00	6.18	102.95	
Marital status <sup>b</sup>												
Single	3,713	9,109,430	90,725,531	9.96	184.00	0.00	0.00 - 0.00	0.00	9,000.00	4.22	15.70	
Married	7,938	14,095,355	1,080,653,415	76.67	1,273.00	0.00	0.00 - 0.00	0.00	46,000.00	14.00	139.33	
Widow(er)/Divorcee	1,255	1,776,520	263,344,945	148.20	2,131.00	0.00	0.00 - 0.00	0.00	45,800.00	0.00	324.57	
Education level												
No formal education	2,560	4,743,451	89,860,158	18.94	245.50	0.00	0.00 - 0.00	0.00	8,000.00	0.00	38.63	
Primary education	5,111	8,762,445	326,659,264	37.28	1,001.00	0.00	0.00 - 0.00	0.00	46,000.00	0.00	75.13	
Secondary education	6,091	12,172,330	330,051,435	27.11	448.90	0.00	0.00 - 0.00	0.00	32,200.00	13.37	40.86	
Tertiary education	2,868	5,776,720	824,605,460	142.70	1,871.00	0.00	0.00 - 0.00	0.00	40,000.00	0.00	292.64	
Occupation												
Government employee	1,225	1,583,152	10,795,511	6.82	133.10	0.00	0.00 - 0.00	0.00	10,200.00	0.00	14.15	
Private employee	3,446	8,525,793	442,853,231	51.94	878.90	0.00	0.00 - 0.00	0.00	20,000.00	0.00	123.02	
Self-employed	2,206	3,989,421	134,564,275	33.73	499.70	0.00	0.00 - 0.00	0.00	13,000.00	4.11	63.35	
Unpaid worker/ Homemaker	2,128	3,839,709	172,036,994	44.80	476.70	0.00	0.00 - 0.00	0.00	16,000.00	11.87	77.74	
Retiree	548	782,603	334,051,868	426.80	4,050.00	0.00	0.00 - 0.00	0.00	40,000.00	0.00	1,228.70	
Student	3,584	6,657,462	83,823,572	12.59	241.10	0.00	0.00 - 0.00	0.00	6,000.00	0.00	30.54	
Not working <sup>c</sup>	3,549	6,191,008	393,494,207	63.56	1,271.00	0.00	0.00 - 0.00	0.00	46,000.00	9.58	117.54	
Household income group												
Less than RM 1,000	2,733	5,117,600	135,674,697	26.51	662.40	0.00	0.00 - 0.00	0.00	46,000.00	8.63	44.39	
RM 1,000 - RM 1,999	3,115	5,782,614	61,367,039	10.61	192.10	0.00	0.00 - 0.00	0.00	6,000.00	1.17	20.05	
RM 2,000 - RM 2,999	2,713	5,120,787	149,400,796	29.18	415.30	0.00	0.00 - 0.00	0.00	16,000.00	5.59	52.76	
RM 3,000 - RM 3,999	2,241	4,431,713	346,900,808	78.28	1,708.00	0.00	0.00 - 0.00	0.00	40,000.00	0.00	220.94	
RM 4,000 - RM 4,999	1,407	2,784,248	12,434,400	4.47	111.10	0.00	0.00 - 0.00	0.00	4,100.00	0.00	10.28	
RM 5,000 - RM 5,999	1,043	1,849,181	67,855,985	36.70	398.60	0.00	0.00 - 0.00	0.00	6,000.00	0.00	78.13	
RM 6,000 - RM 6,999	847	1,622,340	324,877,149	200.30	1,940.00	0.00	0.00 - 0.00	0.00	20,000.00	0.00	565.68	
RM 7,000 - RM 7,999	595	1,158,920	71,437,824	61.64	556.20	0.00	0.00 - 0.00	0.00	10,200.00	0.00	162.00	
RM 8,000 - RM 8,999	470	978,428	92,759,940	94.81	841.90	0.00	0.00 - 0.00	0.00	16,000.00	5.68	183.93	
RM 9,000 - RM 9,999	254	338,824	54,247,241	160.10	861.30	0.00	0.00 - 0.00	0.00	13,000.00	0.00	357.48	
RM 10,000 and above	1,126	2,114,221	249,849,123	118.20	1,913.00	0.00	0.00 - 0.00	0.00	45,800.00	0.00	269.67	
Household income quintile												
Q1 (20% poorest)	3,445	6,491,507	142,098,663	21.89	588.80	0.00	0.00 - 0.00	0.00	46,000.00	7.71	36.07	
Q2	3,219	6,113,177	135,659,705	22.19	291.70	0.00	0.00 - 0.00	0.00	8,000.00	4.14	40.25	
Q3	3,270	6,280,863	85,013,855	13.54	317.40	0.00	0.00 - 0.00	0.00	16,000.00	1.25	25.82	
Q4	3,302	6,163,428	410,860,658	66.66	1,463.00	0.00	0.00 - 0.00	0.00	40,000.00	0.00	169.63	
Q5 (20% richest)	3,308	6,249,903	793,172,120	126.90	1,557.00	0.00	0.00 - 0.00	0.00	45,800.00	16.46	237.36	
Household income category												
Bottom 40% (B40)	11,515	21,754,338	703,485,511	32.34	866.20	0.00	0.00 - 0.00	0.00	46,000.00	2.34	62.33	
Middle 40% (M40)	3,678	7,087,612	466,763,064	65.86	1,002.00	0.00	0.00 - 0.00	0.00	20,000.00	0.00	150.99	
Top 20% (T20)	1,351	2,456,927	396,556,427	161.40	1,841.00	0.00	0.00 - 0.00	0.00	45,800.00	19.91	302.89	

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

<sup>a</sup> Malay includes Orang Asli<sup>b</sup> Does not include children aged less than 13 years old<sup>c</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.14:** Health expenditure (in Ringgit Malaysia, RM) for inpatient healthcare users in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>972</b>	<b>31,547,134</b>	<b>1,571,619,657</b>	<b>964.83</b>	<b>4,319.75</b>	<b>1.00</b>	<b>0.00 - 90.00</b>	<b>0.00</b>	<b>46,000.00</b>	<b>404.09</b>	<b>1,525.57</b>
<b>State</b>											
Johor	63	129,580	37,584,348	290.00	1,225.00	0.00	0.00 - 90.00	0.00	8,000.00	0.00	644.64
Kedah	60	129,660	91,813,029	708.10	1,970.00	0.00	0.00 - 70.00	0.00	8,000.00	0.00	1,550.24
Kelantan	35	57,006	15,379,487	269.80	1,869.00	15.00	0.00 - 70.00	0.00	15,000.00	0.00	731.19
Melaka	69	61,736	41,006,404	664.20	2,047.00	20.00	0.00 - 60.00	0.00	15,000.00	64.40	1,264.05
Negeri Sembilan	72	142,841	68,000,706	476.10	3,153.00	0.00	0.00 - 25.00	0.00	32,200.00	0.00	1,071.10
Pahang	55	86,994	54,921,420	631.30	1,424.00	0.00	0.00 - 80.00	0.00	5,000.00	0.00	1,421.40
Pulau Pinang	55	97,607	496,454,249	5,086.00	13,509.00	45.00	0.00 - 300.00	0.00	45,800.00	0.00	11,658.51
Perak	60	143,551	369,750,491	2,576.00	6,192.00	40.00	0.00 - 230.00	0.00	20,000.00	0.00	5,927.49
Perlis	74	18,892	22,059,207	1,168.00	5,580.00	20.00	0.00 - 150.00	0.00	46,000.00	0.00	2,528.36
Selangor	98	267,687	126,884,354	474.00	1,738.00	0.00	0.00 - 75.00	0.00	16,000.00	114.10	833.91
Terengganu	54	52,425	7,401,812	141.20	565.40	5.00	0.00 - 50.00	0.00	3,800.00	0.00	301.78
Sabah	72	188,581	97,600,235	517.60	1,254.00	38.00	0.00 - 90.00	0.00	5,000.00	47.16	987.94
Sarawak	58	158,651	51,673,745	325.70	848.60	0.00	0.00 - 150.00	0.00	3,000.00	0.00	796.70
WP Kuala Lumpur	36	82,324	82,837,748	1,006.00	2,492.00	20.00	0.00 - 2,400.00	0.00	16,000.00	170.72	1,841.77
WP Labuan	55	4,967	2,077,454	418.20	1,511.00	10.00	0.00 - 64.00	0.00	13,000.00	27.65	808.83
WP Putrajaya	56	6,404	6,174,966	964.30	3,194.00	0.00	0.00 - 0.00	0.00	21,000.00	140.35	1,788.25
<b>Location</b>											
Urban	584	1,218,036	1,463,478,158	1,202.00	4,928.00	2.00	0.00 - 114.00	0.00	46,000.00	460.77	1,942.25
Rural	388	410,870	108,141,499	263.20	1,178.00	0.00	0.00 - 56.00	0.00	15,000.00	72.08	454.32
<b>Sex</b>											
Male	394	648,928	893,591,497	1,377.00	5,523.00	0.00	0.00 - 80.00	0.00	46,000.00	106.57	2,647.49
Female	578	979,978	678,028,160	691.90	3,266.00	18.00	0.00 - 100.00	0.00	45,800.00	336.01	1,047.75
<b>Age group (Years)</b>											
0-4	102	168,433	71,402,715	423.90	1,018.00	18.00	0.00 - 70.00	0.00	3,500.00	0.00	904.51
5-9	39	47,210	18,043,317	382.20	1,037.00	10.00	0.00 - 50.00	0.00	4,000.00	0.00	866.63
10-14	28	62,118	55,557,787	894.40	2,043.00	0.00	0.00 - 80.00	0.00	6,000.00	0.00	2,238.11
15-19	34	69,435	15,540,489	223.80	747.50	1.00	0.00 - 60.00	0.00	3,000.00	0.00	592.62
20-24	51	111,951	32,543,390	290.70	797.90	40.00	0.00 - 86.00	0.00	9,000.00	86.76	494.63
25-29	86	239,992	135,412,343	564.20	1,308.00	30.00	0.00 - 90.00	0.00	5,500.00	125.29	1,003.18
30-34	93	182,190	102,819,955	564.40	1,452.00	34.00	0.00 - 130.00	0.00	10,200.00	170.15	958.56
35-39	96	178,203	393,649,982	2,209.00	5,686.00	15.00	0.00 - 380.00	0.00	20,000.00	0.00	5,307.87
40-44	50	74,651	52,668,014	705.50	2,948.00	0.00	0.00 - 90.00	0.00	16,000.00	0.00	1,561.82
45-49	50	66,814	28,735,097	430.10	1,681.00	0.00	0.00 - 80.00	0.00	8,000.00	0.00	1,123.88
50-54	53	69,047	12,772,438	185.00	661.40	0.00	0.00 - 72.00	0.00	5,000.00	27.59	342.37
55-59	69	88,707	17,466,031	196.90	843.00	0.00	0.00 - 18.00	0.00	7,000.00	20.82	372.97
60-64	66	75,913	198,608,036	2,616.00	9,538.00	23.00	0.00 - 250.00	0.00	45,800.00	0.00	6,523.55
65-69	58	79,574	366,223,819	4,602.00	12,607.00	0.00	0.00 - 60.00	0.00	40,000.00	0.00	11,852.50
70-74	40	42,297	2,725,894	64.45	420.90	0.00	0.00 - 70.00	0.00	13,000.00	21.07	107.83
75 and over	57	72,371	67,450,350	932.00	4,169.00	0.00	0.00 - 0.00	0.00	46,000.00	112.08	1,751.93
<b>Ethnicity</b>											
Malay <sup>a</sup>	674	958,036	312,439,477	326.10	1,522.00	0.00	0.00 - 70.00	0.00	46,000.00	195.77	456.48
Chinese	85	256,039	932,253,273	3,641.00	9,597.00	1.00	0.00 - 900.00	0.00	45,800.00	575.20	6,706.91
Indian	87	127,087	152,806,034	1,202.00	3,816.00	0.00	0.00 - 70.00	0.00	32,200.00	418.16	1,986.60
Bumiputera Sabah	68	142,034	18,335,614	129.10	310.30	20.00	0.00 - 76.00	0.00	1,500.00	28.70	229.48
Bumiputera Sarawak	43	85,942	5,676,503	66.05	170.80	1.00	0.00 - 90.00	0.00	8,000.00	29.92	102.18
Others	15	59,768	150,108,755	2,512.00	2,865.00	2,400.00	1,000.00 - 3,500.00	0.00	16,000.00	1,393.74	3,629.34

**Table 8.14:** Health expenditure (in Ringgit Malaysia, RM) for inpatient healthcare users in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
Citizenship											
Malaysian	949	1,563,339	1,420,643,569	908.70	4,365.00	0.00	0.00 - 76.00	0.00	46,000.00	326.24	1,491.21
Permanent Resident	8	6,467	934,127	144.40	307.60	0.00	0.00 - 400.00	0.00	2,500.00	0.00	330.62
Non-Malaysian	15	59,100	150,041,961	2,539.00	2,869.00	2,400.00	1,000.00 - 3,500.00	0.00	16,000.00	1,414.05	3,663.52
Marital status <sup>b</sup>											
Single	123	269,965	90,725,531	336.10	1,020.00	0.00	0.00 - 40.00	0.00	9,000.00	153.37	518.76
Married	581	961,269	1,080,653,415	1,124.00	4,757.00	21.00	0.00 - 100.00	0.00	46,000.00	237.20	2,011.19
Widow(er)/Divorcee	112	151,659	263,344,945	1,736.00	7,131.00	0.00	0.00 - 60.00	0.00	45,800.00	0.00	3,752.75
Education level											
No formal education	171	254,394	89,860,158	353.20	1,006.00	12.00	0.00 - 70.00	0.00	8,000.00	18.12	688.34
Primary education	244	345,138	326,659,264	946.50	4,967.00	0.00	0.00 - 80.00	0.00	46,000.00	9.27	1,883.65
Secondary education	355	650,584	330,051,435	507.30	1,880.00	1.00	0.00 - 130.00	0.00	32,200.00	269.76	744.87
Tertiary education	200	375,267	824,605,460	2,197.00	7,045.00	20.00	0.00 - 90.00	0.00	40,000.00	0.00	4,399.70
Occupation											
Government employee	85	90,816	10,795,511	118.90	546.40	0.00	0.00 - 0.00	0.00	10,200.00	0.00	242.66
Private employee	160	325,967	442,853,231	1,359.00	4,306.00	25.00	0.00 - 150.00	0.00	20,000.00	0.00	3,109.16
Self-employed	97	138,336	134,564,275	972.70	2,520.00	15.00	0.00 - 90.00	0.00	13,000.00	220.40	1,725.07
Unpaid worker/ Homemaker	192	379,047	172,036,994	453.90	1,458.00	40.00	0.00 - 150.00	0.00	16,000.00	147.02	760.71
Retiree	46	65,235	334,051,868	5,121.00	13,275.00	0.00	0.00 - 50.00	0.00	40,000.00	0.00	13,769.80
Student	96	176,936	83,823,572	473.70	1,410.00	0.00	0.00 - 20.00	0.00	6,000.00	0.00	1,102.26
Not working <sup>c</sup>	296	452,569	393,494,207	869.50	4,632.00	1.00	0.00 - 70.00	0.00	46,000.00	142.96	1,595.98
Household income group											
Less than RM 1,000	193	273,772	135,674,697	495.60	2,830.00	10.00	0.00 - 70.00	0.00	46,000.00	162.79	828.36
RM 1,000 - RM 1,999	182	310,341	61,367,039	197.70	808.50	20.00	0.00 - 80.00	0.00	6,000.00	27.16	368.32
RM 2,000 - RM 2,999	124	223,483	149,400,796	668.50	1,884.00	10.00	0.00 - 150.00	0.00	16,000.00	202.45	1,134.57
RM 3,000 - RM 3,999	98	174,214	346,900,808	1,991.00	8,431.00	6.00	0.00 - 72.00	0.00	40,000.00	0.00	5,513.42
RM 4,000 - RM 4,999	88	153,694	12,434,400	80.90	468.70	0.00	0.00 - 20.00	0.00	4,100.00	0.00	186.25
RM 5,000 - RM 5,999	71	99,022	67,855,985	685.30	1,599.00	23.00	0.00 - 80.00	0.00	6,000.00	0.00	1,384.73
RM 6,000 - RM 6,999	51	100,934	324,877,149	3,219.00	7,192.00	1.00	0.00 - 250.00	0.00	20,000.00	0.00	7,967.97
RM 7,000 - RM 7,999	31	67,702	71,437,824	1,055.00	2,093.00	30.00	0.00 - 190.00	0.00	10,200.00	0.00	2,498.93
RM 8,000 - RM 8,999	34	67,578	92,759,940	1,373.00	2,957.00	25.00	0.00 - 3,000.00	0.00	16,000.00	260.85	2,484.42
RM 9,000 - RM 9,999	19	22,680	54,247,241	2,392.00	2,453.00	3,500.00	0.00 - 3,500.00	0.00	13,000.00	870.37	3,913.33
RM 10,000 and above	69	114,105	249,849,123	2,190.00	8,008.00	0.00	0.00 - 300.00	0.00	45,800.00	0.00	4,573.98
Household income quintile											
Q1 (20% poorest)	227	331,828	142,098,663	428.20	2,576.00	15.00	0.00 - 70.00	0.00	46,000.00	152.23	704.23
Q2	186	338,638	135,659,705	400.60	1,180.00	20.00	0.00 - 90.00	0.00	8,000.00	115.56	685.65
Q3	139	236,100	85,013,855	360.10	1,604.00	0.00	0.00 - 75.00	0.00	16,000.00	39.37	680.78
Q4	201	324,575	410,860,658	1,266.00	6,270.00	0.00	0.00 - 75.00	0.00	40,000.00	0.00	3,188.18
Q5 (20% richest)	207	376,386	793,172,120	2,107.00	6,020.00	1.00	0.00 - 850.00	0.00	45,800.00	508.71	3,705.97
Household income category											
Bottom 40% (B40)	641	1,022,935	703,485,511	687.70	3,941.00	6.00	0.00 - 80.00	0.00	46,000.00	58.22	1,317.21
Middle 40% (M40)	231	411,717	466,763,064	1,134.00	4,018.00	0.00	0.00 - 70.00	0.00	20,000.00	0.00	2,516.10
Top 20% (T20)	88	172,875	396,556,427	2,294.00	6,612.00	25.00	0.00 - 3,000.00	0.00	45,800.00	649.77	3,938.02

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.15:** Per capita health expenditure (in Ringgit Malaysia, RM) for oral healthcare, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>31,574,566</b>	<b>672,068,037</b>	<b>21.29</b>	<b>851.63</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>64,000.00</b>	<b>0.00</b>	<b>43.28</b>
<b>State</b>											
Johor	1,487	3,583,487	11,365,677	3.17	23.97	0.00	0.00 - 0.00	0.00	300.00	1.10	5.25
Kedah	948	2,002,593	21,071,537	10.52	169.60	0.00	0.00 - 0.00	0.00	3,500.00	0.00	25.83
Kelantan	1,040	1,780,805	1,816,860	1.02	7.87	0.00	0.00 - 0.00	0.00	160.00	0.61	1.43
Melaka	919	820,924	8,600,882	10.48	79.02	0.00	0.00 - 0.00	0.00	1,359.00	3.18	17.78
Negeri Sembilan	894	1,909,034	15,778,442	8.27	131.40	0.00	0.00 - 0.00	0.00	5,000.00	1.31	15.22
Pahang	994	1,527,286	10,501,348	6.88	166.90	0.00	0.00 - 0.00	0.00	5,000.00	0.00	17.84
Pulau Pinang	950	1,631,913	43,395,664	26.59	177.90	0.00	0.00 - 0.00	0.00	1,500.00	0.00	67.62
Perak	811	2,196,662	13,003,236	5.92	37.28	0.00	0.00 - 0.00	0.00	500.00	2.13	9.71
Perlis	914	231,316	1,390,297	6.01	54.24	0.00	0.00 - 0.00	0.00	1,000.00	2.29	9.73
Selangor	1,811	6,390,944	436,609,274	68.32	1,874.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	175.15
Terengganu	1,118	1,187,197	11,574,806	9.75	170.70	0.00	0.00 - 0.00	0.00	5,000.00	0.00	20.72
Sabah	1,355	3,790,738	21,496,581	5.67	32.47	0.00	0.00 - 0.00	0.00	500.00	1.04	10.30
Sarawak	1,005	2,648,630	21,478,320	8.11	47.46	0.00	0.00 - 0.00	0.00	600.00	2.58	13.64
WP Kuala Lumpur	729	1,688,285	48,714,924	28.85	339.70	0.00	0.00 - 0.00	0.00	6,000.00	0.00	58.07
WP Labuan	912	87,678	798,849	9.11	168.30	0.00	0.00 - 0.00	0.00	6,000.00	0.00	18.67
WP Putrajaya	801	97,074	4,471,338	46.06	324.20	0.00	0.00 - 0.00	0.00	5,500.00	5.85	86.27
<b>Location</b>											
Urban	10,009	23,623,015	644,949,735	27.30	983.50	0.00	0.00 - 0.00	0.00	64,000.00	0.00	56.68
Rural	6,679	7,951,551	27,118,302	3.41	76.15	0.00	0.00 - 0.00	0.00	5,000.00	1.12	5.71
<b>Sex</b>											
Male	8,043	15,738,005	489,065,899	31.08	1,196.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	74.96
Female	8,645	15,836,561	183,002,138	11.56	155.90	0.00	0.00 - 0.00	0.00	6,000.00	7.37	15.74
<b>Age group (Years)</b>											
0-4	1,298	2,546,160	2,374,436	0.93	8.39	0.00	0.00 - 0.00	0.00	100.00	0.23	1.63
5-9	1,565	2,469,031	5,049,689	2.05	17.26	0.00	0.00 - 0.00	0.00	300.00	0.85	3.24
10-14	1,428	2,445,646	2,176,590	0.89	9.22	0.00	0.00 - 0.00	0.00	250.00	0.21	1.57
15-19	1,094	2,727,354	391,498,508	143.50	2,872.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	395.95
20-24	1,048	3,002,365	22,618,861	7.53	121.90	0.00	0.00 - 0.00	0.00	5,000.00	1.27	13.80
25-29	1,121	3,147,072	42,789,981	13.60	126.60	0.00	0.00 - 0.00	0.00	5,000.00	5.94	21.25
30-34	1,189	2,801,848	74,331,002	26.53	245.10	0.00	0.00 - 0.00	0.00	6,000.00	0.00	53.78
35-39	1,254	2,428,096	22,254,366	9.17	92.02	0.00	0.00 - 0.00	0.00	5,500.00	3.77	14.57
40-44	1,064	1,902,132	27,982,880	14.71	119.50	0.00	0.00 - 0.00	0.00	2,500.00	3.04	26.39
45-49	1,062	1,716,563	15,963,806	9.30	49.74	0.00	0.00 - 0.00	0.00	700.00	5.26	13.34
50-54	1,063	1,632,323	15,233,568	9.33	47.85	0.00	0.00 - 0.00	0.00	600.00	5.09	13.58
55-59	998	1,455,774	14,439,968	9.92	60.41	0.00	0.00 - 0.00	0.00	1,100.00	2.97	16.87
60-64	852	1,186,746	11,439,991	9.64	65.68	0.00	0.00 - 0.00	0.00	2,000.00	4.81	14.47
65-69	693	871,596	1,616,520	1.86	29.94	0.00	0.00 - 0.00	0.00	2,900.00	0.67	3.04
70-74	492	590,567	21,421,879	36.27	292.70	0.00	0.00 - 0.00	0.00	5,000.00	0.00	87.01
75 and over	467	651,295	875,990	1.35	17.19	0.00	0.00 - 0.00	0.00	300.00	0.00	3.13
<b>Ethnicity</b>											
Malay <sup>a</sup>	11,325	17,425,958	501,521,451	28.78	1,141.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	68.29
Chinese	1,838	6,122,813	123,346,160	20.15	167.90	0.00	0.00 - 0.00	0.00	6,000.00	6.57	33.72
Indian	980	1,792,154	16,118,287	8.99	110.40	0.00	0.00 - 0.00	0.00	5,000.00	3.38	14.61
Bumiputera Sabah	1,035	2,071,061	7,615,537	3.68	23.23	0.00	0.00 - 0.00	0.00	400.00	1.03	6.32
Bumiputera Sarawak	698	1,407,413	4,594,071	3.26	23.65	0.00	0.00 - 0.00	0.00	250.00	0.30	6.23
Others	812	2,755,167	18,872,530	6.85	73.56	0.00	0.00 - 0.00	0.00	2,400.00	0.00	13.78

**Table 8.15:** Per capita health expenditure (in Ringgit Malaysia, RM) for oral healthcare, by sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
Citizenship											
Malaysian	15,783	28,584,000	654,116,782	22.88	894.80	0.00	0.00 - 0.00	0.00	64,000.00	0.00	4719
Permanent Resident	121	234,440	790,243	3.37	28.07	0.00	0.00 - 0.00	0.00	450.00	0.00	7.01
Non-Malaysian	780	2,749,951	17,161,012	6.24	70.42	0.00	0.00 - 0.00	0.00	2,400.00	0.00	13.10
Marital status <sup>b</sup>											
Single	3,713	9,109,430	447,582,806	49.13	1,574.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	124.87
Married	7,938	14,095,355	204,572,481	14.51	148.50	0.00	0.00 - 0.00	0.00	6,000.00	8.05	20.98
Widow(er)/Divorcee	1,255	1,776,520	10,805,997	6.08	58.77	0.00	0.00 - 0.00	0.00	1,359.00	2.09	10.08
Education level											
No formal education	2,560	4,743,451	6,638,884	1.40	13.88	0.00	0.00 - 0.00	0.00	600.00	0.65	2.15
Primary education	5,111	8,762,445	25,389,661	2.90	45.91	0.00	0.00 - 0.00	0.00	2,400.00	1.17	4.62
Secondary education	6,091	12,172,330	502,969,779	41.32	1,367.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	98.05
Tertiary education	2,868	5,776,720	137,067,970	23.73	147.70	0.00	0.00 - 0.00	0.00	5,500.00	11.26	36.19
Occupation											
Government employee	1,225	1,583,152	15,583,852	9.84	69.33	0.00	0.00 - 0.00	0.00	5,500.00	5.43	14.26
Private employee	3,446	8,525,793	130,181,756	15.27	129.60	0.00	0.00 - 0.00	0.00	5,000.00	6.45	24.09
Self-employed	2,206	3,989,421	39,053,492	9.79	104.30	0.00	0.00 - 0.00	0.00	5,000.00	5.11	14.47
Unpaid worker/ Homemaker	2,128	3,839,709	40,595,143	10.57	183.20	0.00	0.00 - 0.00	0.00	6,000.00	0.45	20.70
Retiree	548	782,603	7,991,201	10.21	71.53	0.00	0.00 - 0.00	0.00	2,900.00	3.14	17.28
Student	3,584	6,657,462	403,186,710	60.56	1,839.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	163.66
Not working <sup>c</sup>	3,549	6,191,008	35,475,884	5.73	94.07	0.00	0.00 - 0.00	0.00	5,000.00	0.77	10.69
Household income group											
Less than RM 1,000	2,733	5,117,600	36,845,180	7.20	112.60	0.00	0.00 - 0.00	0.00	5,000.00	0.89	13.51
RM 1,000 - RM 1,999	3,115	5,782,614	16,502,093	2.85	21.09	0.00	0.00 - 0.00	0.00	1,000.00	0.01	5.70
RM 2,000 - RM 2,999	2,713	5,120,787	39,741,931	7.76	112.90	0.00	0.00 - 0.00	0.00	3,500.00	0.83	14.69
RM 3,000 - RM 3,999	2,241	4,431,713	49,187,452	11.10	164.20	0.00	0.00 - 0.00	0.00	5,000.00	2.50	19.70
RM 4,000 - RM 4,999	1,407	2,784,248	75,328,757	27.06	276.10	0.00	0.00 - 0.00	0.00	6,000.00	0.00	55.51
RM 5,000 - RM 5,999	1,043	1,849,181	12,815,415	6.93	37.82	0.00	0.00 - 0.00	0.00	1,100.00	3.58	10.28
RM 6,000 - RM 6,999	847	1,622,340	8,480,190	5.23	40.29	0.00	0.00 - 0.00	0.00	1,000.00	1.67	8.78
RM 7,000 - RM 7,999	595	1,158,920	9,765,056	8.43	44.30	0.00	0.00 - 0.00	0.00	500.00	3.66	13.19
RM 8,000 - RM 8,999	470	978,428	364,285,052	372.30	4,775.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	1,068.49
RM 9,000 - RM 9,999	254	338,824	4,028,027	11.89	70.78	0.00	0.00 - 0.00	0.00	700.00	1.07	22.70
RM 10,000 and above	1,126	2,114,221	54,310,604	25.69	138.20	0.00	0.00 - 0.00	0.00	6,000.00	15.17	36.21
Household income quintile											
Q1 (20% poorest)	3,445	6,491,507	37,890,462	5.84	100.10	0.00	0.00 - 0.00	0.00	5,000.00	0.85	10.82
Q2	3,219	6,113,177	20,405,643	3.34	23.68	0.00	0.00 - 0.00	0.00	1,000.00	0.63	6.05
Q3	3,270	6,280,863	55,448,617	8.83	127.80	0.00	0.00 - 0.00	0.00	5,000.00	2.74	14.92
Q4	3,302	6,163,428	116,320,280	18.87	219.30	0.00	0.00 - 0.00	0.00	6,000.00	4.87	32.88
Q5 (20% richest)	3,308	6,249,903	441,224,753	70.60	1,894.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	180.65
Household income category											
Bottom 40% (B40)	11,515	21,754,338	210,501,349	9.68	139.50	0.00	0.00 - 0.00	0.00	6,000.00	5.11	14.24
Middle 40% (M40)	3,678	7,087,612	410,481,348	57.92	1,780.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	155.12
Top 20% (T20)	1,351	2,456,927	50,307,059	20.48	90.69	0.00	0.00 - 0.00	0.00	6,000.00	13.96	26.99

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.16:** Health expenditure (in Ringgit Malaysia, RM) for oral healthcare users in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>4,398</b>	<b>7,493,581</b>	<b>672,068,037</b>	<b>89.69</b>	<b>1,746.53</b>	<b>0.00</b>	<b>0.00 - 1.00</b>	<b>0.00</b>	<b>64,000.00</b>	<b>0.00</b>	<b>182.20</b>
<b>State</b>											
Johor	297	711,061	11,365,677	15.98	51.95	0.00	0.00 - 1.00	0.00	300.00	6.48	25.49
Kedah	177	362,853	21,071,537	58.07	395.80	0.00	0.00 - 1.00	0.00	3,500.00	0.00	139.44
Kelantan	181	322,535	1,816,860	5.63	17.80	0.00	0.00 - 2.00	0.00	160.00	3.29	7.98
Melaka	287	259,254	8,600,882	33.18	138.10	0.00	0.00 - 1.00	0.00	1,359.00	10.71	55.65
Negeri Sembilan	279	610,546	15,778,442	25.84	231.60	0.00	0.00 - 1.00	0.00	5,000.00	5.04	46.65
Pahang	149	248,942	10,501,348	42.18	412.90	0.00	0.00 - 0.00	0.00	5,000.00	0.00	108.66
Pulau Pinang	230	351,043	43,395,664	123.60	368.30	0.00	0.00 - 75.00	0.00	1,500.00	0.00	291.80
Perak	234	606,210	13,003,236	21.45	68.69	0.00	0.00 - 1.00	0.00	500.00	8.67	34.23
Perlis	250	69,975	1,390,297	19.87	97.35	0.00	0.00 - 1.00	0.00	1,000.00	9.04	30.70
Selangor	429	1,432,079	436,609,274	304.90	3,953.00	0.00	0.00 - 5.00	0.00	64,000.00	0.00	780.31
Terengganu	400	426,222	11,574,806	27.16	284.20	0.00	0.00 - 2.00	0.00	5,000.00	0.00	57.81
Sabah	344	845,502	21,496,581	25.42	65.06	0.00	0.00 - 2.00	0.00	500.00	7.66	43.19
Sarawak	310	863,526	21,478,320	24.87	80.66	0.00	0.00 - 1.00	0.00	600.00	7.73	42.02
WP Kuala Lumpur	144	306,407	48,714,924	159.00	786.60	0.00	0.00 - 50.00	0.00	6,000.00	7.23	310.74
WP Labuan	274	28,651	798,849	27.88	293.90	0.00	0.00 - 1.00	0.00	6,000.00	0.00	57.25
WP Putrajaya	413	48,776	4,471,338	91.67	453.00	0.00	0.00 - 0.00	0.00	5,500.00	12.25	171.09
<b>Location</b>											
Urban	2,729	5,566,958	644,949,735	115.90	2,024.00	0.00	0.00 - 2.00	0.00	64,000.00	0.00	240.26
Rural	1,669	1,926,623	27,118,302	14.08	154.20	0.00	0.00 - 1.00	0.00	5,000.00	4.70	23.45
<b>Sex</b>											
Male	1,887	3,332,227	489,065,899	146.80	2,597.00	0.00	0.00 - 1.00	0.00	64,000.00	0.00	353.88
Female	2,511	4,161,355	183,002,138	43.98	301.80	0.00	0.00 - 1.00	0.00	6,000.00	28.13	59.82
<b>Age group (Years)</b>											
0-4	168	258,111	2,374,436	9.20	24.92	0.00	0.00 - 1.00	0.00	100.00	2.77	15.63
5-9	1,059	1,513,650	5,049,689	3.34	21.95	0.00	0.00 - 0.00	0.00	300.00	1.38	5.29
10-14	1,029	1,706,663	2,176,590	1.28	11.02	0.00	0.00 - 0.00	0.00	250.00	0.30	2.26
15-19	492	1,097,611	391,498,508	356.70	4,521.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	984.26
20-24	167	373,975	22,618,861	60.48	341.60	2.00	1.00 - 50.00	0.00	5,000.00	13.13	107.83
25-29	183	511,835	42,789,981	83.60	305.20	2.00	0.00 - 140.00	0.00	5,000.00	45.07	122.14
30-34	225	452,321	74,331,002	164.30	592.20	2.00	0.00 - 90.00	0.00	6,000.00	8.05	320.61
35-39	237	358,593	22,254,366	62.06	232.90	2.00	0.00 - 40.00	0.00	5,500.00	27.59	96.53
40-44	159	238,765	27,982,880	117.20	319.80	3.00	1.00 - 100.00	0.00	2,500.00	34.36	200.04
45-49	174	280,858	15,963,806	56.84	111.70	2.00	0.00 - 80.00	0.00	700.00	33.88	79.80
50-54	167	250,972	15,233,568	60.70	108.80	2.00	0.00 - 90.00	0.00	600.00	35.92	85.47
55-59	119	170,207	14,439,968	84.84	158.20	2.00	0.00 - 120.00	0.00	1,100.00	31.21	138.46
60-64	104	138,273	11,439,991	82.73	176.70	6.00	0.00 - 100.00	0.00	2,000.00	44.73	120.74
65-69	62	62,800	1,616,520	25.74	109.50	0.00	0.00 - 20.00	0.00	2,900.00	10.26	41.22
70-74	32	38,634	21,421,879	554.50	1,026.00	15.00	1.00 - 1,359.00	0.00	5,000.00	0.00	1,160.88
75 and over	21	40,314	875,990	21.73	67.35	0.00	0.00 - 1.00	0.00	300.00	0.00	50.58
<b>Ethnicity</b>											
Malay <sup>a</sup>	3,177	4,532,774	501,521,451	110.60	2,235.00	0.00	0.00 - 1.00	0.00	64,000.00	0.00	262.37
Chinese	367	1,243,367	123,346,160	99.20	362.40	0.00	0.00 - 50.00	0.00	6,000.00	35.71	162.70
Indian	251	478,937	16,118,287	33.65	211.90	0.00	0.00 - 9.00	0.00	5,000.00	14.42	52.89
Bumiputera Sabah	315	577,834	7,615,537	13.18	42.58	0.00	0.00 - 1.00	0.00	400.00	4.91	21.45
Bumiputera Sarawak	216	450,005	4,594,071	10.21	41.04	0.00	0.00 - 0.00	0.00	250.00	0.64	19.78
Others	72	210,665	18,872,530	89.59	253.30	0.00	0.00 - 140.00	0.00	2,400.00	30.50	148.67

**Table 8.16:** Health expenditure (in Ringgit Malaysia, RM) for oral healthcare users in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
Citizenship											
Malaysian	4,318	7,238,939	654,116,782	90.36	1,776.00	0.00	0.00 - 1.00	0.00	64,000.00	0.00	186.14
Permanent Resident	16	18,463	790,243	42.80	93.73	1.00	0.00 - 40.00	0.00	450.00	3.14	82.46
Non-Malaysian	63	236,083	17,161,012	72.69	231.80	3.00	0.00 - 140.00	0.00	2,400.00	17.17	128.21
Marital status <sup>b</sup>											
Single	1,150	2,413,338	447,582,806	185.50	3,055.00	0.00	0.00 - 1.00	0.00	64,000.00	0.00	470.92
Married	1,222	2,049,735	204,572,481	99.80	378.40	2.00	0.00 - 85.00	0.00	6,000.00	58.98	140.63
Widow(er)/Divorcee	125	140,215	10,805,997	77.07	196.40	1.00	0.00 - 30.00	0.00	1,359.00	29.22	124.91
Education level											
No formal education	493	728,492	6,638,884	9.11	34.44	0.00	0.00 - 1.00	0.00	600.00	4.44	13.79
Primary education	2,114	3,355,858	25,389,661	7.57	73.96	0.00	0.00 - 0.00	0.00	2,400.00	3.11	12.03
Secondary education	1,107	2,144,589	502,969,779	234.50	3,251.00	0.00	0.00 - 5.00	0.00	64,000.00	0.00	556.95
Tertiary education	677	1,253,779	137,067,970	109.30	302.20	2.00	0.00 - 100.00	0.00	5,500.00	58.22	160.43
Occupation											
Government employee	306	366,073	15,583,852	42.57	139.40	0.00	0.00 - 60.00	0.00	5,500.00	24.62	60.52
Private employee	495	1,130,266	130,181,756	115.20	339.60	3.00	0.00 - 100.00	0.00	5,000.00	57.46	172.89
Self-employed	244	436,452	39,053,492	89.48	304.30	3.00	1.00 - 100.00	0.00	5,000.00	50.00	128.96
Unpaid worker/ Homemaker	343	577,371	40,595,143	70.31	468.70	1.00	0.00 - 10.00	0.00	6,000.00	4.28	136.34
Retiree	89	111,330	7,991,201	71.78	178.40	2.00	0.00 - 70.00	0.00	2,900.00	28.47	115.09
Student	2,429	4,090,750	403,186,710	98.56	2,345.00	0.00	0.00 - 0.00	0.00	64,000.00	0.00	266.39
Not working <sup>c</sup>	492	781,339	35,475,884	45.40	261.60	0.00	0.00 - 2.00	0.00	5,000.00	7.00	83.81
Household income group											
Less than RM 1,000	617	1,183,458	36,845,180	31.13	232.70	0.00	0.00 - 1.00	0.00	5,000.00	4.01	58.26
RM 1,000 - RM 1,999	697	1,220,558	16,502,093	13.52	44.33	0.00	0.00 - 1.00	0.00	1,000.00	0.97	26.07
RM 2,000 - RM 2,999	690	1,122,270	39,741,931	35.41	239.40	0.00	0.00 - 1.00	0.00	3,500.00	4.64	66.18
RM 3,000 - RM 3,999	607	1,016,813	49,187,452	48.37	340.30	0.00	0.00 - 1.00	0.00	5,000.00	11.21	85.54
RM 4,000 - RM 4,999	366	708,737	75,328,757	106.30	540.10	0.00	0.00 - 1.00	0.00	6,000.00	0.00	214.27
RM 5,000 - RM 5,999	307	467,189	12,815,415	27.43	71.49	0.00	0.00 - 2.00	0.00	1,100.00	14.95	39.91
RM 6,000 - RM 6,999	255	363,049	8,480,190	23.36	82.75	0.00	0.00 - 2.00	0.00	1,000.00	7.98	38.73
RM 7,000 - RM 7,999	190	322,545	9,765,056	30.28	80.08	0.00	0.00 - 1.00	0.00	500.00	13.69	46.86
RM 8,000 - RM 8,999	151	335,421	364,285,052	1,086.00	8,125.00	0.00	0.00 - 80.00	0.00	64,000.00	0.00	3,125.22
RM 9,000 - RM 9,999	80	87,100	4,028,027	46.25	134.30	0.00	0.00 - 40.00	0.00	700.00	5.81	86.68
RM 10,000 and above	411	619,888	54,310,604	87.61	244.60	0.00	0.00 - 100.00	0.00	6,000.00	55.03	120.20
Household income quintile											
Q1 (20% poorest)	758	1,450,253	37,890,462	26.13	210.60	0.00	0.00 - 1.00	0.00	5,000.00	3.92	48.34
Q2	764	1,303,383	20,405,643	15.66	49.39	0.00	0.00 - 1.00	0.00	1,000.00	3.94	27.37
Q3	842	1,373,371	55,448,617	40.37	271.10	0.00	0.00 - 1.00	0.00	5,000.00	13.33	67.42
Q4	914	1,572,427	116,320,280	73.97	429.60	0.00	0.00 - 1.00	0.00	6,000.00	19.69	128.26
Q5 (20% richest)	1,093	1,747,593	441,224,753	252.50	3,576.00	0.00	0.00 - 65.00	0.00	64,000.00	0.00	646.28
Household income category											
Bottom 40% (B40)	2,851	4,779,259	210,501,349	44.04	295.00	0.00	0.00 - 1.00	0.00	6,000.00	23.72	64.37
Middle 40% (M40)	1,089	1,941,930	410,481,348	211.40	3,396.00	0.00	0.00 - 1.00	0.00	64,000.00	0.00	565.96
Top 20% (T20)	431	725,839	50,307,059	69.31	156.50	0.00	0.00 - 100.00	0.00	6,000.00	50.99	87.63

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.17:** Per capita health expenditure (in Ringgit Malaysia, RM) for community pharmacy, by sociodemographic characteristics, NHMS 2019

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>31,574,566</b>	<b>4,037,399,686</b>	<b>127.87</b>	<b>949.11</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>87,339.29</b>	<b>99.35</b>	<b>156.38</b>
<b>State</b>											
Johor	1,487	3,583,487	588,270,632	164.20	1,274.00	0.00	0.00 - 0.00	0.00	28,679.00	31.24	297.08
Kedah	948	2,002,593	199,564,871	99.65	552.30	0.00	0.00 - 0.00	0.00	10,429.00	62.12	137.19
Kelantan	1,040	1,780,805	55,788,398	31.33	230.30	0.00	0.00 - 0.00	0.00	6,127.00	16.05	46.60
Melaka	919	820,924	55,565,295	67.69	467.00	0.00	0.00 - 0.00	0.00	5,214.00	32.42	102.95
Negeri Sembilan	894	1,909,034	204,814,328	107.30	596.10	0.00	0.00 - 0.00	0.00	7,821.00	33.76	180.82
Pahang	994	1,527,286	114,399,342	74.90	559.70	0.00	0.00 - 0.00	0.00	7,821.00	41.23	108.58
Pulau Pinang	950	1,631,913	153,053,002	93.79	632.90	0.00	0.00 - 0.00	0.00	31,286.00	51.23	136.35
Perak	811	2,196,662	516,652,676	235.20	1,303.00	0.00	0.00 - 0.00	0.00	18,250.00	52.04	418.36
Perlis	914	231,316	40,780,030	176.30	829.00	0.00	0.00 - 0.00	0.00	15,643.00	107.35	245.24
Selangor	1,811	6,390,944	1,280,875,233	200.40	1,139.00	0.00	0.00 - 0.00	0.00	26,071.00	117.37	283.47
Terengganu	1,118	1,187,197	95,922,100	80.80	488.10	0.00	0.00 - 0.00	0.00	9,125.00	52.44	109.16
Sabah	1,355	3,790,738	144,666,954	38.16	279.60	0.00	0.00 - 0.00	0.00	6,518.00	20.26	56.07
Sarawak	1,005	2,648,630	268,732,163	101.50	649.80	0.00	0.00 - 0.00	0.00	7,821.00	39.10	163.82
WP Kuala Lumpur	729	1,688,285	272,221,799	161.20	1,589.00	0.00	0.00 - 0.00	0.00	39,107.00	51.02	271.46
WP Labuan	912	87,678	23,468,221	267.70	4,197.00	0.00	0.00 - 0.00	0.00	87,339.00	0.00	654.06
WP Putrajaya	801	97,074	22,624,641	233.10	1,182.00	0.00	0.00 - 0.00	0.00	20,857.00	127.25	338.88
<b>Location</b>											
Urban	10,009	23,623,015	3,530,655,983	149.50	1,057.00	0.00	0.00 - 0.00	0.00	87,339.00	112.12	186.79
Rural	6,679	7,951,551	506,743,703	63.73	500.30	0.00	0.00 - 0.00	0.00	31,286.00	41.71	85.75
<b>Sex</b>											
Male	8,043	15,738,005	1,807,209,974	114.80	909.00	0.00	0.00 - 0.00	0.00	31,286.00	71.13	158.53
Female	8,645	15,836,561	2,230,189,712	140.80	987.20	0.00	0.00 - 0.00	0.00	87,339.00	114.05	167.60
<b>Age group (Years)</b>											
18-19	1,094	2,727,354	29,261,699	10.73	118.50	0.00	0.00 - 0.00	0.00	2,086.00	1.51	19.95
20-24	1,048	3,002,365	291,337,273	97.04	589.00	0.00	0.00 - 0.00	0.00	10,429.00	46.19	147.89
25-29	1,121	3,147,072	286,537,157	91.05	520.50	0.00	0.00 - 0.00	0.00	7,821.00	41.68	140.41
30-34	1,189	2,801,848	362,940,030	129.50	560.90	0.00	0.00 - 0.00	0.00	7,821.00	88.06	171.01
35-39	1,254	2,428,096	687,329,587	283.10	1,406.00	0.00	0.00 - 0.00	0.00	13,036.00	70.03	496.12
40-44	1,064	1,902,132	304,315,800	160.00	1,154.00	0.00	0.00 - 0.00	0.00	87,339.00	97.02	222.95
45-49	1,062	1,716,563	384,936,051	224.20	1,452.00	0.00	0.00 - 0.00	0.00	28,679.00	87.96	360.54
50-54	1,063	1,632,323	467,971,582	286.70	1,555.00	0.00	0.00 - 0.00	0.00	26,071.00	124.14	449.24
55-59	998	1,455,774	286,897,572	197.10	803.50	0.00	0.00 - 0.00	0.00	20,857.00	123.49	270.66
60-64	852	1,186,746	325,473,536	274.30	1,538.00	0.00	0.00 - 0.00	0.00	26,071.00	117.38	431.13
65-69	693	871,596	471,293,334	540.70	2,650.00	0.00	0.00 - 0.00	0.00	39,107.00	199.05	882.40
70-74	492	590,567	89,015,599	150.70	556.10	0.00	0.00 - 0.00	0.00	6,518.00	74.77	226.68
75 and over	467	651,295	50,090,465	76.91	605.90	0.00	0.00 - 0.00	0.00	31,286.00	27.33	126.49
<b>Ethnicity</b>											
Malay <sup>a</sup>	11,325	17,425,958	2,162,205,907	124.10	921.90	0.00	0.00 - 0.00	0.00	87,339.00	91.04	157.12
Chinese	1,838	6,122,813	1,249,505,096	204.10	1,375.00	0.00	0.00 - 0.00	0.00	39,107.00	99.80	308.35
Indian	980	1,792,154	257,643,519	143.80	749.10	0.00	0.00 - 0.00	0.00	10,429.00	87.18	200.34
Bumiputera Sabah	1,035	2,071,061	113,475,990	54.79	393.60	0.00	0.00 - 0.00	0.00	7,821.00	26.04	83.54
Bumiputera Sarawak	698	1,407,413	83,616,028	59.41	282.20	0.00	0.00 - 0.00	0.00	3,911.00	20.84	97.99
Others	812	2,755,167	170,953,145	62.05	447.70	0.00	0.00 - 0.00	0.00	7,300.00	14.91	109.18
<b>Citizenship</b>											
Malaysian	15,783	28,584,000	3,830,437,501	134.00	985.10	0.00	0.00 - 0.00	0.00	87,339.00	103.04	164.98
Permanent Resident	121	234,440	113,492,094	484.10	1,268.00	0.00	0.00 - 0.00	0.00	7,300.00	7.92	960.27
Non-Malaysian	780	2,749,951	93,470,091	33.99	317.30	0.00	0.00 - 0.00	0.00	6,518.00	14.69	53.29

**Table 8.17:** Per capita health expenditure (in Ringgit Malaysia, RM) for community pharmacy, by sociodemographic characteristics, NHMS 2019 (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
Marital status											
Single	3,713	9,109,430	887,969,949	97.48	758.60	0.00	0.00 - 0.00	0.00	13,036.00	47.76	147.19
Married	7,938	14,095,355	2,905,460,603	206.10	1,254.00	0.00	0.00 - 0.00	0.00	87,339.00	151.55	260.70
Widow(er)/Divorcee	1,255	1,776,520	243,969,134	137.30	691.10	0.00	0.00 - 0.00	0.00	31,286.00	74.54	200.12
Education level											
No formal education	2,560	4,743,451	101,976,228	21.50	360.30	0.00	0.00 - 0.00	0.00	31,286.00	3.54	39.46
Primary education	5,111	8,762,445	534,261,833	60.97	640.10	0.00	0.00 - 0.00	0.00	39,107.00	38.17	83.77
Secondary education	6,091	12,172,330	1,771,286,021	145.50	1,028.00	0.00	0.00 - 0.00	0.00	28,679.00	96.26	194.77
Tertiary education	2,868	5,776,720	1,628,311,252	281.90	1,389.00	0.00	0.00 - 0.00	0.00	87,339.00	187.63	376.12
Occupation											
Government employee	1,225	1,583,152	334,757,358	211.40	781.00	0.00	0.00 - 0.00	0.00	20,857.00	147.10	275.80
Private employee	3,446	8,525,793	1,106,822,565	129.80	817.10	0.00	0.00 - 0.00	0.00	87,339.00	79.99	179.65
Self-employed	2,206	3,989,421	868,056,764	217.60	1,312.00	0.00	0.00 - 0.00	0.00	28,679.00	132.52	302.66
Unpaid worker/ Homemaker	2,128	3,839,709	686,332,909	178.70	1,015.00	0.00	0.00 - 0.00	0.00	31,286.00	122.59	234.90
Retiree	548	782,603	423,164,735	540.70	2,767.00	0.00	0.00 - 0.00	0.00	39,107.00	184.97	896.45
Student	3,584	6,657,462	81,584,758	12.25	241.30	0.00	0.00 - 0.00	0.00	10,429.00	2.92	21.59
Not working <sup>b</sup>	3,549	6,191,008	536,680,597	86.69	834.60	0.00	0.00 - 0.00	0.00	13,036.00	18.81	154.56
Household income group											
Less than RM 1,000	2,733	5,117,600	822,959,502	160.80	1,293.00	0.00	0.00 - 0.00	0.00	39,107.00	68.39	253.23
RM 1,000 - RM 1,999	3,115	5,782,614	384,075,844	66.42	458.60	0.00	0.00 - 0.00	0.00	10,429.00	40.29	92.55
RM 2,000 - RM 2,999	2,713	5,120,787	445,444,190	86.99	696.70	0.00	0.00 - 0.00	0.00	18,250.00	48.92	125.06
RM 3,000 - RM 3,999	2,241	4,431,713	352,989,720	79.65	524.60	0.00	0.00 - 0.00	0.00	31,286.00	52.69	106.61
RM 4,000 - RM 4,999	1,407	2,784,248	336,495,117	120.90	634.90	0.00	0.00 - 0.00	0.00	7,821.00	69.37	172.35
RM 5,000 - RM 5,999	1,043	1,849,181	265,747,572	143.70	781.60	0.00	0.00 - 0.00	0.00	7,821.00	53.58	233.85
RM 6,000 - RM 6,999	847	1,622,340	472,668,571	291.30	1,427.00	0.00	0.00 - 0.00	0.00	20,857.00	84.77	497.93
RM 7,000 - RM 7,999	595	1,158,920	176,963,223	152.70	773.60	0.00	0.00 - 0.00	0.00	10,429.00	73.72	231.67
RM 8,000 - RM 8,999	470	978,428	54,788,846	56.00	353.90	0.00	0.00 - 0.00	0.00	3,911.00	16.06	95.93
RM 9,000 - RM 9,999	254	338,824	66,991,455	197.70	748.60	0.00	0.00 - 0.00	0.00	5,214.00	53.82	341.61
RM 10,000 and above	1,126	2,114,221	638,872,854	302.20	1,971.00	0.00	0.00 - 0.00	0.00	87,339.00	115.55	488.81
Household income quintile											
Q1 (20% poorest)	3,445	6,491,507	861,193,483	132.70	1,152.00	0.00	0.00 - 0.00	0.00	39,107.00	59.17	206.16
Q2	3,219	6,113,177	495,883,899	81.12	491.60	0.00	0.00 - 0.00	0.00	15,643.00	53.98	108.25
Q3	3,270	6,280,863	505,166,463	80.43	660.60	0.00	0.00 - 0.00	0.00	18,250.00	49.04	111.82
Q4	3,302	6,163,428	741,662,582	120.30	686.80	0.00	0.00 - 0.00	0.00	31,286.00	82.78	157.88
Q5 (20% richest)	3,308	6,249,903	1,414,090,466	226.30	1,418.00	0.00	0.00 - 0.00	0.00	87,339.00	126.62	325.89
Household income category											
Bottom 40% (B40)	11,515	21,754,338	2,281,677,096	104.90	811.50	0.00	0.00 - 0.00	0.00	39,107.00	79.14	130.63
Middle 40% (M40)	3,678	7,087,612	1,082,729,807	152.80	900.70	0.00	0.00 - 0.00	0.00	20,857.00	85.33	220.20
Top 20% (T20)	1,351	2,456,927	653,589,989	266.00	1,833.00	0.00	0.00 - 0.00	0.00	87,339.00	118.75	413.29

Use of community pharmacy was applicable for those aged 18 years and over (N=11,674). However, per capita health expenditure was calculated based on all of the population.

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.18:** Annual health expenditure (in Ringgit Malaysia, RM) for community pharmacy users in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=11,674)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>1,277</b>	<b>2,274,287</b>	<b>4,037,399,686</b>	<b>1,775.24</b>	<b>3,096.52</b>	<b>782.14</b>	<b>260.71 - 2,085.71</b>	<b>0.00</b>	<b>87,339.29</b>	<b>1,453.80</b>	<b>2,096.67</b>
<b>State</b>											
Johor	86	209,635	588,270,632	2,806.00	4,534.00	1,304.00	521.40 - 2,607.00	0.00	28,679.00	1,065.79	4,546.56
Kedah	91	224,358	199,564,871	889.50	1,428.00	391.10	260.70 - 782.10	0.00	10,429.00	569.70	1,209.29
Kelantan	47	66,287	55,788,398	841.60	870.30	521.40	521.40 - 1,043.00	0.00	6,127.00	557.02	1,126.22
Melaka	48	52,996	55,565,295	1,048.00	1,548.00	391.10	182.50 - 625.70	0.00	5,214.00	430.53	1,666.42
Negeri Sembilan	85	166,992	204,814,328	1,226.00	1,648.00	782.10	104.30 - 1,825.00	0.00	7,821.00	693.56	1,759.42
Pahang	39	57,013	114,399,342	2,007.00	2,151.00	1,304.00	521.40 - 2,607.00	0.00	7,821.00	1,267.72	2,745.38
Pulau Pinang	69	108,594	153,053,002	1,409.00	2,054.00	1,043.00	260.70 - 1,564.00	0.00	31,286.00	738.05	2,080.76
Perak	71	207,554	516,652,676	2,489.00	3,537.00	1,017.00	312.90 - 2,164.00	0.00	18,250.00	1,322.50	3,655.99
Perlis	123	31,923	40,780,030	1,277.00	1,897.00	521.40	260.70 - 1,356.00	0.00	15,643.00	882.32	1,672.61
Selangor	172	551,528	1,280,875,233	2,322.00	3,187.00	1,304.00	521.40 - 2,607.00	0.00	26,071.00	1,549.19	3,095.63
Terengganu	76	78,652	95,922,100	1,220.00	1,495.00	651.80	208.60 - 1,825.00	0.00	9,125.00	923.42	1,515.73
Sabah	71	177,252	144,666,954	816.20	1,025.00	599.60	260.70 - 782.10	0.00	6,518.00	543.69	1,088.64
Sarawak	82	222,537	268,732,163	1,208.00	1,932.00	469.30	208.60 - 1,043.00	0.00	7,821.00	632.96	1,782.21
WP Kuala Lumpur	46	100,191	272,221,799	2,717.00	6,029.00	912.50	260.70 - 2,607.00	0.00	39,107.00	1,307.01	4,127.06
WP Labuan	47	3,926	23,468,221	5,977.00	19,147.00	834.30	391.10 - 2,216.00	0.00	87,339.00	0.00	12,707.60
WP Putrajaya	124	14,849	22,624,641	1,524.00	2,687.00	651.80	312.90 - 1,695.00	0.00	20,857.00	1,012.15	2,035.21
<b>Location</b>											
Urban	848	1,845,938	3,530,655,983	1,913.00	3,308.00	808.20	312.90 - 2,346.00	0.00	87,339.00	1,525.25	2,300.07
Rural	429	428,350	506,743,703	1,183.00	1,825.00	521.40	208.60 - 1,304.00	0.00	31,286.00	891.34	1,474.69
<b>Sex</b>											
Male	492	897,795	1,807,209,974	2,013.00	3,269.00	782.10	312.90 - 2,086.00	0.00	31,286.00	1,398.99	2,626.90
Female	785	1,376,493	2,230,189,712	1,620.00	2,971.00	782.10	260.70 - 1,955.00	0.00	87,339.00	1,366.62	1,873.77
<b>Age group (Years)</b>											
18-19	18	46,283	29,261,699	632.20	677.90	495.40	130.40 - 938.60	0.00	2,086.00	231.57	1,032.90
20-24	77	228,381	291,337,273	1,276.00	1,759.00	677.90	338.90 - 1,304.00	0.00	10,429.00	764.11	1,787.22
25-29	95	247,764	286,537,157	1,156.00	1,493.00	521.40	208.60 - 1,825.00	0.00	7,821.00	690.21	1,622.77
30-34	158	319,908	362,940,030	1,135.00	1,274.00	782.10	260.70 - 1,304.00	0.00	7,821.00	871.95	1,397.08
35-39	159	264,598	687,329,587	2,598.00	3,491.00	782.10	391.10 - 3,911.00	0.00	13,036.00	1,061.14	4,134.13
40-44	132	197,370	304,315,800	1,542.00	3,284.00	782.10	312.90 - 1,825.00	0.00	87,339.00	1,114.78	1,968.93
45-49	121	194,673	384,936,051	1,977.00	3,903.00	808.20	260.70 - 2,086.00	0.00	28,679.00	884.47	3,070.24
50-54	138	211,595	467,971,582	2,212.00	3,805.00	912.50	260.70 - 2,086.00	0.00	26,071.00	1,137.52	3,285.76
55-59	116	181,997	286,897,572	1,576.00	1,735.00	1,043.00	286.80 - 2,607.00	0.00	20,857.00	1,201.64	1,951.13
60-64	104	140,175	325,473,536	2,322.00	3,925.00	1,304.00	417.10 - 2,607.00	0.00	26,071.00	1,179.90	3,463.93
65-69	77	127,373	471,293,334	3,700.00	6,063.00	834.30	208.60 - 5,214.00	0.00	39,107.00	1,808.61	5,591.59
70-74	50	81,458	89,015,599	1,093.00	1,110.00	1,043.00	338.90 - 1,304.00	0.00	6,518.00	714.85	1,470.70
75 and over	32	32,713	50,090,465	1,531.00	2,287.00	677.90	391.10 - 2,607.00	0.00	31,286.00	709.71	2,352.75
<b>Ethnicity</b>											
Malay <sup>a</sup>	917	1,321,306	2,162,205,907	1,636.00	2,957.00	782.10	260.70 - 1,955.00	0.00	87,339.00	1,265.91	2,006.93
Chinese	127	469,093	1,249,505,096	2,664.00	4,275.00	1,173.00	521.40 - 2,607.00	0.00	39,107.00	1,681.64	3,645.68
Indian	81	154,361	257,643,519	1,669.00	2,003.00	912.50	338.90 - 2,607.00	0.00	10,429.00	1,140.69	2,197.50
Bumiputera Sabah	54	109,084	113,475,990	1,040.00	1,396.00	599.60	208.60 - 1,173.00	0.00	7,821.00	588.14	1,492.39
Bumiputera Sarawak	57	105,005	83,616,028	796.30	698.50	521.40	260.70 - 1,043.00	0.00	3,911.00	568.10	1,024.51
Others	41	115,438	170,953,145	1,481.00	1,656.00	677.90	338.90 - 1,564.00	0.00	7,300.00	582.78	2,379.05
<b>Citizenship</b>											
Malaysian	1,228	2,142,388	3,830,437,501	1,788.00	3,162.00	782.10	260.70 - 2,086.00	0.00	87,339.00	1,453.54	2,122.32
Permanent Resident	13	55,485	113,492,094	2,045.00	1,961.00	677.90	677.90 - 3,129.00	0.00	7,300.00	299.15	3,791.76
Non-Malaysian	36	76,415	93,470,091	1,223.00	1,492.00	599.60	260.70 - 1,304.00	104.30	6,518.00	721.09	1,725.29

**Table 8.18:** Annual health expenditure (in Ringgit Malaysia, RM) for community pharmacy users in the last 2 weeks, by sociodemographic characteristics, NHMS 2019 (N=11,674) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI		
										Lower	Upper	
Marital status												
Single	179	502,647	887,969,949	1,767.00	2,742.00	677.90	260.70 - 2,373.00	0.00	13,036.00	997.87	2,535.31	
Married	965	1,584,600	2,905,460,603	1,834.00	3,317.00	782.10	286.80 - 2,086.00	0.00	87,339.00	1,447.26	2,219.87	
Widow(er)/Divorcee	133	187,040	243,969,134	1,304.00	1,742.00	782.10	260.70 - 1,434.00	0.00	31,286.00	866.75	1,741.99	
Education level												
No formal education	49	101,512	101,976,228	1,005.00	2,277.00	286.80	130.40 - 912.50	0.00	31,286.00	242.83	1,766.31	
Primary education	224	339,544	534,261,833	1,573.00	2,868.00	782.10	286.80 - 1,825.00	0.00	39,107.00	1,090.41	2,056.53	
Secondary education	538	1,035,115	1,771,286,021	1,711.00	3,124.00	782.10	260.70 - 1,825.00	0.00	28,679.00	1,222.66	2,199.74	
Tertiary education	465	794,116	1,628,311,252	2,050.00	3,230.00	1,043.00	338.90 - 2,607.00	0.00	87,339.00	1,541.77	2,559.17	
Occupation												
Government employee	218	236,440	334,757,358	1,416.00	1,545.00	782.10	391.10 - 2,086.00	0.00	20,857.00	1,065.91	1,765.74	
Private employee	300	697,275	1,106,822,565	1,587.00	2,422.00	782.10	312.90 - 2,086.00	0.00	87,339.00	1,118.07	2,056.64	
Self-employed	243	472,181	868,056,764	1,838.00	3,407.00	651.80	260.70 - 2,346.00	0.00	28,679.00	1,250.76	2,426.04	
Unpaid worker/ Homemaker	260	452,150	686,332,909	1,518.00	2,596.00	808.20	286.80 - 1,825.00	0.00	31,286.00	1,115.57	1,920.30	
Retiree	89	139,291	423,164,735	3,038.00	5,979.00	1,043.00	260.70 - 3,129.00	0.00	39,107.00	1,304.22	4,771.78	
Student	24	63,074	81,584,758	1,293.00	2,164.00	651.80	260.70 - 1,304.00	0.00	10,429.00	418.18	2,168.77	
Not working <sup>b</sup>	143	213,877	536,680,597	2,509.00	3,766.00	782.10	208.60 - 2,607.00	0.00	13,036.00	884.01	4,134.59	
Household income group												
Less than RM 1,000	194	357,956	822,959,502	2,299.00	4,366.00	782.10	260.70 - 2,086.00	0.00	39,107.00	1,200.21	3,397.89	
RM 1,000 - RM 1,999	205	357,115	384,075,844	1,075.00	1,526.00	521.40	182.50 - 1,304.00	0.00	10,429.00	718.54	1,432.45	
RM 2,000 - RM 2,999	193	347,159	445,444,190	1,283.00	2,377.00	677.90	260.70 - 1,304.00	0.00	18,250.00	796.29	1,769.94	
RM 3,000 - RM 3,999	151	265,628	352,989,720	1,329.00	1,717.00	834.30	260.70 - 1,304.00	0.00	31,286.00	983.37	1,674.41	
RM 4,000 - RM 4,999	107	210,607	336,495,117	1,598.00	1,730.00	1,043.00	391.10 - 2,607.00	0.00	7,821.00	1,097.31	2,098.17	
RM 5,000 - RM 5,999	80	147,643	265,747,572	1,800.00	2,173.00	938.60	260.70 - 2,607.00	0.00	7,821.00	977.71	2,622.16	
RM 6,000 - RM 6,999	83	212,280	472,668,571	2,227.00	3,373.00	782.10	521.40 - 2,607.00	0.00	20,857.00	971.64	3,481.62	
RM 7,000 - RM 7,999	63	102,100	176,963,223	1,733.00	2,026.00	1,043.00	260.70 - 2,607.00	0.00	10,429.00	1,105.37	2,361.10	
RM 8,000 - RM 8,999	35	46,683	54,788,846	1,174.00	1,160.00	521.40	260.70 - 2,477.00	0.00	3,911.00	658.25	1,689.02	
RM 9,000 - RM 9,999	28	36,592	66,991,455	1,831.00	1,503.00	1,825.00	391.10 - 2,607.00	0.00	5,214.00	1,130.96	2,530.63	
RM 10,000 and above	132	174,745	638,872,854	3,656.00	5,912.00	1,721.00	625.70 - 5,214.00	0.00	87,339.00	2,069.44	5,242.61	
Household income quintile												
Q1 (20% poorest)	228	420,584	861,193,483	2,048.00	4,077.00	599.60	260.70 - 1,564.00	0.00	39,107.00	1,090.40	3,004.83	
Q2	242	439,272	495,883,899	1,129.00	1,480.00	651.80	260.70 - 1,304.00	0.00	15,643.00	825.40	1,432.35	
Q3	215	361,933	505,166,463	1,396.00	2,400.00	651.80	260.70 - 1,304.00	0.00	18,250.00	920.97	1,870.52	
Q4	244	460,265	741,662,582	1,611.00	1,982.00	912.50	260.70 - 2,086.00	0.00	31,286.00	1,223.61	1,999.15	
Q5 (20% richest)	342	576,454	1,414,090,466	2,453.00	4,048.00	1,304.00	469.30 - 2,607.00	0.00	87,339.00	1,623.29	3,282.88	
Household income category												
Bottom 40% (B40)	834	1,456,270	2,281,677,096	1,567.00	2,749.00	782.10	260.70 - 1,799.00	0.00	39,107.00	1,240.88	1,892.71	
Middle 40% (M40)	290	583,072	1,082,729,807	1,857.00	2,592.00	782.10	260.70 - 2,607.00	0.00	20,857.00	1,226.69	2,487.19	
Top 20% (T20)	147	219,167	653,589,989	2,982.00	5,455.00	1,304.00	391.10 - 3,911.00	0.00	87,339.00	1,596.87	4,367.45	

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

<sup>a</sup> Malay includes Orang Asli<sup>b</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.19:** Per capita health expenditure (in Ringgit Malaysia, RM) for domiciliary care, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>31,574,566</b>	<b>6,538,997</b>	<b>0.21</b>	<b>14.10</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>1,700.00</b>	<b>0.05</b>	<b>0.36</b>
<b>State</b>											
Johor	1,487	3,583,487	397,081	0.11	2.56	0.00	0.00 - 0.00	0.00	70.00	0.00	0.24
Kedah	948	2,002,593	1,429,246	0.71	30.80	0.00	0.00 - 0.00	0.00	1,700.00	0.00	1.80
Kelantan	1,040	1,780,805	1,968,743	1.11	40.73	0.00	0.00 - 0.00	0.00	1,500.00	0.00	3.25
Melaka	919	820,924	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
Negeri Sembilan	894	1,909,034	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
Pahang	994	1,527,286	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
Pulau Pinang	950	1,631,913	88	0.00	0.01	0.00	0.00 - 0.00	0.00	1.00	0.00	0.00
Perak	811	2,196,662	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
Perlis	914	231,316	478,890	2.07	36.38	0.00	0.00 - 0.00	0.00	900.00	0.00	4.78
Selangor	1,811	6,390,944	1,509,718	0.24	12.16	0.00	0.00 - 0.00	0.00	1,000.00	0.00	0.54
Terengganu	1,118	1,187,197	516,409	0.44	10.43	0.00	0.00 - 0.00	0.00	300.00	0.00	1.11
Sabah	1,355	3,790,738	127,714	0.03	1.42	0.00	0.00 - 0.00	0.00	60.00	0.00	0.10
Sarawak	1,005	2,648,630	73,732	0.03	0.52	0.00	0.00 - 0.00	0.00	10.00	0.00	0.08
WP Kuala Lumpur	729	1,688,285	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
WP Labuan	912	87,678	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
WP Putrajaya	801	97,074	37,376	0.39	12.41	0.00	0.00 - 0.00	0.00	400.00	0.00	1.12
<b>Location</b>											
Urban	10,009	23,623,015	1,679,011	0.07	4.15	0.00	0.00 - 0.00	0.00	900.00	0.02	0.12
Rural	6,679	7,951,551	4,859,986	0.61	27.17	0.00	0.00 - 0.00	0.00	1,700.00	0.00	1.22
<b>Sex</b>											
Male	8,043	15,738,005	4,583,792	0.29	18.76	0.00	0.00 - 0.00	0.00	1,700.00	0.00	0.58
Female	8,645	15,836,561	1,955,205	0.12	6.83	0.00	0.00 - 0.00	0.00	1,000.00	0.03	0.21
<b>Age group (Years)</b>											
0-4	1,298	2,546,160	361,611	0.14	3.75	0.00	0.00 - 0.00	0.00	400.00	0.00	0.32
5-9	1,565	2,469,031	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
10-14	1,428	2,445,646	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
15-19	1,094	2,727,354	127,714	0.05	1.68	0.00	0.00 - 0.00	0.00	60.00	0.00	0.14
20-24	1,048	3,002,365	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
25-29	1,121	3,147,072	477,222	0.15	5.80	0.00	0.00 - 0.00	0.00	380.00	0.00	0.34
30-34	1,189	2,801,848	580,552	0.21	4.32	0.00	0.00 - 0.00	0.00	100.00	0.00	0.51
35-39	1,254	2,428,096	128,913	0.05	2.30	0.00	0.00 - 0.00	0.00	100.00	0.00	0.16
40-44	1,064	1,902,132	286,676	0.15	6.73	0.00	0.00 - 0.00	0.00	300.00	0.00	0.45
45-49	1,062	1,716,563	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
50-54	1,063	1,632,323	549,974	0.34	18.36	0.00	0.00 - 0.00	0.00	1,000.00	0.00	1.00
55-59	998	1,455,774	544,746	0.37	15.37	0.00	0.00 - 0.00	0.00	1,000.00	0.00	0.87
60-64	852	1,186,746	1,105,012	0.93	39.80	0.00	0.00 - 0.00	0.00	1,700.00	0.00	2.76
65-69	693	871,596	2,035,601	2.34	58.28	0.00	0.00 - 0.00	0.00	1,500.00	0.00	6.77
70-74	492	590,567	100,908	0.17	7.17	0.00	0.00 - 0.00	0.00	300.00	0.00	0.51
75 and over	467	651,295	240,070	0.37	18.23	0.00	0.00 - 0.00	0.00	900.00	0.00	1.10
<b>Ethnicity</b>											
Malay <sup>a</sup>	11,325	17,425,958	5,454,260	0.31	17.58	0.00	0.00 - 0.00	0.00	1,700.00	0.05	0.58
Chinese	1,838	6,122,813	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
Indian	980	1,792,154	883,291	0.49	22.21	0.00	0.00 - 0.00	0.00	1,000.00	0.00	1.46
Bumiputera Sabah	1,035	2,071,061	127,714	0.06	1.92	0.00	0.00 - 0.00	0.00	60.00	0.00	0.18
Bumiputera Sarawak	698	1,407,413	73,732	0.05	0.71	0.00	0.00 - 0.00	0.00	10.00	0.00	0.15
Others	812	2,755,167	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00

**Table 8.19:** Per capita health expenditure (in Ringgit Malaysia, RM) for domiciliary care, by sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI		
										Lower	Upper	
Citizenship												
Malaysian	15,783	28,584,000	6,538,997	0.23	14.82	0.00	0.00 - 0.00	0.00	1,700.00	0.05	0.40	
Permanent Resident	121	234,440	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
Non-Malaysian	780	2,749,951	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
Marital status <sup>b</sup>												
Single	3,713	9,109,430	823,560	0.09	3.82	0.00	0.00 - 0.00	0.00	300.00	0.00	0.20	
Married	7,938	14,095,355	5,011,121	0.36	20.40	0.00	0.00 - 0.00	0.00	1,700.00	0.01	0.70	
Widow(er)/Divorcee	1,255	1,776,520	342,706	0.19	11.78	0.00	0.00 - 0.00	0.00	900.00	0.00	0.48	
Education level												
No formal education	2,560	4,743,451	363,339	0.08	2.74	0.00	0.00 - 0.00	0.00	400.00	0.00	0.17	
Primary education	5,111	8,762,445	517,082	0.06	6.51	0.00	0.00 - 0.00	0.00	1,000.00	0.00	0.14	
Secondary education	6,091	12,172,330	3,378,697	0.28	17.57	0.00	0.00 - 0.00	0.00	1,500.00	0.00	0.61	
Tertiary education	2,868	5,776,720	2,279,878	0.39	19.13	0.00	0.00 - 0.00	0.00	1,700.00	0.00	0.81	
Occupation												
Government employee	1,225	1,583,152	530,187	0.33	8.30	0.00	0.00 - 0.00	0.00	380.00	0.00	0.73	
Private employee	3,446	8,525,793	2,055,630	0.24	16.30	0.00	0.00 - 0.00	0.00	1,700.00	0.00	0.52	
Self-employed	2,206	3,989,421	66,858	0.02	1.42	0.00	0.00 - 0.00	0.00	120.00	0.00	0.05	
Unpaid worker/Homemaker	2,128	3,839,709	1,087,277	0.28	13.05	0.00	0.00 - 0.00	0.00	1,000.00	0.00	0.61	
Retiree	548	782,603	1,968,743	2.52	61.43	0.00	0.00 - 0.00	0.00	1,500.00	0.00	7.46	
Student	3,584	6,657,462	165,091	0.02	1.84	0.00	0.00 - 0.00	0.00	400.00	0.00	0.06	
Not working <sup>c</sup>	3,549	6,191,008	665,211	0.11	6.57	0.00	0.00 - 0.00	0.00	900.00	0.00	0.22	
Household income group												
Less than RM 1,000	2,733	5,117,600	621,011	0.12	5.02	0.00	0.00 - 0.00	0.00	300.00	0.00	0.28	
RM 1,000 - RM 1,999	3,115	5,782,614	1,361,081	0.24	19.03	0.00	0.00 - 0.00	0.00	1,700.00	0.00	0.62	
RM 2,000 - RM 2,999	2,713	5,120,787	546,636	0.11	2.64	0.00	0.00 - 0.00	0.00	94.00	0.00	0.21	
RM 3,000 - RM 3,999	2,241	4,431,713	1,473,874	0.33	14.59	0.00	0.00 - 0.00	0.00	1,000.00	0.00	0.77	
RM 4,000 - RM 4,999	1,407	2,784,248	238,908	0.09	5.71	0.00	0.00 - 0.00	0.00	380.00	0.00	0.26	
RM 5,000 - RM 5,999	1,043	1,849,181	2,154,396	1.17	40.05	0.00	0.00 - 0.00	0.00	1,500.00	0.00	3.27	
RM 6,000 - RM 6,999	847	1,622,340	143,090	0.09	3.53	0.00	0.00 - 0.00	0.00	400.00	0.00	0.23	
RM 7,000 - RM 7,999	595	1,158,920	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
RM 8,000 - RM 8,999	470	978,428	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
RM 9,000 - RM 9,999	254	338,824	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
RM 10,000 and above	1,126	2,114,221	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
Household income quintile												
Q1 (20% poorest)	3,445	6,491,507	621,011	0.10	4.46	0.00	0.00 - 0.00	0.00	300.00	0.00	0.22	
Q2	3,219	6,113,177	1,532,745	0.25	18.55	0.00	0.00 - 0.00	0.00	1,700.00	0.00	0.62	
Q3	3,270	6,280,863	1,326,849	0.21	12.09	0.00	0.00 - 0.00	0.00	1,000.00	0.00	0.50	
Q4	3,302	6,163,428	2,915,301	0.47	22.46	0.00	0.00 - 0.00	0.00	1,500.00	0.00	1.12	
Q5 (20% richest)	3,308	6,249,903	143,090	0.02	1.80	0.00	0.00 - 0.00	0.00	400.00	0.00	0.06	
Household income category												
Bottom 40% (B40)	11,515	21,754,338	4,040,066	0.19	12.16	0.00	0.00 - 0.00	0.00	1,700.00	0.04	0.33	
Middle 40% (M40)	3,678	7,087,612	2,498,931	0.35	20.79	0.00	0.00 - 0.00	0.00	1,500.00	0.00	0.91	
Top 20% (T20)	1,351	2,456,927	0	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.20:** Health expenditure (in Ringgit Malaysia, RM) for domiciliary care recipients in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>317</b>	<b>534,334.00</b>	<b>6,538,997.03</b>	<b>12.24</b>	<b>107.89</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>1,700.00</b>	<b>2.59</b>	<b>21.89</b>
<b>State</b>											
Johor	26	70,134.00	397,081.00	5.66	17.78	0.00	0.00 - 0.00	0.00	70.00	0.00	12.55
Kedah	15	27,799.00	1,429,246.00	51.41	265.30	0.00	0.00 - 0.00	0.00	1,700.00	0.00	135.72
Kelantan	5	10,117.00	1,968,743.00	194.60	563.50	0.00	0.00 - 0.00	0.00	1,500.00	0.00	512.32
Melaka	19	19,542.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
Negeri Sembilan	11	26,526.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
Pahang	4	3,149.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
Pulau Pinang	17	10,689.00	87.50	0.01	0.09	0.00	0.00 - 0.00	0.00	1.00	0.00	0.03
Perak	20	50,730.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
Perlis	17	5,418.00	478,890.00	88.39	227.70	0.00	0.00 - 0.00	0.00	900.00	0.00	223.11
Selangor	28	68,871.00	1,509,718.00	21.92	117.20	0.00	0.00 - 0.00	0.00	1,000.00	0.00	52.73
Terengganu	25	27,730.00	516,409.00	18.62	67.01	0.00	0.00 - 0.00	0.00	300.00	0.00	50.02
Sabah	17	41,526.00	127,714.00	3.08	13.64	0.00	0.00 - 0.00	0.00	60.00	0.00	9.08
Sarawak	58	153,853.00	73,732.00	0.48	2.13	0.00	0.00 - 0.00	0.00	10.00	0.00	1.24
WP Kuala Lumpur	6	13,240.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
WP Labuan	14	1,224.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
WP Putrajaya	35	3,785.00	37,376.00	9.87	62.97	0.00	0.00 - 0.00	0.00	400.00	0.00	28.86
<b>Location</b>											
Urban	184	381,910.00	1,679,011.00	4.40	32.43	0.00	0.00 - 0.00	0.00	900.00	1.10	7.69
Rural	133	152,423.00	4,859,986.00	31.88	194.40	0.00	0.00 - 0.00	0.00	1,700.00	0.00	64.61
<b>Sex</b>											
Male	101	179,778.00	4,583,792.00	25.50	174.60	0.00	0.00 - 0.00	0.00	1,700.00	0.00	52.20
Female	216	354,556.00	1,955,205.00	5.52	45.42	0.00	0.00 - 0.00	0.00	1,000.00	1.41	9.62
<b>Age group (Years)</b>											
0-4	65	107,277.00	361,611.00	3.37	18.08	0.00	0.00 - 0.00	0.00	400.00	0.00	7.62
5-9	7	7,653.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
10-14	11	26,492.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
15-19	7	24,287.00	127,714.00	5.26	18.33	0.00	0.00 - 0.00	0.00	60.00	0.00	15.55
20-24	18	43,038.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
25-29	39	69,731.00	477,222.00	6.84	38.84	0.00	0.00 - 0.00	0.00	380.00	0.00	15.07
30-34	47	90,445.00	580,552.00	6.42	23.43	0.00	0.00 - 0.00	0.00	100.00	0.00	15.36
35-39	36	51,123.00	128,913.00	2.52	15.90	0.00	0.00 - 0.00	0.00	100.00	0.00	7.53
40-44	16	21,865.00	286,676.00	13.11	63.34	0.00	0.00 - 0.00	0.00	300.00	0.00	39.12
45-49	11	21,425.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
50-54	14	10,593.00	549,974.00	51.92	230.20	0.00	0.00 - 0.00	0.00	1,000.00	0.00	158.03
55-59	8	10,723.00	544,746.00	50.80	183.60	0.00	0.00 - 50.00	0.00	1,000.00	0.00	116.41
60-64	10	15,557.00	1,105,012.00	71.03	358.50	0.00	0.00 - 0.00	0.00	1,700.00	0.00	214.38
65-69	11	13,276.00	2,035,601.00	153.30	468.50	0.00	0.00 - 0.00	0.00	1,500.00	0.00	399.20
70-74	9	10,580.00	100,908.00	9.54	55.83	0.00	0.00 - 0.00	0.00	300.00	0.00	30.44
75 and over	8	10,268.00	240,070.00	23.38	153.10	0.00	0.00 - 0.00	0.00	900.00	0.00	76.01
<b>Ethnicity</b>											
Malay <sup>a</sup>	231	324,437.00	5,454,260.00	16.81	128.10	0.00	0.00 - 0.00	0.00	1,700.00	2.13	31.49
Chinese	9	28,735.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00
Indian	10	18,935.00	883,291.00	46.65	222.30	0.00	0.00 - 0.00	0.00	1,000.00	0.00	144.28
Bumiputera Sabah	11	23,109.00	127,714.00	5.53	18.20	0.00	0.00 - 0.00	0.00	60.00	0.00	16.19
Bumiputera Sarawak	50	122,338.00	73,732.00	0.60	2.38	0.00	0.00 - 0.00	0.00	10.00	0.00	1.50
Others	6	16,780.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00

**Table 8.20:** Health expenditure (in Ringgit Malaysia, RM) for domiciliary care recipients in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=16,688) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI		
										Lower	Upper	
Citizenship												
Malaysian	310	512,559.00	6,538,997.00	12.76	110.10	0.00	0.00 - 0.00	0.00	1,700.00	2.68	22.84	
Permanent Resident	1	635.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
Non-Malaysian	6	21,140.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
Marital status <sup>b</sup>												
Single	37	86,493.00	823,560.00	9.52	38.59	0.00	0.00 - 0.00	0.00	300.00	0.00	21.25	
Married	181	282,499.00	5,011,121.00	17.74	143.40	0.00	0.00 - 0.00	0.00	1,700.00	0.46	35.02	
Widow(er)/Divorcee	20	31,730.00	342,706.00	10.80	89.72	0.00	0.00 - 0.00	0.00	900.00	0.00	28.17	
Education level												
No formal education	85	143,272.00	363,339.00	2.54	15.68	0.00	0.00 - 0.00	0.00	400.00	0.00	5.73	
Primary education	57	87,695.00	517,082.00	5.90	65.42	0.00	0.00 - 0.00	0.00	1,000.00	0.00	14.21	
Secondary education	99	190,466.00	3,378,697.00	17.74	140.10	0.00	0.00 - 0.00	0.00	1,500.00	0.00	39.80	
Tertiary education	74	109,920.00	2,279,878.00	20.74	138.10	0.00	0.00 - 0.00	0.00	1,700.00	0.00	43.26	
Occupation												
Government employee	40	41,568.00	530,187.00	12.75	50.23	0.00	0.00 - 0.00	0.00	380.00	0.00	27.10	
Private employee	48	99,758.00	2,055,630.00	20.61	150.90	0.00	0.00 - 0.00	0.00	1,700.00	0.00	45.45	
Self-employed	35	66,962.00	66,858.00	1.00	11.06	0.00	0.00 - 0.00	0.00	120.00	0.00	3.01	
Unpaid worker/Homemaker	69	116,598.00	1,087,277.00	9.33	74.87	0.00	0.00 - 0.00	0.00	1,000.00	0.00	20.41	
Retiree	5	8,798.00	1,968,743.00	223.80	597.50	0.00	0.00 - 0.00	0.00	1,500.00	0.00	646.69	
Student	21	38,014.00	165,091.00	4.34	24.59	0.00	0.00 - 0.00	0.00	400.00	0.00	11.52	
Not working <sup>c</sup>	98	160,587.00	665,211.00	4.14	40.78	0.00	0.00 - 0.00	0.00	900.00	0.00	8.49	
Household income group												
Less than RM 1,000	45	62,161.00	621,011.00	9.99	44.99	0.00	0.00 - 0.00	0.00	300.00	0.00	23.53	
RM 1,000 - RM 1,999	60	128,384.00	1,361,081.00	10.60	128.40	0.00	0.00 - 0.00	0.00	1,700.00	0.00	28.47	
RM 2,000 - RM 2,999	38	61,572.00	546,636.00	8.88	22.66	0.00	0.00 - 0.00	0.00	94.00	0.41	17.35	
RM 3,000 - RM 3,999	47	88,322.00	1,473,874.00	16.69	103.10	0.00	0.00 - 0.00	0.00	1,000.00	0.00	39.34	
RM 4,000 - RM 4,999	31	55,446.00	238,908.00	4.31	40.89	0.00	0.00 - 0.00	0.00	380.00	0.00	13.20	
RM 5,000 - RM 5,999	33	36,896.00	2,154,396.00	58.39	281.80	0.00	0.00 - 0.00	0.00	1,500.00	0.00	159.89	
RM 6,000 - RM 6,999	23	29,193.00	143,090.00	4.90	26.45	0.00	0.00 - 0.00	0.00	400.00	0.00	12.58	
RM 7,000 - RM 7,999	7	13,988.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
RM 8,000 - RM 8,999	14	23,477.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
RM 9,000 - RM 9,999	3	3,418.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
RM 10,000 and above	15	31,355.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	
Household income quintile												
Q1 (20% poorest)	58	87,810.00	621,011.00	7.07	38.03	0.00	0.00 - 0.00	0.00	300.00	0.00	16.74	
Q2	59	116,207.00	1,532,745.00	13.19	135.00	0.00	0.00 - 0.00	0.00	1,700.00	0.00	33.24	
Q3	55	104,598.00	1,326,849.00	12.69	93.69	0.00	0.00 - 0.00	0.00	1,000.00	0.00	30.40	
Q4	82	124,166.00	2,915,301.00	23.48	157.50	0.00	0.00 - 0.00	0.00	1,500.00	0.00	56.52	
Q5 (20% richest)	62	101,431.00	143,090.00	1.41	14.17	0.00	0.00 - 0.00	0.00	400.00	0.00	3.69	
Household income category												
Bottom 40% (B40)	219	355,585.00	4,040,066.00	11.36	94.67	0.00	0.00 - 0.00	0.00	1,700.00	2.33	20.40	
Middle 40% (M40)	80	131,234.00	2,498,931.00	19.04	152.50	0.00	0.00 - 0.00	0.00	1,500.00	0.00	49.40	
Top 20% (T20)	17	47,393.00	0.00	0.00	0.00	0.00	0.00 - 0.00	0.00	0.00	0.00	0.00	

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Does not include children aged less than 13 years old

c Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.21:** Per capita health expenditure (in Ringgit Malaysia, RM) for dietary supplements, by sociodemographic characteristics, NHMS 2019

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI		RSE
										Lower	Upper	
<b>MALAYSIA</b>	<b>16,688</b>	<b>31,574,566</b>	<b>5,038,744,274</b>	<b>159.58</b>	<b>1,204.28</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>73,000.00</b>	<b>122.01</b>	<b>197.16</b>	<b>7.55</b>
<b>State</b>												
Johor	1,487	3,583,487	513,419,303	143.30	614.50	0.00	0.00 - 0.00	0.00	7,300.00	80.05	206.50	4.29
Kedah	948	2,002,593	185,348,184	92.55	496.60	0.00	0.00 - 0.00	0.00	8,517.00	42.58	142.53	5.37
Kelantan	1,040	1,780,805	59,852,649	33.61	221.50	0.00	0.00 - 0.00	0.00	2,859.00	16.65	50.57	6.59
Melaka	919	820,924	62,543,454	76.19	369.40	0.00	0.00 - 0.00	0.00	4,867.00	48.40	103.97	4.85
Negeri Sembilan	894	1,909,034	185,705,315	97.28	379.30	0.00	0.00 - 0.00	0.00	6,083.00	57.68	136.87	3.90
Pahang	994	1,527,286	312,733,169	204.80	2,559.00	0.00	0.00 - 0.00	0.00	73,000.00	30.25	379.28	12.50
Pulau Pinang	950	1,631,913	547,656,391	335.60	1,191.00	0.00	0.00 - 0.00	0.00	14,600.00	106.62	564.56	3.55
Perak	811	2,196,662	313,966,357	142.90	674.80	0.00	0.00 - 0.00	0.00	8,517.00	78.69	207.17	4.72
Perlis	914	231,316	29,040,714	125.50	513.30	0.00	0.00 - 0.00	0.00	7,300.00	77.03	174.06	4.09
Selangor	1,811	6,390,944	1,160,429,875	181.60	800.10	0.00	0.00 - 0.00	0.00	12,167.00	118.20	244.95	4.41
Terengganu	1,118	1,187,197	96,511,093	81.29	522.60	0.00	0.00 - 0.00	0.00	12,167.00	39.75	122.84	6.43
Sabah	1,355	3,790,738	328,558,825	86.67	591.90	0.00	0.00 - 0.00	0.00	12,167.00	36.23	137.12	6.83
Sarawak	1,005	2,648,630	839,350,479	316.90	2,539.00	0.00	0.00 - 0.00	0.00	36,500.00	0.00	646.32	8.01
WP Kuala Lumpur	729	1,688,285	370,906,504	219.70	2,022.00	0.00	0.00 - 0.00	0.00	36,500.00	28.77	410.62	9.20
WP Labuan	912	87,678	9,079,374	103.60	473.60	0.00	0.00 - 0.00	0.00	8,517.00	60.02	147.08	4.57
WP Putrajaya	801	97,074	23,642,588	243.60	1,388.00	0.00	0.00 - 0.00	0.00	24,200.00	114.71	372.39	5.70
<b>Location</b>												
Urban	10,009	23,623,015	4,567,969,589	193.40	1,376.00	0.00	0.00 - 0.00	0.00	73,000.00	143.43	243.31	7.12
Rural	6,679	7,951,551	470,774,686	59.21	342.50	0.00	0.00 - 0.00	0.00	8,760.00	45.06	73.35	5.79
<b>Sex</b>												
Male	8,043	15,738,005	2,309,160,369	146.70	1,277.00	0.00	0.00 - 0.00	0.00	36,500.00	85.09	208.36	8.71
Female	8,645	15,836,561	2,729,583,906	172.40	1,127.00	0.00	0.00 - 0.00	0.00	73,000.00	139.69	205.03	6.54
<b>Age group (Years)</b>												
18-19	1,094	2,727,354	19,757,721	7.24	70.16	0.00	0.00 - 0.00	0.00	2,129.00	2.81	11.68	9.68
20-24	1,048	3,002,365	150,486,981	50.12	248.90	0.00	0.00 - 0.00	0.00	3,407.00	33.42	66.82	4.97
25-29	1,121	3,147,072	853,106,745	271.10	2,322.00	0.00	0.00 - 0.00	0.00	36,500.00	0.00	553.00	8.57
30-34	1,189	2,801,848	358,642,879	128.00	498.50	0.00	0.00 - 0.00	0.00	8,760.00	92.59	163.41	3.89
35-39	1,254	2,428,096	443,159,740	182.50	804.60	0.00	0.00 - 0.00	0.00	12,167.00	114.36	250.67	4.41
40-44	1,064	1,902,132	605,679,817	318.40	2,396.00	0.00	0.00 - 0.00	0.00	73,000.00	163.25	473.60	7.52
45-49	1,062	1,716,563	481,170,225	280.30	840.30	0.00	0.00 - 0.00	0.00	6,083.00	184.57	376.05	3.00
50-54	1,063	1,632,323	749,708,151	459.30	2,295.00	0.00	0.00 - 0.00	0.00	36,500.00	217.50	701.08	5.00
55-59	998	1,455,774	325,384,610	223.50	707.70	0.00	0.00 - 0.00	0.00	9,733.00	158.79	288.24	3.17
60-64	852	1,186,746	379,484,616	319.80	1,245.00	0.00	0.00 - 0.00	0.00	24,200.00	162.51	477.03	3.89
65-69	693	871,596	345,240,904	396.10	1,265.00	0.00	0.00 - 0.00	0.00	16,656.00	213.11	579.09	3.19
70-74	492	590,567	94,324,478	159.70	493.20	0.00	0.00 - 0.00	0.00	7,300.00	92.06	227.37	3.09
75 and over	467	651,295	232,597,408	357.10	1,180.00	0.00	0.00 - 0.00	0.00	7,300.00	33.32	680.94	3.31
<b>Ethnicity</b>												
Malay <sup>a</sup>	11,325	17,425,958	2,040,447,818	117.10	927.30	0.00	0.00 - 0.00	0.00	73,000.00	92.77	141.42	7.92
Chinese	1,838	6,122,813	2,368,375,219	386.80	2,176.00	0.00	0.00 - 0.00	0.00	36,500.00	217.07	556.55	5.63
Indian	980	1,792,154	279,955,572	156.20	606.90	0.00	0.00 - 0.00	0.00	6,083.00	103.67	208.76	3.89
Bumiputera Sabah	1,035	2,071,061	141,862,647	68.50	442.60	0.00	0.00 - 0.00	0.00	7,300.00	25.97	111.03	6.46
Bumiputera Sarawak	698	1,407,413	108,236,967	76.90	387.40	0.00	0.00 - 0.00	0.00	3,650.00	34.57	119.24	5.04
Others	812	2,755,167	99,866,052	36.25	230.90	0.00	0.00 - 0.00	0.00	4,258.00	19.65	52.84	6.37
<b>Citizenship</b>												
Malaysian	15,783	28,584,000	4,919,310,258	172.10	1,263.00	0.00	0.00 - 0.00	0.00	73,000.00	130.82	213.38	7.34
Permanent Resident	121	234,440	13,698,944	58.43	223.90	0.00	0.00 - 0.00	0.00	2,190.00	13.79	103.08	3.83
Non-Malaysian	780	2,749,951	105,589,062	38.40	241.60	0.00	0.00 - 0.00	0.00	4,258.00	21.47	55.33	6.29

**Table 8.21:** Per capita health expenditure (in Ringgit Malaysia, RM) for dietary supplements, by sociodemographic characteristics, NHMS 2019 (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI		Min
										Lower	Upper	
Marital status												
Single	3,713	9,109,430	1,153,120,871	126.60	1,408.00	0.00	0.00 - 0.00	0.00	36,500.00	28.68	224.50	11.12
Married	7,938	14,095,355	3,403,111,112	241.40	1,346.00	0.00	0.00 - 0.00	0.00	73,000.00	194.28	288.59	5.58
Widow(er)/Divorcee	1,255	1,776,520	482,512,292	271.60	1,034.00	0.00	0.00 - 0.00	0.00	12,167.00	134.28	408.93	3.81
Education level												
No formal education	2,560	4,743,451	117,585,132	24.79	243.70	0.00	0.00 - 0.00	0.00	7,300.00	12.21	37.37	9.83
Primary education	5,111	8,762,445	432,318,969	49.34	337.10	0.00	0.00 - 0.00	0.00	7,300.00	36.01	62.67	6.83
Secondary education	6,091	12,172,330	2,302,843,051	189.20	1,607.00	0.00	0.00 - 0.00	0.00	73,000.00	107.92	270.45	8.49
Tertiary education	2,868	5,776,720	2,124,588,323	367.80	1,468.00	0.00	0.00 - 0.00	0.00	36,500.00	283.70	451.87	3.99
Occupation												
Government employee	1,225	1,583,152	433,384,735	273.70	858.70	0.00	0.00 - 0.00	0.00	12,167.00	200.49	347.01	3.14
Private employee	3,446	8,525,793	1,671,582,370	196.10	1,132.00	0.00	0.00 - 0.00	0.00	36,500.00	138.37	253.75	5.77
Self-employed	2,206	3,989,421	759,149,170	190.30	762.20	0.00	0.00 - 0.00	0.00	12,167.00	135.95	244.63	4.01
Unpaid worker/ Homemaker	2,128	3,839,709	793,760,621	206.70	1,726.00	0.00	0.00 - 0.00	0.00	73,000.00	125.94	287.50	8.35
Retiree	548	782,603	357,761,280	457.10	1,183.00	0.00	0.00 - 365.00	0.00	24,200.00	321.83	592.45	2.59
Student	3,584	6,657,462	38,787,374	5.83	83.50	0.00	0.00 - 0.00	0.00	2,433.00	1.72	9.94	14.33
Not working <sup>b</sup>	3,549	6,191,008	982,822,297	158.70	1,731.00	0.00	0.00 - 0.00	0.00	36,500.00	11.71	305.79	10.91
Household income group												
Less than RM 1,000	2,733	5,117,600	561,579,459	109.70	524.10	0.00	0.00 - 0.00	0.00	7,300.00	76.41	143.06	4.78
RM 1,000 - RM 1,999	3,115	5,782,614	278,206,475	48.11	300.40	0.00	0.00 - 0.00	0.00	7,300.00	34.08	62.15	6.24
RM 2,000 - RM 2,999	2,713	5,120,787	424,443,597	82.89	486.10	0.00	0.00 - 0.00	0.00	8,760.00	56.41	109.36	5.87
RM 3,000 - RM 3,999	2,241	4,431,713	701,164,478	158.20	1,629.00	0.00	0.00 - 0.00	0.00	73,000.00	78.28	238.15	10.30
RM 4,000 - RM 4,999	1,407	2,784,248	410,093,459	147.30	639.70	0.00	0.00 - 0.00	0.00	5,475.00	63.84	230.75	4.34
RM 5,000 - RM 5,999	1,043	1,849,181	313,985,226	169.80	702.40	0.00	0.00 - 0.00	0.00	12,167.00	89.17	250.43	4.14
RM 6,000 - RM 6,999	847	1,622,340	421,785,625	260.00	837.20	0.00	0.00 - 0.00	0.00	7,300.00	141.69	378.29	3.22
RM 7,000 - RM 7,999	595	1,158,920	225,804,821	194.80	905.10	0.00	0.00 - 0.00	0.00	12,167.00	83.85	305.83	4.65
RM 8,000 - RM 8,999	470	978,428	215,159,291	219.90	866.70	0.00	0.00 - 0.00	0.00	6,083.00	69.29	370.51	3.94
RM 9,000 - RM 9,999	254	338,824	163,804,877	483.50	1,554.00	0.00	0.00 - 0.00	0.00	12,167.00	107.34	859.56	3.21
RM 10,000 and above	1,126	2,114,221	819,484,480	387.60	2,015.00	0.00	0.00 - 0.00	0.00	36,500.00	187.42	587.79	5.20
Household income quintile												
Q1 (20% poorest)	3,445	6,491,507	601,586,767	92.67	474.40	0.00	0.00 - 0.00	0.00	7,300.00	65.79	119.56	5.12
Q2	3,219	6,113,177	393,250,999	64.33	385.30	0.00	0.00 - 0.00	0.00	8,760.00	45.40	83.26	5.99
Q3	3,270	6,280,863	699,568,479	111.40	658.80	0.00	0.00 - 0.00	0.00	14,600.00	71.51	151.26	5.92
Q4	3,302	6,163,428	995,066,448	161.40	1,388.00	0.00	0.00 - 0.00	0.00	73,000.00	98.38	224.52	8.60
Q5 (20% richest)	3,308	6,249,903	1,846,039,093	295.40	1,401.00	0.00	0.00 - 0.00	0.00	36,500.00	216.67	374.07	4.74
Household income category												
Bottom 40% (B40)	11,515	21,754,338	2,408,004,173	110.70	862.50	0.00	0.00 - 0.00	0.00	73,000.00	87.15	134.23	7.79
Middle 40% (M40)	3,678	7,087,612	1,210,835,303	170.80	757.40	0.00	0.00 - 0.00	0.00	12,167.00	122.71	218.97	4.43
Top 20% (T20)	1,351	2,456,927	916,672,309	373.10	1,918.00	0.00	0.00 - 0.00	0.00	36,500.00	207.18	539.01	5.14

Purchase of dietary supplements was applicable for those aged 18 years and over (N=11,674). However, per capita health expenditure was calculated based on all of the population.

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.22:** Annual health expenditure (in Ringgit Malaysia, RM) for dietary supplements purchased in the last 1 month, by sociodemographic characteristics, NHMS 2019 (N=11,674)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>1,640</b>	<b>3,090,828</b>	<b>5,038,744,274</b>	<b>1,630.22</b>	<b>3,524.88</b>	<b>851.67</b>	<b>425.83 - 1,825.00</b>	<b>0.00</b>	<b>73,000.00</b>	<b>1,294.49</b>	<b>1,965.96</b>
<b>State</b>											
Johor	155	357,339	513,419,303	1,437.00	1,392.00	961.20	608.30 - 1,825.00	0.00	7,300.00	1,081.93	1,791.64
Kedah	67	126,730	185,348,184	1,463.00	1,385.00	1,095.00	486.70 - 2,433.00	24.33	8,517.00	994.18	1,930.91
Kelantan	53	63,030	59,852,649	949.60	724.80	608.30	365.00 - 1,217.00	0.00	2,859.00	641.65	1,257.53
Melaka	69	58,477	62,543,454	1,070.00	929.50	790.80	462.30 - 1,217.00	0.00	4,867.00	776.73	1,362.36
Negeri Sembilan	108	228,831	185,705,315	811.50	790.40	608.30	292.00 - 1,095.00	0.00	6,083.00	587.16	1,035.92
Pahang	99	146,883	312,733,169	2,129.00	8,036.00	973.30	365.00 - 1,825.00	0.00	73,000.00	513.31	3,744.95
Pulau Pinang	106	262,113	547,656,391	2,089.00	2,282.00	1,217.00	608.30 - 2,433.00	0.00	14,600.00	1,336.79	2,842.00
Perak	82	234,285	313,966,357	1,340.00	1,641.00	973.30	425.80 - 1,582.00	0.00	8,517.00	854.73	1,825.49
Perlis	112	24,218	29,040,714	1,199.00	1,112.00	851.70	486.70 - 1,825.00	0.00	7,300.00	933.58	1,464.74
Selangor	215	701,199	1,160,429,875	1,655.00	1,846.00	973.30	547.50 - 2,433.00	0.00	12,167.00	1,259.50	2,050.34
Terengganu	89	82,178	96,511,093	1,174.00	1,640.00	608.30	365.00 - 1,217.00	0.00	12,167.00	776.88	1,571.95
Sabah	99	271,211	328,558,825	1,211.00	1,889.00	608.30	365.00 - 1,217.00	0.00	12,167.00	692.35	1,730.55
Sarawak	116	349,004	839,350,479	2,405.00	6,652.00	608.30	243.30 - 1,825.00	0.00	36,500.00	22.59	4,787.38
WP Kuala Lumpur	79	164,810	370,906,504	2,251.00	6,141.00	1,217.00	608.30 - 1,460.00	0.00	36,500.00	221.29	4,279.73
WP Labuan	73	6,834	9,079,374	1,329.00	1,124.00	973.30	608.30 - 1,825.00	0.00	8,517.00	961.39	1,695.80
WP Putrajaya	118	13,687	23,642,588	1,727.00	3,345.00	1,205.00	608.30 - 1,825.00	0.00	24,200.00	888.29	2,566.51
<b>Location</b>											
Urban	1,113	2,500,371	4,567,969,589	1,827.00	3,863.00	1,095.00	486.70 - 1,825.00	0.00	73,000.00	1,418.77	2,235.07
Rural	527	590,457	470,774,686	797.30	996.50	486.70	243.30 - 973.30	0.00	8,760.00	665.39	929.22
<b>Sex</b>											
Male	596	1,217,194	2,309,160,369	1,897.00	4,219.00	1,217.00	365.00 - 1,825.00	0.00	36,500.00	1,169.53	2,624.70
Female	1,044	1,873,633	2,729,583,906	1,457.00	2,978.00	790.80	425.80 - 1,825.00	0.00	73,000.00	1,226.52	1,687.16
<b>Age group (Years)</b>											
18-19	17	46,377	19,757,721	426.00	343.10	365.00	365.00 - 486.70	0.00	2,129.00	270.74	581.31
20-24	77	230,723	150,486,981	652.20	646.80	474.50	279.80 - 790.80	0.00	3,407.00	484.20	820.28
25-29	121	374,639	853,106,745	2,277.00	6,404.00	851.70	365.00 - 1,217.00	0.00	36,500.00	45.65	4,508.64
30-34	170	363,655	358,642,879	986.20	1,036.00	608.30	365.00 - 1,217.00	0.00	8,760.00	786.17	1,186.26
35-39	166	312,158	443,159,740	1,420.00	1,815.00	730.00	438.00 - 1,825.00	0.00	12,167.00	991.11	1,848.22
40-44	168	290,081	605,679,817	2,088.00	5,840.00	1,217.00	608.30 - 1,825.00	0.00	73,000.00	1,156.96	3,018.97
45-49	159	289,840	481,170,225	1,660.00	1,378.00	1,217.00	608.30 - 2,433.00	0.00	6,083.00	1,324.12	1,996.13
50-54	186	306,185	749,708,151	2,449.00	4,827.00	1,217.00	608.30 - 2,433.00	0.00	36,500.00	1,278.82	3,618.28
55-59	162	250,971	325,384,610	1,297.00	1,233.00	1,095.00	608.30 - 1,460.00	0.00	9,733.00	1,032.71	1,560.30
60-64	149	224,183	379,484,616	1,693.00	2,431.00	730.00	304.20 - 2,433.00	0.00	24,200.00	1,119.61	2,265.88
65-69	120	176,796	345,240,904	1,953.00	2,209.00	1,217.00	608.30 - 2,433.00	0.00	16,656.00	1,262.78	2,642.75
70-74	77	111,102	94,324,478	849.00	845.30	608.30	146.00 - 1,217.00	0.00	7,300.00	652.46	1,045.53
75 and over	68	114,117	232,597,408	2,038.00	2,139.00	1,217.00	425.80 - 3,042.00	0.00	7,300.00	758.70	3,317.76
<b>Ethnicity</b>											
Malay <sup>a</sup>	1,096	1,579,952	2,040,447,818	1,291.00	2,824.00	730.00	365.00 - 1,460.00	0.00	73,000.00	1,077.84	1,505.08
Chinese	252	894,412	2,368,375,219	2,648.00	5,148.00	1,217.00	730.00 - 3,042.00	0.00	36,500.00	1,618.24	3,677.70
Indian	119	202,700	279,955,572	1,381.00	1,255.00	1,217.00	486.70 - 1,825.00	0.00	6,083.00	1,107.03	1,655.23
Bumiputera Sabah	66	126,337	141,862,647	1,123.00	1,434.00	608.30	304.20 - 1,460.00	0.00	7,300.00	658.00	1,587.79
Bumiputera Sarawak	62	130,640	108,236,967	828.50	1,004.00	365.00	243.30 - 1,034.00	0.00	3,650.00	475.62	1,181.42
Others	45	156,787	99,866,052	637.00	752.20	425.80	219.00 - 608.30	0.00	4,258.00	392.02	881.88
<b>Citizenship</b>											
Malaysian	1,582	2,903,551	4,919,310,258	1,694.00	3,623.00	973.30	462.30 - 1,825.00	0.00	73,000.00	1,340.08	2,048.40
Permanent Resident	11	23,848	13,698,944	574.40	460.10	486.70	486.70 - 486.70	0.00	2,190.00	368.34	780.53
Non-Malaysian	46	163,279	105,589,062	646.70	775.40	365.00	219.00 - 608.30	0.00	4,258.00	404.23	889.13

**Table 8.22:** Annual health expenditure (in Ringgit Malaysia, RM) for dietary supplements purchased in the last 1 month, by sociodemographic characteristics, NHMS 2019 (N=11,674) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI		
										Lower	Upper	
Marital status												
Single	218	629,912	1,153,120,871	1,831.00	5,064.00	681.30	365.00 - 1,217.00	0.00	36,500.00	498.58	3,162.63	
Married	1,216	2,181,006	3,403,111,112	1,560.00	3,109.00	973.30	462.30 - 1,825.00	0.00	73,000.00	1,316.41	1,804.27	
Widow(er)/Divorcee	206	279,909	482,512,292	1,724.00	2,074.00	1,083.00	486.70 - 2,433.00	0.00	12,167.00	1,060.33	2,387.31	
Education level												
No formal education	58	111,646	117,585,132	1,053.00	1,210.00	608.30	365.00 - 1,095.00	0.00	7,300.00	656.82	1,449.57	
Primary education	268	445,092	432,318,969	971.30	1,160.00	608.30	304.20 - 1,217.00	0.00	7,300.00	771.69	1,170.92	
Secondary education	660	1,275,671	2,302,843,051	1,805.00	4,663.00	851.70	365.00 - 1,825.00	0.00	73,000.00	1,089.02	2,521.38	
Tertiary education	651	1,239,686	2,124,588,323	1,714.00	2,783.00	1,217.00	608.30 - 2,433.00	0.00	36,500.00	1,371.58	2,056.04	
Occupation												
Government employee	281	341,161	433,384,735	1,270.00	1,470.00	851.70	365.00 - 1,825.00	0.00	12,167.00	1,006.53	1,534.12	
Private employee	424	1,087,411	1,671,582,370	1,537.00	2,828.00	851.70	365.00 - 1,825.00	0.00	36,500.00	1,142.53	1,931.90	
Self-employed	257	504,249	759,149,170	1,506.00	1,620.00	1,156.00	486.70 - 1,825.00	0.00	12,167.00	1,234.93	1,776.08	
Unpaid worker/ Homemaker	291	538,044	793,760,621	1,475.00	4,408.00	730.00	365.00 - 1,460.00	0.00	73,000.00	954.55	1,995.99	
Retiree	138	230,048	357,761,280	1,555.00	1,750.00	1,217.00	608.30 - 1,825.00	0.00	24,200.00	1,210.12	1,900.20	
Student	22	51,435	38,787,374	754.10	594.90	486.70	425.80 - 851.70	0.00	2,433.00	428.86	1,079.34	
Not working <sup>b</sup>	226	336,430	982,822,297	2,921.00	6,876.00	1,083.00	365.00 - 2,433.00	0.00	36,500.00	450.10	5,392.55	
Household income group												
Less than RM 1,000	266	509,458	561,579,459	1,102.00	1,292.00	681.30	304.20 - 1,217.00	0.00	7,300.00	870.17	1,334.44	
RM 1,000 - RM 1,999	184	318,240	278,206,475	874.20	960.00	608.30	365.00 - 1,217.00	0.00	7,300.00	694.98	1,053.43	
RM 2,000 - RM 2,999	210	378,827	424,443,597	1,120.00	1,429.00	608.30	304.20 - 1,217.00	0.00	8,760.00	828.05	1,412.78	
RM 3,000 - RM 3,999	202	441,294	701,164,478	1,589.00	4,949.00	851.70	425.80 - 1,217.00	0.00	73,000.00	867.55	2,310.21	
RM 4,000 - RM 4,999	138	285,306	410,093,459	1,437.00	1,467.00	851.70	486.70 - 1,825.00	0.00	5,475.00	822.84	2,051.92	
RM 5,000 - RM 5,999	118	190,906	313,985,226	1,645.00	1,539.00	1,217.00	365.00 - 2,433.00	0.00	12,167.00	1,162.08	2,127.33	
RM 6,000 - RM 6,999	117	263,049	421,785,625	1,603.00	1,477.00	1,217.00	608.30 - 2,433.00	0.00	7,300.00	1,121.91	2,085.00	
RM 7,000 - RM 7,999	76	149,965	225,804,821	1,506.00	2,099.00	973.30	608.30 - 1,217.00	0.00	12,167.00	766.31	2,245.13	
RM 8,000 - RM 8,999	63	94,728	215,159,291	2,271.00	1,770.00	1,460.00	973.30 - 3,650.00	0.00	6,083.00	1,505.41	3,037.25	
RM 9,000 - RM 9,999	34	68,171	163,804,877	2,403.00	2,750.00	1,217.00	608.30 - 2,433.00	0.00	12,167.00	1,018.98	3,786.71	
RM 10,000 and above	221	358,151	819,484,480	2,288.00	4,438.00	1,217.00	730.00 - 2,433.00	0.00	36,500.00	1,287.05	3,289.14	
Household income quintile												
Q1 (20% poorest)	304	574,501	601,586,767	1,047.00	1,244.00	608.30	292.00 - 1,217.00	0.00	7,300.00	837.89	1,256.40	
Q2	211	362,473	393,250,999	1,085.00	1,184.00	669.20	365.00 - 1,217.00	0.00	8,760.00	859.05	1,310.77	
Q3	271	561,792	699,568,479	1,245.00	1,858.00	608.30	365.00 - 1,217.00	0.00	14,600.00	859.34	1,631.15	
Q4	332	625,266	995,066,448	1,591.00	4,093.00	851.70	365.00 - 2,433.00	0.00	73,000.00	1,071.38	2,111.48	
Q5 (20% richest)	511	934,064	1,846,039,093	1,976.00	3,135.00	1,217.00	608.30 - 2,433.00	0.00	36,500.00	1,535.24	2,417.47	
Household income category												
Bottom 40% (B40)	984	1,895,127	2,408,004,173	1,271.00	2,659.00	730.00	365.00 - 1,278.00	0.00	73,000.00	1,055.47	1,485.79	
Middle 40% (M40)	416	775,294	1,210,835,303	1,562.00	1,754.00	1,217.00	511.00 - 2,433.00	0.00	12,167.00	1,260.61	1,862.94	
Top 20% (T20)	229	387,675	916,672,309	2,365.00	4,320.00	1,460.00	608.30 - 2,433.00	0.00	36,500.00	1,422.09	3,306.98	

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

<sup>a</sup> Malay includes Orang Asli<sup>b</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.23:** Per capita health expenditure (in Ringgit Malaysia, RM) for medical check-up, by sociodemographic characteristics, NHMS 2019

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>31,574,566</b>	<b>481,421,549</b>	<b>15.25</b>	<b>150.32</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>5,000.00</b>	<b>8.62</b>	<b>21.88</b>
<b>State</b>											
Johor	1,487	3,583,487	32,277,437	9.01	111.80	0.00	0.00 - 0.00	0.00	4,000.00	2.75	15.26
Kedah	948	2,002,593	10,245,334	5.12	45.83	0.00	0.00 - 0.00	0.00	1,000.00	1.48	8.75
Kelantan	1,040	1,780,805	1,906,657	1.07	9.82	0.00	0.00 - 0.00	0.00	200.00	0.47	1.67
Melaka	919	820,924	12,618,743	15.37	102.80	0.00	0.00 - 0.00	0.00	1,000.00	1.65	29.10
Negeri Sembilan	894	1,909,034	23,302,865	12.21	76.06	0.00	0.00 - 0.00	0.00	900.00	4.35	20.06
Pahang	994	1,527,286	11,155,023	7.30	54.52	0.00	0.00 - 0.00	0.00	1,000.00	2.09	12.52
Pulau Pinang	950	1,631,913	58,943,427	36.12	130.70	0.00	0.00 - 0.00	0.00	1,070.00	12.50	59.73
Perak	811	2,196,662	15,380,104	7.00	59.85	0.00	0.00 - 0.00	0.00	1,620.00	3.04	10.96
Perlis	914	231,316	1,150,633	4.97	32.83	0.00	0.00 - 0.00	0.00	500.00	2.80	7.15
Selangor	1,811	6,390,944	200,820,294	31.42	289.50	0.00	0.00 - 0.00	0.00	5,000.00	0.57	62.28
Terengganu	1,118	1,187,197	7,706,932	6.49	66.27	0.00	0.00 - 0.00	0.00	3,000.00	2.97	10.02
Sabah	1,355	3,790,738	37,932,087	10.01	69.60	0.00	0.00 - 0.00	0.00	1,500.00	3.17	16.84
Sarawak	1,005	2,648,630	44,569,461	16.83	97.42	0.00	0.00 - 0.00	0.00	1,300.00	8.72	24.93
WP Kuala Lumpur	729	1,688,285	20,373,729	12.07	86.87	0.00	0.00 - 0.00	0.00	1,400.00	5.27	18.86
WP Labuan	912	87,678	2,199,124	25.08	198.00	0.00	0.00 - 0.00	0.00	3,000.00	6.73	43.43
WP Putrajaya	801	97,074	839,699	8.65	51.82	0.00	0.00 - 0.00	0.00	2,300.00	5.39	11.91
<b>Location</b>											
Urban	10,009	23,623,015	441,199,587	18.68	170.90	0.00	0.00 - 0.00	0.00	5,000.00	9.85	27.50
Rural	6,679	7,951,551	40,221,962	5.06	52.93	0.00	0.00 - 0.00	0.00	3,000.00	3.05	7.06
<b>Sex</b>											
Male	8,043	15,738,005	216,206,898	13.74	88.04	0.00	0.00 - 0.00	0.00	3,000.00	9.46	18.01
Female	8,645	15,836,561	265,214,650	16.75	193.30	0.00	0.00 - 0.00	0.00	5,000.00	4.46	29.03
<b>Age group (Years)</b>											
18-19	1,094	2,727,354	2,756,721	1.01	23.49	0.00	0.00 - 0.00	0.00	2,000.00	0.00	2.02
20-24	1,048	3,002,365	17,094,558	5.69	42.88	0.00	0.00 - 0.00	0.00	1,000.00	2.81	8.58
25-29	1,121	3,147,072	30,113,124	9.57	50.29	0.00	0.00 - 0.00	0.00	800.00	5.39	13.75
30-34	1,189	2,801,848	32,232,344	11.50	68.80	0.00	0.00 - 0.00	0.00	1,000.00	6.94	16.07
35-39	1,254	2,428,096	126,353,346	52.04	449.80	0.00	0.00 - 0.00	0.00	5,000.00	0.00	129.58
40-44	1,064	1,902,132	32,129,454	16.89	77.75	0.00	0.00 - 0.00	0.00	3,000.00	9.27	24.52
45-49	1,062	1,716,563	58,421,493	34.03	155.30	0.00	0.00 - 0.00	0.00	1,620.00	11.99	56.08
50-54	1,063	1,632,323	41,015,069	25.13	106.70	0.00	0.00 - 1.00	0.00	1,000.00	15.09	35.16
55-59	998	1,455,774	47,300,730	32.49	141.20	0.00	0.00 - 1.00	0.00	1,400.00	17.60	47.38
60-64	852	1,186,746	37,374,800	31.49	147.50	0.00	0.00 - 0.00	0.00	1,300.00	9.88	53.11
65-69	693	871,596	21,543,506	24.72	114.50	0.00	0.00 - 0.00	0.00	1,000.00	8.20	41.23
70-74	492	590,567	16,067,415	27.21	121.10	0.00	0.00 - 0.00	0.00	1,000.00	0.00	57.11
75 and over	467	651,295	19,018,988	29.20	248.60	0.00	0.00 - 0.00	0.00	4,000.00	2.65	55.75
<b>Ethnicity</b>											
Malay <sup>a</sup>	11,325	17,425,958	112,671,881	6.47	68.47	0.00	0.00 - 0.00	0.00	4,000.00	4.74	8.19
Chinese	1,838	6,122,813	286,788,164	46.84	308.60	0.00	0.00 - 0.00	0.00	5,000.00	14.45	79.23
Indian	980	1,792,154	33,314,906	18.59	101.00	0.00	0.00 - 0.00	0.00	1,400.00	10.49	26.69
Bumiputera Sabah	1,035	2,071,061	16,773,271	8.10	79.36	0.00	0.00 - 0.00	0.00	1,500.00	1.71	14.49
Bumiputera Sarawak	698	1,407,413	10,502,771	7.46	65.08	0.00	0.00 - 0.00	0.00	2,000.00	1.76	13.17
Others	812	2,755,167	21,370,557	7.76	38.51	0.00	0.00 - 0.00	0.00	800.00	4.26	11.26
<b>Citizenship</b>											
Malaysian	15,783	28,584,000	450,870,458	15.77	157.00	0.00	0.00 - 0.00	0.00	5,000.00	8.48	23.07
Permanent Resident	121	234,440	669,569	2.86	21.78	0.00	0.00 - 0.00	0.00	300.00	0.00	6.22
Non-Malaysian	780	2,749,951	29,866,520	10.86	55.56	0.00	0.00 - 0.00	0.00	1,070.00	6.00	15.73

**Table 8.23:** Per capita health expenditure (in Ringgit Malaysia, RM) for medical check-up, by sociodemographic characteristics, NHMS 2019 (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
Marital status											
Single	3,713	9,109,430	61,518,862	6.75	52.06	0.00	0.00 - 0.00	0.00	2,000.00	4.51	9.00
Married	7,938	14,095,355	378,640,510	26.86	212.10	0.00	0.00 - 0.00	0.00	5,000.00	12.28	41.44
Widow(er)/Divorcee	1,255	1,776,520	41,223,312	23.20	169.00	0.00	0.00 - 0.00	0.00	4,000.00	11.19	35.22
Education level											
No formal education	2,560	4,743,451	15,538,106	3.28	84.06	0.00	0.00 - 0.00	0.00	4,000.00	0.00	6.65
Primary education	5,111	8,762,445	78,942,300	9.01	76.14	0.00	0.00 - 0.00	0.00	3,000.00	5.65	12.37
Secondary education	6,091	12,172,330	162,570,985	13.36	84.48	0.00	0.00 - 0.00	0.00	1,620.00	8.41	18.30
Tertiary education	2,868	5,776,720	223,527,249	38.69	305.20	0.00	0.00 - 0.00	0.00	5,000.00	5.47	71.92
Occupation											
Government employee	1,225	1,583,152	23,587,095	14.90	94.76	0.00	0.00 - 0.00	0.00	1,500.00	6.25	23.55
Private employee	3,446	8,525,793	150,439,668	17.65	90.61	0.00	0.00 - 0.00	0.00	3,000.00	12.85	22.44
Self-employed	2,206	3,989,421	88,592,463	22.21	117.60	0.00	0.00 - 0.00	0.00	1,200.00	7.30	37.11
Unpaid worker/ Homemaker	2,128	3,839,709	133,460,357	34.76	357.50	0.00	0.00 - 0.00	0.00	5,000.00	0.00	84.28
Retiree	548	782,603	22,100,055	28.24	120.80	0.00	0.00 - 0.00	0.00	3,000.00	11.94	44.54
Student	3,584	6,657,462	6,530,978	0.98	17.64	0.00	0.00 - 0.00	0.00	2,000.00	0.37	1.59
Not working <sup>b</sup>	3,549	6,191,008	56,710,934	9.16	103.80	0.00	0.00 - 0.00	0.00	4,000.00	4.55	13.77
Household income group											
Less than RM 1,000	2,733	5,117,600	43,063,594	8.42	73.69	0.00	0.00 - 0.00	0.00	1,300.00	3.93	12.89
RM 1,000 - RM 1,999	3,115	5,782,614	35,237,088	6.09	46.42	0.00	0.00 - 0.00	0.00	1,000.00	3.77	8.41
RM 2,000 - RM 2,999	2,713	5,120,787	26,300,129	5.14	29.33	0.00	0.00 - 0.00	0.00	500.00	3.30	6.97
RM 3,000 - RM 3,999	2,241	4,431,713	148,602,172	33.53	346.90	0.00	0.00 - 0.00	0.00	5,000.00	0.00	76.60
RM 4,000 - RM 4,999	1,407	2,784,248	22,045,908	7.92	57.84	0.00	0.00 - 0.00	0.00	2,000.00	4.33	11.51
RM 5,000 - RM 5,999	1,043	1,849,181	27,606,348	14.93	99.71	0.00	0.00 - 0.00	0.00	1,620.00	3.81	26.05
RM 6,000 - RM 6,999	847	1,622,340	24,715,734	15.23	86.70	0.00	0.00 - 0.00	0.00	1,000.00	3.28	27.19
RM 7,000 - RM 7,999	595	1,158,920	35,610,224	30.73	171.70	0.00	0.00 - 0.00	0.00	3,000.00	0.00	65.84
RM 8,000 - RM 8,999	470	978,428	11,052,693	11.30	50.59	0.00	0.00 - 0.00	0.00	700.00	1.99	20.60
RM 9,000 - RM 9,999	254	338,824	14,586,302	43.05	148.20	0.00	0.00 - 0.00	0.00	1,200.00	0.75	85.35
RM 10,000 and above	1,126	2,114,221	86,181,154	40.76	144.90	0.00	0.00 - 0.00	0.00	3,000.00	25.10	56.42
Household income quintile											
Q1 (20% poorest)	3,445	6,491,507	52,162,120	8.04	69.99	0.00	0.00 - 0.00	0.00	1,300.00	4.32	11.76
Q2	3,219	6,113,177	34,266,320	5.61	41.20	0.00	0.00 - 0.00	0.00	1,000.00	3.47	7.74
Q3	3,270	6,280,863	153,360,828	24.42	290.80	0.00	0.00 - 0.00	0.00	5,000.00	0.00	54.68
Q4	3,302	6,163,428	63,063,726	10.23	73.99	0.00	0.00 - 0.00	0.00	2,000.00	5.92	14.54
Q5 (20% richest)	3,308	6,249,903	172,148,352	27.54	127.50	0.00	0.00 - 0.00	0.00	3,000.00	17.27	37.82
Household income category											
Bottom 40% (B40)	11,515	21,754,338	271,164,258	12.46	164.80	0.00	0.00 - 0.00	0.00	5,000.00	3.53	21.40
Middle 40% (M40)	3,678	7,087,612	112,086,222	15.81	99.11	0.00	0.00 - 0.00	0.00	3,000.00	7.36	24.26
Top 20% (T20)	1,351	2,456,927	91,750,866	37.34	141.70	0.00	0.00 - 0.00	0.00	3,000.00	23.63	51.05

Medical check-up was applicable for those aged 18 years and over (N=11,674). However, per capita health expenditure was calculated based on all of the population.

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.24:** Health expenditure (in Ringgit Malaysia, RM) for medical check-up, among those who went for medical check-up in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=11,674)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>4,536</b>	<b>7,443,869</b>	<b>481,421,549</b>	<b>64.67</b>	<b>304.41</b>	<b>0.00</b>	<b>0.00 - 5.00</b>	<b>0.00</b>	<b>5,000.00</b>	<b>36.85</b>	<b>92.50</b>
<b>State</b>											
Johor	246	535,138	32,277,437	60.32	284.30	0.00	0.00 - 1.00	0.00	4,000.00	21.23	99.40
Kedah	302	596,755	10,245,334	17.17	82.81	0.00	0.00 - 1.00	0.00	1,000.00	4.57	29.77
Kelantan	178	215,452	1,906,657	8.85	27.04	0.00	0.00 - 1.00	0.00	200.00	4.11	13.59
Melaka	290	263,484	12,618,743	47.89	177.40	0.00	0.00 - 1.00	0.00	1,000.00	14.96	80.83
Negeri Sembilan	333	686,147	23,302,865	33.96	124.00	0.00	0.00 - 1.00	0.00	900.00	10.86	57.06
Pahang	287	371,703	11,155,023	30.01	107.50	0.00	0.00 - 1.00	0.00	1,000.00	8.36	51.67
Pulau Pinang	307	485,430	58,943,427	121.40	217.20	1.00	0.00 - 182.00	0.00	1,070.00	70.93	171.92
Perak	274	686,469	15,380,104	22.40	105.60	0.00	0.00 - 1.00	0.00	1,620.00	11.12	33.69
Perlis	297	68,943	1,150,633	16.69	58.56	0.00	0.00 - 1.00	0.00	500.00	8.96	24.42
Selangor	447	1,337,818	200,820,294	150.10	619.10	1.00	0.00 - 85.00	0.00	5,000.00	4.33	295.89
Terengganu	236	221,097	7,706,932	34.86	150.60	0.00	0.00 - 2.00	0.00	3,000.00	16.90	52.82
Sabah	313	790,821	37,932,087	47.97	146.50	1.00	0.00 - 28.00	0.00	1,500.00	17.34	78.59
Sarawak	316	735,700	44,569,461	60.58	177.70	0.00	0.00 - 5.00	0.00	1,300.00	32.72	88.44
WP Kuala Lumpur	192	393,516	20,373,729	51.77	174.50	0.00	0.00 - 1.00	0.00	1,400.00	20.15	83.40
WP Labuan	282	25,529	2,199,124	86.14	360.10	0.00	0.00 - 1.00	0.00	3,000.00	25.85	146.44
WP Putrajaya	236	29,869	839,699	28.11	90.57	0.00	0.00 - 0.00	0.00	2,300.00	18.59	37.63
<b>Location</b>											
Urban	2,735	5,578,701	441,199,587	79.09	344.90	0.00	0.00 - 20.00	0.00	5,000.00	42.22	115.95
Rural	1,801	1,865,168	40,221,962	21.56	107.70	0.00	0.00 - 1.00	0.00	3,000.00	12.92	30.21
<b>Sex</b>											
Male	1,983	3,416,712	216,206,898	63.28	180.50	0.00	0.00 - 10.00	0.00	3,000.00	44.74	81.82
Female	2,553	4,027,157	265,214,650	65.86	379.00	0.00	0.00 - 1.00	0.00	5,000.00	17.91	113.81
<b>Age group (Years)</b>											
18-19	59	126,666	2,756,721	21.76	107.80	1.00	0.00 - 1.00	0.00	2,000.00	1.24	42.29
20-24	228	538,745	17,094,558	31.73	97.23	0.00	0.00 - 5.00	0.00	1,000.00	15.87	47.59
25-29	292	752,021	30,113,124	40.04	96.88	1.00	0.00 - 20.00	0.00	800.00	23.86	56.22
30-34	357	733,247	32,232,344	43.96	129.20	0.00	0.00 - 5.00	0.00	1,000.00	27.05	60.86
35-39	441	790,245	126,353,346	159.90	778.10	0.00	0.00 - 5.00	0.00	5,000.00	0.00	395.27
40-44	372	598,419	32,129,454	53.69	131.40	1.00	0.00 - 30.00	0.00	3,000.00	31.28	76.10
45-49	412	639,478	58,421,493	91.36	244.10	1.00	0.00 - 50.00	0.00	1,620.00	33.02	149.70
50-54	485	730,966	41,015,069	56.11	154.00	1.00	0.00 - 5.00	0.00	1,000.00	34.42	77.80
55-59	478	702,856	47,300,730	67.30	197.50	1.00	0.00 - 1.00	0.00	1,400.00	38.04	96.56
60-64	476	643,143	37,374,800	58.11	196.50	0.00	0.00 - 1.00	0.00	1,300.00	20.10	96.13
65-69	395	519,395	21,543,506	41.48	146.00	0.00	0.00 - 1.00	0.00	1,000.00	14.26	68.69
70-74	288	294,374	16,067,415	54.58	167.20	0.00	0.00 - 1.00	0.00	1,000.00	0.00	112.86
75 and over	253	374,315	19,018,988	50.81	326.60	0.00	0.00 - 0.00	0.00	4,000.00	4.16	97.46
<b>Ethnicity</b>											
Malay <sup>a</sup>	2,952	3,919,843	112,671,881	28.74	142.20	0.00	0.00 - 1.00	0.00	4,000.00	21.18	36.31
Chinese	574	1,661,453	286,788,164	172.60	574.00	1.00	0.00 - 150.00	0.00	5,000.00	54.56	290.67
Indian	350	522,059	33,314,906	63.81	179.40	1.00	0.00 - 10.00	0.00	1,400.00	38.24	89.39
Bumiputera Sabah	241	428,796	16,773,271	39.12	171.20	1.00	0.00 - 1.00	0.00	1,500.00	8.07	70.16
Bumiputera Sarawak	224	387,292	10,502,771	27.12	122.10	0.00	0.00 - 1.00	0.00	2,000.00	6.71	47.53
Others	195	524,425	21,370,557	40.75	80.44	0.00	0.00 - 70.00	0.00	800.00	23.80	57.70
<b>Citizenship</b>											
Malaysian	4,316	6,868,644	450,870,458	65.64	315.20	0.00	0.00 - 1.00	0.00	5,000.00	35.54	95.74
Permanent Resident	36	34,438	669,569	19.44	54.43	1.00	0.00 - 1.00	0.00	300.00	0.00	40.69
Non-Malaysian	183	540,637	29,866,520	55.24	115.30	0.00	0.00 - 75.00	0.00	1,070.00	33.12	77.37

**Table 8.24:** Health expenditure (in Ringgit Malaysia, RM) for medical check-up, among those who went for medical check-up in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=11,674) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
Marital status											
Single	565	1,277,632	61,518,862	48.15	131.80	1.00	0.00 - 20.00	0.00	2,000.00	33.30	63.00
Married	3,319	5,317,167	378,640,510	71.21	340.70	0.00	0.00 - 3.00	0.00	5,000.00	32.82	109.60
Widow(er)/Divorcee	649	842,562	41,223,312	48.93	243.00	0.00	0.00 - 1.00	0.00	4,000.00	24.10	73.75
Education level											
No formal education	303	417,104	15,538,106	37.25	281.70	0.00	0.00 - 1.00	0.00	4,000.00	0.00	75.56
Primary education	1,142	1,698,321	78,942,300	46.48	167.90	0.00	0.00 - 1.00	0.00	3,000.00	29.42	63.54
Secondary education	1,963	3,392,753	162,570,985	47.92	154.80	1.00	0.00 - 1.00	0.00	1,620.00	30.69	65.15
Tertiary education	1,111	1,899,028	223,527,249	117.70	523.70	0.00	0.00 - 70.00	0.00	5,000.00	17.59	217.82
Occupation											
Government employee	589	718,565	23,587,095	32.83	138.60	0.00	0.00 - 1.00	0.00	1,500.00	13.59	52.06
Private employee	1,087	2,296,838	150,439,668	65.50	165.40	1.00	0.00 - 50.00	0.00	3,000.00	49.73	81.27
Self-employed	707	1,138,149	88,592,463	77.84	210.20	1.00	0.00 - 60.00	0.00	1,200.00	29.37	126.31
Unpaid worker/ Homemaker	865	1,403,624	133,460,357	95.08	586.60	1.00	0.00 - 1.00	0.00	5,000.00	0.00	229.07
Retiree	304	419,692	22,100,055	52.66	161.20	0.00	0.00 - 1.00	0.00	3,000.00	25.05	80.26
Student	71	171,844	6,530,978	38.01	103.90	1.00	0.00 - 70.00	0.00	2,000.00	15.78	60.23
Not working <sup>b</sup>	913	1,295,158	56,710,934	43.79	223.70	0.00	0.00 - 1.00	0.00	4,000.00	22.45	65.13
Household income group											
Less than RM 1,000	898	1,398,656	43,063,594	30.79	138.50	0.00	0.00 - 1.00	0.00	1,300.00	15.01	46.57
RM 1,000 - RM 1,999	836	1,369,458	35,237,088	25.73	92.75	0.00	0.00 - 1.00	0.00	1,000.00	16.24	35.22
RM 2,000 - RM 2,999	710	1,173,773	26,300,129	22.41	58.05	0.00	0.00 - 1.00	0.00	500.00	14.92	29.89
RM 3,000 - RM 3,999	520	883,878	148,602,172	168.10	762.70	1.00	0.00 - 5.00	0.00	5,000.00	0.00	379.46
RM 4,000 - RM 4,999	372	673,216	22,045,908	32.75	114.20	0.00	0.00 - 1.00	0.00	2,000.00	18.45	47.04
RM 5,000 - RM 5,999	260	375,015	27,606,348	73.61	211.70	0.00	0.00 - 5.00	0.00	1,620.00	23.14	124.08
RM 6,000 - RM 6,999	185	345,442	24,715,734	71.55	177.20	0.00	0.00 - 5.00	0.00	1,000.00	19.74	123.36
RM 7,000 - RM 7,999	141	223,026	35,610,224	159.70	365.10	1.00	0.00 - 100.00	0.00	3,000.00	0.00	321.18
RM 8,000 - RM 8,999	133	238,229	11,052,693	46.40	94.48	0.00	0.00 - 38.00	0.00	700.00	13.37	79.42
RM 9,000 - RM 9,999	81	106,158	14,586,302	137.40	240.00	1.00	0.00 - 150.00	0.00	1,200.00	30.07	244.73
RM 10,000 and above	361	591,360	86,181,154	145.70	244.60	30.00	0.00 - 200.00	0.00	3,000.00	102.28	189.19
Household income quintile											
Q1 (20% poorest)	1,087	1,729,246	52,162,120	30.16	133.20	0.00	0.00 - 1.00	0.00	1,300.00	16.68	43.65
Q2	851	1,381,229	34,266,320	24.81	83.92	0.00	0.00 - 1.00	0.00	1,000.00	15.60	34.02
Q3	807	1,368,592	153,360,828	112.10	615.20	0.00	0.00 - 5.00	0.00	5,000.00	0.00	249.16
Q4	848	1,387,717	63,063,726	45.44	150.80	0.00	0.00 - 3.00	0.00	2,000.00	26.87	64.01
Q5 (20% richest)	904	1,511,426	172,148,352	113.90	239.60	1.00	0.00 - 150.00	0.00	3,000.00	73.72	154.08
Household income category											
Bottom 40% (B40)	3,141	5,121,869	271,164,258	52.94	336.40	0.00	0.00 - 1.00	0.00	5,000.00	15.26	90.63
Middle 40% (M40)	927	1,510,952	112,086,222	74.18	204.40	0.00	0.00 - 20.00	0.00	3,000.00	35.17	113.20
Top 20% (T20)	429	745,389	91,750,866	123.10	236.00	1.00	0.00 - 170.00	0.00	3,000.00	83.76	162.42

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

<sup>a</sup> Malay includes Orang Asli<sup>b</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.25:** Per capita health expenditure (in Ringgit Malaysia, RM) for private medical laboratory, by sociodemographic characteristics, NHMS 2019

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>16,688</b>	<b>31,574,566</b>	<b>438,159,318</b>	<b>13.88</b>	<b>497.21</b>	<b>0.00</b>	<b>0.00 - 0.00</b>	<b>0.00</b>	<b>45,000.00</b>	<b>3.69</b>	<b>24.06</b>
<b>State</b>											
Johor	1,487	3,583,487	14,982,225	4.18	47.83	0.00	0.00 - 0.00	0.00	1,000.00	1.05	7.31
Kedah	948	2,002,593	3,885,396	1.94	40.97	0.00	0.00 - 0.00	0.00	1,730.00	0.04	3.84
Kelantan	1,040	1,780,805	14,316,868	8.04	333.00	0.00	0.00 - 0.00	0.00	15,000.00	0.00	22.29
Melaka	919	820,924	2,038,860	2.48	26.57	0.00	0.00 - 0.00	0.00	500.00	0.03	4.93
Negeri Sembilan	894	1,909,034	8,768,616	4.59	43.18	0.00	0.00 - 0.00	0.00	1,200.00	0.33	8.85
Pahang	994	1,527,286	12,978,244	8.50	90.38	0.00	0.00 - 0.00	0.00	1,800.00	1.36	15.63
Pulau Pinang	950	1,631,913	170,269,990	104.30	2,051.00	0.00	0.00 - 0.00	0.00	45,000.00	0.00	289.36
Perak	811	2,196,662	8,946,878	4.07	39.56	0.00	0.00 - 0.00	0.00	850.00	0.21	7.94
Perlis	914	231,316	834,037	3.61	24.84	0.00	0.00 - 0.00	0.00	500.00	1.66	5.55
Selangor	1,811	6,390,944	128,621,835	20.13	244.20	0.00	0.00 - 0.00	0.00	13,000.00	5.39	34.86
Terengganu	1,118	1,187,197	1,510,159	1.27	13.64	0.00	0.00 - 0.00	0.00	300.00	0.47	2.08
Sabah	1,355	3,790,738	25,295,452	6.67	115.70	0.00	0.00 - 0.00	0.00	4,200.00	0.00	13.36
Sarawak	1,005	2,648,630	18,567,356	7.01	58.37	0.00	0.00 - 0.00	0.00	1,600.00	3.21	10.81
WP Kuala Lumpur	729	1,688,285	24,783,676	14.68	391.20	0.00	0.00 - 0.00	0.00	14,000.00	0.00	34.96
WP Labuan	912	87,678	1,873,624	21.37	202.60	0.00	0.00 - 0.00	0.00	3,000.00	0.16	42.57
WP Putrajaya	801	97,074	486,101	5.01	45.46	0.00	0.00 - 0.00	0.00	600.00	1.28	8.73
<b>Location</b>											
Urban	10,009	23,623,015	402,340,553	17.03	566.80	0.00	0.00 - 0.00	0.00	45,000.00	3.47	30.59
Rural	6,679	7,951,551	35,818,764	4.51	164.40	0.00	0.00 - 0.00	0.00	15,000.00	1.06	7.95
<b>Sex</b>											
Male	8,043	15,738,005	148,546,225	9.44	162.50	0.00	0.00 - 0.00	0.00	14,000.00	3.07	15.81
Female	8,645	15,836,561	289,613,093	18.29	683.10	0.00	0.00 - 0.00	0.00	45,000.00	0.00	37.59
<b>Age group (Years)</b>											
18-19	1,094	2,727,354	1,528,232	0.56	22.26	0.00	0.00 - 0.00	0.00	2,000.00	0.00	1.23
20-24	1,048	3,002,365	7,253,472	2.42	19.86	0.00	0.00 - 0.00	0.00	1,300.00	1.15	3.68
25-29	1,121	3,147,072	17,361,899	5.52	57.32	0.00	0.00 - 0.00	0.00	2,000.00	2.01	9.02
30-34	1,189	2,801,848	23,839,853	8.51	73.14	0.00	0.00 - 0.00	0.00	1,200.00	3.85	13.16
35-39	1,254	2,428,096	18,581,283	7.65	67.01	0.00	0.00 - 0.00	0.00	1,800.00	3.11	12.20
40-44	1,064	1,902,132	25,524,955	13.42	88.57	0.00	0.00 - 0.00	0.00	3,000.00	4.03	22.81
45-49	1,062	1,716,563	47,344,410	27.58	229.80	0.00	0.00 - 0.00	0.00	3,600.00	0.00	62.96
50-54	1,063	1,632,323	23,283,366	14.26	92.77	0.00	0.00 - 0.00	0.00	1,000.00	2.68	25.85
55-59	998	1,455,774	51,932,868	35.67	465.80	0.00	0.00 - 0.00	0.00	14,000.00	4.91	66.43
60-64	852	1,186,746	167,627,159	141.20	2,408.00	0.00	0.00 - 0.00	0.00	45,000.00	0.00	394.20
65-69	693	871,596	15,443,542	17.72	167.60	0.00	0.00 - 0.00	0.00	2,000.00	0.00	44.10
70-74	492	590,567	7,104,865	12.03	73.37	0.00	0.00 - 0.00	0.00	800.00	0.85	23.21
75 and over	467	651,295	31,333,413	48.11	792.60	0.00	0.00 - 0.00	0.00	15,000.00	0.00	111.26
<b>Ethnicity</b>											
Malay <sup>a</sup>	11,325	17,425,958	91,578,004	5.26	165.60	0.00	0.00 - 0.00	0.00	15,000.00	2.50	8.01
Chinese	1,838	6,122,813	270,260,500	44.14	1,067.00	0.00	0.00 - 0.00	0.00	45,000.00	0.00	94.43
Indian	980	1,792,154	47,761,660	26.65	408.10	0.00	0.00 - 0.00	0.00	14,000.00	3.82	49.48
Bumiputera Sabah	1,035	2,071,061	14,342,865	6.93	150.70	0.00	0.00 - 0.00	0.00	4,200.00	0.00	17.13
Bumiputera Sarawak	698	1,407,413	5,361,971	3.81	44.81	0.00	0.00 - 0.00	0.00	2,000.00	1.36	6.26
Others	812	2,755,167	8,854,317	3.21	27.04	0.00	0.00 - 0.00	0.00	800.00	1.23	5.19
<b>Citizenship</b>											
Malaysian	15,783	28,584,000	423,878,735	14.83	522.50	0.00	0.00 - 0.00	0.00	45,000.00	3.59	26.07
Permanent Resident	121	234,440	334,046	1.43	14.99	0.00	0.00 - 0.00	0.00	300.00	0.00	3.02
Non-Malaysian	780	2,749,951	13,946,536	5.07	35.06	0.00	0.00 - 0.00	0.00	800.00	1.93	8.21

**Table 8.25:** Per capita health expenditure (in Ringgit Malaysia, RM) for private medical laboratory, by sociodemographic characteristics, NHMS 2019 (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
Marital status											
Single	3,713	9,109,430	49,004,569	5.38	95.84	0.00	0.00 - 0.00	0.00	4,200.00	1.72	9.04
Married	7,938	14,095,355	197,953,216	14.04	180.10	0.00	0.00 - 0.00	0.00	14,000.00	6.70	21.39
Widow(er)/Divorcee	1,255	1,776,520	191,201,532	107.60	2,021.00	0.00	0.00 - 0.00	0.00	45,000.00	0.00	277.01
Education level											
No formal education	2,560	4,743,451	4,247,434	0.90	11.39	0.00	0.00 - 0.00	0.00	300.00	0.38	1.41
Primary education	5,111	8,762,445	208,297,799	23.77	911.10	0.00	0.00 - 0.00	0.00	45,000.00	0.00	58.32
Secondary education	6,091	12,172,330	120,107,939	9.87	115.40	0.00	0.00 - 0.00	0.00	5,000.00	2.08	17.65
Tertiary education	2,868	5,776,720	104,932,401	18.16	252.40	0.00	0.00 - 0.00	0.00	14,000.00	9.66	26.67
Occupation											
Government employee	1,225	1,583,152	22,207,625	14.03	153.40	0.00	0.00 - 0.00	0.00	3,600.00	2.03	26.03
Private employee	3,446	8,525,793	96,595,581	11.33	192.20	0.00	0.00 - 0.00	0.00	14,000.00	5.54	17.12
Self-employed	2,206	3,989,421	78,880,132	19.77	179.50	0.00	0.00 - 0.00	0.00	4,200.00	0.46	39.08
Unpaid worker/ Homemaker	2,128	3,839,709	21,565,799	5.62	43.29	0.00	0.00 - 0.00	0.00	1,000.00	2.74	8.50
Retiree	548	782,603	17,085,701	21.83	231.80	0.00	0.00 - 0.00	0.00	5,000.00	0.11	43.56
Student	3,584	6,657,462	2,179,400	0.33	13.97	0.00	0.00 - 0.00	0.00	2,000.00	0.02	0.63
Not working <sup>b</sup>	3,549	6,191,008	199,645,079	32.25	1,084.00	0.00	0.00 - 0.00	0.00	45,000.00	0.00	81.14
Household income group											
Less than RM 1,000	2,733	5,117,600	27,712,595	5.42	199.30	0.00	0.00 - 0.00	0.00	15,000.00	0.21	10.62
RM 1,000 - RM 1,999	3,115	5,782,614	13,148,752	2.27	28.30	0.00	0.00 - 0.00	0.00	1,000.00	0.78	3.77
RM 2,000 - RM 2,999	2,713	5,120,787	17,455,919	3.41	50.54	0.00	0.00 - 0.00	0.00	1,800.00	1.25	5.56
RM 3,000 - RM 3,999	2,241	4,431,713	40,328,812	9.10	99.43	0.00	0.00 - 0.00	0.00	2,000.00	2.92	15.28
RM 4,000 - RM 4,999	1,407	2,784,248	12,288,910	4.41	56.53	0.00	0.00 - 0.00	0.00	2,000.00	1.44	7.39
RM 5,000 - RM 5,999	1,043	1,849,181	9,627,747	5.21	53.36	0.00	0.00 - 0.00	0.00	1,000.00	1.60	8.82
RM 6,000 - RM 6,999	847	1,622,340	3,832,704	2.36	32.58	0.00	0.00 - 0.00	0.00	800.00	0.00	4.74
RM 7,000 - RM 7,999	595	1,158,920	57,632,004	49.73	524.40	0.00	0.00 - 0.00	0.00	14,000.00	0.00	116.46
RM 8,000 - RM 8,999	470	978,428	29,983,639	30.64	495.50	0.00	0.00 - 0.00	0.00	13,000.00	0.00	67.06
RM 9,000 - RM 9,999	254	338,824	6,219,672	18.36	68.75	0.00	0.00 - 0.00	0.00	1,200.00	0.00	40.43
RM 10,000 and above	1,126	2,114,221	210,577,705	99.60	1,812.00	0.00	0.00 - 0.00	0.00	45,000.00	0.00	240.21
Household income quintile											
Q1 (20% poorest)	3,445	6,491,507	29,705,143	4.58	177.10	0.00	0.00 - 0.00	0.00	15,000.00	0.45	8.70
Q2	3,219	6,113,177	15,644,038	2.56	28.92	0.00	0.00 - 0.00	0.00	1,000.00	1.12	4.00
Q3	3,270	6,280,863	50,144,797	7.98	94.07	0.00	0.00 - 0.00	0.00	2,000.00	3.32	12.65
Q4	3,302	6,163,428	25,068,756	4.07	48.87	0.00	0.00 - 0.00	0.00	2,000.00	1.97	6.16
Q5 (20% richest)	3,308	6,249,903	308,245,725	49.32	1,096.00	0.00	0.00 - 0.00	0.00	45,000.00	0.00	98.66
Household income category											
Bottom 40% (B40)	11,515	21,754,338	125,511,624	5.77	155.30	0.00	0.00 - 0.00	0.00	15,000.00	3.27	8.27
Middle 40% (M40)	3,678	7,087,612	94,595,012	13.35	212.40	0.00	0.00 - 0.00	0.00	13,000.00	2.00	24.69
Top 20% (T20)	1,351	2,456,927	208,701,824	84.94	1,681.00	0.00	0.00 - 0.00	0.00	45,000.00	0.00	205.45

Use of private medical laboratory was applicable for those aged 18 years and over (N=11,674). However, per capita health expenditure was calculated based on all of the population.

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

a Malay includes Orang Asli

b Not working includes those who were unemployed, old age, children, and those who were not working because of health problems

**Table 8.26:** Health expenditure (in Ringgit Malaysia, RM) for private medical laboratory users in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=11,674)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
<b>MALAYSIA</b>	<b>725</b>	<b>1,503,864</b>	<b>438,159,318</b>	<b>291.36</b>	<b>2,261.96</b>	<b>40.00</b>	<b>0.00 - 150.00</b>	<b>0.00</b>	<b>45,000.00</b>	<b>84.89</b>	<b>497.82</b>
<b>State</b>											
Johor	49	126,506	14,982,225	118.40	228.70	8.00	0.00 - 150.00	0.00	1,000.00	49.88	186.98
Kedah	23	48,689	3,885,396	79.80	256.10	0.00	0.00 - 100.00	0.00	1,730.00	9.74	149.86
Kelantan	23	26,797	14,316,868	534.30	2,721.00	50.00	1.00 - 70.00	0.00	15,000.00	0.00	1,508.10
Melaka	34	26,591	2,038,860	76.68	128.70	35.00	0.00 - 80.00	0.00	500.00	9.48	143.87
Negeri Sembilan	39	64,678	8,768,616	135.60	195.40	60.00	0.00 - 200.00	0.00	1,200.00	64.63	206.52
Pahang	49	79,931	12,978,244	162.40	365.60	1.00	0.00 - 150.00	0.00	1,800.00	32.97	291.76
Pulau Pinang	23	44,287	170,269,990	3,845.00	12,119.00	300.00	100.00 - 300.00	0.00	45,000.00	0.00	9,006.14
Perak	24	115,315	8,946,878	77.59	158.50	50.00	1.00 - 60.00	0.00	850.00	15.44	139.73
Perlis	38	9,494	834,037	87.85	88.47	70.00	37.00 - 120.00	0.00	500.00	59.32	116.39
Selangor	145	488,816	128,621,835	263.10	848.70	50.00	0.00 - 150.00	0.00	13,000.00	108.72	417.54
Terengganu	35	29,484	1,510,159	51.22	71.23	24.00	0.00 - 83.00	0.00	300.00	23.29	79.15
Sabah	52	149,458	25,295,452	169.20	563.60	40.00	0.00 - 120.00	0.00	4,200.00	18.92	319.57
Sarawak	65	205,615	18,567,356	90.30	192.10	30.00	0.00 - 106.00	0.00	1,600.00	48.34	132.27
WP Kuala Lumpur	35	78,953	24,783,676	313.90	1,808.00	0.00	0.00 - 80.00	0.00	14,000.00	0.00	726.41
WP Labuan	69	6,565	1,873,624	285.40	692.20	0.00	0.00 - 90.00	0.00	3,000.00	61.19	509.61
WP Putrajaya	22	2,685	486,101	181.10	211.70	90.00	0.00 - 300.00	0.00	600.00	108.87	253.29
<b>Location</b>											
Urban	509	1,275,139	402,340,553	315.50	2,423.00	45.00	0.00 - 150.00	0.00	45,000.00	73.60	557.46
Rural	216	228,724	35,818,764	156.60	959.30	1.00	0.00 - 100.00	0.00	15,000.00	32.94	280.27
<b>Sex</b>											
Male	353	774,214	148,546,225	191.90	709.50	25.00	0.00 - 150.00	0.00	14,000.00	75.38	308.35
Female	372	729,650	289,613,093	396.90	3,163.00	50.00	0.00 - 120.00	0.00	45,000.00	0.00	814.03
<b>Age group (Years)</b>											
18-19	14	26,006	1,528,232	58.76	228.50	0.00	0.00 - 80.00	0.00	2,000.00	0.00	127.49
20-24	58	154,848	7,253,472	46.84	75.19	30.00	0.00 - 75.00	0.00	1,300.00	27.47	66.22
25-29	73	186,292	17,361,899	93.20	218.90	45.00	0.00 - 120.00	0.00	2,000.00	41.51	144.89
30-34	74	182,874	23,839,853	130.40	258.70	40.00	0.00 - 150.00	0.00	1,200.00	69.20	191.52
35-39	81	205,973	18,581,283	90.21	214.50	30.00	0.00 - 150.00	0.00	1,800.00	38.72	141.70
40-44	73	166,666	25,524,955	153.20	262.60	20.00	0.00 - 200.00	0.00	3,000.00	66.03	240.27
45-49	82	156,492	47,344,410	302.50	708.10	40.00	0.00 - 150.00	0.00	3,600.00	14.59	590.48
50-54	68	111,075	23,283,366	209.60	294.40	99.00	1.00 - 260.00	0.00	1,000.00	76.08	343.16
55-59	67	111,054	51,932,868	467.60	1,637.00	100.00	0.00 - 300.00	0.00	14,000.00	94.92	840.35
60-64	49	78,609	167,627,159	2,132.00	9,215.00	0.00	0.00 - 180.00	0.00	45,000.00	0.00	5,856.79
65-69	36	50,575	15,443,542	305.40	637.80	60.00	0.00 - 100.00	0.00	2,000.00	0.00	707.34
70-74	28	42,123	7,104,865	168.70	225.20	100.00	0.00 - 200.00	0.00	800.00	47.20	290.14
75 and over	22	31,274	31,333,413	1,002.00	3,560.00	5.00	0.00 - 100.00	0.00	15,000.00	0.00	2,374.16
<b>Ethnicity</b>											
Malay <sup>a</sup>	388	614,852	91,578,004	148.90	870.40	1.00	0.00 - 100.00	0.00	15,000.00	74.39	223.50
Chinese	132	465,213	270,260,500	580.90	3,845.00	100.00	0.00 - 220.00	0.00	45,000.00	0.00	1,220.75
Indian	64	120,381	47,761,660	396.80	1,539.00	100.00	0.00 - 200.00	0.00	14,000.00	67.08	726.43
Bumiputera Sabah	43	56,354	14,342,865	254.50	888.20	30.00	0.00 - 75.00	0.00	4,200.00	0.00	617.64
Bumiputera Sarawak	49	88,688	5,361,971	60.46	170.20	0.00	0.00 - 35.00	0.00	2,000.00	14.37	106.55
Others	49	158,377	8,854,317	55.91	99.82	0.00	0.00 - 100.00	0.00	800.00	26.20	85.61
<b>Citizenship</b>											
Malaysian	661	1,305,316	423,878,735	324.70	2,426.00	40.00	0.00 - 150.00	0.00	45,000.00	88.05	561.41
Permanent Resident	7	6,078	334,046	54.96	81.23	20.00	0.00 - 60.00	0.00	300.00	3.98	105.94
Non-Malaysian	57	192,469	13,946,536	72.46	113.50	0.00	0.00 - 125.00	0.00	800.00	38.99	105.93

**Table 8.26:** Health expenditure (in Ringgit Malaysia, RM) for private medical laboratory users in the last 12 months, by sociodemographic characteristics, NHMS 2019 (N=11,674) (cont'd)

Sociodemographic characteristics	Count	Estimated population	Sum	Mean	SD	Median	IQR	Min	Max	95% CI	
										Lower	Upper
Marital status											
Single	129	310,719	49,004,569	157.70	497.10	30.00	0.00 - 108.00	0.00	4,200.00	58.45	256.97
Married	534	1,104,108	197,953,216	179.30	620.40	45.00	0.00 - 150.00	0.00	14,000.00	100.34	258.23
Widow(er)/Divorcee	62	89,037	191,201,532	2,147.00	8,848.00	45.00	0.00 - 100.00	0.00	45,000.00	0.00	5,479.58
Education level											
No formal education	32	78,114	4,247,434	54.38	71.61	40.00	0.00 - 100.00	0.00	300.00	28.69	80.06
Primary education	130	246,806	208,297,799	844.00	5,385.00	25.00	0.00 - 100.00	0.00	45,000.00	0.00	2,069.53
Secondary education	322	665,792	120,107,939	180.40	462.00	40.00	0.00 - 150.00	0.00	5,000.00	60.59	300.21
Tertiary education	240	508,562	104,932,401	206.30	829.20	40.00	0.00 - 198.00	0.00	14,000.00	112.98	299.68
Occupation											
Government employee	85	146,439	22,207,625	151.70	485.90	0.00	0.00 - 85.00	0.00	3,600.00	28.86	274.44
Private employee	271	643,043	96,595,581	150.20	686.00	1.00	0.00 - 150.00	0.00	14,000.00	79.48	220.95
Self-employed	124	277,400	78,880,132	284.40	625.30	60.00	0.00 - 150.00	0.00	4,200.00	52.68	516.03
Unpaid worker/ Homemaker	103	186,513	21,565,799	115.60	161.60	50.00	0.00 - 150.00	0.00	1,000.00	73.15	158.10
Retiree	35	68,265	17,085,701	250.30	757.90	100.00	0.00 - 300.00	0.00	5,000.00	20.18	480.39
Student	15	46,370	2,179,400	47.00	166.40	30.00	0.00 - 30.00	0.00	2,000.00	13.15	80.85
Not working <sup>b</sup>	92	135,834	199,645,079	1,470.00	7,210.00	30.00	0.00 - 200.00	0.00	45,000.00	0.00	3,657.45
Household income group											
Less than RM 1,000	83	161,945	27,712,595	171.10	1,114.00	20.00	0.00 - 120.00	0.00	15,000.00	5.14	337.11
RM 1,000 - RM 1,999	84	165,798	13,148,752	79.31	148.60	45.00	0.00 - 100.00	0.00	1,000.00	36.18	122.43
RM 2,000 - RM 2,999	92	202,406	17,455,919	86.24	241.00	5.00	0.00 - 100.00	0.00	1,800.00	35.50	136.98
RM 3,000 - RM 3,999	88	183,039	40,328,812	220.30	441.50	70.00	0.00 - 200.00	0.00	2,000.00	83.68	356.98
RM 4,000 - RM 4,999	75	144,665	12,288,910	84.95	235.30	1.00	0.00 - 95.00	0.00	2,000.00	29.41	140.49
RM 5,000 - RM 5,999	55	82,468	9,627,747	116.70	227.40	1.00	0.00 - 100.00	0.00	1,000.00	50.83	182.66
RM 6,000 - RM 6,999	38	89,635	3,832,704	42.76	133.90	0.00	0.00 - 40.00	0.00	800.00	0.00	86.69
RM 7,000 - RM 7,999	29	63,594	57,632,004	906.20	2,092.00	200.00	0.00 - 2,000.00	0.00	14,000.00	220.05	1,592.44
RM 8,000 - RM 8,999	36	97,011	29,983,639	309.10	1,566.00	30.00	0.00 - 150.00	0.00	13,000.00	0.00	689.98
RM 9,000 - RM 9,999	16	34,592	6,219,672	179.80	135.00	200.00	90.00 - 300.00	0.00	1,200.00	76.82	282.78
RM 10,000 and above	118	253,995	210,577,705	829.10	5,190.00	100.00	0.00 - 200.00	0.00	45,000.00	0.00	2,021.15
Household income quintile											
Q1 (20% poorest)	104	202,418	29,705,143	146.80	996.90	20.00	0.00 - 100.00	0.00	15,000.00	13.79	279.71
Q2	95	194,154	15,644,038	80.58	142.30	40.00	0.00 - 100.00	0.00	1,000.00	43.13	118.02
Q3	119	266,884	50,144,797	187.90	419.40	50.00	0.00 - 150.00	0.00	2,000.00	85.44	290.34
Q4	159	276,866	25,068,756	90.54	213.60	1.00	0.00 - 100.00	0.00	2,000.00	47.45	133.64
Q5 (20% richest)	237	538,827	308,245,725	572.10	3,700.00	60.00	0.00 - 200.00	0.00	45,000.00	0.00	1,150.17
Household income category											
Bottom 40% (B40)	397	838,338	125,511,624	149.70	778.10	20.00	0.00 - 110.00	0.00	15,000.00	87.24	212.19
Middle 40% (M40)	192	362,368	94,595,012	261.00	906.50	40.00	0.00 - 180.00	0.00	13,000.00	75.71	446.38
Top 20% (T20)	125	278,442	208,701,824	749.50	4,962.00	60.00	0.00 - 200.00	0.00	45,000.00	0.00	1,846.15

95% CI = 95% Confidence Interval; SD = Standard Deviation; IQR = Inter Quartile Range

<sup>a</sup> Malay includes Orang Asli

<sup>b</sup> Not working includes those who were unemployed, old age, children, and those who were not working because of health problems



# Appendices

## Appendix 1

### Members of Steering Committee, NHMS 2019-2022

1. Director General of Health
2. Deputy Director General of Health (Research & Technical Support)
3. Deputy Director General of Health (Public Health)
4. Deputy Director General of Health (Medical)
5. Principal Director, Oral Health Programme
6. Principal Director, Pharmaceutical Services Programme
7. Principal Director, Food Safety and Quality Programme
8. Director, Medical Development Division
9. Director, Planning Division
10. Director, Health Education Division
11. Director, Disease Control Division
12. Director, Family Health Development Division
13. Director, Nutrition Division
14. Representative of State Directors
15. Director, Institute for Public Health
16. Dean, Faculty of Medicine, University of Malaya
17. Dean, Faculty of Medicine, National University of Malaysia
18. Principal Investigator of NHMS

## Appendix 2

### Members of Central Coordinating Team (CCT) NHMS 2019 Healthcare Demand Module

1. Dr Noor Ani Ahmad (Director: Institute for Public Health)
2. Dr Nor Izzah Hj Ahmad Shauki (Director: Institute for Health Systems Research)
3. Dr Manimaran Krishnan Kaundan (Director: Institute for Health Behavioural Research)
4. Dr Hj Tahir Hj Aris (Advisor)
5. Dr Shubash Shander Ganapathy (Principal Investigator)
6. Suhana Jawahir (Co-Principal Investigator: Healthcare Demand Module)
7. Dr Tan Ee Hong (Head: Centre for Health Equity Research)
8. Dr Fathullah Iqbal Ab Rahim (Data Manager)
9. Nazirah Alias (Project Manager)
10. Dr Mohd Shaiful Azlan Kassim (Project Manager)
11. Dr Halizah Mat Rifin (System Manager)
12. Dr LeeAnn Tan (Publicity Manager)
13. Norzawati Yeop (Logistics Manager)
14. Ruhaya Salleh (Central Field Supervisor of Northern Zone)
15. Lim Kuang Kuay (Central Field Supervisor of Eastern Zone)
16. Dr Rajini Sooryanarayana (Central Field Supervisor of Southern Zone)
17. Hashima Ismail (Central Field Supervisor of Central Zone)
18. Norhafizah Sahril (Central Field Supervisor of Central Zone)
19. Chan Ying Ying (Central Field Supervisor of Central Zone)
20. Ahmad Ali Zainuddin (Central Field Supervisor of East Malaysia Zone)
21. Andy Mustaming (System Support)

## Appendix 3

### List of Liaison Officers

1. Dr. Linayanti Rosli  
Ketua Penolong Pengarah Kanan (Unit NCD)  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Johor
2. Dr. Nor Hana Ahmad Bahuri  
Ketua Penolong Pengarah Kanan (Unit NCD)  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Johor

3. Dr. Ahmad Hazri Ilyas  
Pegawai Perubatan  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Kedah
4. Dr. Noorhashimah Abdullah  
Ketua Penolong Pengarah (Unit NCD)  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Kelantan
5. Dr. Mohd Syis Zulkipli  
Pegawai Perubatan  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Melaka
6. Datin Seri Dr. Norzakiah Mohd Tahir  
Ketua Penolong Pengarah Kanan (Unit NCD)  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Sembilan
7. Dr. Ami Kalsum Subirdan  
Ketua Penolong Pengarah (Unit NCD)  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Pahang
8. Dr. Farzaana Adam  
Ketua Penolong Pengarah Kanan (Unit NCD)  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Pulau Pinang
9. Dr. Norrina Esa  
Pegawai Epidemiologi (NCDC)  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Perak
10. Dr. Husna Hakimah Tajul Rahim  
Ketua Penolong Pengarah (Unit NCD)  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Perlis
11. Dr. Bariyah Kadas  
Ketua Penolong Pengarah Kanan  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Selangor
12. Dr. Wan Nor Hafizah Wan Baharuddin  
Pegawai Perubatan  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Terengganu
13. Dr. Idzhar Azwan Mohd. Idrus  
Penolong Pengarah  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Sabah
14. Dr. Micheal Pelitini Anak Ugak  
Ketua Penolong Pengarah  
Seksyen TB/Kusta dan Penyelidikan Kesihatan Awam  
Jabatan Kesihatan Negeri Sarawak
15. Mohd Shamsul Zamani Abdul Malek  
Penolong Pegawai Perubatan  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Wilayah Persekutuan Kuala Lumpur & Putrajaya

16. Dr. Rosnelizaide Ramely  
Pegawai Perubatan  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Wilayah Persekutuan Labuan

17. Dr. Becklyne Mile  
Ketua Penolong Pengarah  
Bahagian Kesihatan Awam  
Jabatan Kesihatan Negeri Sarawak

#### Appendix 4

List of Research Assistants in Central Team  
Healthcare Demand Module

1. Amir Jazali Zaili
2. Amira Farhana Mohamed Iqbal
3. Izzahtul Afiqah Kamarullail
4. Fasehah Ali
5. Madhumathi Ananda Dorai
6. Mohamad Azli Che Daud
7. Mohamad Syafiq Mohamad Sallehin
8. Muhamad Mustaqim Hussain
9. Muhammad Noriduan Nor'amilin
10. Noor Nadia Syahira Mohd Kamal
11. Noraznie Nordin
12. Nornadiah Zulkifly
13. Nurul Amalina Yusof
14. Nurul Faizah Mohd Suhaimi
15. Nurul Hafizah Mohd Hazman
16. Putrizatul Ain Mohamad Radzib

#### Appendix 5

State Data Collection Teams

#### JOHOR

- **Field Supervisors**  
Dr. Nur Liana Ab Majid  
Ahzairin Ahmad  
Dr. Nurul Iman Jamalul-Lail
- **Data Collectors**  
Norain Mohd Idris  
Nur Atiqahasrah Abdul Rahman  
Nursyazwana Abu Bakar  
Efie Nursyahira Su'ut  
Nur zafir Nazira Ruhaimi  
Amirah Ali  
Izza Idayu Ishak  
Nur Khairiyah Mohammad  
Norhasima Shawal  
Ros Azura Hikmi  
Siti Nur Nabila Zailan  
Nur Shafiqah Quratul Aini Mustafa  
Muhammad Arif Kamson  
Lau Cin Pein  
Afiqah Ali  
Ng Chie Ying  
Wan Anisa Rodzlan Hasani  
Muhammad Farouq Abdul Rahman  
Nor Fatin Afiqah Mohd Noor  
Ahmad Faruqi Ahmad Jazuli  
Muhamad Farid Saypodin  
Mohd Zhahiruddin Khairul Arifin  
Muhammad Afif Azhari  
Muhammad Syafiq Azni  
Mohd Akhsah Mansor

#### MELAKA

- **Field Supervisors**  
Suhaila Abdul Ghaffar  
Faizul Akmal Abd Rahman  
Kong Yuke Lin
- **Data Collectors**  
Muhaizon Muhamad  
Zafirah Zainal  
Dayang Nor Atikah Datu Awang  
Zuhaida Hussin  
Raja Nor Fatimah Raja Omar  
Azmarhani Abd Rahman  
Nurul Wahidah Whakiddin  
Nor Azila Mustopha  
Nur Azlin Adil  
Nurul Syamimi Zuber  
Normala Samsudin  
Nurul Nadia Abdul Razak  
Fatin Syamimi Mansor  
Mohd. Yusry Mahdi  
Muhammad Khairul Faezi Mohd Tamin  
Muhammad Haziq Halimi

#### NEGERI SEMBILAN

- **Field Supervisors**  
Cheong Siew Man  
Dr. Mohd Shaiful Jefri Mohd Nor Sham  
Dr. Nor Azlina Hashim  
Ahzairin Ahmad  
Munawara Pardi
- **Data Collectors**  
Nazurah Daud  
Rohani Sipelistah  
Nur Aimi Jamaluddin  
Norazilah Amir Basan  
Muhamad Zulhilmi Razali  
Anis Nurdinieh Ahmad Shapawi  
Nazifa Zahidah Malik  
Muhammad Aiman Rahimin  
Ng Sze Lam  
Pavithrayani Ramayah  
Kalaiwani Gunasekaran  
Sim ZhenZhao  
Kamarul Ariffin Amat Basari  
Muhammad Asyraf Adnan  
Muhammad Syahmir Aminuddin Mohd Baharuddin

## SELANGOR

- **Field Supervisors**  
Nur Shahida Abdul Aziz  
Dr. Rozmi Mohd Ali  
Dr. Mohd Shaiful Azlan Kassim  
Dr. Rimah Melati Ab. Ghani  
Pn Normaizira Hamidi  
Dr. Nurulasmak Mohamed  
Munawara Pardi
- **Data Collectors**  
Farlinda Petrus  
Norjannah Hussain  
Norasshikin Anoar  
Tengku Ahmad Saifuddin Tengku Mohd Nadzri  
Noraisyah Samsikama  
Fadzilah Mak Mon  
Alia Anak Anthony  
Nadirah Fuad  
Nur Fatimah Mohd  
Roshafida Hussin  
Nurul Khairiza Kahar  
Ade Aliff Jobin @ Juvie  
Mohamad Pauzan Razali  
Wan Muhammad Asyraf Wan Ramlan  
Nabihah Mohamad Noh  
Chang May Shin  
Ong Ceah Ling  
Rohana Saharudin  
Nurul Aini Kamaruddin  
Nurul Shafika Hanum Yusri  
Azizah Nurfauziah Jafri  
Salsadila Nordin  
Aini Ahmad  
Khairunnisa' Mohd Subri  
Esma Amsyar Edy Harejonto  
Isa Kamarudin  
Nurlis Yunarlis  
Mohd Hilman Faiz Muhd Naim  
Mohamad Nur Hafiz Khalil  
Mohammad Asyraf Rosli  
Muhammad Haniful Amin Mohd Rivoan  
Ahmad Husaini Abdul Razak  
Mohd Taufik Mokhtar  
Wan Mohamad Shahariman Ramli  
Mohammad Fareez Akmal Abdul Aziz

## W.P. KUALA LUMPUR

- **Field Supervisors**  
Dr. Noor Aliza Lodz  
Masitah Hj. Ahmad
- **Data Collectors**  
Siti Fatimah Abdul Mumin  
Noor Shuhada Kamalrudin  
Nur Syakira Hazwani Mohamad Rudian  
Kamaruz Fawwaz Kamaruzzaman  
Syahiroh Said  
Muhammad Ridwan Md Nurhadi  
Nurain Nadia Azmi  
Adeline Lo Li Ching  
Nor Syafawati Ahmad Sukhari  
Wong Sok Peng  
Nurul Hidayah Zamri  
Muhammad Naufal Mohd Najib  
Casey Gan Cheo Lih

Syed Muhammad Iqbal Syed Mazlan  
Amierul Asyraf Sauti  
Hasnul Amri Jamaluddin

## W.P. PUTRAJAYA

- **Field Supervisors**  
Syafinaz Mohd. Sallehuddin  
Dr. Nur Amalina Zaimi  
Fadly Ehzan Halim
- **Data Collectors**  
Fauziah Suhanawati Ismail  
Wan Nor Hafizah Wan Jaafar  
Ruhil Faizah Mustafha  
Nur Amira Mohd Yusuf @ Mokhles  
Nur Amiera Azlan  
Nurin Iman Ahmad Kamal  
Siti Noafika Anwar  
Siti Nuratikah Mohd Zain  
Azman Nor Azman Ahamad  
Muhammad Zulhilmi Muhammad Yusuf  
Nabila Najwa Mohamad Azami  
Akmal Hafiz Abd Rahman  
Siti Zulaikha Yusof  
Muhammad Shafiq Shaffie  
Zaihan Misman  
Mohamad Azli Che Daud

## PERAK

- **Field Supervisors**  
Eida Nurhadzira Mohamad  
Azli Baharudin @ Shaharudin  
Noor Hasidah Ab. Rahman
- **Data Collectors**  
Fauziah Suhanawati Ismail  
Wan Nor Hafizah Wan Jaafar  
Ruhil Faizah Mustafha  
Nur Amira Mohd Yusuf @ Mokhles  
Muhammad Baihaqi Ahmad Pauzi  
Nurul Hidayah Mat Yusoff  
Rahimah Abdul Rahman  
Maisarah Norhizat  
Shalini Ganesan  
Karthigan Chitharthan  
Ismul Azam Kamaruzaman  
Chua Yen Ting  
Ng Hao Zheng  
Mohd Faizol Mustaffa  
Muhammad Fakhrul Hilman Shah Roslan  
Muhammad Izzat Mat Yusoff

**KEDAH**

- **Field Supervisors**  
 Rasidah Jamaluddin  
 Lalitha Palaniveloo  
 Dr. Sarah Nurain Mohd Noh
- **Data Collectors**  
 Wan Nur Syamimie Wan Rosli  
 Siti Norshilawati Abu Bakar  
 Nur Asma Aida Md Radzi  
 Nora'shikin Mat Esa  
 Norhasliza Mat Noor  
 Muhammad Luqman Abdullah  
 Nur Aishah Solihah Mohmad Nezan  
 Fairuz Mohd Hashim  
 Muhammad Noriduan Nor'amilin  
 Nurul Ashikin Nosarodin  
 Nurul Najua Che Omar  
 Darshini Paramesvaran  
 Khuzairi Basharuddin  
 Sadeshwaran Paramesvaran  
 Sathiswaran Jayaraman  
 Mohamad Imran Alias

**PULAU PINANG**

- **Field Supervisors**  
 Nur Azna Mahmud  
 Dr. Tan Yeung R'ong  
 Dr. LeeAnn Tan
- **Data Collectors**  
 Norasikin Nordin  
 Farah Amnah Mohd Rosli  
 Deepa Chandra Sakeran  
 Siti Salbiah Mat Desa  
 Siti Syafiqah Ahmad Yusoff  
 Nor Hazami Rozan  
 Salsabeela Mohd Ariff  
 Ashahqirin Aziz  
 Goh Yu Zhang  
 Wan Nur Fatin Iezyan Wan Ilias  
 Nadhirah Mohd Yunos  
 Loo Wen Xin  
 Mohammad Nazrin Nazmuding  
 Mohd Fitri Mustafa  
 Ahmad Fadil Ismail

**PERLIS**

- **Field Supervisors**  
 Mohd Amierul Fikri Mahmud  
 Dr. Ainul Nadziha Mohd Hanafiah  
 Jayvikramjit Singh Manjit Singh
- **Data Collectors**  
 Marwidia Mustapa  
 Aime Yustina Saad  
 Yusmaria Kamarudin  
 Muammar Hasif Shamsuddin  
 Siti Aisyah Ibrahim  
 Sharifah Solihah Syed Hashim  
 Nurul Farahtul Akmal Alias  
 Ika Shalida Tajuddin  
 Norhayati Kamarudin  
 Nurulfarhana Zakaria  
 Sakinatul Khaulah Mohd Naim

Afidah Haziani Rodzi  
 Ahmad Hafizi Ariffin  
 Muhammad Haniff Samsuddin  
 Muhammad Faiz Radzi

**PAHANG**

- **Field Supervisors**  
 Dr. Thamil Arasu Saminathan  
 Dr. Fazila Haryati Ahmad  
 Dr. Fiona Chua Chun Yong
- **Data Collectors**  
 Zulaida Ammary  
 Esah Dolah  
 Nurul Suzie Yanti Mohd Nor  
 Shahibul Bariah Mat Ghani  
 Nur Fadzliana Mohd Radzi  
 Muhamad Hazwan Hasman  
 Nor Khadijah Fatimah Abdul Rahman  
 Siti Normah Abdul Manan  
 Noor Balqis Md Desa  
 Sarah Ridzwan  
 Norashidah Rosed  
 Noor Nazifah Mamat  
 Muhammad Azim Abdul Mutalib  
 Yusmawi Mamat  
 Muhammad Abdul Rahman

**TERENGGANU**

- **Field Supervisors**  
 Nor Ain Ab Wahab  
 Mohamad Hasnan Ahmad  
 Dr. Muhammad Hafiz Mohd Yunos
- **Data Collectors**  
 Fatimah Tahir  
 Faizah Derani  
 Tuan Aishah Tuan Ahmad Sulong  
 Mek Yah Othman  
 Hasmila Mat Hassan  
 Safrial Ridwan  
 Nursyafiza Zahari  
 Nurul Aimi Shah Bani  
 Nur Anas Ilyia Ishak  
 Nur Fatin Amira Aziz  
 Muhammad Jamaluddin  
 Muhammad Syahmi Farhan Ab Majid  
 Nabihah Mustopal Kamar  
 Muhammad Affiq Ikhwani Abdul Razak  
 Muhamad Fateh Mustafa  
 Muhammad Safuan Suhaimi

## KELANTAN

- **Field Supervisors**  
Dr. Nik Adilah Shahein  
Mohamad Fuad Mohamad Anuar  
Kamarul Zaman Salleh
- **Data Collectors**  
Norlizawati Syukur  
Rosmawati Anuar  
Nor Fadilah Yusof  
Saiful Amin Ab Rani  
Mohamad Afendi Zainurin  
Nur Syafawani Yusoff  
Zulkarnain Zulkipli  
Noor Shamsiah Enche Hamid  
Mohamad Fakhri Ludin  
Aziani Md Zain  
Nik Mohamad Zakwan Nik Mohd Zulkifly  
Nur Amalina Rashid  
Muhammad Faris Hussin  
Muhammad Azim Aziz  
Mohamad Hafiezi Shairy Awang

## SARAWAK

- **Field Supervisors**  
Mohd. Hatta Abdul Motalib  
Dr. Mirunaaleni Selvaraju  
Nurashma Juatan
- **Data Collectors**  
Mahani Iring  
Diana Sembai Edward  
Ani Salihie  
Jesseca Anak Sawing  
Doris Gia Anak Oiu Juan  
Ijut Anak Banta  
Nur Aina Faira Abdul Ghafar  
Sinda Anak Jawa  
Norizan Adlie  
Stacy Lua Sinawat  
Nur Aleesha Ngui Abdullah  
Jurina Japal  
Lisa Anak Taeng  
Ong Li Ling  
Dayang Nirmilia Abang Tasbi  
Najwa Dayana Abdullah  
Koo Pei Yu  
Emmalynna Matius  
Stillea Anak Mambu  
Nur Zumantun Abdul Rajak  
Cecilia Anak Anthony  
Lau Lik Loon  
Hannie Ting Tiew Sing  
Mary Suzie Anak Asit  
Jessica Duling Anak Kudang  
Hartini Ramzi  
Catherine Anak Gudop  
Lavenda Joecy Aymen Anak Baba  
Nur Adila Abdullah  
Norjuwita Jack  
Yap Vivina Kenyalang  
Limah Anak Migat  
Juliana Jenai Anak Ramping  
Margerat Anak Minong  
Ling Song Jing  
Aelsa Anak Anthony

Nurhaziqah Saimin  
Tiong Xun Yih  
Baron Anak Peter Jerry  
Doris Anak Sabat  
Ambrose Neli  
Zanariah Junaidi  
Afina Yian Anak Chundi  
Melissa Ramji  
Happilyn Anak Libin  
Elizabeth Melintang  
Arddy Yius  
Mohammed Hefalani Mohd Azman  
Luther Vandas Linchis  
Sia Pong Lee

## SABAH

- **Field Supervisors**  
Mohamad Aznuddin Abd Razak  
Muhammad Faiz Mohd Hisham  
Faizah Paiwai
- **Data Collectors**  
Lena James Lojuty  
Valerie Paul  
Rita Gamion  
Siti Khadijah Manan  
Mas Hidayu Siantim  
Sunita Samin  
Mohd Hafiz Mohd Ali  
Mazlan Haji Abdul Halim Chin  
Muhammad Nur Mohd Arif  
Ahmad Tang Bakri  
Ajun Chin  
Dg Siti Fazirah Madi  
Rasyidah Fathin Rahban  
Noor Azni Adzmain  
Wan Misly Kindon  
Faradillah Dahalan  
Arnny Yushidayah Dahalan  
Fyrah James  
Siti Ayuni Saplie  
Mohd Aldy Abdul Razak  
Mohd Khairul Samsu Lim  
Ianddrian Charles Taimin  
Ilham Tamrin  
Mohd Jazlan Harith Abdul Razak  
Steve Glant Denventure Benjamin

**W.P. LABUAN**

- **Field Supervisors**  
Hasmah Mohamed Haris  
Dr. Abdul Aziz Harith
  
- **Data Collectors**  
Noryati Mohammad  
Paimi Ahkau  
Sanha Villiamon  
Norasmah Pandin  
Nurulaniza Abd Ghafar  
Heirie Hazuin Salam  
Yunus Mohammad  
Nurul Farhanah Ihwan  
Gabriel Jatun  
Mawarsari Said  
Joan Sonny Limbowoi Saimin  
Nur Azvila Kadir  
Joanna John  
Javiksen James  
Jeldy Galoh  
Jonathan Sabin

NHMS 2019

# Questionnaire

Institut Kesihatan Umum (IKU)  
Kementerian Kesihatan Malaysia

NHMS 2019

# Health Care Demand, Cost, and Utilisation



**NATIONAL HEALTH AND MORBIDITY SURVEY 2019**

## HEALTHCARE DISEASE

**INSTITUTE FOR PUBLIC HEALTH**

**MINISTRY OF HEALTH MALAYSIA**

## QUESTIONNAIRE

(UNTUK DIISI OLEH PENEMURAMAH)															
<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">ID <div><div></div><div></div></div> Negeri (2 Digit)</div> <div style="text-align: center;"><div><div></div><div></div></div> DP &amp; <div><div></div><div></div></div> DB (2 Digit)                  (3 Digit)</div> <div style="text-align: center;"><div><div></div><div></div><div></div></div> BP (4 Digit)</div> <div style="text-align: center;"><div><div></div><div></div><div></div></div> UB (3 Digit)</div> <div style="text-align: center;"><div><div></div><div></div><div></div></div> TK (3 Digit)</div> <div style="text-align: center;"><div><div></div></div> Strata (1 Digit)</div> <div style="text-align: center;"><div><div></div><div></div><div></div><div></div></div> Isi Rumah &amp; Individu (2 Digit)      (2 Digit)</div> </div>															
TARIKH TEMURAMAH				<div><div></div><div></div></div> <b>Haribulan</b>		<div><div></div><div></div></div> <b>Bulan</b>		<div><div></div><div></div><div></div><div></div></div> <b>Tahun</b>							
STATUS TEMPAT KEDIAMAN				<input type="checkbox"/> Berjaya  <input type="checkbox"/> Gagal  <i>Jika tempat kediaman gagal, nyatakan sebab gagal</i>											
				<div><input type="checkbox"/></div> Tempat Kediaman Enggan <div><input type="checkbox"/></div> Tempat Kediaman Berkunci <div><input type="checkbox"/></div> Tempat Kediaman Roboh <div><input type="checkbox"/></div> Bukan Tempat Kediaman <div><input type="checkbox"/></div> Tempat Kediaman Tidak Ditemui <div><input type="checkbox"/></div> Tidak Layak											
KOORDINAT LOKASI GEOGRAFI				i. Latitude		<div><div></div><div></div><div></div></div>				.		<div><div></div><div></div><div></div><div></div><div></div><div></div></div>			
				ii. Longitude		<div><div></div><div></div><div></div></div>				.		<div><div></div><div></div><div></div><div></div><div></div><div></div></div>			

**A : MAKLUMAT ISIRUMAH / *HOUSEHOLD PARTICULARS***

**[PENEMURAMAH: Maklumat isirumah ini perlu diperolehi dari ketua isirumah atau orang yang paling tahu mengenai isirumah. Tentukan terlebih dahulu orang yang paling tahu mengenai isirumah]**

"Saya akan bertanya beberapa soalan mengenai ahli isirumah anda. Ahli isirumah adalah mereka yang tinggal di tempat kediaman ini, berkongsi peralatan dan kemudahan di rumah, makan bersama dan telah tinggal sekurang-kurangnya 2 minggu dari tarikh temuduga.

*I would like to ask you a few questions about your household members. Household members are those who live here, share facilities, eat together, and live here at least 2 weeks from the date of interview."*

A001	<p>"Berapakah bilangan ahli isirumah anda? <i>How many persons are there in your household?"</i></p>	<input type="text"/> Orang
A001 A-D	<p>"Saya perlukan maklumat mengenai nama, jantina, umur dan taraf perkahwinan setiap ahli isirumah ini. <i>I would like to know the name, sex, age and marital status of each household member."</i></p>	<p>[PENEMURAMAH : Senaraikan kesemua ahli isirumah ini serta isikan maklumat berkaitan di ruang A-D. Mulakan baris pertama dengan nama orang yang memberi maklumat mengenai isirumah ini]</p>
A001 E	<p>"Siapakah ketua isirumah ini? <i>Who is head of this household?"</i></p> <p><b>[PENEMURAMAH : Ketua isirumah adalah orang yang paling berpengaruh dan yang paling banyak buat keputusan untuk isirumah ini]</b></p>	<p>[PENEMURAMAH : Tandakan "1" pada kolum E bagi ketua isirumah yang telah dikenal pasti].</p>
	<p>"Saya perlukan maklumat mengenai hubungan setiap ahli isirumah dengan ... [bacakan nama ketua isirumah]. <i>I would like to know the relationship of each household member to ...</i> [bacakan nama ketua isirumah]."</p>	<p>[PENEMURAMAH : Rujuk Kod A untuk status hubungan dan tuliskan pada kolum E bagi setiap ahli isirumah]</p>

## JADUAL ISIRUMAH / HOUSEHOLD ROSTER

A001. Maklumat sosio-demografi									
No. ID	A. Nama Ahli Isirumah	B. Jantina (L/P)	C. Umur, Tahun Genap Pada Hari Lahir Terakhir. Jika Bayi Kurang Setahun, Guna Bulan Genap.		D. Taraf Perkahwinan	E. Hubungan Dengan Ketua Isirumah	F. Temubual	G. SAQ	H. Blood Taking
			Tahun	Bulan					
Taraf Perkahwinan			Hubungan dengan Ketua Isirumah				SAQ		
1. Tidak pernah berkahwin / Never married 2. Berkahwin / Married 3. Berpisah / Separated 4. Janda / Duda / Divorced 5. Tinggal bersama pasangan / Cohabiting 6. Balu / Widower 7. Lain-lain / Others			01. Ketua isirumah / Head of Household 02. Suami atau isteri / Spouse 03. Ibubapa / Parents 04. Anak / Child 05. Datuk atau nenek atau moyang / Grand or great grandparents 06. Cucu atau cicit / Grand or great grand child 07. Adik-beradik / Siblings 08. Mertua / Parent-in-law 09. Menantu / Son- / Daughter-in-law 10. Ipar duai / Brother or sister in law 11. Saudara-mara lain / Other relatives 12. Kawan / Friend 13. Pekerja seperti pembantu rumah, tukang kebun, pemandu dll / Workers such as live-in housemaid, gardener, driver etc 14. Lain-lain / Others				1. Mental Health (GHQ) 2. Mental Health (PHQ) 3. Alcohol (AL) 4. Substance Abuse (SA) 5. Men's Health (ED) 6. Men's Health (BPH) 7. Health Literacy (HLS) 8. Men's Health: Sexual Behaviour (MSM)		

**A1: ISIRUMAH *HOUSEHOLD***

Soalan untuk diisi oleh penemuramah: Pilih SATU jawapan sahaja.

A1000	Siapakah yang menjawab borang soal selidik ini?	1 Ketua isirumah atau orang yang paling mengetahui perbelanjaan isirumah ... <b>sila ke A1100</b> 2 Ahli isirumah lain ... <b>sila ke A2000</b>
A1100	Jenis rumah <i>House type</i>	1 Rumah sebuah / bungalow <i>Single house / bungalow</i> 2 Rumah berkembar <i>Semi-detached house</i> 3 Rumah teres setingkat <i>Single storey terrace house</i> 4 Rumah teres dua tingkat atau lebih <i>Two or more storey terrace house</i> 5 Kondominium / pangsapuri <i>Condominium / Apartment</i> 6 Rumah pangsa / flat <i>Flats</i> 7 Rumah kampung <i>Village house</i> 8 Rumah kedai <i>Shop house</i> 9 Rumah panjang <i>Long house</i> 10 Rumah bot <i>Boat house</i> 11 Rumah setinggan <i>Squatters</i> (-7) TT (-9) EJ
A1200	Saya ingin bertanya tentang jumlah wang isirumah ini belanja dalam tempoh sebulan yang lepas. <i>I would like to ask about the amount your household spends in the last one month.</i>	
	<b>[PENEMURAMAH: Untuk semua soalan, tuliskan dalam Ringgit Malaysia (RM), nilai tunai / wang atau benda. Jika tiada, isi nilai 0]</b> <b>JANGAN BIARKAN RUANGAN KOSONG</b>	
	Dalam tempoh <u>sebulan lepas</u> , berapa isirumah ini belanja untuk: <i>In the last one month, how much did your household spend on:</i>	
A1201	Makanan, seperti beras, daging, buah-buahan, sayur-sayuran dan minyak masak. Ini termasuk harga sebarang makanan yang dimasak dan dimakan oleh isirumah, <b>kecuali</b> bayaran makan di restoran, arak dan tembakau <i>Food, such as rice, meat, fruits, vegetables and cooking oils. This includes the cost of any food that was cooked and consumed by the household, <b>excluding</b> restaurant meals, alcohol and tobacco</i>	RM <input type="text"/> (-7) TT (-9) EJ
A1202	Sewa / bayaran pinjaman rumah, bil elektrik, air dan telefon, gas dan arang / kayu api <i>Rental / housing loan, electricity, water and telephone bill, gas and charcoal / firewood</i>	RM <input type="text"/> (-7) TT (-9) EJ
A1203	Yuran pendidikan (sekolah / kolej / tuisyen), buku, alat tulis dan lain-lain perbelanjaan berkaitan <i>Education fees (school / college / tuition), books, stationeries, and other related expenses</i>	RM <input type="text"/> (-7) TT (-9) EJ

## JADUAL ISIRUMAH / HOUSEHOLD ROSTER

[illegible]

A1400	Saya ingin bertanya tentang jagaan kesihatan ahli isirumah. <i>I would like to ask about healthcare of the household members.</i>	
A1401	Adakah ahli isirumah anda biasanya pergi ke klinik yang sama? <i>Do your household members usually go to the same clinic?</i>	1. Ya / <i>Yes</i> ... <b>sila ke A1402</b> 2. Tidak / <i>No</i> ... <b>sila ke A1404</b> (-7) TT    (-9) EJ
A1402	Adakah klinik tersebut milik kerajaan atau swasta? <i>Is that clinic owned by government or private?</i>	1. Kerajaan <i>Government</i> 2. Swasta <i>Private</i> (-7) TT    (-9) EJ
A1403	Apakah nama klinik tersebut? <i>What is the name of the clinic?</i>	Nama klinik ..... <i>Name of clinic</i> ..... (-7) TT    (-9) EJ
A1404	Adakah ahli isirumah anda biasanya berjumpa dengan doktor yang sama? <i>Do your household members usually see the same doctor?</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT    (-9) EJ

## A2: SOSIODEMOGRAFI *SOCIODEMOGRAPHY*

Soalan untuk diisi oleh penemuramah: Pilih SATU jawapan sahaja.

A2000	Siapakah yang telah menjawab borang soal selidik ini?	1 Ahli isirumah sendiri 2 Ahli isirumah dibantu oleh penterjemah (boleh jadi sesiapa sahaja) 3 Proksi (bagi pihak ahli isirumah) 4 Proksi dengan bantuan penterjemah
A2100	Nama responden: <i>Name of respondent:</i>	
A2101	Jantina: <i>Gender:</i>	1 Lelaki <i>Male</i> 2 Perempuan <i>Female</i>
A2102	Apakah hubungan anda dengan ... (nama ketua isirumah)? <i>What is your relationship to ... (name of head of household)?</i>	1. Ketua isirumah <i>Head of Household</i> 2. Suami atau isteri <i>Spouse</i> 3. Ibubapa <i>Parent</i> 4. Anak <i>Child</i> 5. Datuk / nenek atau moyang <i>Grand- or great grandparent</i> 6. Cucu atau cicit <i>Grand- or great-grandchild</i> 7. Adik-beradik <i>Siblings</i> 8. Mertua <i>Parent-in-law</i> 9. Menantu <i>Son- or Daughter- in-law</i> 10. Ipar-Duai <i>Brother- or Sister- in-law</i> 11. Saudara-mara lain <i>Other relatives</i> 12. Kawan <i>Friend</i> 13. Pekerja seperti pembantu rumah, tukang kebun, pemandu, dan lain-lain <i>Workers such as live-in housemaid, gardener, driver and others</i> 14. Lain-lain <i>Others</i>
(-7) TT (-9) EJ		
A2103	Bila tarikh lahir anda? <i>When is your birth date?</i>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">D</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">D</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">M</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">M</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">Y</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">Y</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">Y</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;">Y</div> </div>
[PENEMURAMAH: Sekiranya 'TT' tuliskan '01' untuk hari '07' untuk bulan '0000' untuk tahun]		
A2104	Berapa umur anda? <i>How old are you?</i>	<div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"></div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"></div> Tahun Genap
(-7) TT (-9) EJ		
A2105	Apakah nombor kad pengenalan anda? <i>What is your identification number?</i>	No. Kad Pengenalan Baru / MyKid <i>New Identification Card / MyKid</i>  No. Passport <i>Passport No.</i>  No. Kad Pengenalan lain (Tentera / Polis / Sijil lahir / Lain-lain) <i>Other identification card no. (Army / Police / Birth cert / Others)</i>
(-7) TT (-9) EJ		
[PERINGATAN: Pastikan nombor pengenalan BETUL]		

A2106	Apakah bangsa anda? <i>What is your ethnicity?</i>	1. Melayu <i>Malay</i> 2. Cina <i>Chinese</i> 3. India <i>Indian</i> 4. Orang Asli Semenanjung <i>Aborigines</i> 5. Bumiputera Sabah, nyatakan: <i>Bumiputera of Sabah, specify: .....</i> 6. Bumiputera Sarawak, nyatakan: <i>Bumiputera of Sarawak, specify: .....</i> 7. Lain-lain, nyatakan: <i>Others, specify: .....</i> (-7) TT    (-9) EJ
A2107	Apakah taraf kewarganegaraan anda? <i>What is your citizenship status?</i>	1. Warganegara Malaysia <i>Malaysian Citizen</i> 2. Permastautin tetap <i>Permanent Resident of Malaysia</i> 3. Bukan warganegara Malaysia <i>Non-Malaysian Citizen</i> (-7) TT    (-9) EJ
A2108	Apakah taraf perkahwinan anda? <i>What is your marital status?</i>	1. Tidak pernah berkahwin <i>Never married</i> 2. Berkahwin <i>Married</i> 3. Berpisah <i>Separated</i> 4. Janda / Duda <i>Divorcee</i> 5. Balu <i>Widow / Widower</i> 6. Tinggal bersama pasangan <i>Living with partner</i> (-7) TT    (-9) EJ
A2109	Apakah tahap pendidikan tertinggi anda? <i>What is your highest education level?</i>	1. Tidak pernah bersekolah <i>Never attended school</i> 2. Tidak habis sekolah rendah <i>Did not complete primary school</i> 3. Tamat darjah 6 <i>Completed standard 6</i> 4. Tamat tingkatan 3 <i>Completed form 3</i> 5. Tamat tingkatan 5 <i>Completed form 5</i> 6. Tamat tingkatan 6 / sijil / diploma <i>Completed form 6 / certificate / diploma</i> 7. Tamat pengajian peringkat sarjana muda <i>Completed Bachelors degree</i> 8. Tamat pengajian peringkat sarjana <i>Completed Masters degree</i> 9. Tamat pengajian peringkat kedoktoran (PhD) <i>Completed Doctoral qualification (PhD)</i> 10. Lain-lain, nyatakan: <i>Others, specify: .....</i> (-7) TT    (-9) EJ
A2210	Adakah anda bekerja? <i>Are you working?</i>	1. Ya / <i>Yes ... sila ke A2221</i> 2. Tidak / <i>No ... sila ke A2211</i> (-7) TT    (-9) EJ
A2211	Adakah anda bekerja dalam tempoh 1 bulan yang lepas, dari ... 2019, hingga hari ini? <i>Were you working in the last 1 month, from ... 2019, till today?</i>	1. Ya, dengan bayaran <i>Yes, with payment ... sila ke A2221</i> 2. Ya, tanpa bayaran <i>Yes, without payment ... sila ke A2221</i> 3. Tidak <i>No ... sila ke A2212</i> (-7) TT    (-9) EJ
[PERHATIAN: Tanyakan samada menerima bayaran]		

A2212	<p>Jika tidak, kenapa? <i>If not, why?</i></p> <p>Pilih <b>satu</b> jawapan <b>UTAMA</b> sahaja. <i>Choose only one MAIN answer.</i></p>	<ol style="list-style-type: none"> <li>1. Masalah kesihatan / kurang upaya <i>Health problems / disabled</i></li> <li>2. Menjaga pesakit / orang kurang upaya / orang tua <i>Care for the sick / disabled / elderly</i></li> <li>3. Menjaga rumah / anak-anak, cucu, ahli keluarga lain <i>Homemaker / care for children, grandchildren, other family members</i></li> <li>4. Sedang mencari kerja <i>Job-seeking</i></li> <li>5. Mempunyai pekerjaan tapi tidak bekerja <i>Have a job but not working</i></li> <li>6. Penganggur <i>Unemployed</i></li> <li>7. Pelajar <i>Student</i></li> <li>8. Pesara <i>Pensioner</i></li> <li>9. Tua <i>Old age</i></li> <li>10. Kanak-kanak tidak bersekolah <i>Child not at school</i></li> <li>11. Lain-lain <i>Others</i></li> </ol>	(-7) TT (-9) EJ
<b>[PENEMURAMAH: Terus ke A2230 selepas soalan ini]</b>			
A2221	<p>Adakah anda ... <i>Are you a ...</i></p> <p><b>A2221 ditanya jika:</b> <b>A2210 = 'YA' atau A2211 = 'YA'</b></p> <p>Pilih <b>satu</b> jawapan <b>UTAMA</b> sahaja. <i>Choose only one MAIN answer.</i></p>	<ol style="list-style-type: none"> <li>1. Majikan <i>Employer</i></li> <li>2. Pekerja kerajaan <i>Government employee</i></li> <li>3. Pekerja separa kerajaan <i>Semi-government employee</i></li> <li>4. Pekerja swasta <i>Private employee</i></li> <li>5. Bekerja sendiri <i>Self-employed</i></li> <li>6. Pekerja tanpa gaji <i>Unpaid worker</i></li> <li>7. Pekerja keluarga tanpa gaji <i>Unpaid family worker</i></li> <li>8. Lain-lain, nyatakan: <i>Others, specify: .....</i></li> </ol>	(-7) TT (-9) EJ
A2230	<p>Berapakah <b>purata pendapatan kasar bulanan</b> anda, dari segi ...? <i>What is your average personal gross monthly income, in terms of ...?</i></p>		
<p><b>[PENEMURAMAH: Untuk semua soalan, tuliskan dalam Ringgit Malaysia (RM), nilai tunai / wang atau benda. Jika tiada, isi nilai 0]</b></p> <p><b>JANGAN BIARKAN RUANGAN KOSONG</b></p>			
A2231	<p>Pendapatan daripada bekerja (upah / gaji) atau pencen <i>Income from work (wage / salary) or pension</i></p>	<p>RM <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/></p>	<p>Sebulan <i>Monthly</i></p> <p>(-7) TT (-9) EJ</p>
A2232	<p>Wang yang diterima daripada ahli isirumah <i>Money received from household members</i></p>	<p>RM <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/></p>	<p>Sebulan <i>Monthly</i></p> <p>(-7) TT (-9) EJ</p>
A2233	<p>Wang daripada sumber lain, contohnya daripada kutipan sewa aset, wang daripada ahli keluarga bukan isirumah, biasiswa, kebajikan masyarakat / sosial, Baitulmal, dividen dan lain-lain <i>Money from other sources, such as from asset rental collection, non-household family members, scholarship, community / social welfare, Baitulmal, dividend and others</i></p>	<p>RM <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/></p>	<p>Sebulan <i>Monthly</i></p> <p>(-7) TT (-9) EJ</p>

A23: PEMBAYAR PERKHIDMATAN KESIHATAN <i>PAYER FOR HEALTH SERVICES</i>		
A2300	<p>Saya akan bertanya mengenai perlindungan insuran kesihatan.</p> <p><i>I would like to ask about health insurance coverage.</i></p>	
A2301	<p>Adakah anda dilindungi oleh <b>surat jaminan (GL kerajaan)</b> untuk jagaan kesihatan (<b>tidak termasuk program pembiayaan kesihatan kerajaan</b>)? (milik sendiri atau ahli keluarga, contohnya suami / isteri, anak, ibu / bapa)</p> <p><i>Are you covered by any <b>government Guarantee Letter (GL)</b> for healthcare (<b>excluding government health funding program</b>)? (your own or family members' such as spouse, child, parents)</i></p>	<p>1. Ya / <b>Yes</b></p> <p>2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>
A2302	<p>Adakah anda dilindungi oleh <b>program pembiayaan kesihatan kerajaan</b>? (contohnya kad Peduli Sihat, Skim Perlindungan Nasional B40 mySalam, Skim PeKa B40 dan insuran kesihatan kerajaan yang lain)</p> <p><i>Are you covered by <b>government health funding program</b>? (such as Peduli Sihat card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health insurance)</i></p>	<p>1. Ya / <b>Yes</b></p> <p>2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>
A2303	<p>Adakah anda dilindungi oleh majikan termasuk <b>insuran kesihatan yang ditaja oleh majikan, klinik / hospital panel</b> atau lain-lain perlindungan kesihatan majikan (<b>tidak termasuk PERKESO</b>)? (milik sendiri atau ahli keluarga)</p> <p><i>Are you covered by employer including any <b>employer-sponsored health insurance, clinic / hospital panels</b> or other forms of employment coverage (<b>excluding SOCSO</b>)? (your own or family members')</i></p>	<p>1. Ya / <b>Yes</b></p> <p>2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>
A2304	<p>Adakah anda dilindungi oleh <b>PERKESO</b>?</p> <p><i>Are you covered by <b>SOCSO</b>?</i></p>	<p>1. Ya / <b>Yes</b></p> <p>2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>
A2305	<p>Adakah anda dilindungi oleh <b>insuran kesihatan peribadi</b> yang dibeli sendiri atau oleh ahli keluarga?</p> <p><i>Are you covered by any <b>personal health insurance</b> which you or family member(s) had purchased?</i></p>	<p>1. Ya <b>Yes</b> ... <b>sila ke A2310</b></p> <p>2. Tidak <b>No</b> ... <b>sila ke A2306</b></p> <p>(-7) TT (-9) EJ</p>
A2306	<p>Jika tidak, kenapa?</p> <p><i>If not, why?</i></p> <p>Pilih <b>satu</b> jawapan <b>UTAMA</b> sahaja.</p> <p><i>Choose only <b>one MAIN</b> answer.</i></p>	<p>1. Dilindungi oleh kerajaan <b>Covered by government</b></p> <p>2. Dilindungi oleh majikan / PERKESO <b>Covered by employer / SOCSO</b></p> <p>3. Tidak mampu <b>Cannot afford</b></p> <p>4. Tidak perlu <b>Not needed</b></p> <p>5. Ditolak oleh syarikat insuran <b>Declined by insurance company</b></p> <p>6. Lain-lain, nyatakan: <b>Others, specify: .....</b></p> <p>(-7) TT (-9) EJ</p>
A2310	<p>Siapa yang <b>biasanya bayar</b> untuk jagaan kesihatan anda? (Ini tidak termasuk pengecualian bayaran untuk warga emas, jagaan kesihatan ibu mengandung atau selepas bersalin, imunisasi kanak-kanak, penderma darah, dan lain-lain)</p> <p><i>Who <b>usually pays</b> for your healthcare? (This does not include fee exemption for senior citizen, antenatal or postnatal care, child immunisation, blood donor, and others)</i></p>	
<p><b>[PENEMURAMAH: Boleh pilih 'Ya' bagi lebih daripada satu item (A2311-2318)]</b></p>		

A2311	Kerajaan (contohnya GL kerajaan, kad pencen / pesara) <b>(tidak termasuk program pembiayaan kesihatan kerajaan)</b> <i>Government (such as government GL, pensioner card) (excluding government health funding program)</i>	1. Ya / <b>Yes</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ
A2312	<b>Program pembiayaan kesihatan kerajaan</b> (contohnya kad Peduli Sihat, Skim Perlindungan Nasional B40 mySalam, Skim PeKa B40 dan insuran kesihatan kerajaan yang lain) <i>Government health funding program (such as Peduli Sihat card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health insurance)</i>	1. Ya / <b>Yes</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ
A2313	Insuran kesihatan peribadi <i>Personal health insurance</i>	1. Ya / <b>Yes</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ
A2314	insuran kesihatan yang ditaja oleh majikan <i>employer-sponsored health insurance</i>	1. Ya / <b>Yes</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ
A2315	majikan atau / dan klinik / hospital panel (tidak termasuk jika melibatkan potongan gaji) <i>employer or / and panel clinic / hospital (not included if there are salary deductions)</i>	1. Ya / <b>Yes</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ
A2316	PERKESO SOCSO	1. Ya / <b>Yes</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ
A2317	Sendiri / keluarga / ahli isirumah <i>Self / family / household members</i>	1. Ya / <b>Yes</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ
A2318	Lain-lain (contohnya kebajikan masyarakat) <i>Others (such as community welfare)</i>	1. Ya, nyatakan / <b>Yes, specify : .....</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ

<b>B1: KESIHATAN UMUM &amp; PENYAKIT <i>GENERAL HEALTH &amp; ILLNESS</i></b>			
<b>PENEMURAMAH: Soalan B1000-B1001 untuk responden berumur 13 tahun dan ke atas.</b>			
<b>Untuk responden berumur kurang daripada 13 tahun, terus ke soalan B1100.</b>			
B1000	Sekarang, saya ingin bertanya mengenai tahap kesihatan anda secara umum. <i>Now, I would like to ask about your health status in general.</i>		
B1001	Bagaimanakah anda menilai tahap kesihatan anda? <i>How would you rate your health status?</i>	1. Sangat bagus <i>Excellent</i> 2. Bagus <i>Good</i> 3. Sederhana <i>Fair</i> 4. Tidak bagus <i>Poor</i> 5. Sangat tidak bagus <i>Very poor</i> (-7) TT      (-9) EJ	
B1100	Dalam tempoh <b>2 minggu lepas</b> , dari ... 2019 hingga hari ini, pernahkah anda mengalami ...? <i>In the last 2 weeks, from ... 2019 till today, did you experience ...?</i>		
B1101	Masalah kesihatan seperti berikut: <i>Any of the following health problems such as:</i> <b>Baca atau tunjuk kod A (masalah kesihatan) /</b> <b>Read or show code A (health problem)</b>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT      (-9) EJ	
B1102	Masalah mulut atau gigi (contohnya sakit gigi / ngilu, gusi bengkak atau bernanah, kehilangan gigi, masalah gigi palsu, pecah mulut atau mata ikan, atau sakit rahang) <i>Dental problems? (such as toothache or sensitive tooth, swollen gums with / without pus discharge, loss of teeth, denture problems, mouth ulcers, or jaw pain)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT      (-9) EJ	
B1200	<b>[PENEMURAMAH: Semak jawapan responden bagi B1101-B1102]</b> Dalam tempoh <b>2 minggu lepas</b> , dari ... 2019 hingga hari ini, adakah anda ... bagi ...? <i>In the last 2 weeks, from ... 2019 till today, did you ... for ...?</i>		
		<b>a. Masalah kesihatan</b> <b><i>Health problems</i></b> <b>(Rujuk kod A)</b>	<b>b. Masalah mulut atau gigi</b> <b><i>Dental problems</i></b>
B1201	mendapatkan rawatan / ubat atau nasihat daripada <b>pengamal kesihatan</b> <i>seek treatment / medication or advice from healthcare practitioner(s)</i> <b>Baca atau tunjuk kod B (pengamal kesihatan) /</b> <b>Read or show code B (healthcare practitioner)</b>	1. Ya <i>Yes</i> ... sila ke <b>B1204</b> 2. Tidak <i>No</i> ... sila ke <b>B1202</b> (-7) TT      (-9) EJ	1. Ya <i>Yes</i> ... sila ke <b>B1204</b> 2. Tidak <i>No</i> ... sila ke <b>B1202</b> (-7) TT      (-9) EJ
B1202	Adakah anda rasa <b>perlu</b> untuk mendapatkan rawatan / ubat atau nasihat daripada pengamal kesihatan? <i>Do you think it was necessary to seek treatment / medication or advice from healthcare practitioner(s)?</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT      (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT      (-9) EJ
		<b>a. Masalah kesihatan</b> <b><i>Health problems</i></b> <b>(Rujuk kod A)</b>	<b>b. Masalah mulut atau gigi</b> <b><i>Dental problems</i></b>

B1203	Apakah <b>sebab utama</b> anda tidak mendapatkan rawatan / ubat atau nasihat daripada pengamal kesihatan? <i>What was the <b>main reason</b> for not seeking treatment / medication or advice from healthcare practitioner(s)?</i> <b>Baca atau tunjuk kod C (halangan mendapatkan jagaan kesihatan) / Read or show code C (barriers to get healthcare)</b>	Sebab <i>Reason:</i> Kod <input type="text"/> Code <input type="text"/> (-7) TT (-9) EJ	Sebab <i>Reason:</i> Kod <input type="text"/> Code <input type="text"/> (-7) TT (-9) EJ
B1204	Menggunakan ubat <b>tanpa nasihat pengamal kesihatan</b> <i>Take medicine <b>without advice</b> from <b>healthcare practitioner(s)</b></i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B1205	Mendapatkan nasihat daripada orang lain, <b>selain pengamal kesihatan</b> <i>Got advice from someone <b>other than healthcare practitioner(s)</b></i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B1206	Mendapatkan <b>nasihat daripada sumber lain</b> , seperti internet, TV, radio, aplikasi, dan lain-lain <i>Got <b>advice from other resources</b>, such as internet, TV, application, radio and others</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B1207	Membuat sesuatu selain daripada di atas <i>Did anything else other than the above</i>	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
<b>PERINGATAN: Tanya semua soalan berkaitan a, diikuti dengan b, kemudian sila ke B1300.</b>			
B1300	<b>PENEMURAMAH: Soalan B1300-1302 untuk responden berumur 13 tahun dan ke atas.</b> <b>Untuk responden berumur kurang daripada 13 tahun, terus ke modul B3.</b>  Sekarang, saya ingin bertanya mengenai keadaan kesihatan anda dalam tempoh 6 bulan yang lepas. <i>Now, I would like to ask about your health condition in the last 6 months.</i>		
B1301	Dalam tempoh <b>6 bulan lepas</b> , dari ... 2019 hingga hari ini, adakah anda mengalami <b>kesakitan yang berterusan selama 3 bulan atau lebih</b> di mana-mana bahagian badan, contohnya sakit sendi, sakit urat / saraf dan lain-lain? (Kesakitan yang berterusan bermakna kesakitan tersebut dirasakan setiap hari atau hampir setiap hari dalam tempoh tersebut) <i>In the <b>last 6 months</b>, from ... 2019 till today, have you had <b>persistent pain for 3 months or more</b>, in any parts of your body, such as joint pain, nerve pain and others? (Persistent pain means that the pain is felt every day or most days, during that period)</i>	1. Ya <i>Yes</i> ... <b>sila ke B1302</b> 2. Tidak <i>No</i> ... <b>sila ke B1400</b> (-7) TT (-9) EJ	
B1302	Adakah kesakitan yang berterusan itu mengganggu aktiviti harian, belajar atau kerja anda? <i>Did the persistent pain disturbed your daily activities, study or your work?</i>  Pilih <b>satu</b> jawapan <b>UTAMA</b> sahaja. <i>Choose only <b>one MAIN</b> answer.</i>	1. Tidak mengganggu <i>Not disturbed at all</i> 2. Sedikit mengganggu <i>Mildly disturbed</i> 3. Sederhana mengganggu <i>Moderately disturbed</i> 4. Banyak mengganggu <i>Severely disturbed</i> 5. Sangat banyak mengganggu <i>Extremely disturbed</i> (-7) TT (-9) EJ	

B1400	<b>PENEMURAMAH: Soalan B1400-B1731b untuk responden berumur 18 tahun dan ke atas.</b> <b>Untuk responden berumur kurang daripada 18 tahun, terus ke modul B3.</b> Soalan seterusnya adalah berkenaan penglibatan anda dalam aktiviti untuk mengekalkan kesihatan dan mencegah penyakit. <i>The following questions are related to your involvement in activities to maintain health and prevent diseases.</i>	
B1401	Dalam tempoh <b>12 bulan lepas</b> , dari ... 2018 hingga hari ini, adakah anda pergi mendapatkan pemeriksaan kesihatan termasuk ujian darah / air kencing / x-ray? <i>In the last 12 months, from ... 2018 till today, did you go for medical check-up such blood / urine tests / x-ray?</i>	1. Ya <b>Yes ... sila ke B1410</b> 2. Tidak <b>No ... sila ke B1500</b> (-7) TT (-9) EJ
B1410	Berapa anda bayar untuk pemeriksaan tersebut? <i>How much did you pay for the check-up?</i>	RM <input type="text"/> (-7) TT (-9) EJ
B1420	Dari mana anda mendapatkannya? <i>Where did you get the check-up?</i>	
B1421	Hospital / Klinik Kerajaan <i>Government Hospital / Clinic</i>	1. Ya / <b>Yes</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ
B1422	Hospital / Klinik Swasta <i>Private Hospital / Clinic</i>	1. Ya / <b>Yes</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ
B1423	Farmasi komuniti <i>Community pharmacy</i>	1. Ya / <b>Yes</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ
B1424	Lain-lain <i>Others</i>	1. Ya, nyatakan / <b>Yes, specify : .....</b> 2. Tidak / <b>No</b> (-7) TT (-9) EJ
B1500	Sekarang saya ingin bertanya mengenai pembelian suplemen / makanan tambahan untuk tujuan kesihatan. Suplemen / makanan tambahan ialah produk yang biasanya dimakan atau diminum, dalam bentuk pil, serbuk, atau cecair. Ini termasuk vitamin, mineral, dan herba / tumbuhan. Contoh suplemen termasuk kalsium, minyak ikan, probiotik, jamu, minuman / jus kesihatan dan lain-lain. <i>Now i would like to ask about the purchase of dietary supplement(s) for health purposes. Dietary supplement is a product that usually consumed, in the form of pill, powder, or liquid. It includes vitamin, mineral, and herbs / plants. Examples of dietary supplement(s) include calcium, fish oil, probiotic, herbs, health drink / juice and others.</i>	
B1501	Dalam tempoh <b>1 bulan lepas</b> , dari ... 2019 hingga hari ini, adakah anda <b>membeli</b> suplemen / makanan tambahan untuk tujuan kesihatan? <i>In the last 1 month, from ... 2019 till today, did you buy dietary supplement(s) for health purposes?</i>	1. Ya <b>Yes ... sila ke B1510</b> 2. Tidak <b>No ... sila ke B1600</b> (-7) TT (-9) EJ
B1510	Berapa anda bayar untuk suplemen / makanan tambahan ini? <i>How much did you pay for the dietary supplement(s)?</i> <b>[PENEMURAMAH: Jika tiada, isi RM 0]</b>	RM <input type="text"/> (-7) TT (-9) EJ
B1520	Dari mana anda mendapatkan suplemen / makanan tambahan ini? <i>Where did you get these dietary supplement(s)?</i>	

B1521	Jualan langsung <i>Direct sales</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i>  (-7) TT (-9) EJ
B1522	Farmasi atas talian <i>Online pharmacy</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i>  (-7) TT (-9) EJ
B1523	Farmasi komuniti <i>Community pharmacy</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i>  (-7) TT (-9) EJ
B1524	Hospital atau klinik <i>Hospital or clinic</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i>  (-7) TT (-9) EJ
B1525	Lain-lain <i>Others</i>	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i>  (-7) TT (-9) EJ
[PENEMURAMAH: Sekiranya B1601 lebih dari 1 lawatan, isikan hanya 1 tempat TERKINI bagi B1610-B1620].		
B1600	<p>Sekarang saya ingin bertanya mengenai pengalaman anda pergi ke <b>makmal perubatan swasta</b> untuk tujuan kesihatan seperti ujian darah, ujian air kencing, x-ray, dan lain-lain perkhidmatan kesihatan. Contoh makmal perubatan swasta termasuk BP Healthcare, Pathlab, Gribbles Pathology dan lain-lain.</p> <p><i>Now i would like to ask about your experience going to <b>private medical laboratory</b> for health purposes such as blood tests, urine tests, x-ray and other health services. Examples of private medical laboratory include BP Healthcare, Pathlab, Gribbles Pathology and others.</i></p>	
B1601	<p>Dalam tempoh <b>12 bulan lepas</b>, dari ... 2018 hingga hari ini, adakah anda pergi ke makmal perubatan swasta untuk tujuan kesihatan?</p> <p><i>In the <b>last 12 months</b>, from ... 2018 till today, did you visit any private medical laboratory for health purpose?</i></p>	<p>1. Ya <i>Yes</i> ... <b>sila ke B1610</b> 2. Tidak <i>No</i> ... <b>sila ke B1700</b>  (-7) TT (-9) EJ</p>
[PENEMURAMAH: Sekiranya B1601 lebih dari 1 lawatan, isikan hanya 1 tempat TERKINI bagi B1610-B1620].		
B1610	<p>Adakah lawatan anda untuk ...?</p> <p><i>Was your visit for ...?</i></p>	
B1611	<p>Ujian darah / air kencing / x-ray</p> <p><i>Blood / urine tests / x-ray</i></p>	<p>1. Ya / <i>Yes</i> 2. Tidak / <i>No</i>  (-7) TT (-9) EJ</p>
B1612	<p>Khidmat nasihat berkaitan kesihatan</p> <p><i>Advice related to health</i></p>	<p>1. Ya / <i>Yes</i> 2. Tidak / <i>No</i>  (-7) TT (-9) EJ</p>
B1613	<p>Lain-lain (contohnya imunisasi)</p> <p><i>Others (such as immunisation)</i></p>	<p>1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i>  (-7) TT (-9) EJ</p>
B1620	<p>Adakah jagaan ini diatitkan oleh...?</p> <p><i>Was this care arranged by...?</i></p> <p><b>[PENEMURAMAH: Pilih SATU jawapan sahaja].</b></p>	<p>1. Hospital / klinik <i>Hospital / clinic</i> 2. Sendiri <i>Myself</i> 3. Lain-lain (contohnya untuk kemasukan ke universiti, ketetapan insuran) <i>Others (such as for university intake, insurance requirement)</i>  (-7) TT (-9) EJ</p>

B1630	Berapa anda bayar untuk perkhidmatan ini? (Jumlah 12 bulan) <i>How much did you pay for the service(s)? (Total 12 months)</i>  <b>[PENEMURAMAH: Jika tiada, isi RM 0]</b>		RM <input type="text"/> (-7) TT (-9) EJ
Soalan seterusnya adalah berkenaan keadaan kesihatan anda. <i>The following questions are related to your health condition.</i>			
B1700	Pernahkah anda diberitahu oleh doktor ataupun Penolong Pegawai Perubatan (dresser) bahawa anda menghidap ... <i>Have you ever been told by doctor(s) or Assistant Medical Officer (dresser) that you have ....</i>		
B1710	Kencing manis? <i>Diabetes?</i>  <b>[PENEMURAMAH: Ini tidak termasuk kencing manis ketika mengandung]</b>	1. Ya <i>Yes</i> ... <b>sila ke B1711</b> 2. Tidak <i>No</i> ... <b>sila ke B1720</b> (-7) TT (-9) EJ	
B1711	Jika ya, adakah anda menerima ... daripada pengamal kesihatan? <i>If yes, did you receive ... from healthcare provider(s)?</i>		
B1711a	Nasihat (contohnya nasihat diet khusus untuk penyakit kencing manis, nasihat untuk kurangkan berat badan, nasihat untuk mula bersenam atau lebihkan senaman) <i>Advice (such as diabetic diet, advice to lose weight, advice to start or do more exercise)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	
B1711b	Ubat-ubatan termasuk suntikan ubat <i>Medication(s)</i> <i>including injections</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	
B1720	Tekanan darah tinggi? <i>High blood pressure?</i>  <b>[PENEMURAMAH: Ini tidak termasuk tekanan darah tinggi ketika mengandung]</b>		1. Ya <i>Yes</i> ... <b>sila ke B1721</b> 2. Tidak <i>No</i> ... <b>sila ke B1730</b> (-7) TT (-9) EJ
B1721	Jika ya, adakah anda menerima ... daripada pengamal kesihatan? <i>If yes, did you receive ... from healthcare provider(s)?</i>		
B1721a	Nasihat (contohnya nasihat untuk kurangkan garam dalam makanan, nasihat untuk kurangkan berat badan, nasihat untuk mula bersenam atau lebihkan senaman) <i>Advice (such as to reduce salt intake, advice to lose weight, advice to start or do more exercise)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	
B1721b	Ubat-ubatan <i>Medication(s)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	
B1730	Kolesterol tinggi? <i>High cholesterol?</i>		1. Ya <i>Yes</i> ... <b>sila ke B1731</b> 2. Tidak <i>No</i> ... <b>sila ke modul B2</b> (-7) TT (-9) EJ

B1731	Jika ya, adakah anda menerima ... daripada pengamal kesihatan? <i>If yes, did you receive ... from healthcare provider(s)?</i>		
B1731a	Nasihat (contohnya nasihat diet khusus seperti rendah lemak atau rendah kolesterol, nasihat untuk kurangkan berat badan, nasihat untuk mula bersenam atau lebihkan senaman) <i>Advice (such as special low fat or low cholesterol diet, advice to lose weight, advice to start or do more exercise)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i>	(-7) TT    (-9) EJ
B1731b	Ubat-ubatan <i>Medication(s)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i>	(-7) TT    (-9) EJ

B2: FARMASI KOMUNITI (KEDAI FARMASI) COMMUNITY PHARMACY (PHARMACY SHOP)			
B2000	<p><b>PENEMURAMAH:</b> Modul ini untuk responden berumur 18 tahun dan ke atas. Untuk responden berumur kurang daripada 18 tahun, terus ke modul B3.</p> <p>Soalan seterusnya berkenaan pengalaman anda di <b>kedai farmasi</b> untuk tujuan kesihatan sendiri atau orang lain. Perkhidmatan kesihatan termasuk pemeriksaan kesihatan, khidmat nasihat berkaitan kesihatan, dan pembelian ubat / suplemen. <b>Ini tidak termasuk jagaan kesihatan mulut atau gigi.</b></p> <p><i>The following questions are related to your experience at <b>community pharmacy</b> for own health and others. Health services include health check-up, advice related to health, and buying medicines / supplements. <b>Dental care is not included here.</b></i></p>		
B2001	<p>Dalam tempoh <b>2 minggu lepas</b>, dari ... 2019 hingga hari ini, adakah anda pergi ke kedai farmasi untuk tujuan kesihatan?</p> <p><i>In the <b>last 2 weeks</b>, from ... 2019 till today, have you visited any community pharmacy for health purpose?</i></p>	<p>1. Ya <b>Yes</b> ... <b>sila ke B2002</b> 2. Tidak <b>No</b> ... <b>sila ke modul B3</b></p> <p>(-7) TT (-9) EJ</p>	
B2002	<p>Jika ya, untuk siapa?</p> <p><i>If yes, who was it for?</i></p>		
B2003	Sendiri <i>Self</i>	<p>1. Ya / <b>Yes</b> 2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>	
B2004	Ahli isirumah <i>Household member</i>	<p>1. Ya / <b>Yes</b> 2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>	
B2010	<p><b>Berapa tempat</b> telah anda pergi untuk tujuan kesihatan? (Dalam tempoh 2 minggu lepas)</p> <p><i><b>How many places</b> have you visited for health purpose? (In the last 2 weeks)</i></p>	<p><input type="text"/> <input type="text"/> Tempat <i>Places</i></p> <p>(-7) TT (-9) EJ</p>	
<p><b>[PENEMURAMAH: Sekiranya B2010 lebih dari 2 tempat, isikan hanya 2 tempat TERKINI. Tanya semua soalan berkenaan Tempat 1, diikuti dengan Tempat 2].</b></p>			
		<b>a. Tempat 1</b>	<b>b. Tempat 2</b>
B2020	<p>Apakah nama tempat tersebut?</p> <p><i>What is the name of the place?</i></p>	<p><input type="text"/></p> <p>(-7) TT (-9) EJ</p>	<p><input type="text"/></p> <p>(-7) TT (-9) EJ</p>
B2021	<p>Berapa kali anda ke ...?</p> <p><i>How many times have you visited...?</i></p>	<p><input type="text"/> <input type="text"/> Kali <i>Times</i></p> <p>(-7) TT (-9) EJ</p>	<p><input type="text"/> <input type="text"/> Kali <i>Times</i></p> <p>(-7) TT (-9) EJ</p>
B2030	<p>Adakah lawatan anda ke ... berkaitan dengan masalah kesihatan yang dihadapi 2 minggu yang lepas?</p> <p><i>Was your visit to... related to the health problems faced 2 weeks ago?</i></p>	<p>1. Ya / <b>Yes</b> 2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <b>Yes</b> 2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>
B2031	<p>Apakah jenis perkhidmatan yang anda terima?</p> <p><i>What type of service(s) did you receive?</i></p>		
B2032	<p>Pemeriksaan kesihatan contohnya tekanan darah, gula darah dan lain-lain</p> <p><i>Health check-up such as blood pressure, blood glucose and others</i></p>	<p>1. Ya / <b>Yes</b> 2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <b>Yes</b> 2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>

		a. Tempat 1	b. Tempat 2
B2033	<p>Khidmat nasihat berkaitan kesihatan daripada ahli farmasi</p> <p><i>Advice related to health from pharmacist</i></p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>
B2034	<p>Beli suplemen / makanan tambahan seperti vitamin, mineral, herba (jamu), jus / minuman untuk kesihatan dan lain-lain. <b>(Hanya bayaran yang dibuat sendiri semasa membeli)</b></p> <p><i>Buy supplement(s) such as vitamin, mineral(s), herbs (jamu), juice / drink for health, and others. (Only out-of-pocket payment made at the point of purchasing)</i></p>	<p>1. Ya <i>Yes</i> ... <b>sila ke B2035</b></p> <p>2. Tidak <i>No</i> ... <b>sila ke B2036</b></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya <i>Yes</i> ... <b>sila ke B2035</b></p> <p>2. Tidak <i>No</i> ... <b>sila ke B2036</b></p> <p>(-7) TT (-9) EJ</p>
B2035	<p>Membeli dengan nasihat daripada pengamal kesihatan</p> <p><i>Buy with advice from the healthcare practitioner</i></p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>
B2036	<p>Beli ubat untuk masalah kesihatan. <b>(Hanya bayaran yang dibuat sendiri semasa membeli)</b></p> <p><i>Buy medication for health problems. (Only out-of-pocket payment made at the point of purchasing)</i></p>	<p>1. Ya <i>Yes</i> ... <b>sila ke B2037</b></p> <p>2. Tidak <i>No</i> ... <b>sila ke B2038</b></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya <i>Yes</i> ... <b>sila ke B2037</b></p> <p>2. Tidak <i>No</i> ... <b>sila ke B2038</b></p> <p>(-7) TT (-9) EJ</p>
B2037	<p>Membeli dengan nasihat daripada pengamal kesihatan</p> <p><i>Buy with advice from the healthcare practitioner</i></p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>
B2038	<p>Beli peralatan untuk kesihatan, contohnya jarum insulin, kerusi roda, penyokong lutut, beg air kencing / najis, alat pembalut luka, picagari, alat pengukur gula / tekanan darah (glukometer, mesin tekanan darah). <b>(Hanya bayaran yang dibuat sendiri semasa membeli)</b></p> <p><i>Buy tools for health, such as insulin needle, wheelchair, knee guard, urine / stool bag, bandage, syringe, sugar measurement tool / blood pressure (glucometer / blood pressure machine). (Only out-of-pocket payment made at the point of purchasing)</i></p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>
B2040	<p>Adakah tempat tersebut fasiliti ... ?</p> <p><i>Was the place ... facility?</i></p> <p>Pilih <b>satu</b> jawapan <b>UTAMA</b> sahaja.</p> <p><i>Choose only one MAIN answer.</i></p>	<p>1. Tradisional atau komplementari</p> <p><i>Traditional or complementary</i></p> <p>2. Modern</p> <p><i>Modern</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Tradisional atau komplementari</p> <p><i>Traditional or complementary</i></p> <p>2. Modern</p> <p><i>Modern</i></p> <p>(-7) TT (-9) EJ</p>
B2060	<p>Untuk <b>kesemua lawatan</b>, berapa <b>jumlah</b> yang dibayar untuk jagaan kesihatan, ubat, ujian dan lain-lain?</p> <p><i>For all visits, how much in total did you pay for healthcare, including consultation, medications, tests and others?</i></p> <p><b>[PENEMURAMAH: Jika tiada, isi RM 0]</b></p>	<p>RM <input type="text"/></p> <p>(-7) TT (-9) EJ</p>	<p>RM <input type="text"/></p> <p>(-7) TT (-9) EJ</p>

		a. Tempat 1	b. Tempat 2
B2070	Secara keseluruhannya, bagaimana anda menilai pengalaman anda di ...? <i>Overall, how would you rate your experience at ...?</i>	1. Sangat bagus <i>Excellent</i> 2. Bagus <i>Good</i> 3. Sederhana <i>Fair</i> 4. Tidak bagus <i>Poor</i> 5. Sangat tidak bagus <i>Very poor</i> (-7) TT    (-9) EJ	1. Sangat bagus <i>Excellent</i> 2. Bagus <i>Good</i> 3. Sederhana <i>Fair</i> 4. Tidak bagus <i>Poor</i> 5. Sangat tidak bagus <i>Very poor</i> (-7) TT    (-9) EJ
<b>PERINGATAN: Lengkapi semua soalan bagi Tempat 2 (jika ada), sebelum pergi ke modul B3.</b>			

### B3: JAGAAN KESIHATAN PESAKIT LUAR **OUT-PATIENT CARE**

B3000	<p>Soalan seterusnya berkenaan pengalaman anda menerima khidmat nasihat, pemeriksaan atau rawatan perubatan tradisional, komplementari atau moden. Tempat rawatan termasuk klinik, tempat perubatan tradisional atau komplementari, klinik di hospital, jabatan kecemasan, atau pusat rawatan harian / ambulatori. Jagaan ini <b>tidak memerlukan anda untuk bermalam dan tidak melibatkan jagaan kesihatan mulut atau gigi</b>. Pengamal kesihatan termasuk pengamal perubatan tradisional dan komplementari seperti bomoh, sinseh, pengamal Ayurveda, atau pengamal perubatan Islam. Rujuk kod B (pengamal kesihatan KECUALI pengamal pergigian).</p> <p><i>The following questions are related to your experience in receiving traditional, complementary or modern advice, check-up or treatment. Healthcare facilities include clinics, premise of traditional or complementary treatment, clinics in a hospital, emergency department, or day care / ambulatory care centers. The care <b>does not involve overnight stay and does not include dental care</b>. Healthcare providers include traditional and complementary medicine practitioner such as spiritual healer, chinese herbalist, Ayurvedic practitioner, or Islamic medicine practitioner. Refer code B (healthcare practitioner EXCEPT dental practitioner).</i></p>		
B3001	<p>Dalam tempoh <b>2 minggu lepas</b>, dari... 2019 hingga hari ini, pernahkah anda mendapatkan jagaan kesihatan pesakit luar?</p> <p><i>In the last 2 weeks, from... 2019 till today, have you received any outpatient care?</i></p>	<p>1. Ya <b>Yes</b> ... <b>sila ke B3010</b></p> <p>2. Tidak <b>No</b> ... <b>sila ke modul B4</b></p> <p>(-7) TT (-9) EJ</p>	
B3010	<p><b>Berapa tempat</b> telah anda pergi? (Dalam tempoh 2 minggu lepas)</p> <p><i>If yes, how many places did you go to? (In the last 2 weeks)</i></p>	<input type="text"/> <input type="text"/> Tempat <b>Places</b> (-7) TT (-9) EJ	<p><b>[PENEMURAMAH: Sekiranya B3010 lebih dari 2 tempat, isikan hanya 2 tempat TERKINI.</b></p> <p><b>Tanya semua soalan berkenaan Tempat 1, diikuti dengan Tempat 2].</b></p>
		<b>a. Tempat 1</b>	<b>b. Tempat 2</b>
B3020	<p>Apakah nama tempat tersebut?</p> <p><i>What is the name of the place?</i></p>	<input type="text"/> (-7) TT (-9) EJ	<input type="text"/> (-7) TT (-9) EJ
B3021	<p>Adakah tempat tersebut milik kerajaan atau swasta?</p> <p><i>Is that place owned by government or private?</i></p>	<p>1. Kerajaan <b>Government</b></p> <p>2. Swasta <b>Private</b></p> <p>(-7) TT (-9) EJ</p>	<p>1. Kerajaan <b>Government</b></p> <p>2. Swasta <b>Private</b></p> <p>(-7) TT (-9) EJ</p>
B3022	<p>Berapa kali anda ke...?</p> <p><i>How many times have you visited...?</i></p>	<input type="text"/> <input type="text"/> Kali <b>Times</b> (-7) TT (-9) EJ	<input type="text"/> <input type="text"/> Kali <b>Times</b> (-7) TT (-9) EJ
B3030	<p>Adakah lawatan anda...?</p> <p><i>Was your visit...?</i></p>		
B3031	<p>Berkaitan dengan masalah kesihatan dalam tempoh 2 minggu yang lepas</p> <p><i>Related to the health problems in the past 2 weeks</i></p>	<p>1. Ya / <b>Yes</b></p> <p>2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <b>Yes</b></p> <p>2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>
B3032	<p>Rawatan susulan (contohnya sambung ubat, ambil darah untuk pemeriksaan tahap gula / kolesterol)</p> <p><i>Follow-up (such as refill medications, blood taking for glucose / cholesterol level)</i></p>	<p>1. Ya / <b>Yes</b></p> <p>2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <b>Yes</b></p> <p>2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>
B3033	<p>Pemeriksaan / saringan kesihatan (contohnya ujian darah / x-ray)</p> <p><i>Medical check-up / screening (such as blood tests / x-ray)</i></p>	<p>1. Ya / <b>Yes</b></p> <p>2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <b>Yes</b></p> <p>2. Tidak / <b>No</b></p> <p>(-7) TT (-9) EJ</p>

		a. Tempat 1	b. Tempat 2
B3034	Lain-lain (contohnya imunisasi) <i>Others (such as immunisation)</i>	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B3040	Apakah jenis rawatan yang diterima? <i>What type of treatment did you receive?</i>  Pilih <b>satu</b> jawapan <b>UTAMA</b> sahaja. <i>Choose only one MAIN answer.</i>	1. Tradisional atau komplementari <i>Traditional or complementary</i> 2. Moden <i>Modern</i> (-7) TT (-9) EJ	1. Tradisional atau komplementari <i>Traditional or complementary</i> 2. Moden <i>Modern</i> (-7) TT (-9) EJ
B3050	Siapa bayar untuk rawatan di...? <i>Who paid for the care at ...?</i>		
B3051	Kerajaan (contohnya GL kerajaan, kad pencen / pesara) ( <b>tidak termasuk program pembiayaan kesihatan kerajaan</b> ) <i>Government (such as government GL, pensioner card) (excluding government health funding program)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B3052	<b>Program pembiayaan kesihatan kerajaan?</b> (contohnya kad Peduli Sihat, Skim Perlindungan Nasional B40 mySalam, Skim PeKa B40 dan insuran kesihatan kerajaan yang lain) <i>Government health funding program? (such as Peduli Sihat card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health insurance)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B3053	Insuran kesihatan peribadi <i>Personal health insurance</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B3054	Insuran kesihatan yang ditaja oleh majikan <i>Employer-sponsored health insurance</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B3055	Majikan atau / dan klinik / hospital panel (tidak termasuk jika melibatkan potongan gaji) <i>Employer or / and panel clinic / hospital (not considered if there is salary deductions)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B3056	PERKESO SOCO	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B3057	Sendiri / keluarga / ahli isirumah <i>Self / family / household members</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B3058	Pengecualian bayaran (contohnya warga emas, jagaan kesihatan ibu mengandung atau selepas bersalin, imunisasi kanak-kanak, penderma darah, dan lain-lain) <i>Fee exemption (such as senior citizen, antenatal or postnatal care, child immunisation, blood donor, and others)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ

		a. Tempat 1	b. Tempat 2
B3059	Lain-lain (contohnya kebajikan, perkhidmatan amal percuma) <i>Others (such as welfare, charitable free service)</i>	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B3060	Untuk <b>kesemua lawatan</b> , berapa <b>jumlah</b> yang dibayar untuk jagaan kesihatan, ubat, ujian dan lain-lain? (Hanya bayaran dengan wang sendiri / keluarga / ahli isirumah) <i>For all visits, how much in total did you pay for healthcare, including consultation, medications, tests and others? (Only payment made by own money / family / household member)</i>  <b>[PENEMURAMAH: Jika tiada, isi RM 0]</b>	RM <input type="text"/> (-7) TT (-9) EJ	RM <input type="text"/> (-7) TT (-9) EJ
B3061	Selain daripada jumlah yang anda bayar di atas, berapakah perbelanjaan untuk beli ubat atau peralatan dari tempat lain seperti <b>dinasihatkan</b> oleh pengamal kesihatan di ... ? (Hanya bayaran dengan wang sendiri / keluarga / ahli isirumah dan tidak termasuk bayaran balik insuran / majikan) <i>Apart from the total amount paid above, how much did you spend for medication or appliances from outside facilities as advised by a healthcare practitioner at ... ? (Only payment made by own money / family / household member and does not include reimbursement paid by insurance / employer)</i>  <b>[PENEMURAMAH: Jika tiada, isi RM 0]</b>		
B3062	Kedai Farmasi <i>Pharmacy shop</i>	RM <input type="text"/> (-7) TT (-9) EJ	RM <input type="text"/> (-7) TT (-9) EJ
B3063	Selain Kedai Farmasi <i>Other than pharmacy shop</i>	RM <input type="text"/> (-7) TT (-9) EJ	RM <input type="text"/> (-7) TT (-9) EJ
B3070	Secara keseluruhannya, bagaimana anda menilai pengalaman anda di...? <i>Overall, how would you rate your experience at...?</i>	1. Sangat bagus <i>Excellent</i> 2. Bagus <i>Good</i> 3. Sederhana <i>Fair</i> 4. Tidak bagus <i>Poor</i> 5. Sangat tidak bagus <i>Very poor</i> (-7) TT (-9) EJ	1. Sangat bagus <i>Excellent</i> 2. Bagus <i>Good</i> 3. Sederhana <i>Fair</i> 4. Tidak bagus <i>Poor</i> 5. Sangat tidak bagus <i>Very poor</i> (-7) TT (-9) EJ
<b>PERINGATAN: Lengkapkan semua soalan bagi Tempat 2 (jika ada), sebelum pergi ke modul B4.</b>			

**B4: JAGAAN KESIHATAN PESAKIT DALAM *INPATIENT CARE***

B4000	<p>Soalan seterusnya berkenaan pengalaman <b>bermalam sekurang-kurangnya satu malam di tempat rawatan</b> untuk perawatan kesihatan. Tempat rawatan termasuk hospital, klinik, hospis, rumah bersalin, jabatan kecemasan, tempat pengamal tradisional atau komplementari dan lain-lain. Pengamal kesihatan termasuk pengamal perubatan tradisional dan komplementari seperti bomoh, sinseh, pengamal Ayurveda, atau pengamal perubatan Islam. Rujuk kod B (pengamal kesihatan).</p> <p><i>The following questions are on your experience with <b>at least one night of stay at treatment place</b> for healthcare. Healthcare facilities include hospitals, clinics, hospices, maternity home, emergency department, premise of traditional and complementary medicine practitioner and others. Healthcare providers include traditional and complementary medicine practitioner such as spiritual healer, chinese herbalist, Ayurvedic practitioner, or Islamic medicine practitioner. Refer code B (healthcare practitioner).</i></p> <p><b>[PENEMURAMAH: Definisi jagaan kesihatan pesakit dalam adalah, seseorang yang dimasukkan ke tempat rawatan dan bermalam sekurang-kurangnya satu malam. Ini TIDAK TERMASUK seseorang yang dimasukkan ke tempat rawatan dan discanj pada hari yang sama, lawatan ke klinik pesakit luar, rawatan yang tidak berkaitan dengan kesihatan, menemani pesakit bermalam sebagai ahli keluarga atau dimasukkan ke pusat rawatan harian (daycare). Responden akan dikira sebagai bermalam sekiranya kemasukan untuk jagaan kesihatan melepasi pukul 12 pagi].</b></p>	
B4001	<p>Dalam tempoh <b>12 bulan lepas</b>, dari bulan ... 2018 hingga hari ini, pernahkah anda <b>bermalam untuk rawatan</b>?</p> <p><i>In the <b>last 12 months</b>, from... 2018 till today, have you had <b>overnight stay for treatment</b>?</i></p>	<p>1. Ya <b>Yes ... sila ke B4010</b></p> <p>2. Tidak <b>No ... sila ke modul B5</b></p> <p>(-7) TT (-9) EJ</p>
B4010	<p><b>Berapa tempat</b> telah anda pergi? (Dalam tempoh 12 bulan lepas)</p> <p><i>How many places did you go to? (In the last 12 months)</i></p>	<p><input type="text"/> <input type="text"/> Tempat <i>Places</i></p> <p>(-7) TT (-9) EJ</p> <p><b>[PENEMURAMAH: Sekiranya B4010 lebih dari 2 tempat, isikan hanya 2 tempat TERKINI. Tanya semua soalan berkenaan Tempat 1, diikuti dengan Tempat 2].</b></p>
		<p><b>a. Tempat 1</b></p> <p><b>b. Tempat 2</b></p>
B4020	<p>Apakah nama tempat?</p> <p><i>What is the name of the place?</i></p>	<p><input type="text"/> <input type="text"/></p> <p>(-7) TT (-9) EJ</p>
B4021	<p>Adakah tempat tersebut milik kerajaan atau swasta?</p> <p><i>Is that place owned by government or private?</i></p>	<p>1. Kerajaan <i>Government</i></p> <p>2. Swasta <i>Private</i></p> <p>(-7) TT (-9) EJ</p>
B4022	<p>Berapa kali anda telah dimasukkan ke...?</p> <p><i>How many times were you admitted to...?</i></p>	<p><input type="text"/> <input type="text"/> Kali <i>Times</i></p> <p>(-7) TT (-9) EJ</p>
B4023	<p>Jumlah keseluruhan hari anda masuk ke....</p> <p><i>Total days spent in...</i></p>	<p><input type="text"/> <input type="text"/> Hari <i>Days</i></p> <p>(-7) TT (-9) EJ</p>
B4040	<p>Apakah jenis rawatan yang diterima?</p> <p><i>What type of treatment did you receive?</i></p> <p>Pilih <b>satu</b> jawapan <b>UTAMA</b> sahaja.</p> <p><i>Choose only <b>one MAIN</b> answer.</i></p>	<p>1. Tradisional atau komplementari <i>Traditional or complementary</i></p> <p>2. Moden <i>Modern</i></p> <p>(-7) TT (-9) EJ</p>

		a. Tempat 1	b. Tempat 2
B4050	Siapa bayar untuk rawatan di...? <i>Who paid for the care at...?</i>		
B4051	Kerajaan (contohnya GL kerajaan, kad pencen / pesara) <b>(tidak termasuk program pembiayaan kesihatan kerajaan)</b> <i>Government (such as government GL, pensioner card) (excluding government health funding program)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B4052	<b>Program pembiayaan kesihatan kerajaan?</b> (contohnya kad Peduli Sihat, Skim Perlindungan Nasional B40 mySalam, Skim PeKa B40 dan insuran kesihatan kerajaan yang lain) <i>Government health funding program? (such as Peduli Sihat card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health insurance)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B4053	Insuran kesihatan peribadi <i>Personal health insurance</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B4054	Insuran kesihatan yang ditaja oleh majikan <i>Employer-sponsored health insurance</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B4055	Majikan atau / dan klinik / hospital panel (tidak termasuk jika melibatkan potongan gaji) <i>Employer or / and panel clinic / hospital (not considered if there is salary deductions)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B4056	PERKESO SOCSCO	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B4057	Sendiri / keluarga / ahli isirumah <i>Self / family / household members</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B4058	Pengecualian bayaran (contohnya warga emas, jagaan kesihatan ibu mengandung atau selepas bersalin, imunisasi kanak-kanak, penderma darah, dan lain-lain) <i>Fee exemption (such as senior citizen, antenatal or postnatal care, child immunisation, blood donor, and others)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B4059	Lain-lain (contohnya kebajikan, perkhidmatan amal percuma) <i>others (such as welfare, charitable free service)</i>	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ

		a. Tempat 1	b. Tempat 2
B4060	<p>Untuk <b>kesemua lawatan</b>, berapa <b>jumlah</b> yang dibayar untuk jagaan kesihatan, ubat, ujian dan lain-lain? (Hanya bayaran dengan wang sendiri / keluarga / ahli isirumah dan tidak termasuk bayaran balik insuran / majikan)</p> <p><i>For all visits, how much in total did you pay for healthcare, including consultation, medications, tests and others? (Only payment made by own money / family / household member and does not include reimbursement paid by insurance / employer)</i></p> <p><b>[PENEMURAMAH: Jika tiada, isi RM 0]</b></p>	<div>RM <input type="text"/></div> <div>(-7) TT (-9) EJ</div>	<div>RM <input type="text"/></div> <div>(-7) TT (-9) EJ</div>
B4061	<p>Selain daripada jumlah itu, berapa anda bayar untuk beli ubat / peralatan (implant, kanta mata, kerusi roda, dan lain-lain) <b>seperti dinasihatkan</b> oleh pengamal kesihatan di ... ? (ubat / peralatan yang tidak disediakan oleh Tempat 1, atau 2). Hanya bayaran dengan wang sendiri / keluarga / ahli isirumah dan tidak termasuk bayaran balik insuran / majikan.</p> <p><i>Other than the above total paid, how much did you spend for other medication / appliances (implants, intra-ocular lenses, wheelchair, and others) as advised by the healthcare practitioner at ... ? (medications / appliances that is not available in Tempat 1, or 2). Only payment made by own money / family / household member and does not include reimbursement paid by insurance / employer.</i></p> <p><b>[PENEMURAMAH: Jika tiada, isi RM 0]</b></p>		
B4062	<p>Kedai Farmasi <i>Pharmacy shop</i></p>	<div>RM <input type="text"/></div> <div>(-7) TT (-9) EJ</div>	<div>RM <input type="text"/></div> <div>(-7) TT (-9) EJ</div>
B4063	<p>Selain Kedai Farmasi <i>Other than pharmacy shop</i></p>	<div>RM <input type="text"/></div> <div>(-7) TT (-9) EJ</div>	<div>RM <input type="text"/></div> <div>(-7) TT (-9) EJ</div>
B4070	<p>Secara keseluruhannya, bagaimana anda menilai pengalaman anda di...?</p> <p><i>Overall, how would you rate your experience at...?</i></p>	<div>1. Sangat bagus <i>Excellent</i></div> <div>2. Bagus <i>Good</i></div> <div>3. Sederhana <i>Fair</i></div> <div>4. Tidak bagus <i>Poor</i></div> <div>5. Sangat tidak bagus <i>Very poor</i></div> <div>(-7) TT (-9) EJ</div>	<div>1. Sangat bagus <i>Excellent</i></div> <div>2. Bagus <i>Good</i></div> <div>3. Sederhana <i>Fair</i></div> <div>4. Tidak bagus <i>Poor</i></div> <div>5. Sangat tidak bagus <i>Very poor</i></div> <div>(-7) TT (-9) EJ</div>
<p><b>PERINGATAN: Lengkapkan semua soalan bagi Tempat 2 (jika ada), sebelum pergi ke modul B5.</b></p>			

## B5: JAGAAN KESIHATAN MULUT ATAU GIGI *DENTAL CARE*

B5000	<p>Soalan seterusnya berkenaan rawatan pergigian sebagai pesakit luar. Rawatan pergigian termasuk pemeriksaan mulut dan gigi, rawatan untuk sakit gigi / ngilu, gusi bengkak atau bernanah, masalah kehilangan gigi, masalah gigi palsu, masalah gigi tidak teratur, pecah mulut atau mata ikan dan sakit rahang. Tempat rawatan termasuk klinik pergigian, klinik pergigian di hospital, rawatan pergigian di sekolah, perkhidmatan pergigian bergerak, jabatan kecemasan, farmasi, kedai gigi. Pengamal kesihatan termasuk pengamal perubatan tradisional dan komplementari seperti bomoh, sinseh, pengamal Ayurveda, atau pengamal perubatan Islam. Rujuk kod B (pengamal kesihatan).</p> <p><i>The following questions are about outpatient dental care. Dental care include dental checkup, treatment for toothache or sensitive tooth, swollen gums with / without pus discharge, loss of teeth, denture problems, irregularly aligned teeth, mouth ulcers and jaw pain. Healthcare facilities include dental clinics, dental clinics in hospitals, school dental care, mobile dental services, emergency department, pharmacy, street dentist. Healthcare providers include traditional and complementary medicine practitioner such as spiritual healer, chinese herbalist, Ayurvedic practitioner, or Islamic medicine practitioner. Refer code B (healthcare practitioner).</i></p>	
B5001	<p>Dalam tempoh <b>12 bulan lepas</b>, dari bulan... 2018 hingga hari ini, pernahkah anda menerima pemeriksaan / rawatan pergigian?</p> <p><i>In the last 12 months, from... 2018 till today, did you receive any dental check-up / treatment?</i></p>	<p>1. Ya <b>Yes ... sila ke B5010</b></p> <p>2. Tidak <b>No ...</b></p> <p><b>ke B5002 bagi responden berumur 5-18 tahun.</b></p> <p><b>ke B5003 bagi responden berumur kurang daripada 5 tahun atau 19 tahun ke atas.</b></p> <p>(-7) TT (-9) EJ</p>
B5002	<p><b>Soalan ini hanya perlu dijawab oleh responden berumur 5-18 tahun.</b></p> <p>Adakah anda menerima pemeriksaan / rawatan di tadika / sekolah dalam tempoh <b>12 bulan lepas</b>?</p> <p><i>Did you receive dental check-up / treatment in kindergarten / schools in the last 12 months?</i></p>	<p>1. Ya <b>Yes ... sila ke B5010</b></p> <p>2. Tidak <b>No ... sila ke B5003</b></p> <p>(-7) TT (-9) EJ</p>
B5003	<p>Bila <b>kali terakhir</b> anda menerima pemeriksaan / rawatan pergigian (termasuk di tadika / sekolah)?</p> <p><i>When was the last time you received dental check-up / treatment (including at kindergarten / school)?</i></p>	<p>1. 1 - 2 tahun lepas <b>1 -2 years ago</b></p> <p>2. Lebih dari 2 tahun lepas <b>More than 2 years ago</b></p> <p>3. Tidak pernah <b>Never received</b></p> <p>(-7) TT (-9) EJ</p>
[PENEMURAMAH: Sila ke modul B6 selepas soalan ini.]		
B5010	<p><b>Berapa tempat</b> telah anda pergi? (Dalam tempoh 12 bulan lepas)</p> <p><b>How many places</b> did you go to? (In the last 12 months)</p>	<div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div> <div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div> Tempat <b>Places</b> (-7) TT (-9) EJ
<p>[PENEMURAMAH: Sekiranya B5010 lebih dari 2 tempat, isikan hanya 2 tempat <b>TERKINI</b>. Tanya semua soalan berkenaan Tempat 1, diikuti dengan Tempat 2].</p>		
		<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>a. Tempat 1</b></p> </div> <div style="width: 45%;"> <p><b>b. Tempat 2</b></p> </div> </div>
B5020	<p>Apakah nama tempat?</p> <p><i>What is the name of the place?</i></p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <div style="border: 1px solid black; width: 100%; height: 20px;"></div> <p>(-7) TT (-9) EJ</p> </div> <div style="width: 45%;"> <div style="border: 1px solid black; width: 100%; height: 20px;"></div> <p>(-7) TT (-9) EJ</p> </div> </div>
B5021	<p>Adakah tempat tersebut milik kerajaan atau swasta?</p> <p><i>Is that place owned by government or private?</i></p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>1. Kerajaan <b>Government</b></p> <p>2. Swasta <b>Private</b></p> <p>(-7) TT (-9) EJ</p> </div> <div style="width: 45%;"> <p>1. Kerajaan <b>Government</b></p> <p>2. Swasta <b>Private</b></p> <p>(-7) TT (-9) EJ</p> </div> </div>

		a. Tempat 1	b. Tempat 2
B5022	Berapa kali anda ke....? <i>How many times did you visit...?</i>	<input type="text"/> <input type="text"/> Kali Times (-7) TT (-9) EJ	<input type="text"/> <input type="text"/> Kali Times (-7) TT (-9) EJ
B5030	Adakah lawatan anda ke... berkaitan dengan masalah gigi atau mulut dalam tempoh 2 minggu yang lalu? <i>Was your visit to.... related to your dental problems in the last 2 weeks?</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B5031	Adakah lawatan ke... untuk... <i>Was the visit to... for...</i>  Pilih <b>satu</b> jawapan <b>UTAMA</b> sahaja. <i>Choose only <b>one MAIN</b> answer.</i>	1. Rawatan bagi masalah mulut / gigi <i>Oral health treatment</i> 2. Pemeriksaan mulut / gigi <i>Oral health check-up</i> 3. Lain-lain <i>Others</i> (-7) TT (-9) EJ	1. Rawatan bagi masalah mulut / gigi <i>Oral health treatment</i> 2. Pemeriksaan mulut / gigi <i>Oral health check-up</i> 3. Lain-lain <i>Others</i> (-7) TT (-9) EJ
B5050	Siapa bayar untuk rawatan di...? <i>Who paid for the care at...?</i>		
B5051	Kerajaan (contohnya GL kerajaan, kad pencen / pesara) ( <b>tidak termasuk program pembiayaan kesihatan kerajaan</b> ) <i>Government (such as government GL, pensioner card) (excluding government health funding program)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B5052	<b>Program pembiayaan kesihatan kerajaan?</b> (contohnya kad Peduli Sihat, Skim Perlindungan Nasional B40 mySalam, Skim PeKa B40 dan insuran kesihatan kerajaan yang lain) <i>Government health funding program? (such as Peduli Sihat card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health insurance)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B5053	Insuran kesihatan peribadi <i>Personal health insurance</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B5054	Insuran kesihatan yang ditaja oleh majikan <i>Employer-sponsored health insurance</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B5055	Majikan atau / dan klinik / hospital panel (tidak termasuk jika melibatkan potongan gaji) <i>Employer or / and panel clinic / hospital (not considered if there is salary deductions)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B5056	PERKESO SOCO	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B5057	Sendiri / keluarga / ahli isirumah <i>Self / family / household members</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ

		a. Tempat 1	b. Tempat 2
B5058	<p>Pengecualian bayaran (contohnya warga emas, jagaan kesihatan ibu mengandung atau selepas bersalin, program pergigian di sekolah, penderma darah, dan lain-lain)</p> <p><i>Fee exemption (such as senior citizen, antenatal or postnatal care, school dental programme, blood donor, and others)</i></p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>
B5059	<p>Lain-lain (contohnya kebajikan, perkhidmatan amal percuma)</p> <p><i>Others (such as welfare, charitable free service)</i></p>	<p>1. Ya, nyatakan / <i>Yes, specify : .....</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya, nyatakan / <i>Yes, specify : .....</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>
B5060	<p>Untuk <b>kesemua lawatan</b>, berapa <b>jumlah</b> yang dibayar untuk jagaan kesihatan, ubat, ujian dan lain-lain? (Hanya bayaran dengan wang sendiri / keluarga / ahli isirumah dan tidak termasuk bayaran balik insuran / majikan)</p> <p><i>For all visits, how much in total did you pay for healthcare, including consultation, medications, tests and others? (Only payment made by own money / family / household member and does not include reimbursement paid by insurance / employer)</i></p> <p><b>[PENEMURAMAH: Jika tiada, isi RM 0]</b></p>	<p>RM <input type="text"/></p> <p>(-7) TT (-9) EJ</p>	<p>RM <input type="text"/></p> <p>(-7) TT (-9) EJ</p>
B5061	<p>Selain daripada jumlah di atas, berapa anda bayar untuk beli ubat / korona gigi / gigi palsu dari tempat lain <b>seperti dinasihatkan</b> oleh pengamal pergigian? (Hanya bayaran dengan wang sendiri / keluarga / ahli isirumah dan tidak termasuk bayaran balik insuran / majikan)</p> <p><i>Other than the above total paid, how much did you spend for medication / crown / bridge / denture from outside the clinic as advised by a dental practitioner? (Only payment made by own money / family / household member and does not include reimbursement paid by insurance / employer)</i></p> <p><b>[PENEMURAMAH: Jika tiada, isi RM 0]</b></p>	<p>RM <input type="text"/></p> <p>(-7) TT (-9) EJ</p>	<p>RM <input type="text"/></p> <p>(-7) TT (-9) EJ</p>
B5070	<p>Secara keseluruhannya, bagaimana anda menilai pengalaman anda di ...?</p> <p><i>Overall, how would you rate your experience at ...?</i></p>	<p>1. Sangat bagus <i>Excellent</i></p> <p>2. Bagus <i>Good</i></p> <p>3. Sederhana <i>Fair</i></p> <p>4. Tidak bagus <i>Poor</i></p> <p>5. Sangat tidak bagus <i>Very poor</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Sangat bagus <i>Excellent</i></p> <p>2. Bagus <i>Good</i></p> <p>3. Sederhana <i>Fair</i></p> <p>4. Tidak bagus <i>Poor</i></p> <p>5. Sangat tidak bagus <i>Very poor</i></p> <p>(-7) TT (-9) EJ</p>
<p><b>PERINGATAN: Lengkapkan semua soalan bagi Tempat 2 (jika ada), sebelum pergi ke modul B6.</b></p>			

<b>B6: LAWATAN / RAWATAN DI RUMAH HOME-VISIT / HOMECARE</b>			
B6000	Soalan seterusnya berkenaan pengalaman anda menerima jagaan kesihatan di rumah. Ini termasuk khidmat nasihat, pemeriksaan atau rawatan. Ini adalah termasuk rawatan perubatan tradisional, komplementari atau moden. <i>The following questions are on your experience receiving healthcare at home. It includes consultation, check-up or treatment. This includes traditional, complementary or modern treatment.</i>		
B6001	Dalam tempoh <b>12 bulan lepas</b> , dari bulan ... 2018 hingga hari ini, pernahkah anda menerima lawatan / rawatan kesihatan di rumah daripada mana-mana pengamal kesihatan? <i>In the last 12 months, from... 2018 till today, have you received any home-visit / homecare from any healthcare practitioner?</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i>	(-7) TT (-9) EJ
B6002	Adakah anda rasa anda <b>perlu</b> lawatan / rawatan kesihatan di rumah (Dalam tempoh 12 bulan lepas)? <i>Did you feel that you need the home-visit / homecare (In the last 12 months)?</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i>	(-7) TT (-9) EJ
[PENEMURAMAH: Semak jawapan responden bagi B6001]		Jika YA, sila ke B6010. Jika TIDAK, sila ke modul C1.	
B6010	Daripada berapa agensi / fasiliti / pusat kesihatan atau individu yang anda menerima jagaan tersebut? (Dalam tempoh 12 bulan lepas) <i>How many agencies / healthcare facilities / centres or individual did you receive the care from? (In the last 12 months)</i>  [PENEMURAMAH: Pengamal kesihatan dari agensi / fasiliti / pusat yang sama dikira sebagai satu agensi / fasiliti / pusat lawatan ke rumah].  [PENEMURAMAH: Sekiranya B6010 lebih dari 2 agensi / fasiliti / pusat atau individu, isikan hanya 2 agensi / fasiliti / pusat atau individu TERKINI. Tanya semua soalan berkenaan agensi / fasiliti / pusat atau individu 1, diikuti dengan agensi / fasiliti / pusat atau individu 2].		
B6011	Agensi / fasiliti / pusat <i>Agencies / facilities / centre</i>	<input type="text"/> <input type="text"/> Agensi / fasiliti / pusat <i>Agencies / facilities / centre</i> <b>Sila ke B6020</b>	(-7) TT (-9) EJ
B6012	Individu <i>Individual</i>	<input type="text"/> <input type="text"/> Individu <i>Individual</i> <b>Sila ke B6022</b>	(-7) TT (-9) EJ
		<b>a. Agensi / fasiliti / pusat</b>	<b>b. Agensi / fasiliti / pusat</b>
B6020	Apakah nama agensi / fasiliti / pusat tersebut? <i>What is the name of the agency / facility / centre?</i>	<input type="text"/> (-7) TT (-9) EJ	<input type="text"/> (-7) TT (-9) EJ

		a. Agensi / fasiliti / pusat atau individu 1	b. Agensi / fasiliti / pusat atau individu 2
B6021	Adakah agensi / fasiliti / pusat tersebut...? <i>Is that agency / facility / centre...?</i>	1. Kerajaan <i>Government</i> 2. Swasta <i>Private</i> 3. Pertubuhan bukan kerajaan <i>Non-government organization</i> 4. Lain-lain <i>Others</i> (-7) TT (-9) EJ	1. Kerajaan <i>Government</i> 2. Swasta <i>Private</i> 3. Pertubuhan bukan kerajaan <i>Non-government organization</i> 4. Lain-lain <i>Others</i> (-7) TT (-9) EJ
B6022	Berapa kali anda terima lawatan / rawatan dari...? <i>How many times did you receive visit / care from...?</i>	<div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div> Kali <i>Times</i> (-7) TT (-9) EJ	<div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div> Kali <i>Times</i> (-7) TT (-9) EJ
B6030	Apakah jenis jagaan yang anda terima? <i>What type of care did you receive?</i>		
B6031	Perawatan di rumah contohnya jagaan luka, pemberian makanan melalui tiub, pencegahan ulser / kudis tekanan dan lain-lain <i>Treatment at home such as wound care, tube feeding, prevention of pressure ulcer and others</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B6032	Pemeriksaan kesihatan contohnya tekanan darah <i>Health check such as blood pressure</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B6033	Jagaan berkaitan ubat-ubatan <i>Care related to medication</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B6034	Pemulihan atau rehabilitasi contohnya fisioterapi, terapi pemulihan cara kerja, terapi pertuturan <i>Rehabilitation care such as physiotherapy, occupational therapy, speech therapy</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B6035	Jagaan kesihatan ibu mengandung atau selepas bersalin <i>Antenatal care or postnatal care</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B6036	Jagaan kesihatan bayi <i>Child healthcare</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B6037	Lain-lain <i>Others</i>	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B6038	Adakah jagaan ini diatitkan oleh hospital / klinik? <i>Was this care arranged by the hospital / clinic?</i>  <b>[PENEMURAMAH: Sekiranya B6030 lebih daripada satu jagaan, tandakan YA jika mana-mana satu jagaan adalah diatitkan oleh hospital / klinik].</b>	1. Ya <i>Yes</i> ... sila ke <b>B6040</b> 2. Tidak <i>No</i> ... sila ke <b>B6039</b> (-7) TT (-9) EJ	1. Ya <i>Yes</i> ... sila ke <b>B6040</b> 2. Tidak <i>No</i> ... sila ke <b>B6039</b> (-7) TT (-9) EJ

		a. Agensi / fasiliti / pusat atau individu 1	b. Agensi / fasiliti / pusat atau individu 2
B6039	<p>Bagaimana anda mendapatkan jagaan ini? <i>How did you engage with this care?</i></p> <p>Pilih <b>satu</b> jawapan <b>UTAMA</b> sahaja. <i>Choose only one MAIN answer.</i></p> <p><b>[PENEMURAMAH: Semak semula samada jawapan responden adalah cara mendapatkan perkhidmatan, BUKAN mendapatkan maklumat bagi perkhidmatan].</b></p>	<p>1. Panggilan telefon <i>Phone call</i></p> <p>2. Internet (contohnya Aplikasi) <i>Internet (such as Application)</i></p> <p>3. Hadir ke fasiliti <i>Walk-in</i></p> <p>4. Lain-lain <i>Others</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Panggilan telefon <i>Phone call</i></p> <p>2. Internet (contohnya Aplikasi) <i>Internet (such as Application)</i></p> <p>3. Hadir ke fasiliti <i>Walk-in</i></p> <p>4. Lain-lain <i>Others</i></p> <p>(-7) TT (-9) EJ</p>
B6040	<p>Apakah jenis rawatan yang diterima? <i>What type of treatment did you receive?</i></p> <p>Pilih satu jawapan <b>UTAMA</b> sahaja. <i>Choose only one MAIN answer.</i></p>	<p>1. Tradisional atau komplementari <i>Traditional or complementary</i></p> <p>2. Moden <i>Modern</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Tradisional atau komplementari <i>Traditional or complementary</i></p> <p>2. Moden <i>Modern</i></p> <p>(-7) TT (-9) EJ</p>
B6050	<p>Siapa bayar untuk rawatan di...? <i>Who paid for the care at...?</i></p>		
B6051	<p>Kerajaan (contohnya GL kerajaan, kad pencen / pesara) <b>(tidak termasuk program pembiayaan kesihatan kerajaan)</b> <i>Government (such as government GL, pensioner card) (excluding government health funding program)</i></p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>
B6052	<p><b>Program pembiayaan kesihatan kerajaan?</b> (contohnya kad Peduli Sihat, Skim Perlindungan Nasional B40 mySalam, Skim PeKa B40 dan insuran kesihatan kerajaan yang lain) <b>Government health funding program?</b> (such as Peduli Sihat card, mySalam B40 National Protection Scheme, PeKa B40 scheme and other government health insurance)</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>
B6053	<p>Insuran kesihatan peribadi <i>Personal health insurance</i></p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>
B6054	<p>Insuran kesihatan yang ditaja oleh majikan <i>Employer-sponsored health insurance</i></p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>
B6055	<p>Majikan atau / dan klinik / hospital panel (tidak termasuk jika melibatkan potongan gaji) <i>Employer or / and panel clinic / hospital (not considered if there is salary deductions)</i></p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>
B6056	<p>PERKESO SOCO</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>	<p>1. Ya / <i>Yes</i></p> <p>2. Tidak / <i>No</i></p> <p>(-7) TT (-9) EJ</p>

		a. Agensi / fasiliti / pusat atau individu 1	b. Agensi / fasiliti / pusat atau individu 2
B6057	Sendiri / keluarga / ahli isirumah <i>Self / family / household members</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B6058	Pengecualian bayaran (contohnya warga emas, jagaan kesihatan ibu mengandung atau selepas bersalin, imunisasi kanak-kanak, penderma darah, dan lain-lain) <i>Fee exemption (such as senior citizen, antenatal or postnatal care, child immunisation, blood donor, and others)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B6059	Lain-lain (contohnya kebajikan, perkhidmatan amal percuma) <i>Others (such as welfare, charitable free service)</i>	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
B6060	Untuk <b>kesemua lawatan / rawatan di rumah</b> , berapa <b>jumlah</b> yang dibayar untuk jagaan kesihatan, ubat, ujian dan lain-lain? (Hanya bayaran dengan wang sendiri / keluarga / ahli isirumah dan tidak termasuk bayaran balik insuran / majikan) <i>For all home-visits / homecare, how much in total did you pay for healthcare, including consultation, medications, tests and others? (Only payment made by own money / family / household member and does not include reimbursement paid by insurance / employer)</i>  <b>[PENEMURAMAH: Jika tiada, isi RM 0]</b>	RM <input type="text"/> (-7) TT (-9) EJ	RM <input type="text"/> (-7) TT (-9) EJ
B6061	Selain daripada jumlah yang anda bayar di atas, berapakah perbelanjaan untuk beli ubat atau peralatan dari tempat lain seperti <b>dinasihatkan</b> oleh pengamal kesihatan? (Hanya bayaran dengan wang sendiri / keluarga / ahli isirumah dan tidak termasuk bayaran balik insuran / majikan) <i>Apart from the total paid above, how much did you spend for medication or appliances from outside facilities as advised by a healthcare practitioner? (Only payment made by own money / family / household member and does not include reimbursement paid by insurance / employer)</i>  <b>[PENEMURAMAH: Jika tiada, isi RM 0]</b>		
B6062	Kedai Farmasi <i>Pharmacy shop</i>	RM <input type="text"/> (-7) TT (-9) EJ	RM <input type="text"/> (-7) TT (-9) EJ
B6063	Selain Kedai Farmasi <i>Other than pharmacy shop</i>	RM <input type="text"/> (-7) TT (-9) EJ	RM <input type="text"/> (-7) TT (-9) EJ
B6070	Secara keseluruhannya, bagaimana anda menilai pengalaman anda menerima lawatan / rawatan di rumah dari...? <i>Overall, how would you rate your home-visit / homecare experience from...?</i>	1. Sangat bagus <i>Excellent</i> 2. Bagus <i>Good</i> 3. Sederhana <i>Fair</i> 4. Tidak bagus <i>Poor</i> 5. Sangat tidak bagus <i>Very poor</i> (-7) TT (-9) EJ	1. Sangat bagus <i>Excellent</i> 2. Bagus <i>Good</i> 3. Sederhana <i>Fair</i> 4. Tidak bagus <i>Poor</i> 5. Sangat tidak bagus <i>Very poor</i> (-7) TT (-9) EJ
<b>PERINGATAN: Lengkapkan semua soalan bagi Tempat 2 (jika ada), sebelum pergi ke modul C1.</b>			

C1: JAGAAN TIDAK FORMAL <i>INFORMAL CARE</i>		
C1000	<b>PENEMURAMAH: Modul C1 untuk responden berumur 13 tahun dan ke atas.</b> <b>Untuk responden berumur kurang daripada 13 tahun, modul TAMAT.</b> <p>Soalan seterusnya adalah berkenaan pengalaman anda menjaga mereka yang mengalami masalah kesihatan jangka panjang (seperti strok / angin ahmar, kencing manis, penyakit buah pinggang, sakit jantung, penyakit mental, dementia dan lain-lain), tua atau kurang keupayaan untuk menjaga diri. Ini termasuk (1) <b>jagaan diri</b> (contohnya bantu untuk jalan, makan, pakai pakaian, bawa ke tandas dan mandi) dan (2) <b>jagaan kesihatan</b> (contohnya bawa berjumpa doktor atau sebarang fasiliti kesihatan dan bantu mengurus ubat). Penjagaan yang diberi hendaklah sekurang-kurangnya 3 bulan. Ini tidak termasuk penjagaan yang diberi bayaran upah / gaji, khidmat masyarakat dan aktiviti sukarela.</p> <p><i>The following questions are regarding your experience in providing care to people with long term health conditions (such as stroke, diabetes, kidney disease, heart conditions, mental illness, dementia and others), elderly or unable to care for themselves. This includes (1) <b>personal care</b> (such as assist in walking, feeding, dressing, toileting and bathing) and (2) <b>healthcare</b> (such as bring to the doctor or any health facility and managing medications). The care has to be provided for at least 3 months. It does not involve wage / salary, community service and volunteer activity.</i></p>	
C1001	Dalam tempoh <b>12 bulan lepas</b> , dari... 2018 hingga hari ini, adakah anda memberi jagaan kepada... yang mengalami masalah kesihatan jangka panjang, tua atau kurang keupayaan? <i>In the <b>last 12 months</b>, from... 2018 till today, did you provide care to... with long-term illness, elderly or disabled?</i>	
C1002	Ahli Isirumah anda <i>Your household member</i>	1. Ya <i>Yes</i> , <input type="text"/> <input type="text"/> orang 2. Tidak <i>No</i> (-7) TT (-9) EJ
C1003	Selain ahli isirumah anda <i>Other than your household member</i>	1. Ya <i>Yes</i> , <input type="text"/> <input type="text"/> orang 2. Tidak <i>No</i> (-7) TT (-9) EJ
	<b>[PENEMURAMAH: Semak jawapan responden bagi C1002 dan C1003]</b>	<b>Jika ada satu YA, sila ke C1010.</b> <b>Jika kedua-dua TIDAK, kaji selidik TAMAT.</b>
	<b>[PENEMURAMAH: Sekiranya C1002 dan C1003 lebih daripada seorang, responden hanya perlu jawab bagi SEORANG individu yang paling selalu dijaga bagi soalan seterusnya].</b>	
C1010	Apakah jenis jagaan yang anda berikan kepada...? <i>What kind of care did you provide to...?</i>	
C1011	Jagaan diri (contohnya bantu untuk jalan, makan, pakai pakaian, bawa ke tandas dan mandi) <i>Personal care (such as assist in walking, feeding, dressing, toileting and bathing)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
C1012	Jagaan kesihatan (contohnya bawa berjumpa doktor atau sebarang fasiliti kesihatan dan bantu mengurus ubat) <i>Healthcare (such as bring to the doctor or any health facility and managing medications)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
C1013	Lain-lain bantuan <i>Other assistance</i>	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
	<b>[PENEMURAMAH: Bagi soalan seterusnya, responden boleh jawab bagi SEMUA jenis jagaan yang diberikan].</b>	
C1020	Berapa lamakah anda telah memberi jagaan kepada...? <i>How long have you been providing care to...?</i>	<input type="text"/> <input type="text"/> Tahun <input type="text"/> <input type="text"/> Bulan <i>Years Months</i> (-7) TT (-9) EJ

C1021	Berapa jumlah jam dalam seminggu anda biasanya memberi jagaan kepada...? (Anggaran) <i>In total, how many hours per week did you normally spend providing care to...? (Estimation)</i>	<input type="text"/> Jam <i>Hours</i> (-7) TT (-9) EJ
C1022	Berapakah umur (orang yang terima jagaan)? <i>How old is (person receiving care)?</i>	<input type="text"/> Tahun <i>Years</i> (-7) TT (-9) EJ
C1030	Siapa lagi yang memberi jagaan kepada ...? <i>Who else provides care to ...?</i>	
C1031	Ahli keluarga yang lain (contohnya adik-beradik) <i>Other family members (such as siblings)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
C1032	Pembantu rumah <i>Domestic helper / maid</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
C1033	Jururawat / ahli kejuruaratan lain <i>Nurse / other nursing professional</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
C1034	Jagaan harian / institusi lain <i>Day-care / other institution</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
C1035	Lain-lain (contohnya jiran) <i>Others (such as neighbour)</i>	1. Ya, nyatakan / <i>Yes, specify : .....</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
C1040	Adakah penjagaan ini telah menjejaskan ... anda? <i>Have your role in providing care affected your...?</i>	
C1041	Kesihatan (fizikal dan / atau mental) <i>Health (physical and / or mental)</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
C1042	Aktiviti harian, kerja atau sekolah <i>Daily, work or school activities</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
C1043	Aktiviti sosial dan lain-lain <i>Social activities and others</i>	1. Ya / <i>Yes</i> 2. Tidak / <i>No</i> (-7) TT (-9) EJ
C1050	Adakah anda dilatih untuk memberi jagaan kepada...? <i>Were you trained to provide care to...?</i>	1. Ya, oleh pengamal kesihatan <i>Yes, by healthcare practitioner</i> 2. Ya, oleh selain pengamal kesihatan <i>Yes, by other than healthcare practitioner</i> 3. Tidak <i>No</i> (-7) TT (-9) EJ

NHMS 2019

# Code Book

Institut Kesihatan Umum (IKU)  
Kementerian Kesihatan Malaysia

NHMS 2019

# Health Care Demand, Cost, and Utilisation

# HCD

**Kod A - Masalah Kesihatan *Health Problem***

Kod/Code	Pilihan Jawapan/ <i>Choice of Answer</i>
01	Demam/ <i>Fever</i>
02	Sakit tekak/ <i>Sore throat</i>
03	Sukar untuk menelan/ <i>Difficulty in swallowing</i>
04	Selesema/Hidung tersumbat/ <i>Running nose/Blocked nose</i>
05	Batuk (berkahak atau tanpa kahak)/ <i>Cough (with or without phlegm)</i>
06	Nafas berbunyi/Asma/ <i>Wheezing/Asthma</i>
07	Sakit telinga/Telinga bernanah/ <i>Earache/Pus from ear(s)</i>
08	Sakit mata/Radang mata/ <i>Conjunctivitis</i>
09	Sakit perut/ <i>Stomach ache</i>
10	Kembung perut/ <i>Bloated stomach</i>
11	Cirit birit/ <i>Diarrhoea</i>
12	Muntah/ <i>Vomiting</i>
13	Sakit ulu hati/ <i>Heartburn</i>
14	Masalah kencing/ <i>Urination problem</i>
15	Bengkak/ <i>Swelling</i>
16	Masalah kulit/Ekzema/ <i>Skin problem/Eczema</i>
17	Sakit kepala/Pening Kepala/ <i>Headache/Dizziness/Giddiness</i>
18	Alahan/ <i>Allergies</i>
20	Luka/ <i>Skin lesion</i>
21	Sakit dada/ <i>Chest pain</i>
22	Sakit sendi/ <i>Joint pain</i>
23	Lain-lain masalah/ <i>Others</i>

## Kod B - Pengamal Kesihatan *Healthcare Practitioner*

Kod/Code	Pilihan Jawapan/ <i>Choice of Answer</i>
01	Doktor (termasuk pakar)/ <i>Medical doctor (including specialists)</i>
02	Doktor gigi/ <i>Dentist or dental surgeon</i>
03	Ahli farmasi/ <i>Pharmacist or pharmaceutical chemist</i>
04	Jururawat terlatih/ Jururawat pergigian/ <i>Registered nurse professional/Dental nurse</i>
05	Penolong pegawai perubatan/ <i>Assistant medical officer</i>
06	Bidan terlatih/ <i>Certified midwife</i>
07	Optometris atau Juruoptik (tukang cermin mata)/ <i>Optometrist or Optician</i>
08	Ahli Fisioterapi atau Ahli Terapi Cara Kerja/ <i>Physiotherapist or Occupational Therapist</i>
09	Ahli Pemakanan atau Ahli Dietetik/ <i>Nutritionist or Dietician</i>
10	Pembantu farmasi/ <i>Pharmaceutical assistant or technician</i>
11	Jururawat masyarakat/ <i>Community nurse</i>
12	Penolong Jururawat (assistant nurse)/ <i>Nursing associate or auxiliary</i>
13	Bidan kampung/ Wakil kesihatan kampung/ <i>Midwife associate or auxiliary or traditional birth attendant</i>
14	Pengamal Perubatan Tradisional dan Komplementari (cth. bomoh, tukang urut, sinseh, pengamal homeopati, pengamal Ayurveda, pengamal pengubatan Islam dll.) / <i>Traditional and Complementary Medicine practitioner (spiritual healer, massager, chinese herbalist, homeopathic practitioner, Ayurvedic practitioner, Islamic medicine practitioner and others)</i>

### Kod C - Halangan Mendapatkan Jagaan Kesihatan *Barriers to Get Healthcare*

Kod/Code	Pilihan Jawapan/ <i>Choice of Answer</i>
01	Komitmen kerja/tidak ada masa kerana sibuk bekerja atau ada tugas lain/ <i>Work commitment/could not take time off work or had other commitments</i>
02	Tidak mampu bayar untuk rawatan/ <i>Could not afford to pay for the treatment</i>
03	Tiada pengangkutan/ <i>No transport</i>
04	Tidak mampu bayar tambang pengangkutan/ <i>Could not afford the cost of transport</i>
05	Anda tidak tahu tempat mana hendak pergi/ <i>You did not know where to go</i>
06	Ubat-ubatan dan peralatan di tempat jagaan kesihatan tidak mencukupi/ <i>The healthcare provider's drugs or equipment are inadequate</i>
07	Anda pernah dilayan buruk sebelum ini/ <i>You were previously badly treated</i>
08	Pengamal kesihatan kurang mahir/ <i>The healthcare provider's skill are inadequate</i>
09	Anda cuba pergi tapi tidak diterima/ <i>You tried but were denied healthcare</i>
10	Anda rasa sakit tidak teruk atau kuat dan ubat sendiri/ <i>Perceived not sick enough and self medicate</i>
11	Anda rasa sakit tidak teruk atau kuat dan tidak memerlukan rawatan/ <i>Perceived not sick enough and do not need treatment</i>
12	Lain-lain sebab/ <i>Others</i>

## Appendix 8

### Summary of Publicity Activities and Samples of Publicity Materials

#### Summary of Publicity Activities

Date/Time Period	Activity Description
<b>April 2019 – September 2019</b>	Regular updates posted throughout the survey period on our Instagram ( <a href="https://www.instagram.com/nhms.iku">instagram.com/nhms.iku</a> ) and Facebook ( <a href="https://www.facebook.com/nhms.iku">www.facebook.com/nhms.iku</a> ) pages.
<b>May 2019</b>	A subdomain for NHMS was launched on the IKU website ( <a href="http://iku.gov.my/nhms">http://iku.gov.my/nhms</a> ), along with a dedicated portal for respondents to verify the identities of the interviewers calling at their door by checking their photos and information on <a href="http://iku.gov.my/verify">http://iku.gov.my/verify</a> . This has helped to convince some respondents that the interviewer teams are not scammers in disguise as health workers or other government officials—a common concern in many urban communities these days.
<b>30 May 2019</b>	Press statement released by the Director-General of Health, Datuk Dr. Noor Hisham bin Abdullah announcing the upcoming NHMS 2019 through his official website ‘From the Desk of the Director-General of Health Malaysia’ and social media channels.
<b>25 June 2019</b>	Dr. Shubash Shander Ganapathy and Ahmad Ali Bin Zainuddin were interviewed live on BFM89.9 for their programme “The Bigger Picture”. Listen to the interview at <a href="https://bit.ly/2JyvZFj">https://bit.ly/2JyvZFj</a>
<b>27 June 2019</b>	Live radio interview on AiFM with Dr. Tan Ee Hong and Cheong Siew Man representing the NHMS 2019 team. Listen to the interview at <a href="https://bit.ly/2JyrWJO">https://bit.ly/2JyrWJO</a>
<b>3 July 2019</b>	Dr. Shubash Shander Ganapathy and Logeswary Krisnan made a guest appearance on the television programme ‘Vizhuthugal’ (Astro Vaanavil and Astro Vinmeen HD) to answer questions about NHMS 2019.
<b>4 July 2019</b>	Dr. Shubash Shander Ganapathy and Dr. Ainul Nadziha Binti Mohd Hanafiah were interviewed live on ‘Selamat Pagi Malaysia’, RTM TV1. Watch the interview here: <a href="https://bit.ly/2Nkqvjm">https://bit.ly/2Nkqvjm</a>
<b>17 July 2019</b>	An animated, easy-to-understand explainer video is released to further promote the survey. Respondents whom we successfully interviewed were encouraged to circulate the video in their local community or residents’ WhatsApp groups to encourage participation in the survey.
<b>4 August 2019</b>	Dr. Tan Ee Hong and Cheong Siew Man made a guest appearance on the television programme ‘What Say You’, RTM TV2 to answer questions about NHMS 2019.
<b>23 August 2019</b>	NHMS 2019 is featured on the front page of The Star Metro (Klang Valley edition)
<b>26 August 2019</b>	NHMS 2019 is featured in The Star Metro, Southern Region (Johor, Melaka and Negeri Sembilan).
<b>8 September 2019</b>	Our diligent Principal Investigator, Dr. Shubash Shander Ganapathy once again appears on television as a guest on ‘Vasantham’, TV2 discussing the topic of “Ageing Society” and promoting NHMS 2019.

## Samples of Publicity Materials

## Information pamphlet

### Siapakah yang menjalankan tinjauan ini dan apakah tujuannya?

Tinjauan ini dikendalikan oleh Institut Kesihatan Umum (IKU). Maklumat daripada tinjauan ini akan membantu Kementerian Kesihatan Malaysia merancang perkhidmatan kesihatan yang lebih berkesan.

Kami mengharapkan kerjasama anda untuk menjayakan tinjauan ini. Sertailah tinjauan ini dan bantu kami tingkatkan lagi taraf kesihatan rakyat Malaysia.

**Terima kasih.**

### Who is carrying out the survey and why?

Institut Kesihatan Umum (IKU), or the Institute of Public Health, is carrying out this survey. The information collected will help the Ministry of Health Malaysia plan more effective health services for the future.

We rely on the goodwill and co-operation of people like you to make the study a success. Please take part and help us to make a difference to the health of the people in Malaysia.

**Thank you.**

### Isi rumah anda telah terpilih secara rawak untuk tinjauan ini.

**Apakah perkara selanjutnya?**

Pasukan penemuramah terlatih dari IKU akan melawat rumah anda antara bulan Julai - September 2019. Untuk maklumat lanjut sila layari laman web berikut:

**What's next?**

A team of trained interviewers from IKU will visit at your address sometime in July - September 2019. Meanwhile, you can learn more about the survey at our website:

[iku.gov.my/nhms](http://iku.gov.my/nhms)

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Kompleks Institut Kesihatan Negara (NIH)  
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NHMS Hotline: 03-33628793  
Email: [nhms.iku@moh.gov.my](mailto:nhms.iku@moh.gov.my)

### PENGENALAN RINGKAS

## Tinjauan Kebangsaan Kesihatan dan Morbiditi 2019

A BRIEF INTRODUCTION TO THE

## National Health and Morbidity Survey (NHMS) 2019

### Kami menemuramah lebih kurang 30,000 orang di seluruh negara setiap 4 tahun.

Pernyataan anda dalam tinjauan ini adalah secara sukarela dan segala maklumat peribadi anda yang diperolehi dalam tinjauan ini akan disimpan dan dikendalikan secara sulit.

### We interview around 30,000 people all over the country every 4 years.

Everything is done with voluntary co-operation and with full respect for your privacy.

Tinjauan ini akan meliputi soalan-soalan mengenai topik seperti aktiviti fizikal, pemakanan, dan isu-isu kesihatan yang lain. Selain itu, pengukuran berat badan, tinggi, tekanan darah, dan ujian darah (dengan persetujuan) dari hujung jari untuk memeriksa paras gula, kolesterol, dan haemoglobin (sel darah merah) juga akan dijalankan.

Key aspects of the survey include questions on topics such as physical activity, dietary habits, and other health issues. Also, height and weight measurements and finger-prick blood tests (with consent) for glucose, cholesterol, and haemoglobin (red blood cells) levels will be performed.

### Berdasarkan tinjauan yang lepas\* kami menganggarkan bahawa di Malaysia...

**1 dalam 6** dewasa adults  
menghidap penyakit kencing manis.  
have diabetes.

**1 dalam 3** dewasa adults  
menghidap tekanan darah tinggi.  
adults have high blood pressure.

**1 dalam 2** dewasa adults  
mempunyai tahap kolesterol yang tinggi.  
have high cholesterol.

**1 dalam 3** dewasa tidak mencukupi aktiviti fizikal yang disarankan.  
1 in 3 adults do not meet the recommended levels of physical activity.

Hanya 1 dalam 17 dewasa makan buah-buahan dan sayur-sayuran seperti yang disarankan.  
Only 1 in 17 adults eat the recommended daily intake of fruit and vegetables.

**1 dalam 13** dewasa minum minuman beralkohol.  
1 in 13 adults are current alcohol drinkers.

**1 dalam 4** dewasa merokok.  
1 in 4 adults are current smokers.

Hampir 1 dalam 3 dewasa berumur 16 tahun dan ke atas dan 1 dalam 8 kanak-kanak dari 5 hingga bawah-16 thn disyaki mengalami masalah kesihatan mental.  
Almost 1 in 3 adults aged 16 years and above and 1 in 8 children from age 5 to below-16 were suspected to have mental health problems.

\* National Health and Morbidity Survey (NHMS), 2015

Survey poster

**Tinjauan  
Kebangsaan  
Kesihatan dan  
Morbidity 2019**

**National Health and  
Morbidity Survey  
(NHMS) 2019**

**April - September**

[iku.gov.my/nhms](http://iku.gov.my/nhms)

  @nhms.iku

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NHMS Hotline: 03-33628793  
Email: [nhms.iku@moh.gov.my](mailto:nhms.iku@moh.gov.my)

## Tri-lingual promotional banner



Sertailah tinjauan NHMS dan bersama tingkatkan taraf kesihatan Malaysia.

参加 NHMS 调查，共同改善国家的健康状况。

NHMS கணக்கெடுப்பில் சேரவும் மற்றும் தேசிய சுகாதாரத்தை மேம்படுத்தவும்.

**NHMS 2019**

TINJAUAN KEBANGSAAN KESIHATAN DAN MORBIDITI 2019:  
PENYAKIT TIDAK BERJANGKIT DAN PERMINTAAN JAGAAN KESIHATAN

NATIONAL HEALTH AND MORBIDITY SURVEY 2019:  
NON-COMMUNICABLE DISEASES AND HEALTHCARE DEMAND

**Julai - September 2019**

[iku.gov.my/nhms](http://iku.gov.my/nhms)

Hotline: 03-3362 8793   @nhms.iku

## Sticker for team vehicles



**NHMS 2019**

TINJAUAN KEBANGSAAN KESIHATAN DAN MORBIDITI 2019:  
PENYAKIT TIDAK BERJANGKIT DAN PERMINTAAN JAGAAN KESIHATAN

NATIONAL HEALTH AND MORBIDITY SURVEY 2019:  
NON-COMMUNICABLE DISEASES AND HEALTHCARE DEMAND

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Email: [nhms.iku@moh.gov.my](mailto:nhms.iku@moh.gov.my)

Star Metro feature, discussing NHMS 2018 findings and capturing the NHMS 2019 team in action











Ministry of Health Malaysia



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