

## **Executive Summary**

The Department of Health (DH) conducted the Population Health Survey (PHS) 2014/15 to collect data on population health. The PHS 2014/15 is a territory-wide survey organised into three parts, namely household questionnaire survey fieldwork, health examination and data analysis and reporting. The DH commissioned a private research firm and a private healthcare organisation with laboratory service to conduct the fieldworks of household questionnaire survey and health examination, respectively. Data analysis and reporting of the PHS 2014/15 was commissioned to the Department of Family Medicine and Primary Care of the University of Hong Kong. The DH played a co-ordination and management role in the survey and was responsible for monitoring the quality of various parts of the survey. The PHS 2014/15 aimed to strengthen the Government's information base on population health, thereby support evidence-based decision making in health policy, resource allocation and provision of health services and public health programmes.

The fieldwork of the household survey was conducted between December 2014 and October 2015. It covered the land-based non-institutional population aged 15 or above in Hong Kong, excluding foreign domestic helpers and visitors. Systematic replicated sampling was deployed for selecting a sample of replicates of living quarters from the Frame of Quarters maintained by the Census and Statistics Department and domestic households therein for enumeration in the survey. A total of 12 022 persons aged 15 or above from 5 435 domestic households were successfully enumerated, representing an overall response rate of 75.4% at household level. Health examination was conducted between June 2015 and August 2016. A random subsample of respondents aged between 15 and 84, who were successfully enumerated in the household survey and had signed the PHS consent form, were further invited to undergo health examination. A total of 2 347 respondents attended health examination, including 1 976 respondents completed physical measurements, blood tests and 24-hour urine tests, and 371 respondents completed physical measurements and blood tests only. These represented a participation rate of 39.5%. The survey data were adjusted for the differential response rates by type of housing and grossed-up to the control for the age and gender profile of the study population for the second quarter of 2015. After these adjustments, the survey estimates can represent those of the study population during the survey period.

This report presents the key findings of the PHS on: (1) self-rated health status and quality of life, (2) physical health, (3) mental health, (4) health-related behaviours and lifestyle practices, (5) injury

prevention, (6) preventive health practices, (7) use of health services, (8) physical and biochemical measurements, and (9) risk of cardiovascular disease.

### ***Self-rated Health Status and Quality of Life***

#### Health-related Quality of Life by the Short Form 12 (SF-12v2) Health Survey

The Chinese (Hong Kong) 12-item Short Form Health Survey (version 2) (SF-12v2 (HK)) was used to measure self-rated health status and health-related quality of life (HRQoL). Overall, 69.3% of persons aged 15 or above rated their general health as “excellent”, “very good” or “good”; 26.4% rated their health as “fair” and 4.3% rated as “poor”. The proportion of persons rated their health status as “excellent”, “very good” or “good” generally decreased with age and with increasing number of doctor-diagnosed chronic diseases. The SF-12v2 (HK) mental component summary (MCS) and physical component summary (PCS) scores indicate mental HRQoL and physical HRQoL, respectively. The PCS and MCS scores in PHS 2014/15 are norm-based with a population mean of 50 and standard deviation of 10. Overall, 53.8% and 67.9% of persons aged 15 or above had scores higher than or equal to the population mean of 50 for MCS and PCS, respectively. Both MCS and PCS scores decreased with increasing number of doctor-diagnosed chronic diseases.

#### Quality of Life by WHOQOL-BREF (HK)

The Hong Kong Chinese version of World Health Organization Quality of Life - Brief Questionnaire (WHOQOL-BREF(HK)) instrument was also used to measure quality of life in four domains including physical health, psychological health, social relationships and environment, each with score ranging from 4 to 20 and a higher score indicates a better quality of life. The population WHOQOL-BREF(HK) mean physical health, psychological health, social relationships and environment domain scores were 15.8, 15.0, 14.7 and 15.0 respectively. The mean scores tended to be higher in younger persons and to decrease with increasing number of doctor-diagnosed chronic diseases.

### ***Physical Health Status***

The PHS collected information on a range of acute and chronic health conditions by self-reporting in the household survey. It also enquired about the fitness of vision and hearing.

## Major Health Conditions

### Acute Conditions

Overall, 57.0% of persons aged 15 or above reported that they had one or more acute health problems during the 30 days preceding the survey. Females (61.4%) were more likely to have reported such problems than males (52.1%). The five most frequently reported acute health conditions were the common cold / influenza (23.9%), joint pain/swollen joints (22.1%), low back pain (21.5%), persistent cough (11.1%) and neck pain (9.8%).

### Doctor-diagnosed Chronic Conditions

Overall, 39.6% of persons aged 15 or above reported one or more doctor-diagnosed chronic conditions. Among these persons, 20.1% had one or more chronic conditions diagnosed within the 12 months before the survey. The common self-reported chronic conditions were hypertension (17.8%), high blood cholesterol (14.4%), diabetes mellitus (5.5%), coronary heart disease (2.1%), asthma (1.8%), cancers (1.5%) and stroke (1.4%). The prevalence was generally higher in males than females for all chronic conditions except for cancers, hypertension and diabetes. The prevalence tended to increase with age for all chronic conditions except asthma.

- Hypertension

Overall, 17.8% of persons aged 15 or above reported doctor-diagnosed hypertension. The prevalence increased sharply from 0.5% before the age of 25 to reach the peak of 64.6% in the 75-84 year-old group. Among those who had reported hypertension, 88.3% had taken doctor-prescribed medicine and 11.8% used over-the-counter medications to control their blood pressure.

- High blood cholesterol

Overall, 14.4% of persons aged 15 or above reported doctor-diagnosed high blood cholesterol. The prevalence of high blood cholesterol increased from 0.5% before the age of 25 to reach the peak of 39.0% in the 75-84 year-old group. Among those persons who reported having the diagnosis of high blood cholesterol, 61.7% were taking prescribed drugs and 9.3% were taking over-the-counter medications to lower their blood cholesterol level.

- Diabetes mellitus (DM)

Overall, 5.5% of persons aged 15 or above reported that they had doctor-diagnosed DM and another 2.0% reported that they had high blood sugar but no DM. The prevalence tended to increase from around 0.3% before the age of 25 to reach the peak of 22.7% in the 75-84 year-old group. Among those who reported doctor-diagnosed DM, 8.9% were on insulin, 76.8% were taking oral anti-diabetic drugs and 11.1% were taking over-the-counter medications to control their DM.

- Coronary heart disease (CHD)

Overall, 2.1% of persons aged 15 or above reported doctor-diagnosed CHD, with a higher prevalence in males (2.6%) than in females (1.6%). The prevalence increased steadily after the age of 54 reaching a peak of 12.0% among persons aged 85 or above.

- Asthma

Overall, 1.8% of persons aged 15 or above reported doctor-diagnosed asthma. The prevalence was higher in males (2.0%) than in females (1.6%). The prevalence of asthma was the highest in the age group 15-24 (2.6%).

- Cancer

Overall, 1.5% of persons aged 15 or above reported that they had doctor-diagnosed cancer. The prevalence was higher in females (1.7%) than males (1.3%). The prevalence of cancer increased steadily with age from 0.1% in the 15-24 year-old group to 4.9% among persons aged 85 or above.

- Stroke

Overall, 1.4% of persons aged 15 or above reported that they had doctor-diagnosed stroke, with a higher prevalence in males (1.7%) than in females (1.1%). The prevalence increased from below 1.0% before the age of 55 to reach a peak of 7.8% among persons aged 75-84.

## Vision

Overall, 56.0% of persons aged 15 or above reported that they had good or excellent eyesight (with the aid of glasses or contact lenses if necessary). The proportion of persons with good or excellent eyesight decreased steadily with age from 72.4% in the 15-24 year-old group to 24.7% among those aged 85 or above. Overall, 8.4% of persons aged 15 or above reported that their vision problems had caused limitations some or most of the time in their work or other daily activities.

Myopia (short-sightedness), astigmatism, and presbyopia were commonly reported by 45.8%, 40.9% and 45.5%, respectively, of all persons aged 15 or above, while hyperopia or hypermetropia (long-sightedness) was reported by 6.0% of persons in this age group. Doctor-diagnosed eye diseases, other than refractive errors, that can impair vision were reported by 8.7% of persons aged 15 or above. The commonest reported eye disease was cataract (6.5%).

### Hearing

Hearing impairment or loss diagnosed by a doctor or audiologist was reported by 2.2% of persons aged 15 or above (2.1% for females and 2.2% for males). The prevalence of hearing impairment or loss increased generally with age from less than 1.0% below the age 45 to 18.8% among those aged 85 or above. Overall, 3.3% of persons aged 15 or above said that they had limitations at least some of the time in their work or other daily activities as a result of their hearing problems. Among those with diagnosed hearing impairment or loss, 13.9% reported that they often used hearing aid.

### ***Mental Health***

The PHS collected information on different aspects of the population's mental health, including subjective happiness, sleep quality and disturbances, prevalence of doctor-diagnosed mental illnesses, sources of emotional support and suicidal behaviour.

### Subjective Happiness

Overall, 9.0% of persons (9.4% of females and 8.6% of males) aged 15 or above considered themselves as "a very happy person". The proportion of self-rated "a very happy person" increased from 6.1% among those aged 15-24 to 16.1% among those aged 85 or above.

### Sleep Quality

Overall, 56.7% (59.2% males and 54.4% females) of persons aged 15 or above rated their sleep quality as "Very well" or "Well". During the 30 days preceding the survey, the reported average number of hours of sleep per day was 7.0, with 36.1% (37.6% females and 34.5% males) of persons aged 15 or above sleeping less than seven hours per day. 15.0 % of persons aged 15 or above reported "feeling not getting enough sleep" on at least half of the 30 days preceding the survey. A high proportion of 48.0% (51.9%

females and 43.7% males) persons experienced sleep disturbances in the form of ‘difficulty in falling asleep’ (33.1%), ‘intermittent awakenings’ (35.2%) or ‘early morning awakening’ (29.4%) during the 30 days preceding the survey.

### Self-reported Doctor-diagnosed Mental Illnesses

- Anxiety disorders

Overall, 0.5% of persons aged 15 or above reported having doctor-diagnosed anxiety disorder. The prevalence was higher among females (0.6%) than males (0.3%). Analyzed by age group, it was most common (1.1%) among those aged 65-74.

- Depression

Overall, 0.8% persons aged 15 or above reported having doctor-diagnosed depression, with a significantly greater proportion in females (1.1%) than in males (0.5%). The prevalence was the highest among people aged 65-74 (1.4%).

- Schizophrenia

Overall, 0.2% of people aged 15 or above reported that they had been diagnosed to have schizophrenia by a doctor. The prevalence of schizophrenia was the same between females and males (both at 0.2%). The highest prevalence was found among persons aged 35-54 (0.4%).

- Dementia

Overall, 0.4% of people aged 15 or above reported that they had been diagnosed with dementia by a doctor. The corresponding proportions reported by females and males were 0.6% and 0.2%, respectively. The prevalence was the highest at 6.8% among persons aged 85 or above.

### Social Support

Overall, 54.7% (60.1% females and 48.7% males) of persons aged 15 or above felt that they could count on someone for emotional support, while 33.4% believed that they did not need any support. A great majority (90.3%) of persons in this age group reported that they had at least one relative or close friend to whom they could call on for help. The proportions of these persons reporting having no one to call on for help were relatively high in the older age groups of 65-74 (14.9%), 75-84 (19.9%) and 85 or above

(16.9%) making them more vulnerable. Overall, 56.9% of persons aged 15 or above said that they could count on someone for financial support when needed.

### Suicidal Behaviour

In the PHS, information related to suicidal behaviour was collected from respondents by a self-administered questionnaire. Overall, 1.0% of all persons aged 15 or above had ever attempted suicide. 1.2% had suicidal thoughts (thought about ending their own life) during the year preceding the survey. The prevalence of suicidal thoughts was the highest at 2.6% in the age group of 15-24, which tended to decrease with age. Persons with lower monthly household income were more likely to have suicidal thoughts. Among those who had suicidal thoughts, 8.9% (9.2% males and 8.6% females) had actually attempted suicide during the year preceding the survey and 4.3% of them had attempted more than once.

### ***Health-related Behaviours and Lifestyle Practices***

The PHS collected information on major health-related behaviours and lifestyle practices including smoking, use of alcohol, physical activity, diet and nutrition, eating-out and use of certain drugs and health supplements among persons aged 15 or above in Hong Kong.

### Smoking Habits

Overall, 27.1% (10.8% of females and 45.0% of males) of persons aged 15 or above reported that they had ever smoked cigarette. Among those aged 15 or above who had ever smoked cigarette, 54.6% currently had the habit of cigarette smoking. Over one-third (35.5%) of ever-smokers started smoking before the age of 18 including 6.8% who started smoking at the age younger than 14 years old.

An intention to quit smoking in the six months after the survey was found in 19.9% of persons who currently had the habit of cigarette smoking, being more common in females (26.5%) than males (18.3%). Among persons who currently had the habit of cigarette smoking and intended to quit, 37.2% said that they were fairly confident in quitting smoking successfully in the future.

### Alcohol Consumption

Overall, 50.4% of the population aged 15 or above (47.1% of females and 54.0% of males) reported drinking alcoholic beverages occasionally (drank in three days or less per month) and 11.1% (5.4% of

females and 17.3% of males) drank regularly (drank at least once per week) in the 12 months preceding the survey. The mean age of starting drinking among the ever drinkers was 20.3 years and 21.4% drinkers said that they started drinking before the age of 18 years old. The average number of units (each unit is equivalent to 10 grams) of alcohol usually consumed by the drinkers was 2.7 (2.2 for females and 3.1 for males) per day on typical drinking days in the 12 months preceding the survey. Among persons aged 15 or above, the prevalence of binge drinking at least once per month during the 12 months preceding the survey was 2.2% (0.5% for females and 4.1% for males). Overall, 3.5% of persons aged 15 or above were found to have been drinking at increased risk (3.1%), to have harmful drinking (0.2%), or to have probable alcohol dependence (0.2%) defined by the Alcohol Use Disorders Identification Test (AUDIT) that screens for harmful drinking during the 12 months preceding the survey.

### Physical Activity

Among persons aged 15 or above, 98.1% performed physical activities for at least 10 minutes continuously in a typical week, including 96.9% had transport-related physical activity (including walking or cycling), 44.6% participated in recreation-related physical activity and 18.5% performed work-related physical activity. Among those who had physical activities in a typical week, the average total time spent on all physical activities was 106.3 minutes per day when such activities were performed. In a typical week, 20.8% and 97.7% of persons had undertaken some vigorous and moderate physical activities, respectively. Among persons aged 18 or above, 87.0% (85.8% for females and 88.4% for males) had achieved physical activities up to or exceeding the WHO recommended level of at least 600 MET-minutes per week.

Overall, the mean duration of sedentary behaviour on a typical day was about 7.0 hours (417.5 minutes for females and 421.0 minutes for males) among persons aged 15 or above; 19.1% reported spending 10 hours or longer sitting or reclining each day.

### Diet and Nutrition

The PHS collected information on consumption of fruit and vegetables, salty food such as preserved vegetables, processed meat, snacks with high salt content, seaweeds and ready-to-eat seaweeds and use of seasonings such as salt, soy sauce, oyster sauce, ketchup and chili sauce.

- Consumption of fruit and vegetables

Overall, daily fruit consumption was reported by 62.6% (68.0% of females and 56.6% of males) of persons aged 15 or above. The proportion of persons reported that they ate fruit daily generally increased with age from 49.1% for persons aged 15-24 to 73.1% for persons aged 65-74. Overall, 11.9% (13.3% of females and 10.4% males) of persons aged 15 or above reported that they ate two or more servings of fruit (one serving is equivalent to one piece of medium-sized fruit such as an apple) per day on the days when they ate fruit. The estimated mean number of servings of fruit intake was 1.1 per day for both females and males.

Overall 86.6% (89.2% of females and 83.8% of males) of persons aged 15 or above reported eating vegetables daily. Nearly one-third (31.5%) of persons aged 15 or above reported that they ate two or more servings of vegetables (one serving of vegetables was defined as equivalent to half a bowl of cooked vegetables) per day on the days they ate vegetables. The estimated mean number of servings of vegetables eaten per day was 1.4.

Overall, 5.6% (6.5% for females and 4.6% for males) of persons aged 15 or above reported consuming an average of five or more servings of fruit and vegetables per day. The proportion was the lowest among those in the 85 or above age group (3.1%) and the highest proportion was reported by persons aged 65-74 (7.0%).

- Consumption of salty food

Overall, 20.7%, 46.5% and 21.5% of persons aged 15 or above ate preserved vegetables, processed meat and snacks with high salt content, respectively, on average at least once a week. Majority (59.3% every time and 20.9% often) of persons aged 15 or above used seasonings during cooking. Although only 2.5% of persons aged 15 or above reported that they added seasonings at the table every time when they ate, another 7.0% often added seasonings at the table.

- Consumption of seaweeds and ready-to-eat seaweeds

Overall, 8.3% of persons aged 15 or above reported that they ate seaweeds (including kelp/laver but excluding ready-to-eat seaweeds) on average at least once a week, and 8.1% of persons aged 15 or above said that they eat ready-to-eat seaweeds on average at least once a week.

### Eating-out Habits

On average, persons aged 15 or above reported eating-out for breakfast, lunch and dinner 8.1, 11.9 and 5.4 times per month, respectively. Overall, 28.6%, 48.9% and 9.9% of persons aged 15 or above reported eating-out five times or more a week during the 30 days preceding the survey for breakfast, lunch and dinner, respectively. In general males were more likely to eat out than females, and those in the age group of 15-34 were more likely to eat out at least five times per week for lunch or dinner. Overall, 84.2% of persons aged 15 or above (88.9% for males and 79.9% for females) reported eating-out (including breakfast, lunch and dinner as a whole) at least once a week during the 30 days preceding the survey.

### Use of Medication for Health

The PHS used self-administered questionnaire to collect information on the usage of certain medications including slimming pills, health supplements, birth control pills and hormones in the month preceding the survey from the respondents. Overall, 0.6% of persons aged 15 or above had taken slimming pills, being more common in females (0.8%) than in males (0.3%) and most common among persons aged 25-44 (0.9%). Overall, 3.4% of females aged 15 to 49 reported that they had taken birth control pills, and 0.8% of females aged 30 or above reported that they had taken hormones for menopausal or aging symptoms in the month preceding the survey. Overall, 16.1% of persons aged 15 or above had taken health supplements such as vitamins and mineral supplements, being more common in females (19.4%) than in males (12.4%), and more common among persons aged 45-54 (19.0%) or aged 65-74 (18.6%).

### ***Injury Prevention***

#### Unintentional Injuries

Overall, 14.5% of persons (13.9% of females and 15.1% of males) aged 15 or above reported that they had sustained one or more episodes of unintentional injuries in the 12 months preceding the survey. They were more common among persons in the age groups of 15-24 (19.0%) and 85 or above (17.7%). Among those who had sustained unintentional injuries, the average number of episodes was 2.1. The five most common causes of unintentional injuries were sprain (24.0%), falls (19.9%), hit/struck (19.6%), cutting/piercing (15.8%) and sports (12.8%). Analysed by age group, falls was the main cause of the majority (59.1%) of unintentional injuries sustained by people aged 65 or above. The most common places where unintentional injuries occurred were home (28.5%), sports/athletic areas (17.2%) and

transport areas such as public highways, streets or roads (16.7%). The proportion of unintentional injuries that were work-related was 13.2%, being more common in males (18.5%) than in females (7.9%).

### Preventive Measures

Overall, 80.6% of persons aged 15 or above agreed that unintentional injury could be preventable and 40.4% of these persons reported that they had taken some measures to prevent unintentional injuries at home or in the workplace during the 12 months preceding the survey. Among those persons who reported that they had taken injury prevention measures, “being more careful” was the most frequently cited measure (90.7%), which were followed by “using protective gear” (30.1%) and “took safety training” (8.4%). After excluding those whose injury prevention measure was just “being more careful”, the proportion of persons aged 15 or above who had done something proactively or taken proactive precautions to prevent unintentional injuries at home or in the workplace was only 13.7%.

Among those who reported that they had not taken any injury prevention measure in the household or at workplace, 87.9% said that they felt safe enough, 5.1% thought precautionary measure could not prevent injury and 4.4% found it inconvenient to take any precautionary measure. Among people aged 15 or above, 8.9% (9.3% for females and 8.4% for males) reported that they would give up adopting safety measures (e.g. installing window frame or using anti-slip mat) to prevent unintentional injury because of cost.

Regarding specific injury prevention measures, only 4.8% of persons aged 15 or above reported the use of helmet all of the time when they were riding bicycles; 37.9% of those who drove or rode in a vehicle with seatbelt said that they had used seatbelts all of the time; and 64.7% of persons aged 15 or above who had children and stored drugs at home claimed that they had hidden the drugs from children all of the time.

### ***Preventive Health Practices***

#### Regular Medical Check-up

Overall, 37.6% (44.1% of females and 30.4% of males) of persons aged 15 or above reported that they had regular medical check-up. The proportion of population having regular medical check-up was the highest among those aged 45-54 (45.9%) and the lowest in those aged 15-24 (18.2%). Among those who reported that they had regular medical check-up, 91.8% had their medical check-up at least once every 24 months (89.7% for females and 95.1% for males) and the mean duration between two check-ups was 15.7 months.

### Faecal Occult Blood Test (FOBT)

Overall, 17.1% (15.0% had no symptom and 2.1% had symptoms or discomfort prior to the test) of persons aged 15 or above reported that they had ever had FOBT. The majority (70.9%) of those who had FOBT with no prior symptom received the test from private doctors but the majority (60.8%) of those who had FOBT because of symptoms or discomfort received the test from public clinics or hospitals. Among persons who had FOBT as a screening test (when they had no symptom prior to the test), 64.0% had their last tests within 24 months preceding the survey and the mean duration since their last FOBT was 32.6 months. The proportion of persons aged 50-75 who had received FOBT among those with no symptoms or discomfort prior to the test was 19.9% (20.2% for females and 19.6% for males).

### Colonoscopy

Overall, 14.6% of the persons aged 15 or above (14.1% for females and 15.2% for males) had ever received colonoscopy examination, with 11.3% had no symptom or discomfort and 3.3% had symptoms or discomfort prior to the examination. Among those who had colonoscopy as a screening examination (when they had no symptom or discomfort prior to the examination), most of them (64.0%) received the examination from private doctors, 55.3% had their last examinations within 24 months preceding the survey, and the average duration since the last colonoscopy was 39.6 months. The proportion of persons aged 50 to 75 inclusive who had ever had colonoscopy for screening was 17.7% (16.2% for females and 19.2% for males).

### Prostate-specific Antigen (PSA) Test (for males only)

Overall, 9.2% of males aged 15 or above reported that they ever had a PSA test without (7.4%) and with (1.8%) symptoms or discomfort prior to the test. The proportions of males who had PSA test for screening (they had no symptom or discomfort prior to the test) increased with age from 2.6% in males aged below 45 to the peak of 14.7% in males aged 65-74. Among those who had the PSA test for screening, the majority received the test from private doctors (68.3%), 71.7% had their last tests within 24 months preceding the survey and the average duration since the last PSA test at 26.5 months. Nearly half (45.6%) of males who had PSA test for screening had no fixed schedule of regular PSA tests, and 21.0% reported that the recent test was their first PSA test; 19.9% had repeat PSA test generally once a year or more frequently.

### Digital Rectal Examination (DRE) of the Prostate (for males only)

Overall, 7.9% of males aged 15 or above reported that they had ever had DRE of the prostate - 5.8% had the examination when there were no symptom or discomfort and 2.1% had it because of symptoms or discomfort. Most (61.9%) persons who had DRE without any prior symptom or discomfort received the examination from private doctors, but most (63.7%) of those who had symptoms before the DRE had it in public clinics or hospitals. Among males who had received DRE when there was no symptom or discomfort, 61.1% had their last examinations within 24 months preceding the survey, the average duration since the last DRE was 38.6 months, 53.9% did not have any fixed schedule of repeat examinations and 13.6% had DRE generally once a year or more frequently.

### Cervical Smear (for females aged 25 or above)

Overall, 54.2% of females aged 25 or above reported that they ever had a cervical smear - 51.0% had the test with no symptoms or discomfort prior to the test and 3.2% had it because of symptoms or discomfort. The proportion of women aged 25-64 who had ever had cervical smear when there was no symptom or discomfort was 57.4%. Among those who had a cervical smear when there was no symptom or discomfort, 66.5% had their last cervical smear within 24 months and 20.1% had the test more than 36 months preceding the survey; and 47.6% had regular cervical smear once every one to three years and 1.5% had it more frequently than once a year.

### Mammogram (for females only)

Overall, 25.4% of females aged 15 or above reported that they ever had a mammogram, with 23.4% having no symptom or discomfort prior to the examination and 2.0% had the examination because of symptoms or discomfort. In general, more women consulted private doctors than public clinic or hospitals for the mammogram examination regardless of whether they had symptoms or discomfort prior to the examination. Among those who had the examination for screening (when there was no symptom or discomfort), 63.0% had their last examinations within 24 months preceding the survey and the average duration since their last mammogram was 38.0 months; 49.3% of them had no fixed schedule for repeat examinations although 31.1% had it once every one to two years.

### Health Screening for Cardiovascular Risk Factors

Overall, 55.4% of people aged 15 or above had their blood cholesterol measured before. The proportion of people who had cholesterol checked before tended to increase with age from 14.2% in the 15-24 age group to the peak of 82.8% in the 75-84 age group. Among those who reported that they had blood cholesterol checked before, 95.7% had the test done within five years preceding the survey.

Overall, 75.0% of persons aged 15 or above had their blood pressure checked by a doctor or other health professionals in the past five years. The proportion increased from 50.2% among those aged 15-24 to the peak of 93.1% among those aged 75-84.

Overall, 57.7% of persons aged 15 or above ever had their blood sugar checked before the survey with 92.4% of whom reporting that their last blood sugar check was within the last three years. The proportion of persons who had their blood sugar checked increased from 20.0% in the 15-24 age group to 82.4% in the 75-84 age group.

### *Use of Health Services*

The PHS asked the respondents on whether they had a family doctor, the health care services they had used and how satisfied they were with the health care system in Hong Kong.

### Persons having a Family Doctor

Overall, 43.8% of persons aged 15 or above (45.1% for females and 42.4% for males) reported that they had a family doctor whom they would usually consult first for their health problems. The proportion of persons reported having a family doctor was higher among the age groups between 35 and 64, and in persons with a monthly household income of \$50,000 or above. Majority (96.3%) of persons who reported having a family doctor reported that their family doctors were Western medicine practitioners.

### Persons without a Family Doctor

Among persons who did not report having a family doctor, most (92.3%) would usually consult only Western medicine practitioners, 5.0% who would usually consult only Chinese medicine practitioners when they were ill, while 2.7% would consult both. Across all age groups, persons aged 55-64 had the highest proportion reporting that they would consult Chinese medicine practitioners only (6.3%) when they were ill.

### Type of Health Service Providers usually Consulted

Among those who would usually consult a Western medicine practitioner or both Western and Chinese medicine practitioners when they were ill, 83.6% reported that they would usually consult doctors in private clinics or hospitals.

### Health Problems and Treatment Received

In the 30 days preceding the survey, 57.0% (61.4% of females and 52.1% of males) of persons aged 15 or above reported that they had experienced some kinds of health problems. Among those who had experienced health problems, 39.3% received treatment from Western medicine practitioners in private clinics / hospitals, 8.6% received treatment from Western medicine practitioners in public clinics or hospitals, 11.1% consulted Chinese medicine practitioners, 23.7% did nothing and 25.3% consumed over-the-counter Western (20.2%) or Chinese (5.7%) medication.

### Hospitalisation

Overall, 11.0% (11.7% of females and 10.1% of males) of persons aged 15 or above reported that they had hospital admissions within the 12 months preceding the survey. Among those who reported hospital admissions, 74.2% were admitted to public hospitals under the Hospital Authority (HA), 24.4% were admitted to private hospitals and 1.5% were admitted to both public and private hospitals. The mean number of admissions in the 12 months preceding the survey was 1.3 for those admitted to public hospitals and 1.1 for those admitted to private hospitals. The mean duration of hospital stay during the last episode of admission to public hospitals and private hospitals were 4.7 days and 2.3 days, respectively. While the mean duration of stay at public hospitals was longer for females (4.8 days) than for males (4.5 days), the opposite was true for the mean duration of stay at private hospitals (2.1 days for females vs 2.6 days for males). Overall, 5.3% and 0.7% of the admissions to public hospitals under HA and private hospitals, respectively lasted for more than 14 days.

### Consultations with Mental Health Professionals

Overall, 1.7% of persons aged 15 or above (1.9% in females and 1.5% in males) reported that they had consulted mental health professionals, such as a clinical psychologist, psychiatrist, psychiatric nurse or

medical social worker, for their mental health problems in the 12 months preceding the survey. Persons aged 15-24 recorded the highest proportion (3.1%) of consultation with mental health professionals.

### Satisfaction with the Health Care System

Respondents were asked to rate public and private sectors of the health care system in Hong Kong on an overall satisfaction scale of 0-100 where 0 represents the lowest and 100 the highest level of satisfaction. The average satisfaction scores given to the public health care sector and private health care sector were 66.9 and 75.3, respectively. The average satisfaction score by age group ranged from 64.6 to 73.8 for the public sector, with an increasing trend with age. The average satisfaction score by age group had a narrower range from 73.9 to 76.1 for the private sector.

### ***Physical and Biochemical Measurements***

The PHS invited a random subsample of persons aged between 15 and 84 who had been enumerated in the household survey and signed the survey consent form to undergo a follow-up health examination in order to estimate prevalence of cardiovascular disease risk factors. The health examination included anthropometric and blood pressure measurements as well as blood tests for fasting plasma glucose, haemoglobin A1c (HbA1c) and fasting lipid profile, and 24-hour urine test for sodium and potassium.

### Body Mass Index (BMI)

The mean BMI for females and males aged 15-84 were 22.9 kg/m<sup>2</sup> and 23.9 kg/m<sup>2</sup>, respectively. Overall, 29.9% (24.4% of females and 36.0% of males) persons aged 15-84 were obese (i.e. BMI  $\geq$  25.0 kg/m<sup>2</sup>) and another 20.1% (19.3% of females and 20.9% of males) were overweight (i.e. 23.0 kg/m<sup>2</sup>  $\leq$  BMI < 25.0 kg/m<sup>2</sup>), according to the classification for Chinese adults adopted by the DH. Obesity was most common among females aged 65-84 (34.3%) and among males aged 45-54 (51.1%).

### Waist Circumference and Waist-hip Ratio

Among persons aged 15-84, the mean waist circumference (WC) was 77.7 cm for females and 84.4 cm for males; and the mean waist-hip ratio (WHR) was 0.83 for females and 0.88 for males. Overall, 32.9% (37.2% for females and 28.2% for males) of persons aged 15-84 had central obesity defined by WC and

40.1% (38.9% for females and 41.5% for males) of persons aged 15-84 had central obesity defined by WHR.

### Blood Pressure

The PHS 2014/15 reported the mean of the second and third readings of three blood pressure measurements of respondents with a three minute rest between each measurement. The mean systolic blood pressure (SBP) of persons aged 15-84 was 120.0 mmHg (117.0 mmHg for females and 123.2 mmHg for males). The mean diastolic blood pressure (DBP) of these persons was 77.8 mmHg (75.9 mmHg for females and 79.8 mmHg for males). Apart from 14.6% of persons aged 15-84 with a self-reported doctor-diagnosis of hypertension, 13.2% (11.5% of females and 14.9% of males) of these persons were found to have high blood pressure with SBP  $\geq$ 140 mmHg and/or DBP  $\geq$  90 mmHg. The total prevalence of hypertension combining cases that were self-reported or detected by measurement during health examination was 27.7% (25.5% for females and 30.1% for males) among persons aged 15-84, with 47.5% of them being undiagnosed before the PHS. The total prevalence of hypertension increased steadily with age from 4.5% among those aged 15-24 to 64.8% among those aged 65-84.

### Diabetes Mellitus

The mean values of fasting plasma glucose (FPG) for females and males aged 15-84 were 4.9 mmol/L and 5.1 mmol/L, respectively. The mean values of glycated haemoglobin (HbA1c) for females and males aged 15-84 were 5.6% and 5.7%, respectively. Apart from 3.8% (3.2% for females and 4.6% for males) of persons aged 15-84 with self-reported doctor-diagnosed diabetes mellitus (DM), 4.5% (3.2% of females and 6.0% of males) of these persons had DM defined by either a FPG  $\geq$  7.0 mmol/L or HbA1c  $\geq$  6.5%. Combining the self-reported doctor-diagnosed and newly biochemical testing detected cases, the total prevalence of DM among persons aged 15-84 was 8.4% (6.4% in females and 10.5% in males), with 54.1% of them being undiagnosed before the PHS. The prevalence of DM increased with age from 0.2% for persons aged 15-24 to 25.4% for those aged 65-84. In addition, another 1.0% of persons aged 15-84 had impaired fasting glucose (IFG) with FPG between 6.1 and 6.9 mmol/L.

### Hypercholesterolaemia

Among persons aged 15-84, the mean total cholesterol (TC) was 5.1 mmol/L (5.1 mmol/L for females and 5.0 mmol/L for males), mean high-density lipoprotein (HDL) was 1.4 mmol/L (1.5 mmol/L for

females and 1.3 mmol/L for males), mean low-density lipoprotein (LDL) was 3.1 mmol/L (3.1 mmol/L for females and 3.2 mmol/L for males). Overall, 42.2%, 23.7% and 35.0% of persons aged 15-84 had high TC ( $\geq 5.2$  mmol/L), low HDL ( $< 1.3$  mmol/L for females,  $< 1.0$  mmol/L for males) and high LDL ( $\geq 3.4$  mmol/L), respectively. Hypercholesterolaemia is defined by a TC  $\geq 5.2$  mmol/L, which was found in 34.8% of persons aged 15-84 who had not reported to have a doctor-diagnosed hypercholesterolaemia. Adding this prevalence to the 14.8% self-reported doctor-diagnosed hypercholesterolaemia, the overall prevalence of hypercholesterolaemia was 49.5% among persons aged 15-84 (48.8% for females and 50.3% for males) with 70.2% of them being undiagnosed before the PHS. Analysed by age group, the highest prevalence of hypercholesterolaemia was observed in the age group 55-64 (75.0% in females and 68.9% in males).

### Daily Sodium and Potassium Intake

The PHS 2014/15 estimated daily sodium and potassium intake through measurement of sodium and potassium excretion from 24-hour urine collection.

- Sodium intake

24-hour urinary sodium excretion is a reliable proxy measure of dietary salt intake. Among persons aged 15-84, the mean 24-hour urinary sodium excretion was 150.6 mmol (135.6 mmol for females and 167.1 mmol for males), which is equivalent to a daily salt intake of 8.8 g per day (7.9 g per day for females and 9.8 g per day for males). The vast majority (86.3%) of persons aged 15-84 had dietary salt intake above the WHO recommended daily limit of less than 5 g per day, which was more common in males (90.8%) than females (82.2%). The mean daily salt intake increased with the frequency of eating-out from 8.0 g per day among persons eating out less than once per week to 9.3 g per day among persons eating out six times or more per week.

- Potassium intake

The average daily intake of potassium of participants of the PHS was estimated by the multiplication of 24-hour urinary potassium excretion by a factor of 1.3 and converting one mmol of potassium to 0.039 g of potassium. Among the persons aged 15-84, the estimated mean daily potassium intake was 2.3 g (2.2 g for females and 2.3 g for males). Nearly all (91.5%) persons aged 15-84 had insufficient dietary potassium intake below the WHO recommended level of 3.5 g per day. The proportion of persons with sufficient potassium intake (at least 3.5 g per day) was higher (13.1%)

among persons consuming at least five servings of fruit and vegetables per day than that (8.2%) among persons eating less than five servings of fruit and vegetables per day.

### ***Risk of Cardiovascular Disease***

The PHS adopted a widely-used risk prediction model, namely the Framingham risk model for general cardiovascular disease (CVD) risks to predict the risk of CVD over the next 10 years in the general adult population aged 30-74 of Hong Kong.

#### Risk of Cardiovascular Disease over 10 Years Predicted by Framingham Risk Model

The Framingham risk model predicts the total risk of all cardiovascular outcomes including CHD, stroke, peripheral artery disease and heart failure. Among persons aged 30-74, the mean CVD risk over the next 10 years predicted by the Framingham risk model was 10.6% (6.2% for females and 15.5% for males). The mean CVD risk increased with age in both genders from 1.5% among females aged 30-44 to 15.7% among females aged 65-74 and from 4.1% among males aged 30-44 to 33.2% among males aged 65-74. Among persons aged 30-74, 16.4% were classified as high-risk (10-year CVD risk  $\geq$  20%), 18.3% as medium-risk (10-year CVD risk  $\geq$  10% and  $<$  20%) and 65.4% as low-risk (10-year CVD risk  $<$  10%) according to the Framingham risk model. The proportion of high-risk persons was much lower in females (5.1%) than in males (29.1%) and increased sharply with age to peak at 24.0% and 84.9% among females and males aged 65-74, respectively.

