Highlights of the Belgian HEALTH INTERVIEW SURVEY 2008
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Scientific Institute of Public Health, December 2011, Brussels (Belgium)

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Highlights of the Belgian HEALTH INTERVIEW SURVEY 2008
The Health Interview Survey 2008
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1. The Belgian Health Interview Survey: an Overview
1.1 Background

The Health Interview Survey (HIS) is currently established as one of Belgium’s leading health surveys. The first HIS in Belgium took place in 1997 and was followed by three other waves carried out in 2001, 2004 and 2008. This report provides a summary of the findings from the 2008 survey, along with highlights of changes from 1997 to 2008.

Although sources of health data are numerous in Belgium, the HIS is the largest health survey and the only one that provides broad information on various aspects of health including health status, health related behaviour, and health care consumption. The added value of the HIS is its horizontal approach with different types of information collected simultaneously for the same person. The outcome is a global picture of the health of the population, which allows priority areas to be identified.

Other important features of the HIS are: (a) subjectivity as it provides information on health as perceived by the respondents; (b) wide coverage of the population as it allows obtaining health information from a representative sample of the population, including individuals that cannot be reached through the health services; (c) periodicity as the data are gathered at regular intervals, which allows the monitoring of changes in population health and of the health impacts of policies and interventions.

The HIS is commissioned by all Health Ministries in Belgium and carried out by the Scientific Institute of Public Health in collaboration with the National Institute of Statistics. The data have been used widely in Belgium. Policy makers, advocacy leaders, and health professionals have used these data to inform decisions and develop programs, services and health policies. The data have also been used by the research community for epidemiologic and policy analysis related to a wide range of issues such as health care utilisation, health inequalities, and disability in the elderly population.

1.2 Scope and objectives

The main purpose of the HIS is to describe the health status of the population and monitor health trends in Belgium and its regions (Flanders, Wallonia and Brussels). The survey gives periodic snapshots (every 3 to 5 years) of the health status and related needs of the population at the national and local levels. To measure significant shifts over time, the methodology and core questions are quite similar in the different survey waves. In addition, new questions are added every survey to address emerging concerns.

The specific objectives of the survey can be summarised as follows:

- Identification of health problems
- Description of the health status and health needs of the population
Highlights of the Belgian Health Interview Survey 2008

- Estimation of the prevalence and distribution of health indicators
- Collection of data on health determinants
- Analysis of social (in)equality in health and access to health services
- Study of health care consumption (including preventive care) and its determinants
- Study of possible trends in the health status, health behaviours and health care consumption of the population.

The ultimate aim of this data collection effort is to inform health authorities, stakeholders and researchers on various aspects of health in the population and to influence policy and programmes. The information collected via the HIS is useful at the national level as well as at the regional and international levels because the HIS provides information to such organisations as Eurostat, WHO, UN, and OECD.

1.3 Survey design

The HIS is a cross-sectional household interview survey repeated every 3 to 5 years. The target population of the survey covers all individuals residing in Belgium at the time of data collection with no restrictions regarding nationality or age. The most comprehensive sampling framework for reaching this population is the National Population Register. Individuals not recorded in the National Register, such as the homeless or illegal immigrants, are therefore excluded from the survey.

For practical reasons, those living in prisons or in religious communities of more than eight people are excluded from the survey. Also, people living in an institution are excluded from the survey with the exception of those living in nursing homes or homes for the elderly.

The basic sample size is 10,000 effective interviews. This fixed number of individuals is divided between the regions: 3,500 in the Flanders, 3,500 in Wallonia (including 300 in the German-speaking community) and 3,000 in Brussels. These numbers are, in principle, sufficient to enable accurate estimates at both the national and regional levels.

In order to obtain a more precise picture of the health of the elderly, the Federal Public Service Social Security financed in 2008 an additional sample of 1,250 elderly people representative of the 75-and-older age group. Therefore the total sample size for the 2008 survey is 11,250 individuals.

The sampling scheme of the households and respondents of the survey is a combination of several sampling techniques: stratification, systematic sampling and clustering.
There is first **regional stratification**. Belgium is divided into three regions: the Flemish Region, the Walloon Region and the Brussels Region, for which the number of interviews has been predefined as indicated above. The reason for this stratification is to be able to produce results that are sufficiently precise at the regional level.

There is a second **stratification** at the level of the provinces. This second stratification is done to improve the quality of the sample compared with a simple random method. In particular, it aims to achieve a good geographical spread. The sample size in the provincial stratification is proportional to the population size in the province.

Within the strata, the sampling units are accessed in two stages for the households or three stages for the individuals:

- Within each stratum, municipalities are selected with a selection chance proportional to their size. These municipalities are called the *Primary Sampling Units* (PSU). For each selected PSU, a group of 50 individuals (56 in 2008 due to oversampling) has to be interviewed successfully.

- Within each municipality, a sample of households called the *Secondary Sampling Units* (SSU) is drawn such that around 50 individuals per group (56 in 2008) can be interviewed in total. In this stage a third stratification is done, taking into account the ages of the household members. The purpose of this stratification is linked to the oversampling of the elderly.

- Within each household, at most four individuals are selected to form the *Tertiary Sampling Units* (TSU). In households of four members or less, all members are invited to participate. In households of more than four members, the reference person and his or her partner are always selected for interview. For the other members the ‘birthday rule’ is applied to select the two other persons that will be invited to participate: the two other members whose coming birthdays are the closest to the date of the interview are selected.

### 1.4 Questionnaire

Three types of questionnaire are used:

- A household form that collects information on the characteristics of the household including its composition, monthly income, health expenditures, and so on. This form is completed for the household via a face-to-face interview between the interviewer and in most cases the household’s reference person.

- A face-to-face form that collects information from selected members of the household on topics such as chronic illnesses, limitations, and so on. Under certain specific circumstances, one person (whether a member of the household or not) is allowed to respond ‘on behalf’ of the person selected (interview by proxy).
• A self-administered form that collects information in writing from all respondents aged 15 or older. The decision to use a written questionnaire is based on the idea that some topics, such as mental health, alcohol consumption and so on, are sensitive and are therefore not suited for a face-to-face interview. The self-administered form is not completed for proxy interviews.

1.5 Data collection

Fieldwork for the 2008 survey took place between 19 May 2008 and 30 June 2009. During this period, the interviewers visited the respondents at home and administered the questionnaires using paper-and-pencil personal interviewing (PAPI). All interviewers took a specific training in order to ensure good standardisation of the procedures to be followed during the interviews.

A common problem experienced in all surveys is the low participation rate. To offset this problem, the substitution approach has been used for data collection in all HIS waves. For each selected household there are three other selected households that could substitute for the originally selected one. These replacement households share common characteristics (municipality, statistical sector, age of the reference person and number of household members) with the initially selected household. This group of four households is called a cluster. If a selected household does not participate, it is replaced by a household from the same cluster. When the cluster is exhausted a new cluster is activated.

Over the fieldwork period, a procedure was laid down to ensure quality control for the interviewers' work. This control consisted of checking with the participating households how the investigators went about their work during the interview. All households that effectively participated in the survey between 01/09/2008 and 01/12/2008 were canvassed for quality control. A questionnaire (limited to eight questions) was sent to them to assess the professional attitude of the interviewers. Out of the 1,110 questionnaires sent out, 644 were returned (58%). Based on the analysis of the answers, reminders regarding certain procedures were sent to interviewers via the survey newsletter.

1.6 Participation

Participation in the HIS is not compulsory, so households may refuse to participate. The participation rate is calculated as the proportion of participating households among those that could be contacted. For 2008, this rate was 55% (5,809 / (5,809 + 4,746)). This rate was a little lower compared with previous surveys (1997: 59%, 2001: 61%, and 2004: 61%). However, comparison of participation rates between survey waves is complicated by the fact that the groups that are oversampled have changed over time.
1.7 Structure of the report

This report provides a summary of the findings from the 2008 Belgian HIS and features a wide range of health indicators categorised in five main sections:

- **Health status**: In this section, a series of indicators are used to sketch a complete picture of the health status of the Belgian population, including indicators that reflect the perception of general health status as well as the prevalence of specific diseases and conditions. Also, the impacts of diseases are examined in terms of the presence and degree of functional limitation.

- **Health behaviours**: The positive impact of certain health behaviours on health status has been widely documented. These include behaviours such as healthy nutrition and regular practice of physical activity. Other behaviours have been found to negatively impact health, such as the abuse of alcohol, tobacco consumption, and drug use. The patterns of these behaviours in the Belgian population are reported in this section.

- **Preventive behaviours**: Besides these health related behaviours, this report describes patterns in other behaviours that are related to preventive medical activities. These include vaccination and screening for certain diseases and conditions such as hypercholesterolemia and cancer.

- **Health care consumption**: This section presents the figures on medical care use in Belgium with regard to three domains: institutional health care consumption such as hospitalisation, contacts with providers of ambulatory care, and use of medicines.

- **Health and society**: The concept of health has evolved and became more holistic over time. In the past, health was mainly regarded as a medical concept, while now it is regarded as a complex social phenomenon. Therefore, this section considers an array of indicators that contextualise health status by considering issues such as social networks and relations, institutional support, environmental nuisances, and violence.

The concluding section highlights the findings in relation to one of the main objectives of the HIS that is the monitoring of trends in the health of the Belgian population across HIS waves.

For each indicator presented in the above mentioned sections, the weighted crude prevalence rates are reported in the text. The results are always weighted to be as representative as possible for the Belgian population. The HIS uses a complex sampling procedure that has to be taken into account to generate correct estimates at the population level. In some cases, the reported rates are standardised by age and gender. This standardisation is performed to enable correct interpretation of the differences between subgroups that have different distributions in terms of age and gender.
In this report, the indicators are presented in terms of a number of background characteristics:

- **Age and gender:** Results were examined separately for men and women and by age group. Age and gender are often significant determinants for health indicators.

- **Regions:** Results were generated for Belgium as a whole and for each of the three regions. Individuals included in the sample were considered as belonging to a certain region according to their place of residence.

- **Educational level:** The data were analysed according to educational level. Education was used as an indicator of the socio-economic level of the household and its members. This indicator was constructed on the basis of the highest educational level achieved either by the reference person or by his/her partner. This educational level was then assigned to all members of the household.

- **Urbanisation:** The indicators were analysed according to the degree of urbanisation of the municipality where the respondents reside. This information did not come from the survey itself, but was added into the database; it comes from indicators constructed using information from the 2001 census. It is based on a series of morphological and functional characteristics of the respondents’ municipality of residence.

- **Evolution over time:** Many indicators are repeated in every survey. These indicators are used to monitor the results over time.

Finally, it is important to bear in mind that this document is a summary of the findings of the HIS 2008. The aim of this report is, therefore, not to be comprehensive but rather to present a set of representative and significant results. For more information on the findings of the Belgian HIS, and to download the complete reports (methodology and results) for all waves of the HIS (1997, 2001, 2004, and 2008), please refer to the following websites:

- In English: http://www.healthsurvey.be
- In French: http://www.enquetesante.be
- In Dutch: http://www.gezondheidsenquete.be

It is also possible to perform interactive analyses on the following site:
2. Health status
2.1 Subjective health

Subjective health is a concept that covers various dimensions of health: physical, mental and social. It is a good indicator of health status at the individual and the population levels. It has been found to be a fairly reliable reflection of the impact of health problems affecting the respondents and highly predictive of mortality, morbidity, functional limitation, and consumption of health care.

The estimator was constructed from the standard question on subjective health: "How is your health in general? Is it very good, good, fair, poor, or very poor?". As recommended by the WHO, the answer categories were dichotomised into good subjective health (very good to good) and poor subjective health (fair, poor, and very poor).

In Belgium in 2008, 77% of the population aged 15 or more considered their health status to be good, compared with 23% who considered their health status to be poor. The subjective appraisal of health status was less favourable among women than men (25% in poor health compared with 20%), except in the 55-64 age group.

Subjective health varied according to age: 94% of those aged 15-24 years reported being in good health compared with only 52% of those aged 75 or over. Also, it varied according to educational level, with people from families with a low educational level more often reporting poor health status.

A slight but significant improvement in subjective health was observed in Belgium over time (based on standardised rates): 78% of people in good health in 1997 compared with 80% in 2008.

The prevalence of good health remained stable in Flanders and Brussels, while an improvement was observed in Wallonia (73% in 1997 compared with 78% in 2008). In addition, a substantial regional difference was seen in the 15-24 age group with 15% of this age group reporting poor health in Brussels compared with just 5-6% in Flanders and Wallonia.
2.2 Non-communicable diseases

Non-communicable diseases (NCDs) are one of the most relevant issues for health-related quality of life, especially for the elderly, and are one of the main reasons for the use of health care services. Information on the prevalence of NCDs is an important indicator of the level of (ill) health in the population.

A HIS provides information on the prevalence of NCDs at the population level and takes into account people who rarely or never make use of health care facilities. It is the most appropriate tool to obtain representative information at the level of the country or a region. However, the results must be interpreted with caution because the information is self-reported.

In the HIS 2008 a question was asked on the presence of chronic diseases in general. Furthermore questions were asked on the presence of 35 NCDs in particular.

More than one person in four (27%) reported suffering from at least one chronic or long-term disease or handicap. The percentage of people with a chronic disease increased considerably with age. Rates were 9% for children and young people up to 15 years of age, and almost 60% for the 75 or older age group. The likelihood of a person reporting that they suffered from a chronic disease increased as their educational level decreased. In the Brussels region, the percentage of people with a chronic disease was higher than in the other two regions, but no difference was seen in comparison with other large cities in Belgium.

The number of people living with a chronic disease increased in 2008 compared with the results of the previous surveys in 1997, 2001 and 2004. Compared with 2004, the percentage of people with a chronic disease increased from 24% to
27%. This is due in part to the ageing of the population, but even after age adjustment, a significant increase was still observed.

The five specific conditions most often mentioned by men were lower back problems (14%), allergies (12%), high blood pressure (11%), osteoarthritis (8%) and neck problems (6%). The same complaints were found in the women’s top five, but in a different order: lower back problems (19%), osteoarthritis (17%), allergies (14%), high blood pressure (14%) and neck problems (12%).

The main chronic pathologies were reported more often by women than men. This is the case for high blood pressure, rheumatoid arthritis, lower back problems, neck problems, allergies, serious headaches, incontinence, chronic anxiety, depression, thyroid problems, glaucoma, cataracts, chronic fatigue, osteoporosis, serious intestinal problems and chronic cystitis. Coronary disease, permanent injury or disability caused by an accident, and kidney stones were more prevalent among men.

The evolution of the prevalence of chronic diseases in the general population differed by the type of disease. A number of chronic diseases clearly increased: hypertension, diabetes, osteoarthritis, thyroid problems and cataracts. This increase may partly be explained by the aging of the population because these diseases mainly occur among the elderly. However, even after adjustment for age, a significant increase was observed between 1997 and 2008. The increases in cancer and osteoporosis may be entirely due to the aging of the population.

It should be noted that some diseases and health problems decreased significantly between 1997 and 2008: chronic lung diseases, serious headaches such as migraine, chronic fatigue and serious intestinal problems.

In addition to age and gender, educational level is one of the most significant socio-economic determinants of chronic disease. For 17 of the 35 diseases and problems which appear on the list of the HIS, a significant increase was observed in the risk of disease with decreasing educational level. This applies, in particular, to serious diseases such as cardiovascular pathologies, diabetes, chronic lung diseases and gastric or duodenal ulcers. One type of disease was more frequent with increasing educational level: allergies.
Table 1. Prevalence of specific diseases in the male population by year, Health Interview Survey, Belgium, 1997-2008

<table>
<thead>
<tr>
<th>Percentage of the male population that reported...</th>
<th>1997</th>
<th>2001</th>
<th>2004</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low back disorder or other chronic back defects</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>14.5</td>
</tr>
<tr>
<td>Allergies</td>
<td>11.1</td>
<td>13.1</td>
<td>11.7</td>
<td>11.5</td>
</tr>
<tr>
<td>Hypertension</td>
<td>7.8</td>
<td>10.2</td>
<td>10.9</td>
<td>11.0</td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>8.0</td>
<td>8.5</td>
<td>7.9</td>
<td>8.5</td>
</tr>
<tr>
<td>Neck disorder or other chronic neck defect</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>6.5</td>
</tr>
<tr>
<td>Permanent injury or disability caused by an accident</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>5.8</td>
</tr>
<tr>
<td>Severe headache such as migraine</td>
<td>5.9</td>
<td>5.4</td>
<td>4.7</td>
<td>4.0</td>
</tr>
<tr>
<td>Rheumatoid arthritis</td>
<td>3.7</td>
<td>4.3</td>
<td>4.3</td>
<td>3.9</td>
</tr>
<tr>
<td>Asthma</td>
<td>*</td>
<td>5.1</td>
<td>4.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Chronic bronchitis, chronic obstructive pulmonary disease, emphysema</td>
<td>*</td>
<td>5.4</td>
<td>5.4</td>
<td>3.8</td>
</tr>
<tr>
<td>Serious depression or depression for a period of at least 2 weeks</td>
<td>3.9</td>
<td>4.0</td>
<td>3.9</td>
<td>3.4</td>
</tr>
<tr>
<td>Diabetes</td>
<td>2.0</td>
<td>2.7</td>
<td>3.4</td>
<td>3.3</td>
</tr>
<tr>
<td>Chronic anxiety</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>3.3</td>
</tr>
<tr>
<td>Prostate problems</td>
<td>*</td>
<td>3.5</td>
<td>3.6</td>
<td>3.1</td>
</tr>
<tr>
<td>Stomach ulcer (gastric or duodenal ulcer)</td>
<td>2.5</td>
<td>2.8</td>
<td>2.4</td>
<td>3.0</td>
</tr>
<tr>
<td>Chronic fatigue for a period of at least 3 months</td>
<td>2.9</td>
<td>2.8</td>
<td>2.0</td>
<td>2.6</td>
</tr>
<tr>
<td>Chronic or serious skin disease</td>
<td>3.1</td>
<td>2.9</td>
<td>3.5</td>
<td>2.4</td>
</tr>
<tr>
<td>Coronary heart disease (angina pectoris)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>2.1</td>
</tr>
<tr>
<td>Urinary incontinence</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>1.8</td>
</tr>
<tr>
<td>Serious intestinal problems for a period of at least 3 months</td>
<td>2.4</td>
<td>2.2</td>
<td>2.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Cancer</td>
<td>0.6</td>
<td>1.1</td>
<td>0.7</td>
<td>1.6</td>
</tr>
<tr>
<td>Cataract</td>
<td>0.6</td>
<td>1.0</td>
<td>1.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Thyroid problems</td>
<td>0.8</td>
<td>1.3</td>
<td>1.2</td>
<td>1.3</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>0.7</td>
<td>1.2</td>
<td>0.8</td>
<td>1.2</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>1.0</td>
<td>1.5</td>
<td>1.7</td>
<td>1.0</td>
</tr>
<tr>
<td>Kidney stones</td>
<td>0.9</td>
<td>0.7</td>
<td>1.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Stroke</td>
<td>0.5</td>
<td>0.6</td>
<td>0.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>0.8</td>
</tr>
<tr>
<td>Serious kidney disease, other than kidney stones</td>
<td>0.7</td>
<td>0.4</td>
<td>0.4</td>
<td>0.5</td>
</tr>
<tr>
<td>Chronic cystitis</td>
<td>0.7</td>
<td>0.9</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>0.5</td>
<td>0.7</td>
<td>0.9</td>
<td>0.5</td>
</tr>
<tr>
<td>Cirrhosis of the liver, liver dysfunction</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>0.4</td>
</tr>
<tr>
<td>Gall bladder inflammation or stones</td>
<td>0.2</td>
<td>0.5</td>
<td>0.5</td>
<td>0.4</td>
</tr>
<tr>
<td>Parkinson’s disease</td>
<td>0.2</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Hip fracture</td>
<td>0.2</td>
<td>0.4</td>
<td>0.2</td>
<td>0.2</td>
</tr>
</tbody>
</table>
### Table 2. Prevalence of specific diseases in the female population by year, Health Interview Survey, Belgium, 1997-2008

<table>
<thead>
<tr>
<th>Percentage of the female population that reported...</th>
<th>1997</th>
<th>2001</th>
<th>2004</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low back disorder or other chronic back defects</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>18.9</td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>12.3</td>
<td>15.2</td>
<td>12.7</td>
<td>16.6</td>
</tr>
<tr>
<td>Allergies</td>
<td>14.7</td>
<td>14.4</td>
<td>14.9</td>
<td>14.4</td>
</tr>
<tr>
<td>Hypertension</td>
<td>10.5</td>
<td>12.9</td>
<td>13.6</td>
<td>14.4</td>
</tr>
<tr>
<td>Neck disorder or other chronic neck defect</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>12.2</td>
</tr>
<tr>
<td>Severe headache such as migraine</td>
<td>13.6</td>
<td>13.1</td>
<td>10.9</td>
<td>12.1</td>
</tr>
<tr>
<td>Rheumatoid arthritis</td>
<td>7.4</td>
<td>8.5</td>
<td>7.3</td>
<td>7.8</td>
</tr>
<tr>
<td>Serious depression or depression for a period of at least 2 weeks</td>
<td>7.0</td>
<td>6.4</td>
<td>5.9</td>
<td>6.4</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>4.1</td>
<td>5.9</td>
<td>5.6</td>
<td>6.2</td>
</tr>
<tr>
<td>Thyroid problems</td>
<td>4.5</td>
<td>5.5</td>
<td>5.8</td>
<td>6.0</td>
</tr>
<tr>
<td>Chronic anxiety</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>5.8</td>
</tr>
<tr>
<td>Permanent injury or disability caused by an accident</td>
<td>*</td>
<td>4.2</td>
<td>4.3</td>
<td>4.6</td>
</tr>
<tr>
<td>Asthma (allergic asthma included)</td>
<td>*</td>
<td>4.2</td>
<td>4.3</td>
<td>4.6</td>
</tr>
<tr>
<td>Chronic fatigue for a period of at least 3 months</td>
<td>*</td>
<td>5.6</td>
<td>5.2</td>
<td>4.5</td>
</tr>
<tr>
<td>Urinary incontinence</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>3.9</td>
</tr>
<tr>
<td>Chronic bronchitis, chronic obstructive pulmonary diseases, emphysema</td>
<td>*</td>
<td>5.6</td>
<td>5.2</td>
<td>3.6</td>
</tr>
<tr>
<td>Serious intestinal problems for a period of at least 3 months</td>
<td>3.8</td>
<td>3.7</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Diabetes</td>
<td>2.5</td>
<td>2.9</td>
<td>3.6</td>
<td>3.5</td>
</tr>
<tr>
<td>Stomach ulcer (gastric or duodenal ulcer)</td>
<td>2.7</td>
<td>3.5</td>
<td>3.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Cataract</td>
<td>1.6</td>
<td>2.4</td>
<td>2.6</td>
<td>2.9</td>
</tr>
<tr>
<td>Chronic or serious skin disease</td>
<td>3.6</td>
<td>3.6</td>
<td>3.7</td>
<td>2.8</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>1.3</td>
<td>2.2</td>
<td>2.1</td>
<td>1.8</td>
</tr>
<tr>
<td>Cancer</td>
<td>1.4</td>
<td>1.7</td>
<td>1.3</td>
<td>1.7</td>
</tr>
<tr>
<td>Chronic cystitis</td>
<td>2.6</td>
<td>2.4</td>
<td>2.5</td>
<td>1.7</td>
</tr>
<tr>
<td>Coronary heart disease (angina pectoris)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>1.4</td>
</tr>
<tr>
<td>Stroke</td>
<td>0.9</td>
<td>0.5</td>
<td>0.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>0.7</td>
<td>0.5</td>
<td>0.7</td>
<td>0.9</td>
</tr>
<tr>
<td>Gall bladder inflammation or stones</td>
<td>1.1</td>
<td>1.1</td>
<td>1.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Serious kidney disease, other than kidney stones</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>0.4</td>
</tr>
<tr>
<td>Hip fracture</td>
<td>0.3</td>
<td>0.5</td>
<td>0.5</td>
<td>0.4</td>
</tr>
<tr>
<td>Cirrhosis of the liver, liver dysfunction</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>0.4</td>
</tr>
<tr>
<td>Kidney stones</td>
<td>0.8</td>
<td>0.8</td>
<td>0.9</td>
<td>0.4</td>
</tr>
<tr>
<td>Parkinson’s disease</td>
<td>0.4</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
</tbody>
</table>
The degree of urbanisation of the respondent’s municipality generally had little effect on the prevalence of diseases, with some exceptions: asthma, chronic lung diseases and gastric or duodenal ulcers were reported more often by urban residents than by rural residents.

In Belgium there are still significant regional differences in the prevalence of NCD. For numerous conditions, the prevalence was higher in Brussels and Wallonia than in Flanders. These differences between Flanders and Wallonia have decreased over time. For instance, serious headaches (e.g. migraines), diabetes, chronic fatigue and osteoporosis were significantly more frequent in 1997 in Wallonia than in Flanders, while in 2008 this was no longer the case.

### 2.3 Functional limitations

The potential consequences of long-term illnesses on individual functional capabilities may be severe (for example, the individual is permanently bedridden) or relatively moderate (for example, the individual cannot carry out all tasks of everyday life in a completely autonomous way). Three indicators were used to assess the functional limitations people are confronted with in performing activities:

- The percentage of people who reported that they were limited in performing at least one basic activity, such as walking, climbing stairs, lifting shopping bags, etc.
- The percentage of people who reported that they were limited in at least one daily activity, such as getting out of a bed, washing, dressing, eating, etc.
- The percentage of people who reported that they were limited in instrumental daily activities, such as preparing meals, using the telephone, doing groceries, etc.

For the last two indicators, we examined whether people who needed assistance could receive it.

Nearly four people out of ten (38%) aged 15 or older reported that they were either moderately limited or severely limited in performing (at least one of the listed) basic activities. One person out of ten (10%) reported that they were limited in performing daily activities. Limitations in basic activities were found to be independent of limitations in performing daily activities.

Compared with men, women in general were more often faced with functional limitations in performing basic daily activities and instrumental daily activities. This finding cannot be explained by a difference in the age distribution between men and women, as these differences persisted even after adjusting for age.

The association between age and functional limitations was evident. Limitations were almost non-existent for younger respondents; they became more frequent starting from the age of 65 years and rose exponentially from the age of 75 years and onwards.
The association between socio-economic status and functional limitations was also evident: people with a low educational level reported suffering from limitations more often than those with a high educational level. These differences decreased somewhat but persisted when we accounted for the difference in the age and gender distributions between educational groups.

The majority of those with limitations in instrumental daily activities stated that they could count on assistance when needed. However, a small group of people, especially among the elderly, stated that they needed assistance but did not receive any.

No significant difference was found in comparison with the results of the previous years.

2.4 Bodily pain

Bodily pain is a subjective experience that has an important effect on well-being. It is one of the most frequent complaints that incites people to visit their general practitioner. It is also the most important cause of absence from work and is therefore a significant problem in the society. The impacts of pain on the personal and social levels are also substantial.

In the HIS, the impact of bodily pain on the everyday life of the population aged 15 and older was studied via two questions from the SF-36 questionnaire. One dealt with the significance (or intensity) of the felt pain, and the other with the restrictions it entailed in performing everyday activities. A bodily Pain Score (PS) ranging from 0 to 100 was calculated from the combination of these two questions. This score represents the extent of the problems related to bodily pain within the population. To make interpretation easier, the score is reversed in this report so that a high score corresponds to very unpleasant bodily pain and a low score to the absence of pain.

The average bodily pain score was 24 (out of a maximum of 100) in the total Belgian population aged 15 years and older. The average score for women (PS=28) was greater than for men (PS=20), reflecting the fact that women feel more inconvenienced by pain than men when performing their everyday activities. The elderly were also more frequently inconvenienced by bodily pain than young people: for respondents over 75 years, the average pain score was 35.

Bodily pain was more prevalent among people with a low educational level (PS=33). The socio-economic gradient in terms of pain could be explained in part by the type of professional activity and physical effort required in the various socio-economic groups.
2.5 Mental health

Due to the high frequency of mental problems in western societies and the significance of their costs in human, social and economic terms, mental health is now regarded as a public health priority. In Belgium, the HIS is one of the main sources of systematic data on mental health parameters in the general population aged 15 or older. Various dimensions of mental health were monitored in this survey, including psychological well-being and distress (measured by the GHQ-12), emotional disorders such as depression, anxiety, somatisation and sleeping problems (measured by the SCL-90R), suicidal behaviour, use of psychotropic medicines, etc. The results of the 2008 survey are presented below.

In Belgium, 26% of the population aged 15 or older reported having some degree of psychological distress (GHQ score ≥ 2), while 14% seemed to have a more serious mental health problem (GHQ score ≥ 4). The assessment of specific disorders (SCL-90 subscales) indicated that 9% of the population was experiencing a depression episode, 8% was suffering from somatisation symptoms, 6% had an anxiety disorder, and 21% reported severe sleeping problems. Furthermore, 4% of the population said they had seriously thought about committing suicide in the past 12 months and 0.4% reported having actually attempted suicide in this time period.

With regard to the consumption of psychotropic medicines, 16% of the population reported using one of the following medicines in the two weeks preceding the survey (sometimes in combination): sleeping tablets (10% of the respondents), tranquillisers (7%) and anti-depressants (6%).

Examining the distribution of mental health indicators according to socio-demographic and economic factors gave rise to the following observations.
Women were more likely than men to present all of the mental health problems described above, and women were also more often inclined to use psychotropic medicines. A greater proportion of women than men reported having thought about suicide and having attempted it. Women encountered psychological problems at a younger age than men.

In terms of distribution by age, the prevalence of psychological distress diminished with age. By contrast, the emotional disorders - which seem to be more "biological" in origin - became more frequent as age increased. The use of psychotropic medicines was also much more frequent after the age of 45, especially in the most elderly age group. This increase with age was more pronounced with women than with men.

All mental health indicators examined in this section were linked to the educational level. Psychological distress, emotional disorders, suicidal behaviours and use of psychotropic medicines were more frequent in the lowest educated groups compared with the higher educated.

Finally, these indicators were compared over time. Between 2004 and 2008, there was a slight increase at the national level in psychological distress, depressive disorders and the use of psychotropic medicines, while most other specific problems (somatic, anxiety, sleep) and suicidal behaviour did not change over time (in comparable populations).
Table 3. Summary of mental health problems in the population aged 15 or older, Health Interview Survey, Belgium, 1997-2008

<table>
<thead>
<tr>
<th>Percentage of the population aged 15 or older that reported:</th>
<th>1997</th>
<th>2001</th>
<th>2004</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological distress (GHQ score ≥ 2)</td>
<td>-</td>
<td>25%</td>
<td>24%</td>
<td>26%</td>
</tr>
<tr>
<td>Psychological impairment (GHQ score ≥ 4)</td>
<td>-</td>
<td>13%</td>
<td>13%</td>
<td>14%</td>
</tr>
<tr>
<td>Depressive disorders</td>
<td>-</td>
<td>9%</td>
<td>8%</td>
<td>9%</td>
</tr>
<tr>
<td>Somatisation disorders</td>
<td>-</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Anxiety disorders</td>
<td>-</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Sleeping disorders</td>
<td>-</td>
<td>20%</td>
<td>20%</td>
<td>21%</td>
</tr>
<tr>
<td>Lifetime suicidal ideation</td>
<td>-</td>
<td>-</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Lifetime suicide attempt</td>
<td>-</td>
<td>-</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Suicidal ideation in the past 12 months</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4%</td>
</tr>
<tr>
<td>Suicide attempt in the past 12 months</td>
<td>-</td>
<td>-</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Use of psychotropic medicines (any)</td>
<td>10%</td>
<td>13%</td>
<td>15%</td>
<td>16%</td>
</tr>
<tr>
<td>Use of sleeping tablets</td>
<td>5%</td>
<td>8%</td>
<td>9%</td>
<td>10%</td>
</tr>
<tr>
<td>Use of tranquilisers</td>
<td>4%</td>
<td>6%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Use of anti-depressants</td>
<td>4%</td>
<td>5%</td>
<td>6%</td>
<td>6%</td>
</tr>
</tbody>
</table>

2.6 Oral health

Our teeth are important, not only because of their essential function for chewing and speaking but also for their aesthetic aspect. In addition, the past decade witnessed increasing evidence of the association between oral health problems and the development of general health problems, such as cardiovascular diseases, premature birth and respiratory diseases.

Although the HIS is not suitable for collecting data for direct oral health indicators (such as the prevalence of cavities and decay within the population), but still several indicators included in the HIS allow to obtain an overall view of the oral health of the population and its determinants.

The survey revealed that 12% of the population aged 15 or older no longer had their own natural teeth, 13% had difficulties in chewing hard foods, and 35% reported wearing a dental prosthesis. These problems are naturally more prevalent in the older age groups, but even in the 45-54 age group 7% reported that they no longer had their own teeth, 7% reported problems with chewing hard foods, and 40% reported wearing a dental prosthesis.

Although information on the selected indicators was not available for all years, some changes could still be observed over time: a decrease in the number of people who no longer have their own natural teeth, a decrease in the number of people with chewing difficulties, and a decrease in the number of people with a
A significant socio-economic gradient was observed for all the examined indicators. At a lower educational level there is a higher prevalence of people who have lost all their teeth, who wear a dental prosthesis, who have difficulties with chewing, and who brush their teeth less regularly. These social inequalities can be explained in part by social differences in food habits and in the use of preventive dental care and by a general lack of interest in healthy teeth and good hygiene. Oral health is one of the areas where social inequalities are expressed most powerfully.

Table 4. Prevalence of selected oral health indicators in the population by year, Health Interview Survey, Belgium, 1997-2008

<table>
<thead>
<tr>
<th>Percentage of the population reporting that they:</th>
<th>1997</th>
<th>2001</th>
<th>2004</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>No longer have all their natural teeth (age 15 or older)</td>
<td>-</td>
<td>16%</td>
<td>15%</td>
<td>11%</td>
</tr>
<tr>
<td>Wear a dental prosthesis (age 15 or older)</td>
<td>-</td>
<td>-</td>
<td>38%</td>
<td>35%</td>
</tr>
<tr>
<td>Have difficulties with chewing hard foods (age 15 or older)</td>
<td>15%</td>
<td>16%</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Brush their teeth at least twice a day</td>
<td>-</td>
<td>-</td>
<td>49%</td>
<td>50%</td>
</tr>
</tbody>
</table>
2.7 Nutritional status

The body mass index (BMI) in kg/m² is commonly used to assess the ratio of body weight to height in the adult population aged 18 or older. Morbidity and mortality have been found to increase with a BMI of 25 or greater. An adult with a BMI between 25 and 29.9 is considered overweight and an adult with a BMI of 30 or greater is considered obese. These thresholds are not applicable to children and teens (ages 2 to 17); their BMI are instead determined using curves related to age and gender.

In Belgium, the average BMI for adults was 25.3, indicating that the average Belgian is overweight. The average BMI increased with age until age 65, after which it decreased.

Among the adult population, 47% are too heavy for their height: 33% of the adult population are overweight, while 14% suffer from obesity. Overweight is more frequent in men (54%) than women (40%), but there is no difference between men and women with regard to obesity. What is distinctly alarming is that more than half of all individuals in the 45-54 age group are overweight and one of five people in the 55-64 age group are obese.

Compared with previous surveys (1997, 2001 and 2004), a continuous increase is observed in both average BMI and the percentage of people who are overweight or obese. This observation applies both nationally and regionally with the exception of the Walloon region, where these figures have remained constant over time.

Figure 3. Prevalence of obesity in the population aged 15 or older by year and region, Health Interview Survey, Belgium, 1997-2008

Overall, 18% of young people (aged 2 to 17) were found to be overweight and 5% were found to be obese. These percentages are comparable for girls and boys. The prevalence of overweight peaked in the 5-9 age group (22%) and decreased during adolescence (12%). The percentage of overweight young people was slightly higher in the Brussels region than in the other two regions with more than one of four young person overweight.
Excess weight was associated with educational level. Adults with a low educational level and young people from households whose members have low educational levels were more likely to be overweight.
3. Health behaviours
3.1 Physical activity

The concept of physical activity that is beneficial to health was introduced in 1992 and includes all body movements produced by striated muscles which bring about a significant increase in energy expenditure. The beneficial effects of regular physical activity for health have been widely demonstrated. The key message is that every person should perform 30 minutes of (at least moderate) physical activity nearly every day of the week.

In the context of the HIS, it was decided to consider all types of physical activity. This includes leisure time physical activities and global physical activities such as housework, commuting activities and activities undertaken at work.

Overall, 38% of the Belgian population performed at least 30 minutes of any type of physical activity per day.

Regarding leisure time physical activities:
- 16% performed a sport for at least 4 hours per week
- 58% performed either a sport for less than 4 hours per week or a light physical activity
- 26% performed only sedentary activities

Only 29% of women engaged in physical activity for at least 30 minutes per day, compared with 49% of men. The difference was less marked for leisure time physical activities (70% of women practiced at least light activity compared with 78% of men).

There were marked differences between education levels:
- 17% of people with primary education performed a leisure time physical activity at least once a week, compared with 46% of people with higher education
- 25% of people with primary education performed (moderate to intense) physical activity for at least 30 minutes a day, compared with 43% of people with higher education

The percentage of the population performing leisure time physical activities did not change between 1997 and 2001 or between 2004 and 2008. Likewise, the percentage of the population performing (moderate to intense) physical activity for at least 30 minutes a day did not increase between 2004 and 2008.
3.2 Nutritional habits

In the HIS 2008 only limited attention was given to nutritional habits, since a specific survey on this subject was conducted in Belgium in 2004. Accordingly, the HIS focused particularly on the recommended eating habits, such as daily consumption of vegetables and fruit, vegetable or fruit juices, and whole-wheat bread and weekly consumption of fish and shellfish. There was also a focus on the consumption of non-recommended foods, such as high-sugar drinks. Only the indicators related to fruit and vegetables are discussed below.

The survey revealed that two-thirds of the Belgian population ate fruit every day, but only one-third ate two or more portions daily. In both cases, the prevalence among women was higher than among men. The prevalence of eating fruit daily and eating two or more portions of fruit every day was the lowest among youngsters (age 15-24) at 49% and 24%, respectively.

Daily consumption of fruit and the consumption of at least two portions of fruit per day were closely related to educational level, with the highest prevalence found among the most educated (70% and 39%, respectively). The Walloon region showed the poorest results for fruit consumption (60% and 27%, respectively). The percentage of people eating fruit daily increased sharply over time from 50% in 2001 and 2004 to 64% in 2008.

Among the Belgian population, 85% ate vegetables every day, with two-thirds eating at least 200 grams. This prevalence was lowest among young people aged 15-24 (77% for Belgium as a whole, but barely 50% in the Walloon region). The most educated people were more likely than the lower educated people to consume vegetables daily, as well as to eat at least 200 grams per day (87% and 63%, respectively). Only 75% of the residents of Brussels ate vegetables every day, and barely half ate at least 200 grams per day. As for the consumption of
fruit, the percentage of the population consuming vegetables daily increased over time from 74% in 2004 to 85% in 2008.

**Figure 5.** Percentage of the population consuming fruit and vegetables daily, by age and gender, Health Interview Survey, Belgium, 2008

### 3.3 Tobacco consumption

Smoking is without question one of the most critical health related risk factors in Europe in terms of both morbidity and mortality. Reducing tobacco consumption is therefore undeniably an effective public health strategy for improving the health of the population. Although the number of smokers has diminished over the past decades, tobacco use is still part of everyday life for many Belgian residents. The HIS is suitable for monitoring the evolution of tobacco consumption habits in the population. Several indicators are taken into account for this purpose: smoking status, age of starting regular smoking, number of cigarettes smoked per day, time elapsed between waking and the first cigarette (to estimate dependence),
number of quitting attempts and reason for (trying to-) quit. The results are described below.

In 2008, 25% of Belgian residents aged 15 or older were current smokers, of which 21% were daily smokers and 4% were occasional smokers. By contrast, more than half of the population (54%) had never smoked and nearly a quarter (22%) had stopped smoking at the time of the survey. The proportion of heavy smokers (20 or more cigarettes per day) in the population was 7%. The average starting age for regular smoking was 17.

These figures appear fairly encouraging considering that the proportion of current smokers was 30% in 1997 and 28% in 2004 compared with 25% in 2008. This trend represents a global decrease of 17% (or half a million) smokers over the past decade in Belgium. Moreover, a similar decline in the proportion of daily, heavy and highly dependent smokers was also observed over the same period.

In 2008 the average cigarette consumption among daily smokers was 16 units per day. However, still 11% of the daily smokers exhibited strong to very strong addiction to tobacco, characterised by smoking 20 cigarettes or more per day and lighting up within 30 minutes after waking. On the whole, 69% of daily smokers reported unsuccessful attempt to stop smoking. The main reasons given for wanting to quit are listed in the summary table below.

An analysis by gender confirmed that men smoked (28%) and smoked daily (24%) more often than did women (21% and 18%, respectively), and this gender difference was seen at all ages. Heavy smoking was also more frequent among men (10%) than women (6%), and on average men started smoking regularly at a younger age than women (10 months earlier). Examining smoking habits according to education level showed that daily and heavy smoking habits were more frequently observed among the low educated groups compared with the higher educated groups. Individuals with lower education also stated smoking at a younger age (10 months earlier, on average) and smoked 2 to 3 cigarettes more per day than individuals with higher education.

Surprisingly, smoking prevalence among young people (15-24 age group) matched the population figures: 25% were current smokers (29% of boys and 21% of girls). However, closer examination of this age group reveals that smoking frequency peaks between the ages of 21 and 24 years, ranging from 31% to 40% current smokers – a priority target for prevention.

The prevalence of smokers in the 15-24 age group was relatively steady compared with 2004 (26%). However, an overall decrease can be seen when the trend over the past 11 years is examined, with 25% smokers in this age group in 2008 compared with 32% in 1997.
Table 5. Summary table of tobacco consumption habits for the population aged 15 or older, Health Interview Survey, Belgium, 1997-2008

<table>
<thead>
<tr>
<th>Percentage of the population aged 15 or older that:</th>
<th>1997</th>
<th>2001</th>
<th>2004</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smokes currently</td>
<td>30%</td>
<td>29%</td>
<td>28%</td>
<td>25%</td>
</tr>
<tr>
<td>Smokes daily</td>
<td>26%</td>
<td>24%</td>
<td>24%</td>
<td>21%</td>
</tr>
<tr>
<td>Smokes heavily (20 or more cigarettes/day)</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td>Has stopped smoking</td>
<td>24%</td>
<td>31%</td>
<td>20%</td>
<td>22%</td>
</tr>
<tr>
<td>Never smoked</td>
<td>46%</td>
<td>41%</td>
<td>52%</td>
<td>54%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of the daily smokers aged 15 or older that:</th>
<th>1997</th>
<th>2001</th>
<th>2004</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are highly dependent to tobacco</td>
<td>-</td>
<td>-</td>
<td>14%</td>
<td>11%</td>
</tr>
<tr>
<td>Tried to quit smoking due to fear of health consequences</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>47%</td>
</tr>
<tr>
<td>Tried to quit smoking for financial reasons (cost of tobacco)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>25%</td>
</tr>
<tr>
<td>Tried to quit smoking to please or to accommodate family or friends</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>23%</td>
</tr>
<tr>
<td>Tried to quit smoking due to pregnancy or birth</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>21%</td>
</tr>
<tr>
<td>Tried to quit smoking because of an illness</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>17%</td>
</tr>
</tbody>
</table>

### 3.4 Alcohol consumption

Alcohol consumption is commonplace in European societies, but it is also a main risk factor for a number of diseases and conditions. In fact, alcohol misuse has been a major social, economic and public health problem for a long time. Health damage can result from a single bout of heavy drinking (accidents, drunk driving, violence, etc.) or from regular heavy drinking (cirrhosis of the liver, neurological damage, increased risk of cardiovascular disease and some types of cancers, exacerbation of some latent issues such as depression and family problems, suicidal behaviours, loss of employment, etc.). Monitoring alcohol consumption in the population is therefore a significant public health concern. The indicators described in this section give an overview of alcohol use in the population aged 15 or older in Belgium.

In 2008, 81% of the residents were current drinkers (at least one alcoholic beverage in the 12 months preceding the survey) and 19% were abstainers. Since the first data collection in 1997, the overall trend in this area indicates a relatively stable situation.

In terms of quantity, consumers of alcoholic beverages had on average 11 drinks per week, a slight decrease compared with 2001 and 2004 (after adjustment for
age and gender). Another indicator that declined overtime is the prevalence of excessive consumption, defined according to the WHO thresholds of more than 14 drinks per week for women and more than 21 drinks per week for men. Based on this classification, 8% of the population drank to excess in 2008, which was 1 percentage point less than in 2001-2004 (9%). By contrast, two alcohol-related indicators showed an increase over time: the proportion of daily drinkers (9% in 2001-2004 compared with 12% in 2008) and the prevalence of problem drinking (measured with the CAGE questionnaire): 7% in 2001, 8% in 2004 and 10% in 2008. Finally, 8% of the population exhibited risky (or binge) drinking behaviour (consuming 6 or more alcoholic drinks on the same occasion) on a regular basis (at least once a week).

With regard to socio-demographic profiles, unsurprisingly all forms of alcohol consumption behaviour appeared to be more typically masculine. More men than women drank alcohol (84% versus 77%), more men drank daily (16% versus 9%), men drank larger quantities (13 drinks a week versus 8) or consumed to excess (10% versus 6%). More men than women also exhibited risky drinking behaviour on a weekly risky (13% versus 4%) and problem drinking (13% versus 7%).

Alcohol consumption also varied with age. Some indicators were more frequent in the middle-aged groups than in the youngest and oldest age groups. This was true for the average quantity consumed per week, excessive consumption and problem drinking. In contrast, daily alcohol consumption was more frequent in older age groups (3% in young people versus 21% among those aged 55 or older). Finally, weekly risky drinking was highest in the 15-24 age group (12%) and the 45-64 age group (9-10%).

The analysis of drinking behaviour by educational level brought some differences in drinking habits to light. Prevalence of daily alcohol consumption increased with education level. Excessive consumption and problem drinking were not associated to education level, but weekly risky drinking was encountered more often among people with lower education.
### Table 6. Summary table of alcohol consumption habits for the population aged 15 or older, Health Interview Survey, Belgium, 1997-2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percentage of the population aged 15 or older that:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently drinks alcohol (at least 1 drink in the past 12 months)</td>
<td>84%</td>
<td>80%</td>
<td>84%</td>
<td>81%</td>
</tr>
<tr>
<td>Drinks alcohol every day</td>
<td>8%</td>
<td>10%</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>Drinks alcohol in excess (more than 14 drinks/week for women or more than 21 drinks/week for men)</td>
<td>7%</td>
<td>9%</td>
<td>9%</td>
<td>8%</td>
</tr>
<tr>
<td>Drinks 6 or more units/occasion (risky drinking) at least weekly</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Percentage of alcohol consumers aged 15 or older that:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhibit problem drinking behaviour (according to CAGE)</td>
<td>-</td>
<td>7%</td>
<td>8%</td>
<td>10%</td>
</tr>
</tbody>
</table>

### 3.5 Use of illegal drugs

The 2008 HIS assessed the use of illegal drugs (cannabis, cocaine, amphetamines and heroin) in the general Belgian population between 15 and 64 years of age. Analyses by age, gender, education and urbanisation attempt to sketch a profile associated with the consumption of illegal drugs. A trend analysis was performed for cannabis use only (no data was available for other illegal drugs in previous surveys) and the results are presented in the table below.

In 2008, 14% of the Belgian population aged 15 to 64 had consumed cannabis at least once in their life, while 5% had consumed it within the past 12 months (recent use), and 3% within the past 30 days (current use). Among current users, 30% used cannabis intensively (defined as consumption on at least 20 of the previous 30 days).

The user profile was developed using the characteristics commonly used in international studies. It shows that cannabis use predominantly involved young people (age 15-34), male, urban residents, and all social and educational backgrounds.

This profile can be illustrated using the recent cannabis use indicator (past 12 months). Recent cannabis use concerns 12% of young people aged 15-24 (compared with 5% in the total population), specifically 16% of young men versus 8% of young women. Recent consumption was more frequent among urban residents (8%-10%) compared with the national prevalence (5%).

Results pertaining to the use of other illegal drugs (e.g. cocaine, amphetamines, ecstasy, heroin, etc.) indicated that 4% of the population aged 15 to 64 had used one of these substances at least once in their lifetime and 1.5% had used one of them in the past 12 months. Here again, the profile matched that of the cannabis user: predominantly young, male and urban dwellers.
Recent use (12 months) by substance type revealed similar prevalence levels for cocaine and amphetamines/ecstasy (0.9% in the 15-64 age group) and lower levels for opiates (0.2%) and other substances (0.3%). In the population aged 15 to 34, the prevalence levels were approximately 2% for cocaine and the amphetamines/ecstasy group, 0.4% for opiates and 0.6% for other substances.

Table 7. Summary table of cannabis use for the population aged 15 to 64, Health Interview Survey, Belgium, 1997-2008

<table>
<thead>
<tr>
<th>Percentage of the population aged 15 to 64 that:</th>
<th>1997</th>
<th>2001</th>
<th>2004</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used cannabis at least once in their lifetime</td>
<td></td>
<td>11%</td>
<td>13%</td>
<td>14%</td>
</tr>
<tr>
<td>Used cannabis in the past 12 months</td>
<td></td>
<td>-</td>
<td>-</td>
<td>5.0%</td>
</tr>
<tr>
<td>Used cannabis in the past 30 days</td>
<td></td>
<td>2.7%</td>
<td>3.0%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>
4. Preventive behaviours
4.1 Knowledge of and attitudes towards HIV and AIDS

Acquired Immune Deficiency Syndrome (AIDS) is a severe, life-threatening clinical condition. AIDS is the final clinical stage of infection with the human immunodeficiency virus (HIV), which most often results in progressive damage to the immune system and other organs, including the central nervous system.

Primary prevention, which is crucial for controlling this epidemic, must be based on accurate and recent data on infection incidence, the epidemiological profile of patients, and the knowledge, attitude and behaviour of the general population with regards to HIV/AIDS risk.

The HIV/AIDS surveillance programme in Belgium has produced data on the incidence and epidemiological profile of the affected population on a regular basis since 1984. Information about knowledge, attitude and behaviour with regards to AIDS risks is based on data from the HIS.

In 2008, a large proportion of the Belgian population (aged 15 or older) still did not have a satisfactory understanding of how the HIV virus is transmitted or how to protect themselves against HIV during sexual contact. Only 40% of the population could correctly identify the four non-contaminating forms of contact presented in the survey, while 52% correctly recognised at least the following two: kissing someone on the mouth and giving blood in Belgium (with regard to the risk run by the donor).

**Table 8. Items in the HIS 2008 concerning knowledge about HIV transmission**

<table>
<thead>
<tr>
<th>Non-contaminating forms of contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kissing someone on the mouth</td>
</tr>
<tr>
<td>Mosquito bites</td>
</tr>
<tr>
<td>Eating a meal prepared by someone with AIDS or who is HIV positive</td>
</tr>
<tr>
<td>Giving blood in Belgium nowadays (from the point of view of the donor)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Methods that do not protect against HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose partners who look healthy</td>
</tr>
<tr>
<td>Withdrawal before ejaculation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Methods that protect against HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstaining from penetrative sexual activities</td>
</tr>
<tr>
<td>Using condoms</td>
</tr>
<tr>
<td>Having sex with only one faithful, uninfected partner</td>
</tr>
</tbody>
</table>
Only 46% of the population correctly recognised the two methods that do not protect against virus transmission during sexual contact. It is particularly worrisome to observe that only 52% of the population knew that choosing sexual partners who look healthy was ineffective in protecting against HIV.

Among the population, 44% correctly recognised the three effective methods for preventing HIV transmission. The best-known method was a relationship with one faithful partner (recognised by 91% of the population), followed by using a condom (88%). Only 46% of the population knew that avoiding penetration during sexual contact protects against HIV transmission.

In 2008, the percentage of the population able to correctly identify two non-contaminating forms of contact increased by 10% compared with 2004. However, in 2008 only 46% of the population could correctly identify two methods that do not protect against HIV, compared with 59% in 2004 and 55% in 1997.

In addition, the proportion of the population that had taken an HIV test increased between 1997 (21%) and 2008 (24%); although the proportion of people tested over the three months before the interview dropped from 13% to 5% over this period. Among those aged 15-49 tested between 1 week and 12 months before the interview, 88% reported that they were personally informed of the results of the test.

Intolerance towards HIV-positive persons in the workplace remained significant. Although approximately four out of five people disapproved of dismissal due to HIV infection or AIDS, only half of the population disapproved of a breach of confidentiality without consent with regard to a colleague’s HIV-positive status.

Analysis of the various indicators showed that knowledge of and attitudes towards HIV/AIDS are closely associated with educational level. People with a higher educational level had better knowledge of HIV/AIDS (transmission and protection) and a more positive attitude towards HIV-positive people. People with a higher educational level were also more likely to have had an HIV test.

Indicators related to knowledge of HIV/AIDS showed that overall, the youngest respondents (aged 15-24) had less knowledge about non-contaminating forms of contact and ways to prevent HIV transmission. This knowledge improved in the 25-54 age group and declined again after age 65. Regarding the effective methods of HIV prevention, faithfulness within the couple and using condoms were known to over 90% of the population aged 15-64. However, in the 35-64 age group, the preventive method of avoiding penetration during sexual contact was the best known (approximately half of the respondents).

People aged 15-44 were more disapproving than older generations of a discriminatory and intolerant attitude towards people with HIV in the workplace. It is worth noting that the level of intolerance to HIV-positive colleagues in the workplace was high in the retirement age group (aged 65 and over), although they are the least concerned by this environment. Also, this older age group showed the lowest level of knowledge in terms of non-contaminating forms of contact and ways to prevent HIV transmission.

There were striking regional differences in HIV/AIDS indicators. In Flanders 44% of the population recognised unsafe methods with regard to HIV transmission, compared with 50% of the population in Wallonia and Brussels. However,
compared with the Walloon and Brussels populations the Flemish population had higher awareness that avoiding penetration during sexual contact is an effective way to prevent HIV transmission. As for the Brussels population, it did not recognise faithfulness as being an effective method of HIV prevention as much as the other regions. Condom use was, on the other hand, was recognised at the same level in all three regions. The largest proportion of people tested for HIV was in Brussels with 46%, compared with 28% in Wallonia and only 18% in Flanders. Brussels residents were the least in favour of breaching confidentiality at work with regard to colleagues’ HIV-positive status (29%), compared with 35% in Wallonia and 43% in Flanders. However, there were no regional differences with regard to approval of dismissal due to HIV infection.

4.2 Vaccination

The importance of immunisation programmes has been widely demonstrated. Population surveys are an effective tool for measuring immunisation coverage in the population and provide good opportunities to evaluate potential barriers in this area and to monitor health inequalities.

Individuals were asked in this module whether they had been vaccinated against specific diseases during a given period (depending on the type of vaccination). The responses are therefore based only on the statements of the respondents, with the associated risks of subjectivity.

The World Health Organisation, and more recently the European Commission, recommend assessing vaccination coverage periodically. In the HIS, indicators have been developed for the adult population with regard to vaccination against tetanus, hepatitis B, influenza, pneumococcus and human papillomavirus (HPV).

**Tetanus vaccination**

In Belgium, 62% of the population had been vaccinated against tetanus in the previous 10 years.

The tetanus vaccine rate for women was 58%, compared with 67% for men. Vaccination rates were fairly high in the 15-54 age group, but they dropped rather sharply to 30% among those aged 75 or older.

The likelihood of vaccination increased with educational level. For example, a sharp difference was seen between people with primary education and those with higher education (45% versus 70%).

A drop in tetanus vaccination coverage was observed over time: 68% in 1997 and 62% in 2008.
Hepatitis B vaccination

In Belgium, 33% of the population had been vaccinated against hepatitis B in the previous 10 years.

The same percentage (33%) of women and men had been vaccinated against hepatitis B. The vaccination rate decreased with the age of the respondent: 60% in the 0-24 age group, 29% in the 35-44 age group and 2% in the 75-and-over age group.

The vaccination rate for hepatitis B varied according to educational level: 14% for people with primary education and 43% for people with higher education.

An increase in the hepatitis B vaccination rate was observed over time: 24% in 2001, 29% in 2004 and 33% in 2008.

Flu vaccination

In Belgium, 35% of the population had already been vaccinated at least once against flu and 23% of the population had been vaccinated against flu during the past 12 months. This rate increased to 46% when only the population at-risk was considered (people aged 65 or older, or under 65 with a chronic illness).

Of the population at risk, 45% had been vaccinated against flu during the last vaccination season (between September and December of the previous year) and were therefore effectively protected against the new seasonal flu virus.

Scarcely 10% of the respondents at risk in the 15-34 age group had been vaccinated during the last vaccination season, compared with 15% in the 35-44 age group and 30% in the 45-54 age group. High coverage rates were seen only in the upper age groups (71% of those aged 75 or older).

In contrast to what was seen for tetanus and hepatitis B, the percentage of people at risk vaccinated against flu during the previous vaccination season did not vary with educational level.

The coverage rate for the population at risk increased from 32% in 1997 to 47% in 2004. It remains to be seen whether the drop observed in 2008 (46%), especially in Flanders, is the start of a downward trend, which must be avoided at all costs.

Some other target groups, such as people employed in the health sector or animal husbandry, did benefit from higher coverage than the general population, but these rates are clearly not high enough.
Vaccination against pneumococcus

In Belgium, 11% of the population at risk (aged 60 or older, or 45 or older with a chronic illness) had been vaccinated against pneumococcus in the previous 5 years.

Coverage rates against pneumococcal infection remained very low (around 13%) even among people aged 60 or older. This indicates that this vaccine has not yet been widely adopted by the population and by practitioners.

No marked change was detected over time for vaccination coverage against pneumococcal infection in the population at risk: 12% in 2004, compared with 11% in 2008.

Vaccination against the human papillomavirus (HPV)

The HPV vaccination rate (over the past 12 months) was fairly low among girls aged 12 (6%). It increased with age to a maximum of 40% for girls aged 14.

Among girls, 25% of those aged 15-16 and 12% of those aged 17-18 had been vaccinated against HPV during the previous 12 months. Some vaccinations were also administered to girls aged 19 or older, although members of this group are probably already sexually active and therefore cannot be effectively protected by the vaccine.
4.3 Prevention of cardiovascular diseases and diabetes

Cardiovascular diseases are one of the main causes of death in Belgium; they are involved in more than one-third of all deaths. In addition to health behaviours, there is substantial evidence that high blood pressure, hypercholesterolemia and hyperglycaemia play a major role in the emergence of cardiovascular diseases. Screening for these factors is therefore one of the preventive measures that should be offered to the population, and the HIS is a good source of data for estimating population coverage in these areas.

Individuals were asked whether their blood cholesterol and glycaemia had been checked, and indicators were calculated to estimate the coverage.

**Cholesterol**

Of the population aged 15 or older, 65% had their blood cholesterol checked in the past five years and 43% reported that they were notified that their blood cholesterol was too high.

Blood cholesterol levels were measured more often among women (67.5%) than men (62.5%); but women were notified of high cholesterol levels (after testing) less often than men (39.5% versus 48%, respectively).

People with a higher educational level had higher coverage for hypercholesterolemia screening than people with a lower educational level.

This coverage proportion increased significantly from 1997 to 2008 (from 56% to 65%). The percentage of people notified that their cholesterol was too high also increased during the same period from 34% in 1997 to 43% in 2008.

**Table 9.** The most frequent recommendations made by doctors to those with high cholesterol in the population aged 15 or older, Health Interview Survey, Belgium, 2008

<table>
<thead>
<tr>
<th>Recommendations for reducing high cholesterol</th>
<th>Percent of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical treatment (medicines)</td>
<td>57%</td>
</tr>
<tr>
<td>Changes in dietary habits</td>
<td>54%</td>
</tr>
<tr>
<td>Lose weight</td>
<td>25%</td>
</tr>
<tr>
<td>More physical activity</td>
<td>22%</td>
</tr>
</tbody>
</table>
Behavioural recommendations by doctors (changes in dietary habits, weight loss and increased physical activity) were less often mentioned by people with a low educational level. In addition, recommendations for medical treatment increased over time (from 1997 to 2008).

**Diabetes screening**

Of the population aged 15 or older, 57% had their blood sugar level checked during the previous three years (72% of those aged 45 or older).

The percentage of the population that reported a blood sugar check increased with age (from 22% of those aged 15-24 to 76% of those aged 75 or older). No noticeable increase was detected among people aged 45-54 despite the fact that the risk starts to rise in this age group. In fact, 65% of those aged 45-54 reported a blood sugar test over the past three years, compared with 49% in the 35-44 age group. The coverage increased substantially in older age groups, reaching 78% for those aged 65-74 and 76% for those aged 75 or older.

In the 15-34 age group, a better coverage for this type of screening was seen among women than among men, which is probably due to checks during pregnancy. For those aged 45 or older, no significant difference was seen between men and women in this respect.

People with a higher educational level had a significantly better coverage rate than those in lower educational categories.

The percentage of people reporting a blood sugar check increased significantly between 2004 and 2008 for Belgium as a whole from 50% to 57% for those aged 15 or older and from 62% to 72% for those aged 45 or older.
4.4 Cancer screening

The HIS provides a significant opportunity to measure the coverage rate of cancer screening (breast, cervix, colorectal) in a representative sample of the Belgian population.

Comparison with reimbursement statistics from the National Office for Social Security has shown that the survey results overestimate the screening coverage rate for breast and cervical cancers. Nevertheless, the HIS is a significant source of information because it enables measurement over time and verification of the level of coverage according to a large set of socio-economic parameters, which are not available (or cannot readily be utilised) in reimbursement databases.

Breast cancer screening

In 2008, 73% of women aged 50-69 had a mammogram during the previous two years. Less than a third of these were screening mammograms carried out according to the criteria of the national screening programme, which involved only 22% of women aged 50-69.

A significant percentage (40-45%) of women outside the target group (aged 40-49 and 70-74) had a mammogram during the previous two years.

Social inequalities in cancer screening were observed, with women having high educational levels reporting better screening coverage. However, these differences were not observed for the screening mammograms carried out according to the criteria of the national screening programme. This is therefore an argument in favour of continuation of the programme.

Mammography coverage has increased sharply since 1997 (49%), reaching a peak in 2004 (71%). After this point, there was no significant change (73% in 2008). Mammography screening rose from 20% in 2004 to 22% in 2008. The national screening programme appears to have reached a certain limit, and contributed to an increase in "off-programme" mammograms.

The distribution of the length of time since the last mammogram suggests a pattern of over-screening. A substantial increase was seen in the prevalence of mammograms performed during the previous year (45%) versus those performed the year before (27%).

Women were mainly encouraged by their gynaecologist to have a mammogram (although the invitation letter of the national programme seems to have some influence), but general practitioners played an important role among women with a low educational level.
Cervical cancer screening

Over 70% of women aged 25-64 had a cervical smear test during the previous three years. A sizeable percentage of women outside the target group also benefited from a cervical smear, which suggests that the screening recommendations are not always followed.

Social inequalities were observed here as well, with better coverage among highly educated women.

At the national level the coverage rate has remained stable at about 70% since 1997. The rate was however lower in Flanders (68%) than in Wallonia (76%), where an upward trend has been seen over the last few years.

As with mammograms, gynaecologists were the main instigators in this area, with general practitioners playing a more marginal role.

Colorectal cancer screening

In 2008, 9% of the Belgian population between 50 and 74 years of age reported having had a faecal occult blood test (FOBT) during the previous two years. However, it is too early to assess the effects of the new screening programme implemented recently in the southern part of the country.

FOBT coverage is the same for men and women. At this time, there are no social inequalities such as those observed for mammograms or cervical smear tests.

A significant number of people had already had a test, but this test was done more than two years ago. This suggests that the population is already aware of the need for colorectal cancer screening. Therefore a real potential exists; it would for example be possible to double the coverage rate if the recommended interval between tests (two years) was respected.
5. Medical care consumption
5.1 Contacts with general practitioners (GPs)

Health information regarding contacts with health care providers in general and contacts with GPs in particular is an essential part of a health information system and may help to improve the efficient organization of the health system.

In the HIS, information was collected on contacts with the GPs in terms of frequency, reason and type of contact, and respondents were also asked whether they have a regular GP.

The GP is the caregiver consulted most often by the vast majority of the population and 78% of Belgians had at least one contact with a GP during the previous year. The average number of contacts with a GP per person per year in the population was 4.5. Almost 95% of the population had a regular GP.

The average number of contacts with a GP per person per year in the population declined slightly between 1997 and 2008. These figures were confirmed by health insurance statistics. In addition, a slight but nevertheless significant drop was observed in the number of people who contacted their GP at least once a year. After an increase in the number of people with a regular GP between 1997 and 2004, a new drop was observed in 2008.

The survey results confirm the significant drop in the proportion of home visits between 1997 and 2008; this drop also appears in health insurance statistics. This phenomenon was more pronounced in Wallonia: in 1997 the percentage of home visits was still much higher in Wallonia than in Flanders, but in 2008 there was hardly any difference between the two regions.

Women consulted their GP more often than men. The number of contacts with GPs increased exponentially with age. On average, respondents aged 75 or older consulted their GP four times more often than those below 45; on average they were also seen once a month by their GP. Good medical monitoring of the elderly by GPs undeniably contributes to longer autonomy for this group, preferably at home. This is an important consideration, given the ageing of the population, for planning future needs for general medical care.

The 2008 HIS queried the reasons for the contacts reported during the two months before the survey. While 30% of contacts were for a new complaint or a new health problem, 65% of them were for follow-up or a chronic problem, and 5% of contacts with GPs did not involve a specific complaint or a specific health problem. In the latter case, the reason for the contact was generally to request a preventive examination or a vaccination, although in Flanders a significant reason for these contacts was to request a prescription of contraceptive pills.

Those with a low educational level reported more contacts with their GP than those with a higher educational level. Periodic checks or follow-ups were also more frequent in the lower educational level group, partly due to their poorer health status. Social differences were also observed in the nature of new complaints behind the contacts made with GPs. Complaints linked to the digestive system were most often a reason to consult the GP for those with a low
educational level, while respiratory difficulties were more frequent for those with a high educational level. Finally, the number of home visits was much higher for people with a low educational level. The results show that educational level, as a proxy for socio-economic status, influences the doctor-patient relationship and underlines the significant social role of the GP. It is important that the public authorities recognise and value this role.

In Brussels the percentage of people with a regular GP was much lower. Fewer people reported a contact with a GP during the previous year, and the average number of contacts with a GP was lower than in the other two regions. This pattern of lower contact with a GP appears to be more significant among the younger male population. For those aged up to 45, the percentage of men without a regular GP was 25% to 30%. This phenomenon is partly due to urbanisation, but still the figures in Brussels for the contacts with GPs were than those for other cities in Flanders and Wallonia.

Overall, the differences between Flanders and Wallonia for the examined indicators were not very substantial, but this is not true of the evolution over time. In Flanders the number of people with a regular GP continued to increase, while in Wallonia the trend was reversed in 2008. In Flanders the percentage of people with at least one contact per year with a GP remained constant, despite a lower number of contacts, while in Wallonia the drop in the number of contacts was accompanied by a drop in the number of people contacting their GP at least once a year. This seems to indicate that general medicine is progressing less favourably in Wallonia than in Flanders.

Table 10. Contacts with GPs in the population by year, Health Interview Survey, Belgium, 1997-2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of the population with:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A regular GP</td>
<td>93%</td>
<td>94%</td>
<td>95%</td>
<td>94%</td>
</tr>
<tr>
<td>At least one contact with the GP in the past year</td>
<td>79%</td>
<td>80%</td>
<td>79%</td>
<td>78%</td>
</tr>
<tr>
<td>Percentage of contacts with the GP that are:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home visits</td>
<td>36%</td>
<td>37%</td>
<td>31%</td>
<td>31%</td>
</tr>
<tr>
<td>For a new disease episode</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>30%</td>
</tr>
</tbody>
</table>
5.2 Ambulatory contacts with medical specialists

Ambulatory contacts with medical specialists are an important part of medical care. About one third of ambulatory patient contacts with medical doctors are contacts with specialists. In the HIS information is obtained on ambulatory contacts with specialists in terms of frequency, reason for contact, choice of specialist, and the way the contact was established.

Outpatient contacts with specialists accounted for a significant share of health care consumption. Among the Belgian population, 48% reported at least one contact with a specialist during the last 12 months. This means that in Belgium people consulted a specialist more than twice a year on average. In addition, 6% of the population reported a need to consult a specialist during the last 12 months but did not do so (in 36% of cases for financial reasons).

The HIS provides information about the conditions and the reasons for contacting a specialist: 28% of the contacts were due to a new complaint or a new health problem, 66% were linked to the follow-up of a chronic pathology, and 5% were not based on a specific health problem or complaint.

These percentages varied substantially according to the type of specialist: new contacts were more frequent with a paediatrician (49%), dermatologist (42%) and ophthalmologist (37%), while follow-up visits occurred more often with a neurologist/psychiatrist (88%), internal medicine specialist (75%) or surgeon (65%). Furthermore, 20% of the visits to a gynaecologist were not linked to a health problem or complaint; gynaecologists were often visited for other reasons (in 58% of cases for a preventive examination). For paediatricians, 10% of the visits were not motivated by a health problem or complaint, but rather for a vaccination or preventive examination.

In 49% of the contacts, patients themselves took the initiative to contact the specialist. The patient was referred by a GP in 35% of the cases or another specialist in 10% of the cases, and another person took the initiative in 6% of the cases.

Here too significant differences were observed according to the type of specialist. Paediatricians, dermatologists, ophthalmologists and gynaecologists work primarily as first-line physicians. At least two-thirds of their visits involved a new health problem and occurred at the patient's initiative. Surgeons, internal specialists and neurologists/psychiatrists were more likely to see referred patients (primarily referred by a GP, but also by another specialist). It is striking to note that almost 25% of patients who visited a neurologist or psychiatrist with a new complaint were referred by another specialist.
In addition, significant trends were observed between 2001 and 2008 concerning the percentage of contacts made at the initiative of:

- patients themselves: dropped from 61% to 49%
- a GP: remained stable at around 35%
- a specialist: increased from 1% to 10%.

Women used the services of a specialist more often than men. Women mostly consulted internal medicine specialists (27% of contacts) and gynaecologists (23%). A large proportion of men also visited internal medicine specialists (37%). Visits to a surgeon ranked second with 24%. For children, visits were most often to paediatricians (42% of contacts), but also to dermatologists (12%) and ophthalmologists (11%).

Forty per cent of women aged less than 25 years reported seeing a specialist over the previous 12 months, compared with 60% of those aged over 25. No further age-based variation was observed. Men aged between 15 and 24 consulted a specialist the least (25%). This percentage increased with age to reach 60% for those aged 75 or older.

People with a high educational level reported seeing a specialist more often. They visited more often on the initiative of another specialist and less often on referral by a GP, and their visits were less often linked to a specific health problem or complaint. Women with a high educational level consulted a gynaecologist more often than those with lower educational level. These results, however, do not allow conclusions to be drawn regarding inappropriate use of specialist services by people with a high educational level or under-utilisation by those with a low educational level but they do indicate a need to conduct further research on social inequalities in contacts with the specialists.

The percentage of respondents visiting a specialist over the previous 12 months was higher in Brussels (55%) than in Wallonia (51%) or Flanders (45%). The average number of contacts per year with a specialist was significantly higher in Brussels (3.0) than in Wallonia (2.2) or Flanders (1.9). These differences cannot be explained simply by urbanisation, because residents of the Brussels region also visited specialists more often than those in the cities of Flanders or Wallonia.

The percentage of respondents who stated that they needed the services of a specialist over the previous 12 months but did not contact one was 11% in Brussels, compared with 5% in Flanders and 6% in Wallonia. This was mainly due to financial reasons in the three regions, but in Flanders and Wallonia other reasons were also given, such as lack of time.

It is important to highlight that a different profile regarding the use of ambulatory services has emerged for the Brussels region compared with Flanders and Wallonia. In Brussels, contacts with specialists are more frequent and contacts with GPs are less frequent, but people use emergency services more often. It would be useful to study the factors contributing to this situation in greater detail.
Table 11. Description of contacts with specialists in the population by year, Health Interview Survey, Belgium, 1997-2008

<table>
<thead>
<tr>
<th>Year</th>
<th>1997</th>
<th>2001</th>
<th>2004</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of the population that contacted a specialist at least once in the past year</td>
<td>48%</td>
<td>50%</td>
<td>50%</td>
<td>48%</td>
</tr>
<tr>
<td>Proportion of contacts with a specialist for a new disease episode</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>30%</td>
</tr>
</tbody>
</table>

**Percentage of new contacts with a specialist:**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>On the initiative of the patient</td>
<td>53%</td>
<td>62%</td>
<td>54%</td>
<td>49%</td>
</tr>
<tr>
<td>On the initiative of the GP</td>
<td>36%</td>
<td>34%</td>
<td>36%</td>
<td>35%</td>
</tr>
<tr>
<td>On the initiative of another specialist</td>
<td>4%</td>
<td>1%</td>
<td>4%</td>
<td>10%</td>
</tr>
</tbody>
</table>

5.3 Contacts with dentists

Dental care has its own specific place within health care. These are technical services that cannot be replaced by drugs or self-care which means that dentists have an essential role in modern health care.

The benefits of an annual dental check-up have been demonstrated. The HIS enables an estimation of the evolution between 1997 and 2008 of the percentage of people visiting the dentist or orthodontist at least once a year. Over this period, some significant initiatives were taken to improve oral care in Belgium, such as the publication of a strategic plan for dental care in Belgium in 2003 and various measures to improve financial access to this type of care.

The results of the survey indicate that the percentage of people who visited a dentist during the year before the interview remained stable between 1997 and 2004 (around 49%), but in 2008 this percentage rose to 58%, and even 60% in Flanders. This increase is very significant. However, the decline in the average number of visits to the dentist observed between 2001 (1.7 visits per inhabitant per year) and 2004 (1.4 visits per inhabitant per year) appeared to slow down in 2008 (1.3 visits per inhabitant per year).

Although it cannot be shown directly using the data, the fact that more people visited a dentist but that the number of visits per person declined suggests that people are visiting more for preventive treatment. It is also encouraging to see that the number of young people between the ages of 6 and 18 who visited a dentist during the year preceding the study increased from 63% to 76% between 2004 and 2008.

Women visited their dentist more often than men. Furthermore, only 29% of those aged 75 or over reported that they visited the dentist in the year preceding the survey.
The survey also showed an evident link between regular visits to the dentist and good oral hygiene, more specifically regular teeth brushing. It appears that 57% of those who visited a dentist during the previous year brushed their teeth at least twice a day, while only 41% of those who did not visit a dentist did so.

Among young people in Brussels between 6 and 18 years of age, 14% had never been to the dentist. Although this was an improvement compared with the 17% of the previous survey years, it is still far too high, especially considering that the percentage is only 5% in Flanders and Wallonia.

Socio-economic differences in the use of dental care services were substantial. People with a highest educational level visited a dentist almost twice as often as those with the lowest educational level. The barriers for visiting a dentist did not seem to be financial in nature, but rather cognitive. In fact, measures such as the establishment of free dental care for young people and the reduction in patient contributions have reduced the potential financial obstacles. A reduction in social inequalities in the use of dental services is thus a significant challenge for the coming years.

Table 12. Description of contacts with dentists in the population by year, Health Interview Survey, Belgium, 1997-2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>That visited a dentist in the past year</td>
<td>49%</td>
<td>48%</td>
<td>50%</td>
<td>58%</td>
</tr>
<tr>
<td>That visited a dentist in the past 6 months</td>
<td>30%</td>
<td>32%</td>
<td>31%</td>
<td>33%</td>
</tr>
<tr>
<td>That never visited a dentist</td>
<td>6%</td>
<td>8%</td>
<td>7%</td>
<td>7%</td>
</tr>
</tbody>
</table>
5.4 Contacts with other health care providers and services

Contacts with providers of non-conventional therapies

Non-conventional health therapies play an important role in the Belgian health care sector. In Belgium, only holders of a certificate for medical practice, midwifery or dentistry are authorised to diagnose and to prescribe a treatment. These providers are allowed to use the kind of care they judge appropriate, including non-conventional therapies such as homeopathy, manual therapy, acupuncture and chiropractic treatment. This means that only holders of medical practitioner, midwife or dentist certificates may diagnose or treat using these non-conventional therapies. Any practitioner who provides such therapies without holding one of these certificates would be practising illegally. However, due to the popularity of such therapies it is becoming essential to regulate this practice.

In 2008, 12% of the population used the services of a non-conventional therapist in the 12 months preceding the interview. These visits were made, by order of importance, to osteopaths (6.4%), homeopaths (4.0%), chiropractors (1.8%), acupuncturists (1.6%), manual therapists (1.2%) and phytotherapists/herbalists (1.1%). Women were more likely to consult an alternative therapist (15%) than men (10%). This difference between men and women was observed for each type of non-conventional therapy, except chiropractic. These therapies were used more often by people aged 25 to 54 (15% to 18%) and more often by those with a high educational level (18%) than those with a low educational level (6-7%).

In Wallonia, a significant increase use of this type of therapy was observed from 2001 (10%) to 2004 (12%) and 2008 (14%).

Table 13. Proportion of the population that visited non-conventional therapists in the 12 months preceding the interview by gender, Health Interview Survey, Belgium, 2008

<table>
<thead>
<tr>
<th>Service</th>
<th>Total (%)</th>
<th>Women (%)</th>
<th>Men (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative or non-conventional therapists</td>
<td>12</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Osteopaths</td>
<td>6</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Homeopaths</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Chiropractors</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Acupuncturists</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Manual therapists</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Phytotherapists/herbalists</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Contacts with paramedical services

Aside from medical care providers, there are other significant health care workers who make a major contribution to the health care system. These are the providers of paramedical services, who supply technical services related to diagnosis and treatment. The choice of paramedical services discussed in this report is based on the importance of the services provided by these health care workers for public health.

In 2008, 40% of the Belgian population used the services of a medical analysis laboratory or a medical imaging or radiology centre, 15% consulted a physiotherapist, 6% used the services of a nurse, midwife or obstetrician (excluding care provided in hospital, home care, a medical analysis laboratory or a medical imaging or radiology centre), and nearly 4% consulted a psychologist or psychotherapist in the 12 months preceding the interview. Providers such as dieticians, speech therapists and occupational therapists were in low demand (3%, 2% and 1%, respectively).

Women were more likely than men to use these paramedical services. Elderly people used the first three services cited in table 14 more often. Speech therapists were mainly consulted by children under 15 and psychologists or psychotherapists by those aged 35 to 54.

A linear increase in consultations with dieticians can be seen over time from 1997 (2%) to 2008 (3%). The same was true for consultations with psychologists or psychotherapists, which increased from 2% in 2001 to 4% in 2008.

Table 14. Proportion of the population that used paramedical services in the 12 months preceding the interview by gender, Health Interview Survey, Belgium, 2008

<table>
<thead>
<tr>
<th>Service</th>
<th>Total (%)</th>
<th>Women (%)</th>
<th>Men (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical analysis laboratory, or medical imaging or radiology centre</td>
<td>40</td>
<td>45</td>
<td>35</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>15</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Services of a nurse, midwife or obstetrician</td>
<td>6</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Psychologist or psychotherapist</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Dietician</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Speech therapist</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Occupational therapist</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
5.5 Contacts with the emergency departments

An emergency department is a hospital department that provides initial treatment for patients with a broad spectrum of diseases and injuries, which sometimes can sometimes be life-threatening and therefore need immediate care. Hospital emergency departments are an essential component of our health care system. The availability of urgent immediate medical assistance is a basic right for everyone.

In total 13.5% of the population reported visiting an emergency department during the year preceding the interview. The average number of contacts with an emergency department was 21 per 100 people per year (for visits that did not result in hospitalisation of the patient). In 80% of all cases, people contacting the emergency department were not referred by a doctor.

The main reasons for visiting an emergency department (in a hospital) rather than visiting a GP or a specialist were that the problem was serious or urgent, or that the emergency department was accessible 24 hours a day. Financial reasons were not found to play an important role.

Marked gender differences were observed. Men were more likely to have had contact with an emergency department (14%) than women (12%). The average number of contacts was higher for men (25 contacts per 100 people per year) than for women (17 contacts). Men were more likely (2.4%) than women (1.0%) to go straight to the emergency department without first seeing a GP.

There were no marked differences with regard to age. However, age played a considerable role with regard to the person who decided for the visit to the emergency department. For children and adults younger than 45, the emergency department was contacted in most cases without intervention or referral by a doctor, but for those aged 65 or older, in over half of all cases a doctor had advised the patient to go to the emergency department. In addition, in this same age group over 75% of contacts with an emergency department occurred during the day on weekdays.

More people with a low educational level (15%) contacted an emergency department during the 12 months preceding the interview than people with a high educational level (12%). The average number of contacts was also greater (31 per 100 people per year) in the former group than the latter (17 contacts), but the percentage of contacts with an emergency department without prior referral by a doctor was lower among people with a low educational level (49%), than among those with a high educational level (85%).

Urban residents visited emergency departments more often (16%) than residents of rural areas (11%) or suburban areas (12%). In addition, the average number of contacts was higher in urban areas (25 contacts per 100 people per year) than in rural areas (17 contacts).
In the Brussels (18%) and Walloon (15%) regions, people visited emergency departments more often than in the Flemish region (12%). The number of visits was also higher in those two regions than in the Flemish region (40, 25 and 15 contacts (respectively) per 100 persons by year). In the Brussels and Walloon regions, people were more likely to visit the emergency department without first visiting a GP in the past year (3.8% and 1.9% respectively, compared with 1.1% in the Flemish region). For Brussels, this finding may be related to the geographical proximity of emergency departments to the population, for whom emergency services appear to be an alternative to GPs.

The percentage of people who visited an emergency department during the 12 months preceding the interview increased linearly from 2001 (12%) to 2008 (13.5%). In Brussels, a linear increase was also seen in the average number of contacts with an emergency department (26 contacts per 100 people per year in 2001, 30 in 2004 and 40 in 2008). This is a substantial increase, amounting to a nearly twofold increase in eight years. This trend was not observed in the country's other two regions.

**Figure 7.** Proportion of the population who visited an emergency department in the 12 months preceding the interview, by year and region, Health Interview Survey, Belgium, 2001-2008
5.6 Hospitalisation

Hospitals are an essential part of the health care system. Hospitalisation data regarding the reason and the length of admission are an important indicator of the number and the type of serious health problems in the society. The improvements that have been made in the health care sector have reduced the need for hospitalisation and caused a change in the nature of the services provided by hospitals. In this regard, we noted an increase in the day-care hospitalisations that are short-term hospital admissions, where patients are given a room and a bed but can return home on the same day.

In Belgium, 11% of the population reported being admitted to hospital for classic hospitalisation (including at least one night) during the year preceding the survey, while 7% were admitted for day-care hospitalisation. The average number of admissions per 100 people per year was 15 for classic admissions and 11 for day-care admissions. This yields an admission ratio of 1.4 for classic versus day-care. The average hospital stay was 7 nights. Of the classic admissions, 7% were to a psychiatric department or a psychiatric hospital.

Proportionally, more women than men were admitted for classic hospitalisation (12% and 10% respectively). The percentage of people reporting classic hospital admissions increased with age. Gender was not a determining factor for day-care admissions. The average number of admissions (of both types) per 100 people per year increased with age.

The frequency of classic admissions in the year preceding the interview decreased with increasing educational level; the lowest educated reported more frequent admissions (17%) than the highest educated (10%). The average number of classic admissions also decreased with increasing educational level, but the number of day-care admissions increased, with the net result that the proportion of day-care admissions increased with increasing educational level.

The proportion of persons that reported inpatient hospitalisation in the past year was comparable in the three regions. However, the proportion of persons that reported day-care hospitalisation in the past year was significantly lower in the Walloon region (6%) than in the Flemish region (8%). The ratio of classic admissions to day care admissions was lower in the Flemish region (1.5) than in the other two regions (1.7).

The percentage of people reporting hospital admissions (of both types) during the preceding year did not change significantly between 2004 and 2008. However, the average number of classic admissions per year increased significantly, from 12 per 100 people in 2004 to 15 per 100 people in 2008 after adjustment for age and gender. In addition, the average number of day-care patient hospitalisations per 100 people per year rose from 8 in 2004 to 11 in 2008. The average classic hospital stay diminished over time (from 9 nights in 2004 to 7 nights in 2008), although this drop is not significant. It tends to indicate a rise in the number of short-term hospital admissions.
Figure 8. Proportion of the population reporting inpatient and day patient hospitalisation in the 12 months preceding the interview, by year and region, Health Interview Survey, Belgium, 2008
Highlights of the Belgian Health Interview Survey 2008

5.7 Use of medicines

Medicines improve patients' health, well-being, and the quality of life of the population. However, there are also negative aspects to the use of medicines, such as the occurrence of side effects or costs entailed for society.

The HIS is not the most comprehensive source of information about the use of medicines in Belgium. Still, it is a useful instrument for studying the use of medicines according to a series of specific population characteristics and thereby obtaining a clearer vision of the determinants for the use of these products by the population.

In the Belgian HIS, information on the use of medicines is obtained in two ways:

- Self reporting by the respondent on the use of medicines in the past 2 weeks (by type of medicine)
- The interviewer records the brand names and national codes of all medicines used by the respondent in the past 24 hours

A first significant observation resulting from this survey is that Belgians are major users of prescription drugs. Over half (51%) of the population reported taking a prescription drug over the previous two weeks, while 22% used an over-the-counter (OTC) drug that does not require a doctor's prescription including homeopathic products, herbal medicines, pharmaceutical preparations, vitamins, minerals, and so on.

The next stage of the analysis was limited to official medicines that are used in an ambulatory setting and listed in the Annotated Drugs Registry published by the Belgian Centre for Pharmacotherapeutic Information (BCPI). It appeared that in Belgium, on average 1.3 different types of drug were used per day per inhabitant; this average rose to 4 types of drug per person among those aged 75 or older.

The use of prescribed medicines continues to grow. In 1997, 41% of the population stated that they had taken a prescribed medicine during the previous 2 weeks; in 2001 and 2004 this figure was 47%, and in 2008 it rose to 51%.

The number of users of non-prescription medicines decreased sharply over the past few years. In 1997, 33% of the population said they had used a non-prescription medicine during the previous two weeks; in 2001 this figure dropped to 27%, in 2004 it fell to 24%, and in 2008 to 22%. This phenomenon may be linked to the increased cost of these products. There are very few price controls for non-prescription medicines, which are not reimbursed by social security. Considering that non-prescription medicines are usually used for relatively minor health problems, people tend to do without them if their prices increase substantially, in order to avoid a sharp increase in their cost of living.

The increase in the number of users of prescription medicines on one hand, and the decrease in the use of non-prescription medicines on the other hand suggest that the use of medicines is increasingly determined by prescribing doctors. This
is a positive development in itself and it also means that initiatives to promote rational prescription behaviour among the medical profession will certainly have to be reinforced in the future.

Women used more medicines than men. The use of prescription drugs increased substantially with age. The use of non-prescription medicines was higher among those aged 25-54, but differences relative to other age groups were not very substantial.

Data from the survey provide an overview of the relative magnitude of use of the main groups of medicines within the general population. For men, 43% of the medicines used were for the cardiovascular system, 14% for the nervous system, 11% for the respiratory system, and 10% to treat pain and inflammation. The distribution of these various groups of medicines remained relatively stable between 2004 and 2008, although there was an increase in the use of products acting on the cardiovascular system.

For women, 32% of the medicines used were for the cardiovascular system, 18% for the nervous system, 15% for the hormonal system and 11% to combat pain and inflammation. The proportion of products for the cardiovascular system did not increase between 2004 and 2008.

The most striking increase (based on the list of products studied in the survey) was the number of users of hypolipemic (cholesterol reducing) medicines. Between 2004 and 2008, the number of people using products to reduce cholesterol increased by almost 40% (from 6.5% to 9.0%). In the 55 or older age group, 30% used this type of product. The number of users of new (more expensive) drugs for hypertension also increased sharply.

However, a decrease was observed in the number of users of some groups of medicines. This was particularly the case for anti-inflammatory medicines (NSAID), for which a sharp drop was observed between 2004 and 2008.

Generally, people with a low educational level used as many prescribed medicines as those with a high educational level. However, the use of certain medicines, in particular those used to combat diabetes, asthma and chronic bronchitis, was higher among people with a low educational level. This is no doubt due to the fact that these diseases occurred more frequently in this group of the population.

People with a low educational level used a lot of painkillers, anxiolytics (tranquilisers) and hypnotics (sleeping pills). This phenomenon cannot be explained solely by differences in health status. Attention must be given to the rational use of drugs, particularly in this less privileged socio-economic group, both by public health managers and prescribing doctors.

Non-prescription medicines were used more frequently by people with a high educational level. Evidently, this group is more likely to take the initiative to use medicines without first seeking their doctor's advice. Another explanation is linked to the relatively high cost of non-prescription medicines, which are not reimbursed by the social security.

The percentage of people using prescribed medicines was significantly lower in Flanders (49%) than in Brussels (52%) or Wallonia (54%). The use of non-
prescription medicines was similar in Flanders (21%) and Wallonia (22%) but was higher in Brussels (26%), even when comparison was limited to cities in both regions.

Polypharmacy (defined here as the use of at least five types of medicine on the same day) was very frequently observed, especially in the elderly: 27% of those aged 65-74 and nearly 40% of those aged 75 or older reported using five medicines or more during the previous 24 hours. The literature describes a wide number of potentially damaging effects of polypharmacy. Public health managers must therefore continue to monitor this problem closely.

The survey results showed that the use of medicines by elderly living in an institution was up to 25% higher than that of elderly living at home. Polypharmacy is 50% higher in institutions. This phenomenon is most likely linked in part to the poorer health status of those living in an institution; but even so the figures are striking or even alarming. It would be useful to examine this issue in greater depth and to try to identify the factors that play a determining role.

Figure 9. Evolution of the proportion of the population that used a medicine in the 2 weeks preceding the survey, Health Interview Survey, Belgium, 1997-2008
5.8 Patient satisfaction

The outcomes of health care depend largely on factors specific to patients, their behaviour and their trust. Patient satisfaction is a crucial aspect of care quality. The expectations, wishes and priorities of patients differ from those of care providers. It is therefore important to take this into account for the effective organisation of health care.

The HIS provides an overview of patient satisfaction in the general population and compares the services provided by five types of health care providers: hospitals, dentists, medical specialists, general practitioners, and homecare services.

The results of the survey show that the vast majority of the Belgian population was satisfied with the services provided by the various care providers in Belgium. With regard to services provided by GPs, 95% of the population was (fairly to very) satisfied. The satisfaction rates for dentists, specialists, homecare services and hospital services were 94%, 92%, 92% and 87%, respectively.

GP services had the best score: 70% of the population was very satisfied with them. In comparison, around 60% of the population was very satisfied with the services of dentists, specialists and homecare providers. Only 43% of the population was very satisfied with the services provided by hospitals. This result is not surprising, because hospital services are more complex and involve numerous aspects such as reception, care, medical follow-up, technical examinations, etc. The number of areas in people can express their dissatisfaction increases with the number of care services that are provided.

There was little or no difference in patient satisfaction between men and women, and age-related differences were quite restricted. In general, however, the elderly were more often satisfied with the care given than young people.

It is reassuring to observe that according to the results of the survey, there were few if any socio-economic differences in patient satisfaction with caregivers. The only difference observed concerned hospital services in Brussels and Wallonia where people with the lowest education level and those with the highest (university) level reported they were more satisfied than those with an intermediate education (lower and higher secondary education).

Patient satisfaction is a crucial indicator of the quality of care given. The absence of socio-economic inequalities in care quality is a significant objective of any effective public health system. Belgium is thus very well positioned in this area.

However, it should be noted that satisfaction with care services was almost systematically lower in urban areas than in rural areas. There were also significant regional differences, with higher satisfaction in Flanders than in Brussels and Wallonia. Brussels also had lower satisfaction scores than other cities in Flanders and Wallonia.

The patient's subjective expectations and objective needs, as well as the actual care given to the patients may be the underlying factors here. Although it is
challenging to determine which of these three factors may explain the observed differences, it can safely be assumed that they probably work in conjunction with one another. Whatever the cause, these results reveal a need to examine further how care services in Brussels can be improved to better meet the needs and expectations of patients.

Overall, satisfaction with health care declined with a worse perception of one’s health status. This relationship is clearly established for satisfaction with regard to hospital services and care given by specialists and dentists, but is less clear with regard to GP services and homecare services.

Perhaps the expectations of those who feel in poorer health are higher with regard to relatively technical services. It is also possible that GPs and home caregivers better meet the expectations of ill patients, which are more psychological and social in nature, resulting in higher satisfaction even among those who do not feel in good health.

Finally, the results showed that people who had recent contact with a caregiver were more likely to report that they were satisfied with this caregiver, except in the case of specialists.

**Figure 10.** Proportion of the population satisfied with care provided by health services, Health Interview Survey, Belgium, 2008
6. Health and Society
6.1 Accessibility to health care

The aims of this module are to assess the cost of health services incurred by households and to estimate the proportion of households that have limited access to health care due to financial reasons. For this purpose four indicators were used in the survey: 1) The absolute amount spent by households on health care services (in the broad sense) during the month before the interview; 2) Relative health care expenses (the ratio of monthly health care expenditures to monthly household income); 3) The perception of the household reference person with regard to the difficulty of managing health care expenditures given their income; 4) Postponing health care due to financial reasons.

On average, Belgian households spent €125 per month on health care (absolute expenses), which corresponds to 7% of available income (relative expenses). Average monthly health care expenditures increased with the age of the reference person, both in absolute and relative terms: from €33 for a ‘young’ household (with a young reference person), or 3% of available income, to €175 for an ‘old’ household, or 13% of available income. The relative expenses weighed more heavily on households in the lowest income quintile (10% of available income) than on households in the highest income quintile. In relative terms, the results were stable over time in terms of relative health care expenses.

In total, 35% of Belgian households stated that health care expenditures were (very) difficult to manage given the budget available to the household. This pattern was more common among the elderly. It was also closely linked to the socio-economic status of the households: a low educational level and/or low income was associated with reporting that health care expenditure was (very) difficult to manage in the budget. Also, more than half of one-person households (52%) reported that health care expenditures were (very) difficult to manage. The percentage of households that said that health care expenditures were (very) difficult to manage with the available budget was higher in the Brussels region (45%) than the other two regions.

Of the Belgian households, 14% reported that they had to postpone health care (care providers, dentist, prescription drugs, glasses, mental health care) during the last 12 months for financial reasons. In particular, ‘young’ households were confronted with the need to postpone health care during the last 12 months. This was also more often true for underprivileged households with a low educational level and/or low income. In the Brussels region as well, a higher proportion of people reported that they had to postpone health care due to financial reasons. Finally, it should be noted that postponing health care increased in 2008 compared with 2004.
6.2 Health and environment

Regarding environmental health, the HIS 2008 assessed the nuisance caused in the household by several sources of discomfort: air pollution, unpleasant smells (from either industry or other sources), accumulation of rubbish, dampness, mould or fungus, vibrations from traffic or nearby industries, and noise from various sources (traffic, industries and neighbourhood). People were considered as victims of a nuisance if they stated that they had been effected or irritated (very much or extremely) by this nuisance at home during the 12 months preceding the survey.

Of the population residing in Belgium, 18% stated that they had experienced discomfort during the 12 months preceding the survey from at least one of the sources of environmental nuisance studied. In order of significance, these were: air pollution (6% of the population), road traffic noise (5%), vibrations (4%), and neighbourhood noise (4%).

Women (19%) reported environmental nuisance in the home slightly more frequently than men (17%). This was especially true for sources of nuisance such as air pollution (7% and 5%, respectively), unpleasant industrial smells (3% and 2%), unpleasant smells from other sources (4% and 3%), dampness (3% and 2%), and neighbourhood noise (4% and 3%).

People in the 25-44 age group reported a nuisance in the home most often (22%), followed by the 55-64 age group (21%). Respondents aged 75 or older were least likely to report an environmental nuisance in the home (12%).

Environmental nuisance problems were not linked to educational level, but were linked to the degree of urbanisation. Populations living in urban areas were much
more affected (24%) by nuisance in the home than those living in suburban (13%) or rural (12%) areas.

This trend was also seen at the regional level. In Brussels (essentially an urban area), 39% of individuals complained of environmental nuisances, compared with 26% in the Flemish cities of Ghent and Antwerp and 23% in the Walloon cities of Liège and Charleroi. This difference between Brussels and the other cities was more marked with regard to nuisances linked to the accumulation of rubbish (11% in Brussels versus 5% in the other cities) and air traffic noise (10% in Brussels versus 0-2% in the other cities).

Those who complained of discomfort at home due to environmental nuisance totalled 18% in the Walloon region and 14% in Flanders. The difference between these two regions was especially marked for dampness or unpleasant smells from sources other than industry. Other sources of nuisance (air pollution, unpleasant smells from industry, accumulation of refuse, dampness or fungus, vibrations, noise from road, rail and air traffic, nearby businesses or the neighbourhood) were more common in Brussels than the other two regions, which had similar results.

The sources of nuisance causing the most discomfort in the homes of people in Brussels were air pollution (16%), road traffic noise (15%), vibrations (13%), accumulation of rubbish (11%), air traffic noise (10%), dampness (8%) and neighbourhood noise (8%). In Wallonia, air pollution accounted for 6%, followed by road traffic noise (5%), unpleasant smells coming from sources other than industry (4%), vibrations (4%) and neighbourhood noise (4%). In Flanders, people were bothered by air pollution (4%), road traffic (4%), vibrations (4%) and neighbourhood noise (3%).

Sleep disturbances (during the 12 months preceding the survey) linked to various sources of noise (road traffic, rail traffic, air traffic, noise from businesses and neighbourhood noise) were also investigated. For all sources of noise combined, 5% of the population (with no distinction between men and women) stated that their sleep was very or extremely disrupted by noise while 21% of the population (22% of women and 20% of men) stated that their sleep was slightly or moderately disrupted by noise.

The 25 to 34 age group reported the highest degree of sleep disruption due to noise (slightly or moderately for 26% of this group, and very or extremely for 6%). Those aged 75 or older complained the least (13% slightly or moderately, and 3% very or extremely).

Sleep disruption due to noise did not vary significantly with educational level, but it did vary with the degree of urbanisation. 15% of those living in rural areas stated that their sleep was slightly or moderately disrupted by noise, and 3% that it was very or extremely disrupted. These percentages were 17% and 4% (respectively) for suburban residents, and 27% and 7% for urban residents.

This trend was also seen at the regional level. In Brussels (essentially an urban area), the results were respectively 33% and 15%, which was higher than in Ghent and Antwerp (where 27% of the population had their sleep slightly or moderately disrupted, and 6% very or extremely disrupted by noise) and in Liège and Charleroi (where 9% of the population had their sleep slightly or moderately disrupted and 4% very or extremely disrupted by noise).
The figures were 21% and 4% (respectively) for Flanders as a whole and 16% and 4% (respectively) for Wallonia as a whole.

In the Brussels region, neighbourhood noise was the main cause of sleep disruption (20% slightly or moderately, 6% very or extremely). Next came road traffic noise (18 and 6% respectively) and air traffic noise (14% and 6% respectively). The same ranking was observed in the Walloon region, but with lower figures: 10% and 2% (respectively) for neighbourhood noise; 8% and 2% for road traffic noise, and 3% and less than 1% for air traffic noise. However, in the Flemish Region road traffic noise was mentioned most often (12% and 1%, respectively), followed by neighbourhood noise (9% and 2%) and air traffic noise (5% and less than 1%).

Figure 12. Proportion of the population aged 15 or older that reported sleep disturbances in the previous 12 months due to one of the studied environmental nuisances, by age and gender, Health Interview Survey, Belgium, 2008
6.3 Passive smoking

Passive smoking is the involuntary inhalation by a non-smoker of environmental tobacco smoke (ETS). ETS originates from the side stream (the burning end) of a cigarette, pipe or cigar and the exhaled mainstream smoke (the smoke exhaled by the smoker). Current scientific evidence shows that passive smoking causes death, disease and chronic illness leading to disability. ETS effects include sudden infant death, otitis media, asthma, coughing, wheezing, adverse respiratory function, bronchitis and lung cancer. The Health Interview Survey is useful for assessing the reported presence of tobacco smoke in the environment. Indicators were developed to assess the proportion of households reporting (through the reference person) ETS indoors and potential rules applied for avoiding or restricting exposure. In addition, the frequency of exposure to ETS at home and at work was also estimated at the individual level.

In 2008, 27% of Belgian households included at least one member who smoked inside the home every day. At the individual level, 73% of the population said that they had having (almost) never been exposed to tobacco smoke inside their home.

Trends by age were consistent across the two indicators: households where the reference person was 15-24 or 45-54 years or age were most often those in which someone smoked every day at home (50% and 38%, respectively); in the same age groups, the lowest percentages (68% and 65% respectively) were seen for individuals who stated they had (almost) never been exposed to tobacco smoke in the home. Also, the safest homes in this respect were those of the elderly people (75 years or older).

The distribution of the two indicators by educational level showed that households or people with a university degree were less frequently exposed (around 20%) to ETS in the home than those with a lower educational level (between 26% and 37% for the lower educational categories). In addition, households composed of a couple with children were significantly less frequently exposed to ETS in the home (26%) than single person households (32%).

Over one third (37%) of Belgian households did not apply any rules to avoid or reduce the exposure of family members to tobacco smoke at home. Where rules were present, they most often consisted of asking smokers not to smoke inside the house (87%) or in certain rooms (19%) of the house. Smoking in the presence of young children was forbidden in 9% of the households.

An absence of rules to prevent the exposure to tobacco smoke in the home was most common in households where the reference person was aged 15-24 or 55-74 (51% and 42%, respectively). Imposition of restrictive rules was most likely (30-33%) in homes where the reference person was aged 25 to 44. These households were also most likely to forbid smoking in the presence of young children (10-11%).

A prohibition of smoking in the home was more often imposed in households at the highest income level (92% of households in the 5th quintile of equivalent income) than in those with lower income levels (81% to 87% of those in the 1st to 4th quintile).
The percentage of households where a person smoked in the home almost every day dropped between 2004 and 2008 from 31% to 27%. The percentage of households with no restriction rules regarding ETS fell from 60% to 37%. Finally, the percentage of households banning smoking in the home increased from 77% to 87%. At the same time, homes where smoking in the presence of young children was banned decreased from 31% in 2004 to 9% in 2008.

In 2008, 69% of the population aged 15 or older stated that they were never or nearly never exposed to tobacco smoke in the workplace. The most educated segment of the population was more likely than the least educated not to be exposed to tobacco smoke in the workplace.

Table 15. Description of the pattern of environmental tobacco smoke (ETS) inside the home by year, Health Interview Survey, Belgium, 2004-2008

<table>
<thead>
<tr>
<th>Environmental tobacco smoke (ETS) inside the home</th>
<th>2004</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of households:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With a member smoking inside (nearly) every day</td>
<td>31%</td>
<td>27%</td>
</tr>
<tr>
<td>With no restriction on daily ETS at home</td>
<td>60%</td>
<td>37%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Passive smoking in the population aged 15 or older</th>
<th>Never or almost never</th>
<th>Less than 5 hours per day</th>
<th>More than 5 hours per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>At home</td>
<td>73%</td>
<td>18%</td>
<td>8%</td>
</tr>
<tr>
<td>At work (for 17% of the respondents the question was not relevant because they did not work or did not work inside)</td>
<td>69%</td>
<td>11%</td>
<td>3%</td>
</tr>
</tbody>
</table>
6.4 Trauma: accidents and violence

Accidents and violence are significant causes of morbidity and mortality throughout the world. They can cause physical and psychological injuries and trauma, which in some cases can have serious consequences. Sometimes these traumas are so dramatic that the victims need to be hospitalised or receive medical treatment. They can also lead to physical complications (e.g. infections or bleeding), surgical operations (e.g. deep wounds or fractures), long-term disability or handicap, or even death of the victim. At the psychological level, traumas caused by accidents or violence can lead to posttraumatic disorders, anxiety or depression, eating and sleeping disorders, excessive alcohol use, drug addiction, suicide attempts, and so on. Prevention of accidents and violence therefore remains a major concern for public health.

Accidents

In Belgium, almost 7% of the population reported having been the victim of an accident resulting in a medical consultation during the 12 months preceding the interview. Accidental traumas occurred more frequently among men (8%) than among women (6%). The occurrence of accidental trauma was higher in those aged under 45 and those aged 75 or older. Among the elderly (75 or older), women most commonly reported an accident.

Figure 13. Proportion of the population aged 15 or older that reported being the victim of an accident resulting in medical consultation during the 12 months preceding the interview, by age and gender, Health Interview Survey, Belgium, 2008

Of the Belgian population, 3% was injured by an accident at home or during recreational activities. This type of accident was less commonly reported in the 55-64 age group (2%) and more commonly reported in those aged 75 or older (7%). 1% of the population was injured in a road traffic accident. This type of accident was more frequent among those aged 15 to 54, with a peak in the 25-34 age group and in men. The proportion rose again from age 75 onwards (2%). Nearly 1% of the population was accidentally injured at school. The proportion of
those injured by accidents at school is naturally higher in the 0-14 age group (3%) and the 15-24 age group (1%). 3% of the active working population (age 15-64) was injured in an occupational accident; this type of injury was more prevalent among men (4%) than among women (3%). Young people aged 15-24 were particularly prone to occupational accidents (6%). In the oldest age group (55-84), women reported this type of accident most often.

The causes of reported trauma were, in order of significance: a fall (54% of all cases), a blow or a collision with a person or object (28%), a cut (8%) or other causes (10%). Accidental falls occurred most often with children (two-third of all cases) and in those aged 65 or older (over 75% of all cases). The physical consequences of an accident most commonly reported were bone fractures (30%), sprains, twisted or torn ligaments (27%), and wounds (26%). The prevalence of fractures increased gradually with age, from 18% in the 0-14 age group to over 40% with those aged 65 or older.

Almost one in four (24%) individuals aged 65 or older reported a fall (resulting in medical consultation) in the 12 month preceding the interview. The prevalence was twice as high among women (30%) than among men (15%). The prevalence also increased with the age, from 14-16% in the 65-74 age group to 37% among those 85 or older, which is a fall incidence of more than one in three in the latter age group. The fall incidence was significantly higher in the Brussels region (32%) than in the Flemish region (22%).

Violence

In Belgium, 11% of the population aged 15 or older had been exposed to criminal acts, violence or vandalism at home or in their neighbourhood in the year preceding the interview. Men were more often exposed to this than women (12% versus 10%). Young people and young adults (15-34) were also more often exposed (16-18%) than older age groups.

It is estimated that 11% of the population aged 15 or older had been victims of violence. More specifically, 8% said that they had suffered verbal or psychological abuse (insults, threats, harassment, isolation, etc.), 4% reported theft, extortion or burglary, and 3% said they had been victims of physical violence (being pushed, hit, injured or sexually assaulted). Overall, it appears that as many men as women were the victims of violence. Violence was age-related: there was a higher percentage of victims of violence, either verbal or psychological (12-14%) or theft, extortion or burglary (5%) among young people and young adults (age 15-34). Physical violence was more common with young people aged 15-24 (6%).

Violence (psychological and physical, as well as theft) was more commonly reported (sometimes up to twice as often) by urban residents than by suburban or rural residents. It can be concluded thus that violence is a more specifically urban problem. There was also more violence in the Brussels region (19%), due to its urban nature, than in Wallonia (13%) or Flanders (9%). This was also seen for each type of violence analysed separately.

In Belgium, 4% of the population aged 15 or older had been a victim of domestic violence, which was more common among women (5%) than men (3%). The largest proportion of victims of domestic violence (6%) was in the 45-54 age
group. Victims of domestic violence were more numerous in urban areas (6%) and thus also in the Brussels region (5%). Violence at work or at school affected 4% of the population aged 15 or older, affecting men and women in equal measure. Violence at work or at school was more often reported by young adults aged 25-34 (8%). The frequency of this type of violence was higher in the Brussels region (5%) than in the country’s other two regions.

6.5 Social contacts and social support

Social support has been found to impact health in two ways. Firstly, social support can impact health directly because integration in a social network enables satisfaction of the basic needs for security, affection, and social contact. Secondly, social support can impact health indirectly because it can buffer the negative effects of stress on health (buffering effect). Here social support is a resource that enables individuals – according to different modalities (emotional support, material aid, information, guidance, services, etc.) – to deal with the difficulties they encounter in their lives.

Several indicators were used in the HIS 2008 to assess social health: perception of the quality of social contacts, participation in community activities, and quality of social support.

Of the population aged 15 or older, 7% were (fairly or completely) dissatisfied with their social contacts. More often, these were the elderly (9% of those aged 75 or older). Urban residents were less often satisfied with their social contacts, but the difference in relation to rural residents disappeared after adjustment for age and gender. However, there was greater dissatisfaction in the Brussels region than in the other two regions.

Of the population, 33% stated that they had never taken part in organised community activities. This percentage was higher among women (37%) than among men (30%). It was also higher in the elderly population (over 50% of those aged 75 or older). 53% of those with a low educational level stated that they had never taken part in organised community activities, compared with 20% of those with the highest educational level. Participation in community life was significantly higher in the Flanders region than the other two regions. The participation rate in organised community activities is increasing: in 2004, 37% of the population had never taken part in this type of initiative, compared with 33% in 2008.

A lack of social support was mentioned by 16% of the population, but was more pronounced among the elderly (20%). People with a higher educational level reported less often a lack of social support than those with a lower educational level. The proportion of people with access to only a reduced form of social support was significantly lower in the Flanders region (12%) than in the Brussels (23%) or Walloon regions (20%).
6.6 Social and preventive services

Home care services

The HIS 2008 gave special attention to home care services including home care by a nurse or a midwife, home help and geriatric assistance, meals-on-wheels and transport services. These services (except midwife care) play an important role in the aging of the population, since elderly people are less mobile and more often have chronic conditions or handicaps. These services can contribute to lengthening the time the elderly live at home before being institutionalised.

In 2008, 5% of the population needed care from a nurse or midwife at home during the 12 months preceding the survey. Of these, just over one-fifth (21%) stated that they paid for this service using their own resources. Women used the services of a home nurse or midwife more often (6.6%) than men (3.5%). The elderly used this type of service the most: one person in ten for those aged 65 to 74 and one person in five for those over 75.

The use of home help or geriatric assistance during the 12 months preceding the survey increased from 3% in 2001 and 2% in 2004 to 6% in 2008. Half of the users of these services in 2008 paid for them using service vouchers, 36% paid for them using their own resources entirely, and 11% used another payment method. Women (8%, versus 4% of men) and the elderly (13% of those aged 65-74, and 34% of those 75 or older) were the most frequent users of these types of services. The elderly were more likely to pay for these services with their own resources (46-47%) than with service vouchers (38%), in contrast to adults of working age (8-38% and 50-78%, respectively).

Compared with previous survey years, the need for home help or geriatric assistance increased in 2008 (6% compared with 2% in 2004 and 3% in 2001).
This increase was more pronounced in the Flemish region than in the Brussels or Walloon regions.

Table 16. Proportion of the population who requested home help or geriatric assistance in the 12 months preceding the interview by year, Health Interview Survey, Belgium, 2001-2008

<table>
<thead>
<tr>
<th>Region</th>
<th>2001 (%)</th>
<th>2004 (%)</th>
<th>2008 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Flemish region</td>
<td>4</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Brussels region</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Walloon region</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Preventive and social services

The HIS 2008 also assessed the use of a number of social and preventive services in Belgium. Such services are geared towards specific sub-populations, such as people who need support from a public social assistance centre (CPAS/OCMW) or age-related subgroups: children (regional child care agencies), adolescents (school medical services) and adults (occupational medicine).

Almost two out of three (64%) children under 3 years of age visited regional child care centres in the 12 months preceding the interview. The same percentage was seen in 2004.

Three percent of the total population used the services of a public social assistance centre in the 12 months preceding the interview. Use of public social assistance centres increased with decreasing educational level, from 1% for the highest level to 7% for the lowest level. The public social assistance centres were used more often in the Brussels region (5%) than in the Flemish (3%) or Walloon (2%) regions. In contrast to the Flemish and Walloon regions, where people aged 75 or older were the primary users of public social assistance centres, in the Brussels region the main users of this assistance were younger people.

Furthermore, there was a rising trend in the use of the CPAS/OCMW services in the Brussels region (from 2% in 1997 to 5% in 2008). This rising trend was also observed in the Flemish region (from 1% in 1997 to 3% in 2008), but not in the Walloon region, where the prevalence remained constant over the years at around 2%.
6.7 Attitudes towards the end of life

In 2008 the HIS addressed the topic of ‘end of life’ for the first time, by means of the following questions: To what extent do people want to be informed about a life-threatening illness? What do they want doctors to do during the terminal phase of life? Would people choose to prolong their life even if this involved more pain and discomfort?

The large majority of the population aged 15 or older (94%) wanted doctors to inform them of the advent of a life-threatening illness. 93% of the population wanted doctors to inform them of the treatment options in the event of a life-threatening illness (various types of treatment, their side effects, the expected result of each treatment, options regarding palliative care, and the potential for extending or shortening life span). 89% of the population wanted their family and loved ones to receive the appropriate medical information (diagnosis and possible treatments) in the event of a life-threatening illness.

In the event of a life-threatening illness, 75% of the population would consider asking doctors to be allowed to die as naturally as possible, without any artificial intervention (such as resuscitation, respiratory assistance, or artificial feeding), 56% of the population would consider asking doctors to actively accelerate death by administering or prescribing a lethal substance, and 35% would consider asking doctors to administer a drug that causes unconsciousness until death occurs.

In the event of a life-threatening illness, 12% would rather prolong their life, even if this meant more pain and discomfort. Conversely, 88% of the population would opt for pain relief even if this meant not living as long. People thus very clearly prefer quality of life in this phase of life rather than length of life.

Of the population, 4% had talked to doctors about the medical treatment which could be given in the terminal phase of life, and only 2% of the population said they had a written declaration regarding euthanasia.

Percentages for men were practically identical to those for women. The percentages for medical information (diagnosis, treatments, palliative care options and so on) were slightly higher for middle-aged persons, and lower in the higher age groups. The prevalence of considering asking doctors to be allowed to die without artificial intervention in the event of a life-threatening illness or asking doctors to administer a drug bringing about unconsciousness was not age related. However, the prevalence of considering asking doctors to actively accelerate death was strongly age related. Although only a quarter of young people (aged 15-24) would consider this, the percentage increased to 67% for the 55-64 age group, and declined above this age level. In the oldest age group, the figure remained high at 49%. Especially the elderly (12% of those aged 75 or older) had talked about end-of-life medical treatment with their doctor; this percentage was negligible for young people. The same can be said of a written euthanasia declaration; this practice was uncommon except among those aged 65 or older.
There was little evidence of a consistent link between socio-economic status and the various aspects addressed by this module. However, a certain trend was observed as those with a high educational level stated that they wished to obtain information from doctors (diagnosis, treatments, palliative care options and so on) in the event of a life threatening illness more often than those with a lower educational level. By contrast, the preference for prolonging life instead of pain relief in the event of a life threatening illness was more significant among people with a low educational level than with those with a higher educational level.
7. Has population health changed over time in Belgium?
This report provides an overview of the health of the Belgian population using data from the 2008 HIS. Patterns of numerous indicators organized in five thematic chapters have been examined: health status, health behaviours, preventive behaviours, medical care consumption, and health and society. In this section we will summarise the findings in relation to one of the main objectives of the HIS namely the monitoring of time trends in population health over successive waves of the HIS.

Health status

Trends in general health indicators showed no substantial changes over time. A slight improvement in subjective health was observed: 78% of people regarded their health as good in 1997, compared with 80% in 2008. The proportion of people reporting limitations in instrumental daily activities was stable at about 17% during this period.

Some changes were observed concerning health problems and conditions. On the bright side, reporting of a number of chronic diseases dropped significantly between 1997 and 2008: chronic lung diseases, serious headaches such as migraines, chronic fatigue and serious intestinal problems. However, others increased significantly: hypertension, diabetes, osteoarthritis, thyroid problems and cataract. This increase may in part be explained by the aging of the population because these diseases mainly occur in the elderly. However even after adjustment for age a significant increase was still observed between 1997 and 2008. The increases in cancer and osteoporosis may, for their part, be explained entirely by the aging of the population. Another major negative finding is the continuous increase observed between 1997 and 2008 in the prevalence of overweight (from 42% to 47%) and obesity (from 11% to 14%).

Comparison of mental health indicators between 2004 and 2008 showed a slight increase in psychological distress, depressive problems and the use of psychotropic medicines, while most other specific problems (somatic, anxiety, sleep) and suicidal behaviour did not change over time (in comparable populations).

Health behaviours

The time trends of a number of health behaviours were examined. Most of the examined behaviours were stable or improved over time.

The percentage of the population performing physical activity did not change between 1997 and 2008. Also, no substantial change was found in the use of cannabis.

An improvement was observed in nutritional habits with the percentage of people eating fruit daily increasing sharply from 50% in 2001 and 2004 to 64% in 2008. Similarly, the percentage of the population consuming vegetables daily increased over time, from 74% in 2004 to 85% in 2008. Another improvement is the decline in the proportion of smokers in the Belgian population. In 2008 the survey found that 25% of the population were current smokers (versus 30% in 1997), 21% were daily smokers (versus 26% in 1997), 7% were heavy smokers (versus 10% in 1997), and 11% were highly dependent on tobacco (versus 14% in 2004).
Alcohol consumption departed from this trend. Two alcohol-related indicators showed an increase over time: the proportion of daily drinkers (9% in 2001-2004 versus 12% in 2008) and the prevalence of problematic drinking (7% in 2001, 8% in 2004 and 10% in 2008). However, the prevalence of excessive alcohol consumption did not change substantially; it was 8% of the population in 2008, 1 percentage point less than in 2001-2004 (9%).

Preventive behaviours

Trends in preventive medical behaviour such as vaccination or screening for certain diseases and conditions such as hypercholesterolemia and cancer, depend on the specific behaviour.

The results of vaccination varied depending on the type of vaccine. A drop in tetanus vaccination coverage was observed over time (68% in 1997 versus 62% in 2008), but an increase in the hepatitis B vaccination rate was observed over time (24% in 2001, 29% in 2004 and 33% in 2008). The proportion of the population at risk immunised against seasonal flu increased from 34% in 1997 to 46% in 2008. No marked change over time was seen in vaccination coverage against pneumococcal infection in the population at risk (12% in 2004 versus 11% in 2008).

Coverage for hypercholesterolemia screening increased significantly from 1997 to 2008, from 56% to 65%. The percentage of people notified of a high blood cholesterol level also increased during the same period, from 34% in 1997 to 43% in 2008. The percentage of people reporting a blood sugar level check increased significantly between 2004 and 2008 for Belgium as a whole from 50% to 57% for those aged 15 or older and from 62% to 72% for those aged 45 or older.

Mammography coverage has increased sharply since 1997 (49%), with the largest rise noted in 2004 (71%). After this point there was no marked rise (73% in 2008). Mammography screening rose from 20% in 2004 to 22% in 2008. At the national level coverage for screening cervical cancer has not increased since 1997, remaining at around 70%.

The proportion of the population that had undertaken an HIV test increased between 1997 (21%) and 2008 (24%), but the proportion of people tested during the three months prior to the interview dropped from 13% to 5% over the same period.

Medical care consumption

The trends observed in this area differed according to the health care domain.

Contacts with ambulatory care providers were stable or in some instances decreased over time. The average number of contacts with GPs per person per year in the population declined slightly between 1997 and 2008. These figures were confirmed by health insurance statistics. In addition, a slight but nevertheless significant drop was observed in the number of people who contacted their GP at least once a year (from 79% in 1997 to 78% in 2008). A drop was observed in the proportion of home visits between 1997 and 2008 (from 36% in 1997 to 31% in 2008); this drop also appears in health insurance
Highlights of the Belgian Health Interview Survey 2008

Statistics. The proportion of contacts with specialists in the past year remained stable at 48%.

Significantly more people visited a dentist. The percentage of people who visited a dentist during the year before the interview remained stable between 1997 and 2004 at around 49%, but rose to 58% in 2008.

Trends in the use of institutional care rose for emergency departments and short-term hospital stays. The percentage of people who visited an emergency department during the 12 months preceding the interview increased linearly from 2001 (12%) to 2008 (13.5%). The prevalence of hospital admissions during the preceding year did not change significantly between 2004 and 2008. However, the average number of day patient hospitalisations per 100 people per year rose from 8 in 2004 to 11 in 2008, and the average classic hospital stay diminished over time (from 9 nights in 2004 to 7 nights in 2008), although this drop is not significant. This suggests an increase in the number of short-term hospital admissions.

Use of prescribed medicines increased: The proportion of the population stating that they had used a prescribed medicine during the previous two weeks was 41% in 1997, 47% in 2001 and 2004, and 51% in 2008. The number of users of non-prescription medicines decreased sharply during the past few years: in 1997, 33% of the population said they had used a non-prescription medicine during the previous 2 weeks; in 2001 this figure dropped to 27%, in 2004 it dropped to 24% and in 2008 it dropped to 22%. This phenomenon may be linked to the increased cost of these products. The increasing number of users of prescribed medicines and the decreasing number of user of non-prescription medicines suggest that the use of medicines is increasingly determined by prescribing doctors. This is a positive development in itself, and it also means that initiatives to promote rational prescribing behaviour by the medical profession will certainly have to be reinforced in the future.

Health and society

Many of the indicators addressed in this area were introduced or modified in the 2008 survey, which impedes the study of time trends.

Nevertheless, one main trend can be highlighted: a dramatic increase in proportion of people reporting limited access to health care. In fact, the proportion of Belgian households stating that they had to postpone health care (services of care providers, dentists, prescription drugs, glasses, mental health care) during the previous 12 months for financial reasons increased from 8.5% in 1997 to 14% in 2008.

Conclusion

In the context of the HIS, have the health and health determinants of the Belgian population changed over time? The multidimensional nature of health and the multitude of its determinants preclude a simple answer to this question, but three points can be highlighted.

First, an improvement has been observed in smoking and nutritional habits, but health status indicators that may be affected by such behaviours as obesity,
diabetes and hypertension have increased significantly. In part, this may be explained by the lag between changes in health behaviours and their impact. In such a case, it could be expected that future surveys will show better trends for indicators if similar patterns persist. However, it can safely be concluded that the observed improvement is not sufficient to significantly improve health trends, so more effective measures need to be implemented. For instance, no improvement was seen in the practice of physical activity. In addition, no trend information on the consumption of sweet beverages or junk food was collected in this survey, but international trends suggest an increase. Addressing the determinants of overweight and obesity would therefore be of significant importance for public health.

Second, no substantial improvement has been seen in health status between 1997 and 2008. In this context, it is important to note that the HIS has generated many leads to spur improvements in health status. One of the main leads is to address social inequalities in health in Belgium. In fact, an in-depth analysis of health inequalities showed substantial inequalities between social groups in most of the health indicators and the health determinants. Also, these inequalities did not appear to decrease over time.¹ Based on this, it can be concluded that reducing social inequalities in health is an effective approach to improve population health.

Third, a continuous increase was observed in the use of prescribed medicine across HIS waves (41% in 1997 versus 51% in 2008). Such a pattern needs to be better examined as it may have a significant impact on future health budgets.

See HIS 2008 report 5: Socio-economic inequalities in health.
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