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Bulgaria
Profile of Health and Well-being

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Abstract

Country profiles on health and well-being give an overview of a country's health status, describing data on mortality, morbidity and exposure to key risk factors together with trends over time. They are developed in collaboration with WHO European Member States. When possible, each report also compares a country to a reference group, which in this report is the whole WHO European Region and the countries that joined the European Union after 1 May 2004. To make the comparisons as valid as possible, data are as a rule taken from one source to ensure that they have been harmonized in a reasonably consistent way. Unless stated otherwise, data in this report are mainly drawn from the European Health for All database of the WHO Regional Office for Europe. These data are collected from Member States on an annual basis and include metadata that specify the original source of data for specific indicators.

Keywords
BULGARIA, HEALTH POLICY, HEALTH STATUS, HEALTHY PEOPLE PROGRAMMES – STATISTICS AND NUMERICAL DATA, COMPARATIVE STUDY, HEALTH 2020

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Abbreviations

BMI	body mass index
DALY	disability-adjusted life-year
EU	European Union
EU13	countries that joined the EU after 1 May 2004
GDP	gross domestic product
HFA-DB	Health for All database of the WHO Regional Office for Europe
ICD-10	International Classification of Diseases, tenth revision
ILOSTAT	International Labour Organization's central statistics database
PPP	purchasing power parity

Summary of situation and trends in health and well-being in Bulgaria

The health status of Bulgaria's population has varied widely over the past three decades. Despite noticeable improvements over the last 10 years, the country still faces a number of health challenges. While progress has been made in terms of life expectancy and mortality since 2000, the most recent rates (2013 data) for several indicators remain below the average of countries in the WHO European Region and those that joined the European Union after 1 May 2004 (EU13).

In 2013, life expectancy at birth in Bulgaria was 71.4 years for males and 78.7 years for females. Healthy life expectancy, a more salient indicator of health gains, increased by 3.1 years between 2000 and 2015 to approach 63.8 years for men and 69.2 years for women.

In comparison with the EU13 and other countries of the Region, indicators show improvements in areas such as maternal deaths (three-year rolling average) and death rates (all ages) from external causes of injury and poisoning, diseases of the digestive and the respiratory system, suicide and self-inflicted injury, homicide and assault, and motor vehicle accidents.

Progress has been slow, however, in a number of other areas. For example, indicators show slow increases of mortality rates from cancers and a very high rate of mortality from circulatory conditions. Bulgaria's rates of mortality from these conditions are also higher than the averages for the rest of the Region.

Simultaneously, the incidence and prevalence of cancer have increased rapidly in Bulgaria. This is in line with a similar increase in the EU13 and the Region as a whole. By 2013, the increase of prevalence was greater than that of incidence. Trends of cancer incidence – along with those of circulatory diseases – could potentially have slowed Bulgaria's progress in the reduction of mortality rates.

The incidence of tuberculosis in Bulgaria decreased between 2000 and 2014, and rates were below both EU13 and regional averages. The incidences of HIV and AIDS increased over the same period, but in 2014 remained in line with the averages for the EU13 and substantially below the averages for the Region.

Key messages

1. Improving health status requires cooperation across government sectors and efforts from all levels and sectors of society.
2. Monitoring the implementation of Bulgaria's national health strategy is essential for improving country health.
3. Bulgaria should address:
   (a) high levels of alcohol consumption and tobacco smoking;
   (b) the increased prevalence of obesity;
   (c) the growing burden of noncommunicable diseases; and
   (d) the high share of private household out-of-pocket payments for health.

Bulgaria has shown improvements for most of the 19 core indicators in the Health 2020[1] policy targets (see table below). Unfavourable trends exist for a number of indicators: tobacco smoking, pure alcohol consumption, prevalence of overweight and obesity, Gini coefficient

Core indicators for monitoring Health 2020 policy targets in Bulgaria, most recent years available

Target	Health 2020 core indicators	Value			Year
		Male	Female	Total	
1. Reduce premature mortality[a]	Premature mortality rate from cardiovascular disease, cancer, diabetes mellitus and chronic respiratory diseases among people aged 30 to under 70 years (age-standardized estimate)	783.6	338.9	547.4	2013
	Prevalence of tobacco use among adults aged 15 years and over (age-standardized estimate)[b]	44.3	29.8	36.8	2013
	Pure alcohol consumption per capita among adults aged 15 years and over (recorded data)	-	-	12.0	2014
	Prevalence of overweight and obese (body mass index ≥25) adults aged 18 years and over (age-standardized estimate) *(1)*	64.1	54.4	59.1	2014
	Mortality rate from external causes of injury and poisoning, all ages (age-standardized estimate)	52.8	12.3	31.7	2013
2. Increase life expectancy	Life expectancy at birth, in years	71.4	78.7	75.0	2013
3. Reduce inequities[c]	Infant deaths per 1000 live births	8.3	6.3	7.3	2013
	Proportion of children of official primary school age not enrolled (net enrolment rate)	3.5	3.5	3.5	2013
	Unemployment rate (percentage) *(2)*	12.3	10.4	11.4	2014
	National policy addressing reduction of health inequities established and documented	NA	NA	Yes	2014
	Gini coefficient	-	-	35.4	2014
4. Enhance well-being[d]	Overall life satisfaction among adults aged 15 years and over *(3)*	-	-	4.4	2014
	Availability of social support among adults aged 50 years and over	-	-	83.0	2013
	Percentage of population with improved sanitation facilities *(4)*	-	-	86.0	2015
5. Universal coverage and "right to health"	Private household out-of-pocket expenditure as proportion of total health expenditure	-	-	44.2	2014
	Percentage of children vaccinated against measles (1 dose)	-	-	92.0	2015
	Percentage of infants vaccinated against poliomyelitis (3 doses)	-	-	91.0	2015
	Percentage of children vaccinated against rubella (1 dose by second birthday)	-	-	94.0	2013
	Total health expenditure as percentage of gross domestic product	-	-	8.4	2014
6. National targets	Establishment of process for target-setting documented	NA	NA	Yes	2014
	Evidence documenting: (a) national health strategy aligned with Health 2020 (b) implementation plan (c) accountability mechanism	 NA NA NA	 NA NA NA	 Yes Yes Yes	 2014 2014 2014

NA: not applicable.

[a] Health 2020 target 1 includes percentage of children vaccinated against measles (1 dose), poliomyelitis (3 doses) and rubella (1 dose).

[b] Prevalence includes both daily and occasional (less than daily) use among adults aged 15 years and over.

[c] Target 3 includes life expectancy at birth.

[d] Target 4 includes Gini coefficient, the unemployment rate and the proportion of children not enrolled in primary school.

Source: WHO European Health for All database *(5)* unless otherwise specified.

[1] WHO's policy framework supporting action across government and society for health and well-being.

(the international inequality indicator), proportion of children of official primary school age not enrolled, percentage of children vaccinated against measles (slight decrease), and private household out-of-pocket expenditure.

By 2014, Bulgaria had documented a process for target-setting as well as a national health strategy for 2014–2020 (encompassing targets and indicators) aligned with Health 2020. This strategy includes an accountability mechanism defining responsible institutions along with an implementation plan and timeline that accords with the recommendations of Health 2020.

Bulgaria's score of 4.4 out of 10 for life satisfaction (a measure of subjective well-being) is lower than the average for the Region. Among objective well-being measures, 83% of people aged over 50 years in Bulgaria reported that they had relatives or friends on whom they could count when in trouble; this is almost equal to the average for the EU13 (82.8%), yet under the average for the Region (85.3%).

References

1. Global Health Observatory [online database]. Geneva: World Health Organization; 2015 (http://www.who.int/gho/en/, accessed 16 October 2016).
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3. UNDP Human Development Reports. Human Development Index (HDI) [website]. New York: United Nations Development Programme; 2016 (http://hdr.undp.org/en/content/human-development-index-hdi, accessed 16 October 2016).
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Introduction

In 2012, Member States in the WHO European Region adopted Health 2020 *(1,2)*, a policy framework supporting action across government and society for health and well-being. In support of the accelerated implementation of Health 2020, the WHO Regional Office for Europe introduced two new publication series – the country profiles of health and well-being and the highlights on health and well-being. These follow on from the Regional Office's highlights on health series, which ran from the early 1990s to the mid-2000s with the aim of addressing the need for analyses of the health situations and trends in newly emerging states in order to assist European countries with evidence-informed policy-making.

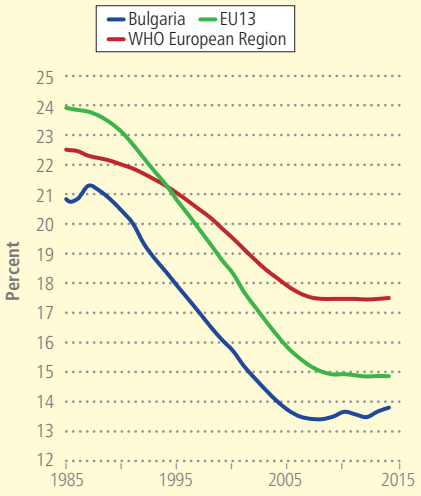
The profiles provide comparative analyses of the situations and trends in health and well-being in countries, describing recent data on mortality, morbidity and exposure to key risk factors with special emphasis on all Health 2020 indicators *(3)*, including well-being. They are developed in collaboration with Member States. The highlights on health and well-being form a separate series, written for policy-makers, that focuses on the main findings from the more extensive profiles.

Data are taken from a single source to ensure that they are harmonized consistently. Unless otherwise noted, data in the reports are drawn from the European Health for All database (HFA-DB)[2] of the Regional Office *(4)*. HFA data are collected from Member States and other international sources on an annual basis and include metadata that specify the original source of data for specific indicators. Other data and information used in the report are referenced accordingly. The International Classification of Diseases, tenth revision (ICD-10) codes for causes of death are given in Annex 1. When possible, each report also compares a country to one or more reference groups of countries, which in this report are all Member States in the Region and the countries belonging to the European Union after 1 May 2004 (EU13).

[2] The HFA-DB *(4)* covers data since 1970. Data on mortality for Bulgaria are available from 1985 to 2013. The reference year is 2000.

Selected demographic and economic information

Fig. 1. **Percentage of population aged 0–14 years,** Bulgaria, WHO European Region and EU13, 1985–2014



According to WHO demographic data, Bulgaria had a total population of approximately 7.15 million in 2015. The country has been a member of the European Union (EU) since 2007.

The WHO European Region as a whole is facing a number of demographic and health challenges, including an ageing population and a declining birth rate. The population profile of Bulgaria matches, to some extent, the profiles for both the Region and the EU13. However, Bulgaria's population trends are of particular concern.

In 2014, children aged 0–14 years made up 13.8% of the total population – a decrease of 1.9 percentage points since 2000 (15.7%). This is compared to 14.9% for the EU13 and 17.5% for the Region (Table 1, Fig. 1). The share of Bulgaria's population aged 65 years and over rose to a high of 19.8% in 2014, almost 4.7 percentage points higher than the average for the Region and 3.5 points higher than that for the EU13 (Table 1, Fig. 2).[3]

Fig. 2. **Percentage of population aged 65+ years,** Bulgaria, WHO European Region and EU13, 1985–2014

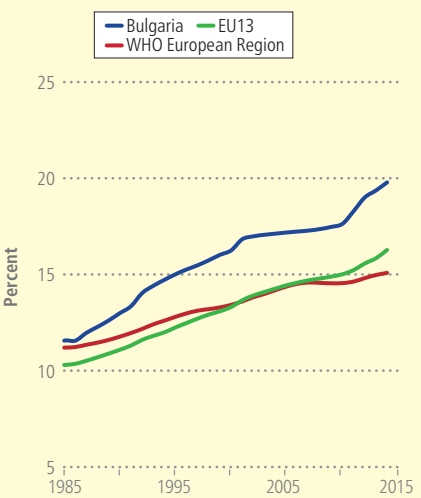


Table 1. **Selected demographic indicators in Bulgaria,** latest available year

	Bulgaria[3]	WHO European Region	EU13
Population (in 1000s)[a]	7150	908 557	104 677
Percentage aged 0–14 years[b]	13.8	17.5	14.9
Percentage aged 15–64 years[b]	66.4	67.4	68.9
Percentage aged 65 years and over[b]	19.8	15.1	16.3
Percentage urban[c]	71.5	70.2	62.9
Crude birth rate (live births per 1000)[d]	9.2	12.3	9.6
Crude death rate per 1000[d]	14.4	9.9	11.1
Natural population growth per 1000[d]	– 5.2	2.4	– 1.5

[a] 2015 data
[b] 2014 data
[c] 2010 data
[d] 2013 data
Source: HFA-DB *(4)*.

[3] Data from Bulgaria's National Statistics Institute may be slightly different *(5)*. Data from the HFA-DB are used here for comparability purposes.

Between 2000 and 2014, Bulgaria's total fertility rate increased by approximately 20% to about 1.5 children per woman (Fig. 3). This is lower than the regional average (and lower than the theoretical replacement minimum of 2.1 children per woman), but is still higher than the average for the EU13. Bulgaria's crude death rate has also steadily increased over the past decades; it is much higher than that of both the Region and the EU13 (Fig. 4). As a result, the country has a very low rate of natural population growth[4] (Table 1) – one of the lowest in the Region in 2013.

Unemployment constitutes a priority area of the Health 2020 targets *(1)*. According to estimates of the International Labour Organization's central statistics database (ILOSTAT), Bulgaria's unemployment rate decreased from 16.2% in 2000 to 11.4% in 2014 *(6)*. This rate is still higher than those of the EU13 (9.63%) and the Region (9.08%). The gender gap for this indicator increased between 2000 and 2014; the unemployment rate for males (16.6% in 2000 and 12.3% in 2014) is still higher than that for females (15.8% in 2000 and 10.4% in 2014).

Bulgaria's gross domestic product (GDP, expressed in dollar purchasing power parity (PPP) per capita) increased 4.2-fold between 2000 and 2015 to approach US$ 6819.90 in 2015. This is 69.2% lower than value for the Region (US$ 22 112.80) and 45.3% lower than the value for the EU13 (US$ 12 463.10).

Fig. 3. **Total fertility rate,** Bulgaria, WHO European Region and EU13, 1985–2014

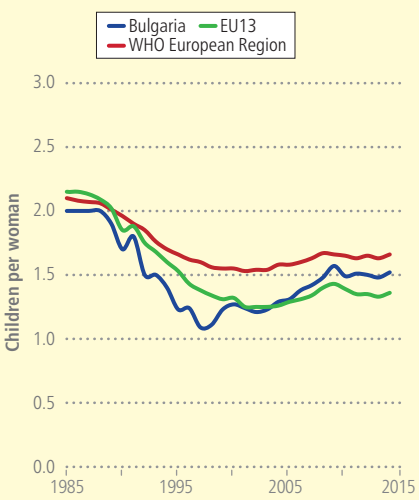
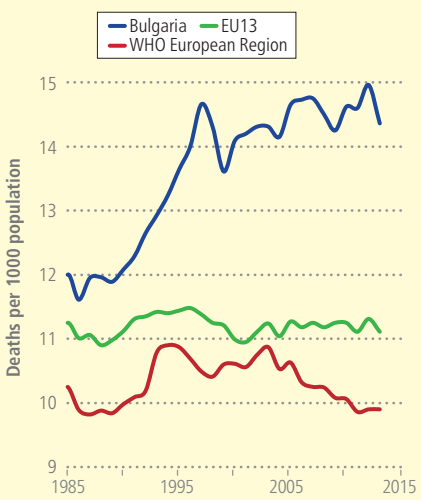


Fig. 4. **Crude death rate,** Bulgaria, WHO European Region and EU13, 1985–2013



[4] Natural population growth is calculated as birth rate minus death rate.

Health status and burden of disease

Life expectancy

Life expectancy at birth is defined as the average number of years that a newborn infant would live if prevailing patterns of mortality at the time of birth were to continue throughout his or her life. In reference to 2000, life expectancy at birth has increased rapidly in Bulgaria. An increase of 2.9 years for males and 3.6 years for females brought life expectancy to 71.4 for males and 78.7 for females in 2013 (Fig. 5, 6). Nevertheless, this increase in life expectancy was slower than that of the Region and the EU13.

The gender gap in life expectancy at birth has decreased by only 0.7 years since 2000. The same gap has reduced by one year in the Region and by 0.5 years in the EU13. In 2013, the figures for Bulgaria remained below EU13 averages (by 1.6 years for males and 1.8 years for females) as well as those of the Region (74.2 years for males and 80.8 years for females).

Fig. 5. **Life expectancy at birth for males,** Bulgaria, WHO European Region and EU13, 1985–2013

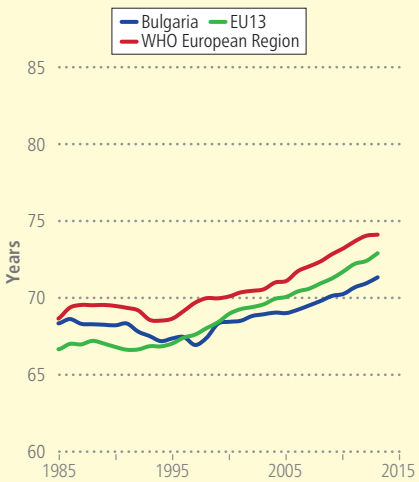


Fig. 6. **Life expectancy at birth for females,** Bulgaria, WHO European Region and EU13, 1985–2013

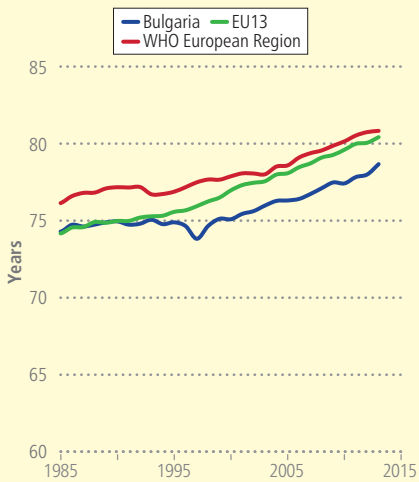


Fig. 7. **Life expectancy at 65 years for males,** Bulgaria, WHO European Region and EU13, 1985–2013

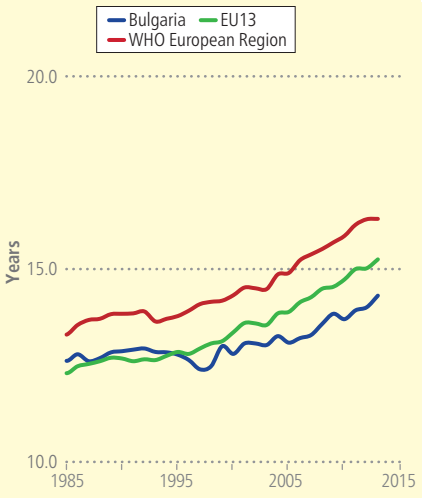
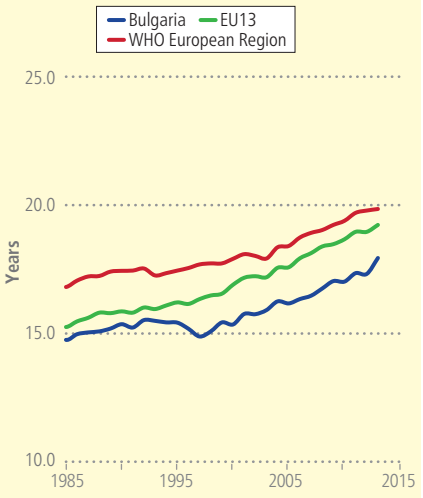


Fig. 8. **Life expectancy at 65 years for females,** Bulgaria, WHO European Region and EU13, 1985–2013



Life expectancy at 65 years is defined as the average number of additional years a 65-year-old person would expect to live based on prevailing mortality statistics. Bulgaria's life expectancy at 65 has followed similar trends to life expectancy at birth (Fig. 7, 8). Between 2000 and 2013 it increased by 2.1 years to approach 16.3 years. This was below the values for the Region and the EU13 (18.3 and 17.5 years, respectively).

Notably, this indicator's gender gap increased from 2.6 years in 2000 to 3.6 years in 2013. In 2013, male life expectancy at 65 (Fig. 7) was 14.3 years, which is two years below the average for the Region and around one year below the average for the EU13. Analogously, female life expectancy at 65 (Fig. 8) was 17.9 in 2013, which is lower than the values for the Region and the EU13 (19.9 and 19.2, respectively).

Healthy life expectancy

Healthy life expectancy summarizes mortality and nonfatal outcomes in a single measure of average population health. It is used to compare health between countries and to measure changes over time. Healthy life expectancy in Bulgaria increased by approximately three years between 2000 and 2015 to approach 66.4 years, yet is still below the averages for the Region (68.3 years) and the EU13 (68.1). The 2015 value was also lower for males (63.8 years) than females (69.2 years); this gender gap remained similar to the values recorded for 2000.

Morbidity

Comparable information on morbidity is more limited than information on mortality. However, data in the HFA-DB are available for certain infectious diseases, noncommunicable diseases and types of cancer. These data are based on routine health reporting systems, and their coverage, completeness and quality vary between countries and over time. Readers should therefore interpret comparisons with caution. Primary sources of data are diverse and include registries, surveillance systems and hospital data.

Infectious diseases and vaccinations

The incidence of tuberculosis in Bulgaria decreased by 38% between 2000 and 2014 to total 25.3 per 100 000 population. This was below both EU13 and regional averages (Fig. 9).

The incidence of HIV in Bulgaria increased 5.7-fold between 2000 and 2014 (Fig. 10a). Despite this increase, however, the incidence of HIV in 2014 (3.4/100 000) remained in line with the average for the EU13 (3.5/100 000) and substantially below the average for the Region (13.7/100 000).

In parallel to the rise in the incidence of HIV, the incidence of AIDS increased approximately 4.5-fold between 2000 and 2014 (Fig. 10b). The rate in 2014 (0.9/100 000) was in line with the average for the EU13 (0.9/100 000) and substantially below that of the Region (1.8/100 000).

Measles vaccination rates increased from below 90% in 2000 (Fig. 11a) to 93% in 2014[5] and 92% in 2015. The 2014 rate is slightly lower than that of the Region (95%) and lower than that of the EU13 (96%).

Poliomyelitis vaccination rates (Fig. 11b) have remained fairly stable since 2010, reaching 95% in 2013 but dropping to 91% in 2015. The 2013 rate is slightly lower than that of the Region (96%) but slightly higher than that of the EU13 (95%).

Fig. 9. **Tuberculosis incidence per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2014

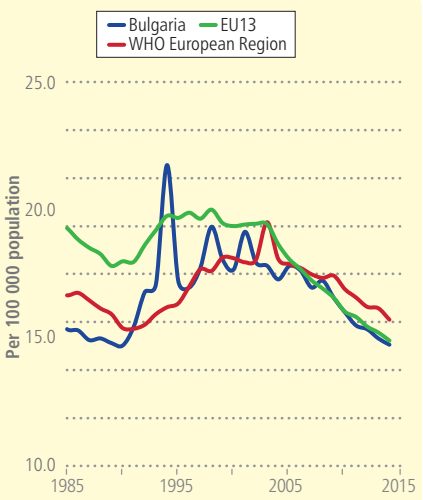


Fig. 10a. **HIV infection incidence per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2014

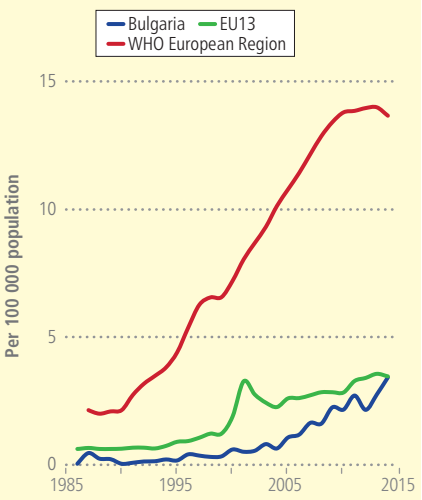
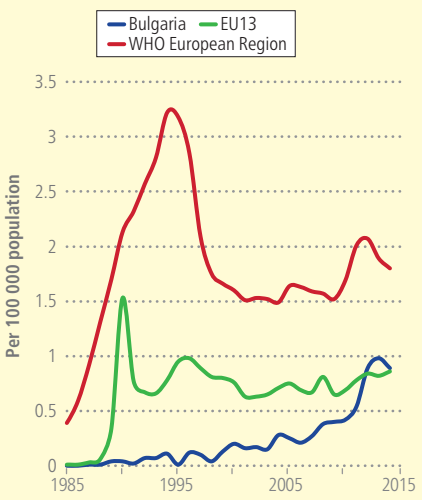


Fig. 10b. **AIDS incidence per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2014



[5] The value for two doses of measles-containing vaccine was 89% in 2014 and 87% in 2015.

Other diseases

As in the EU13 and the Region as a whole, the incidence and prevalence of cancer in Bulgaria have increased rapidly. Between 2000 and 2013, the increase of prevalence (55%) was greater than that of incidence (44%). The 2013 incidence of cancer (461.9/100 000) was lower than the average for the EU13 (508.3/100 000) and higher than the average for the Region (426.3/100 000). Similarly, the 2013 prevalence of cancer was greater in Bulgaria (3.8%) than in the Region as a whole (2.3%).

In line with this trend, there was a steady increase in the incidence of cancer of the cervix uteri in Bulgaria between 2000 and 2013 (from 23.3/100 000 to 28.4/100 000). This is substantially higher than the 2013 averages for the Region (13.1/100 000) and the EU13 (19.9/100 000).

In 2010, the three most prominent causes of hospitalization in Bulgaria were diseases of the circulatory system (an average of 3617.2 hospital discharges per 100 000 population), respiratory system (3098.8/100 000) and digestive system (1995.2/100 000).

Fig. 11a. **Percentage of children with measles vaccination,** Bulgaria, WHO European Region and EU13, 1985–2013

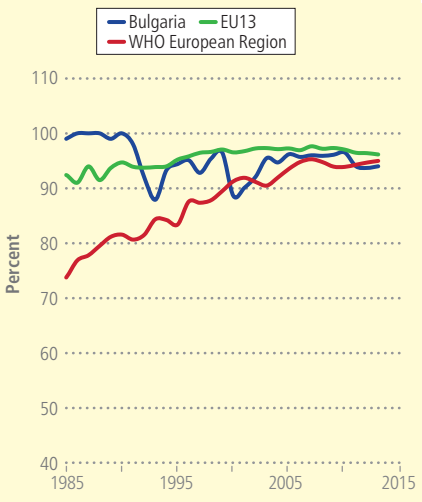
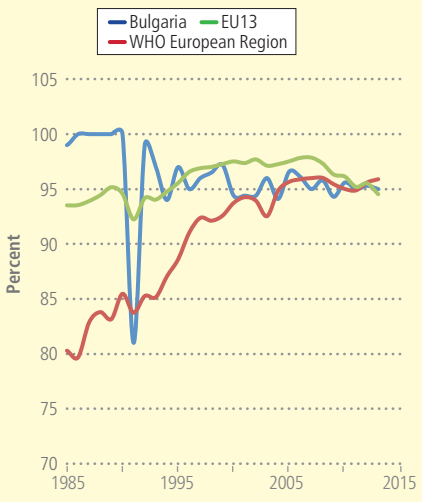


Fig. 11b. **Percentage of infants with poliomyelitis vaccination (with three doses),** Bulgaria, WHO European Region and EU13, 1985–2013



Infant and maternal mortality

The infant mortality rate per 1000 live births in Bulgaria has declined rapidly (Fig. 12), but the 2013 rate (7.3/1000) remained higher than the averages for the EU13 and the Region (5.2/1000 and 6.7/1000, respectively). Nevertheless, the overall gap in the mortality trend between Bulgaria and the Region has been narrowing since 2000.[6]

The maternal mortality ratio also decreased in Bulgaria (Fig. 13). The moving average for the maternal mortality ratio for 2010–2012 shows that Bulgaria's rate (5.0 per 100 000 live births) was one of the lowest in the Region, below the EU13 average (8.1/100 000) and approximately 60% lower than that of the Region (11.8/100 000).

Major causes of death

A comparison of countries' age-standardized mortality rates[7] highlights population differences in the most common causes of death, allowing for the easier identification of preventable deaths. Diseases (all ages) of the circulatory system, malignant neoplasms

Fig. 12. **Infant deaths per 1000 live births,** Bulgaria, WHO European Region and EU13, 1985–2013

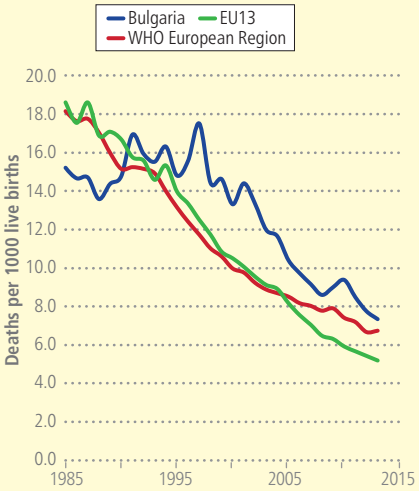
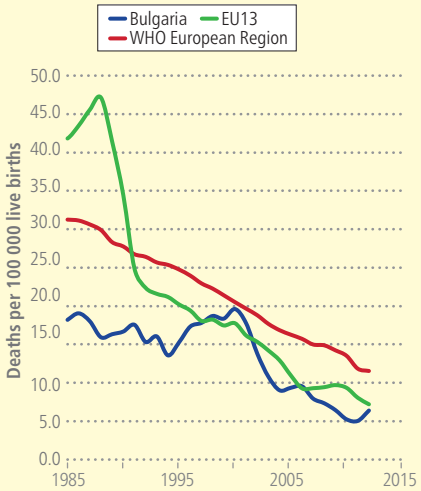


Fig. 13. **Maternal deaths per 100 000 live births,** Bulgaria, WHO European Region and EU13, moving average



6 According to data from Bulgaria's National Center of Public Health and Analyses, infant mortality continued to decline, reaching 6.6 per 1000 live births in 2015 *(7)*.

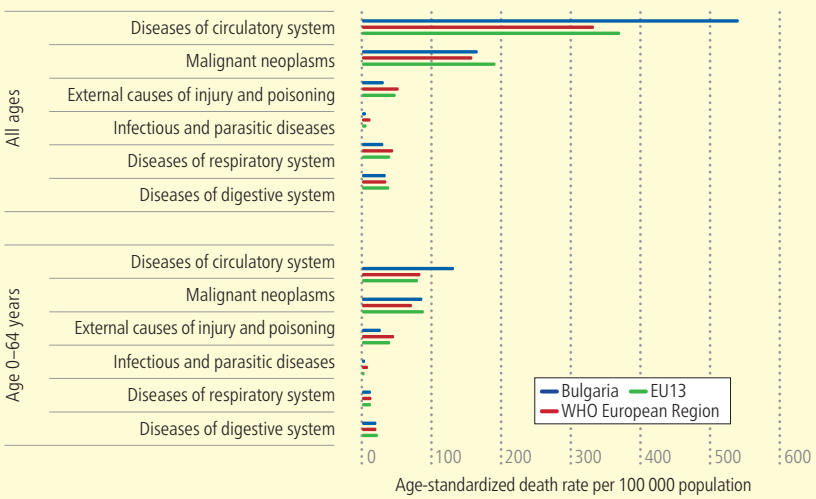
7 Age-standardized death rates are calculated using the direct method: they represent what the crude rates would have been were the population to have had the same age distribution as the standard European population.

(cancers) and external causes of injury and poisoning (accidents, homicides and suicides) are the main killers in the Region: they caused 73.7% of all deaths in 2013. The rate for the EU13 (79%) was higher, and the rate for Bulgaria (83.6%) higher still.

In 2013, Bulgaria's age-standardized mortality rate from all causes and for all ages (883.9/100 000) was higher than the rates for both the Region and the EU13 (738.2/100 000 and 773.8/100 000, respectively). Quite alarmingly, the gender gap for this indicator increased in Bulgaria: the mortality rates for males were 1.5- and 1.7-fold higher than those for females in 2000 and 2013, respectively. Similarly, the rate of premature mortality (all causes) before the age of 65 in Bulgaria (322.0/100 000) was higher than averages for the Region (285.4/100 000) and the EU13 (286.3/100 000).

Between 2000 and 2013, the mortality rate (all ages, all causes) decreased by 22.9% while the all-causes premature mortality rate decreased by 19.5%. Overall, the causes for the excess premature mortality are the same as those for all-ages mortality (Fig. 14).

Fig. 14. **Mortality profile from leading major causes of death, age-standardized death rate per 100 000 population,** Bulgaria, WHO European Region and EU13, 2013



The trends in age-standardized mortality rates for diseases of the circulatory system, malignant neoplasms, external causes of injury and poisoning, and diseases of the respiratory system are given for all ages and for both sexes combined in Fig. 15–18. Significantly, the age-standardized mortality rate from malignant neoplasms (all ages) was low in 2000 (around 150.1/100 000), but increased to 164.7/100 000 in 2013. This is contrary to the decreasing trends in the EU13 and Region (Fig. 16a).

Fig. 15. **Age-standardized death rate from diseases of the circulatory system, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

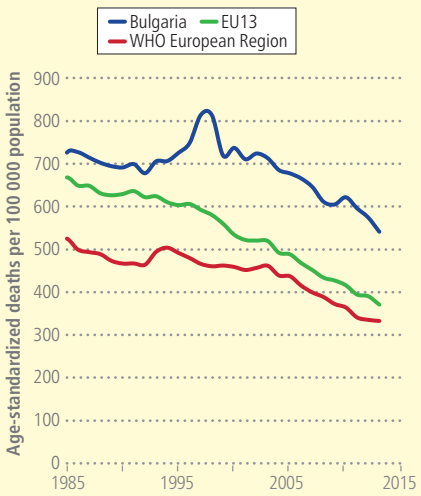


Fig. 16a. **Age-standardized death rate from malignant neoplasms, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

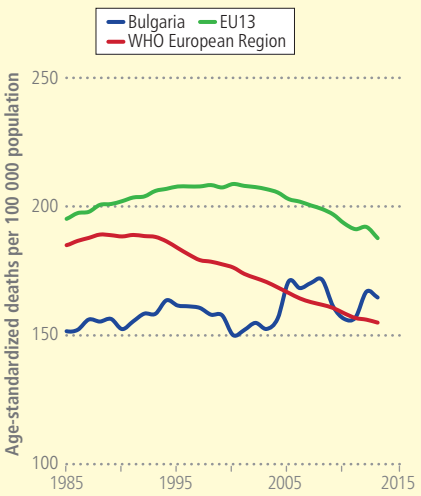


Fig. 16b. **Age-standardized death rate from malignant neoplasm of larynx, trachea, bronchus and lung, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013.

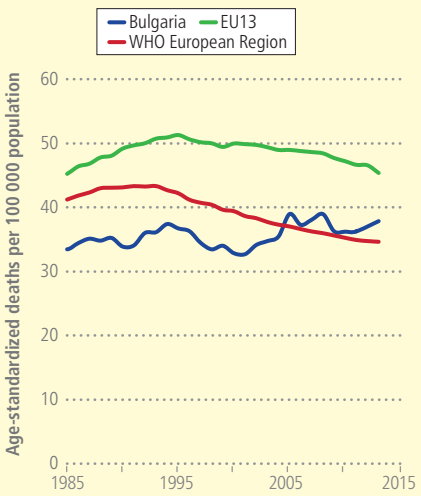


Fig. 16c. **Age-standardized death rate from malignant neoplasm of colon, rectum and anus, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

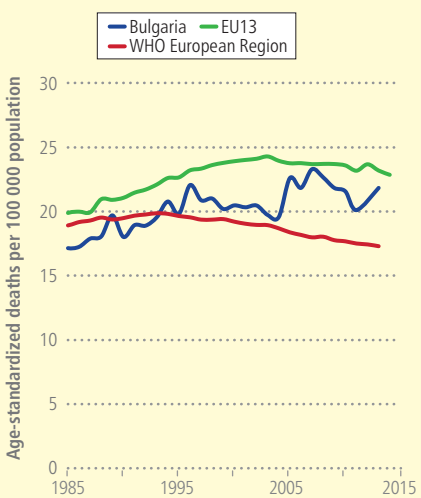


Fig. 16d. **Age-standardized death rate from malignant neoplasm of stomach, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

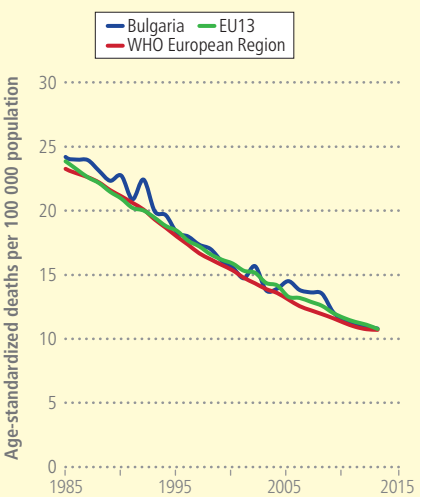
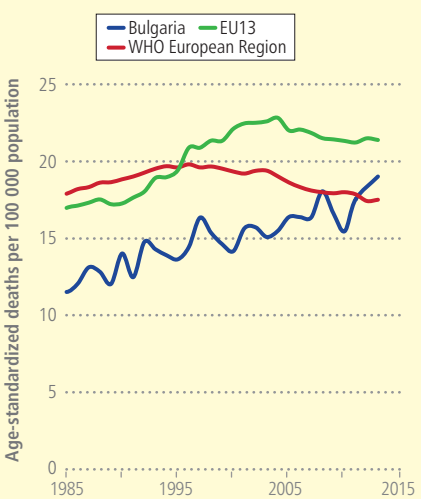


Fig. 16e. **Age-standardized death rate from malignant neoplasm of prostate, all ages per 100 000 males,** Bulgaria, WHO European Region and EU13, 1985–2013



In Bulgaria, the four leading causes of cancer mortality are malignant neoplasms of the larynx, trachea, bronchus and lung; the colon, rectum and anus; the stomach; and the prostate (Fig. 16b–16e).

Other major causes of death

The age-standardized mortality rate from diabetes decreased by approximately 41% between 2000 and 2013. The 2013 rate (11.3/100 000) was lower than the year's average for both the EU13 (13.1/100 000) and the Region (13.0/100 000).

The age-standardized mortality rate from diseases of the digestive system (Fig. 19) increased by 14% between 2000 and 2013. Yet, the 2013 rate (34.3/100 000) is still lower than the average for the EU13 (39.5/100 000) and the Region (35.2/100 000). More worrisome is the increased trend of mortality in Bulgaria, which contrasts with recently observed trends for the Region and the EU13.

Deaths from chronic liver disease and cirrhosis (Fig. 20) accounted for around 49% of all deaths from diseases of the digestive system in 2013 in Bulgaria. Averages for the EU13 and the Region were 52% and 44%, respectively. Bulgaria's death rate for this indicator increased by 4% between 2000 and 2013 to approach 16.8/100 000. This is slightly higher than the 2013 average for the Region (15.4/100 000), but significantly lower than that for the EU13 (20.4/100 000).

Fig. 17. **Age-standardized death rate from external causes of injury and poisoning, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

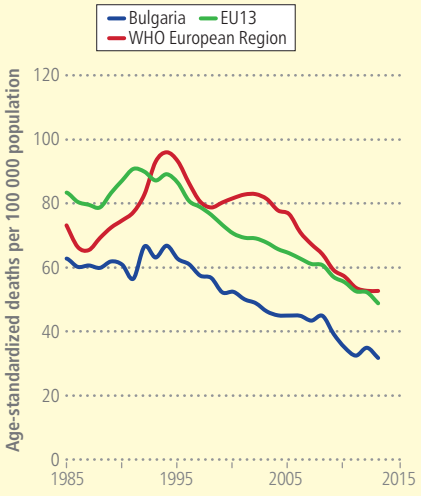


Fig. 18. **Age-standardized death rate from diseases of respiratory system, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

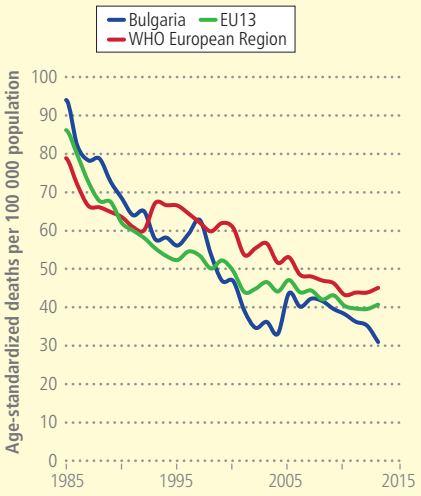


Fig. 19. **Age-standardized death rate from diseases of the digestive system, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

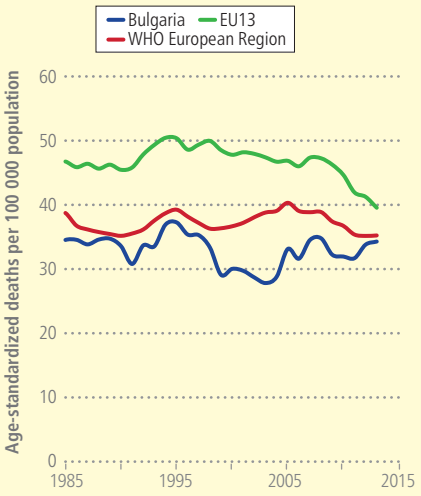


Fig. 20. **Age-standardized death rate from chronic liver diseases and cirrhosis, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

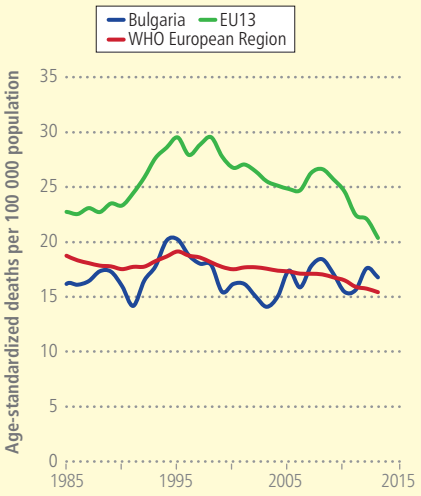
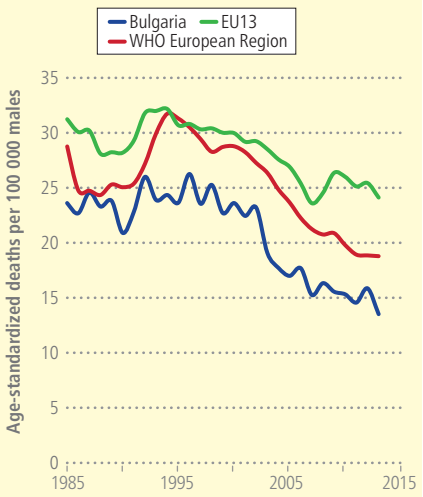


Fig. 21. **Age-standardized death rate from suicide and self-inflicted injury for males, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013



The age-standardized suicide mortality rate in Bulgaria decreased by almost half (– 47%) since 2000 to approach around 8.0/100 000 in 2013. This is below the averages for the Region (11.2/100 000) and the EU13 (13.7/100 000). The gender gap also narrowed for this indicator (Fig. 21, 22), from 16.2% in 2000 to 10.5% in 2013. In 2013, however, the rate for men (13.5/100 000) (Fig. 21) was still 4.5-fold higher than the rate for women (3.0/100 000) (Fig. 22).

Between 2000 and 2013, age-standardized mortality from homicides and intentional injury decreased by 67% in Bulgaria to approach 1.1/100 000. The gender gap also substantially decreased from around 3.0/100 000 in 2000 to around 0.8/100 000 in 2013. The 2013 recorded rates were 1.5/100 000 and 0.7/100 000 for males and females, respectively (Fig. 23, 24). These rates were lower than or in line with the values for the EU13, and lower than the values for the Region (4.4/100 000 for males and 1.4/100 000 for females) by 66% for males and 50% for females.

Fig. 22. **Age-standardized death rate from suicide and self-inflicted injury for females, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

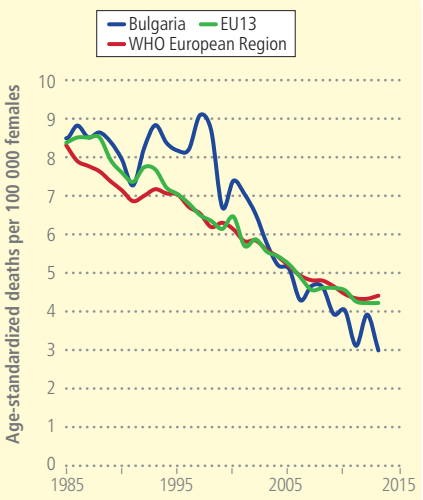


Fig. 23. **Age-standardized death rate from homicide and intentional injury for males, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

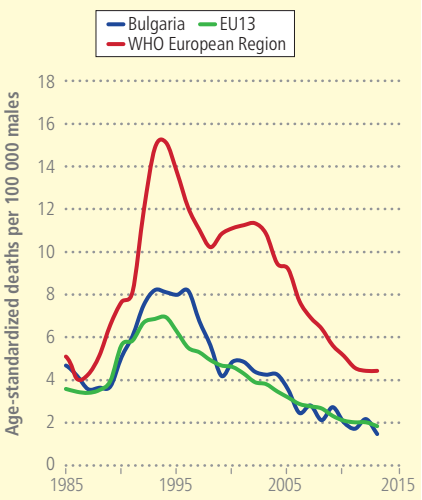
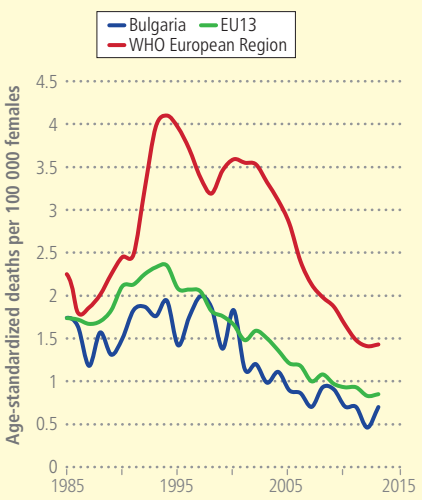


Fig. 24. **Age-standardized death rate from homicide and intentional injury for females, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013



The age-standardized mortality rate from motor vehicle accidents decreased by 43.4% in Bulgaria between 2000 and 2013; the 2013 rate was lower than the averages for both the EU13 and the Region. In 2013, mortality rates were 8.9/100 000 for males and 2.2/100 000 for females (Fig. 25, 26). By 2013, the gender gap for this indicator had decreased from 10.1/100 000 in 2000 to 6.7/100 000.

Selected causes of mortality are also presented in Annex 2, which compares percentage changes from 2000 to the latest available year (2013) in Bulgaria with the averages for the Region and the EU13.

Premature mortality

Since a large percentage of premature deaths from cardiovascular diseases, cancer and accidents are influenced by health-related behaviour and habits, trend analyses of premature mortality between countries can confirm which, if any, treatments and health promotion and prevention measures have been successfully implemented.

Between 2000 and 2013, premature mortality from diseases of the circulatory system decreased in Bulgaria (– 25.1%) as well as in the Region (– 28.8%) and the EU13 (– 33.5%). However, over the past decades the gap between Bulgaria and both the Region and the EU13 has widened.

Fig. 25. **Age-standardized death rate from motor vehicle accidents for males, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

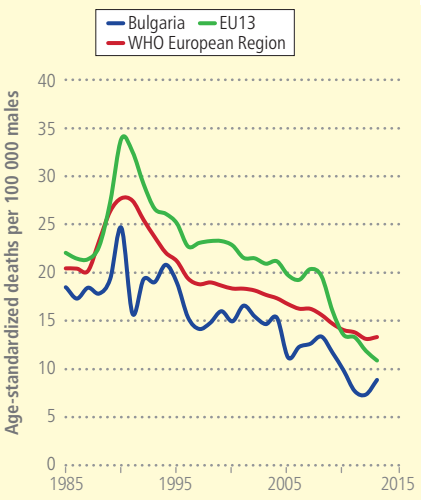


Fig. 26. **Age-standardized death rate from motor vehicle accidents for females, all ages per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

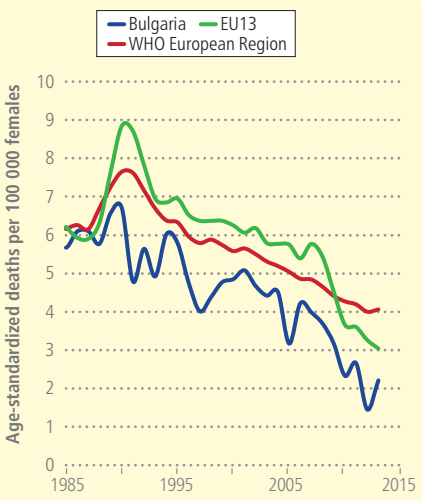
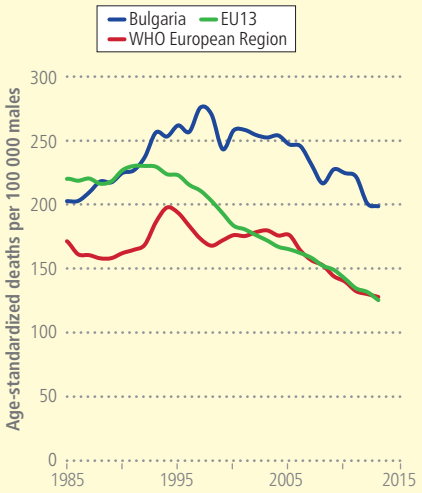


Fig. 27. **Age-standardized death rate from diseases of circulatory system for males, aged 0–64 years per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013



In 2013, the rate for men in Bulgaria (198.6/100 000) (Fig. 27) was around 1.6-fold higher than the average in the Region (127.9/100 000) and the EU13 (125.3/100 000). Similarly, the rate for women (69.7/100 000) was around 1.8-fold higher than the average in the Region (45.8/100 000) and 1.5-fold that in the EU13 (39.4/100 000) (Fig. 28).

The age-standardized mortality rate for premature deaths from ischaemic heart disease decreased by 40.5% between 2000 and 2013 (from 52.2/100 000 to 31.0/100 000). The 2013 rate is in line with the average for the EU13 (31.2/100 000) and lower than that for the Region (40.0/100 000).

By 2013, however, there was still a wide gender gap (Fig. 29, 30) in Bulgaria; the rates for males and females were 52.0/100 000 and 11.3/100 000, respectively.

Fig. 28. **Age-standardized death rate from diseases of the circulatory system for females, aged 0–64 years, per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

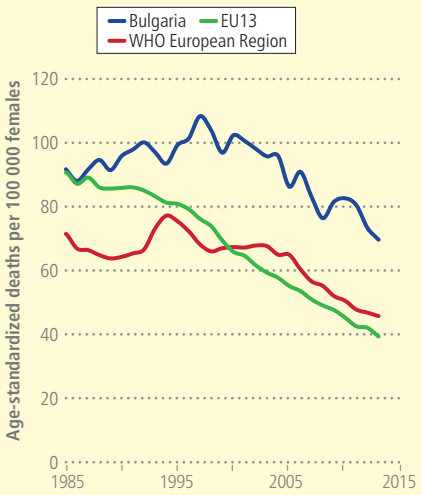


Fig. 29. **Age-standardized death rate from ischaemic heart disease for males, aged 0–64 years, per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

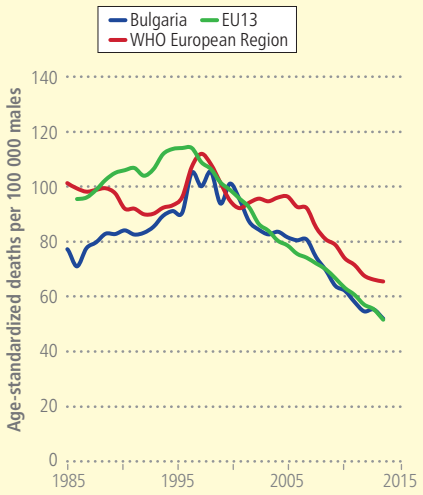


Fig. 30. **Age-standardized death rate from ischaemic heart disease for females, aged 0–64 years, per 100 000 population**, Bulgaria, WHO European Region and EU13, 1985–2013

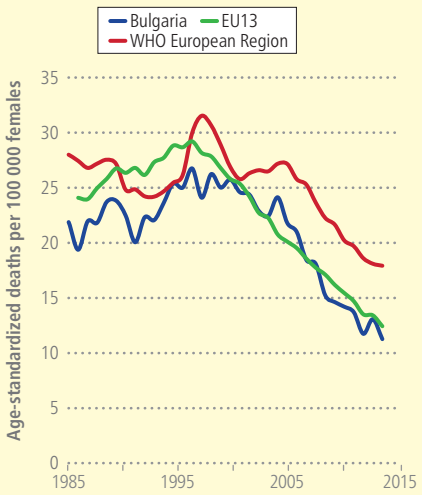
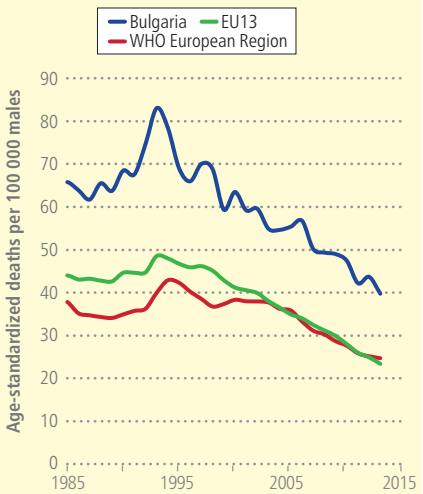


Fig. 31. **Age-standardized death rate for cerebrovascular diseases for males, aged 0–64 years, per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013



The mortality rate for premature deaths from cerebrovascular diseases decreased by 39.4% between 2000 and 2013 (from 45.9/100 000 to 27.8/100 000), yet remained much higher than the 2013 average for both the EU13 (16.6/100 000) and the Region (18.1/100 000). There was no sign of a gender-gap reduction in Bulgaria; the 2013 rates for males and females in Bulgaria were 39.7/100 000 and 16.9/100 000, respectively (Fig. 31, 32).

Rates for premature deaths from malignant neoplasms decreased sharply in the Region and the EU13 between 2000 and 2013. In Bulgaria, however, recorded rates for 2000 and 2013 (84.9/100 000 and 86.4/100 000, respectively) show a slight increase. The 2013 rate is slightly below that of the EU13 (87.9/100 0000) yet higher than that of the Region (70.7/100 000). Bulgaria also displayed a wide gender gap for these indicators; the rate was 67% higher for men (109.4/100 000) than for women (65.5/100 000) (Fig. 33, 34).

Fig. 32. **Age-standardized death rate for cerebrovascular disease for females, aged 0–64 years, per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

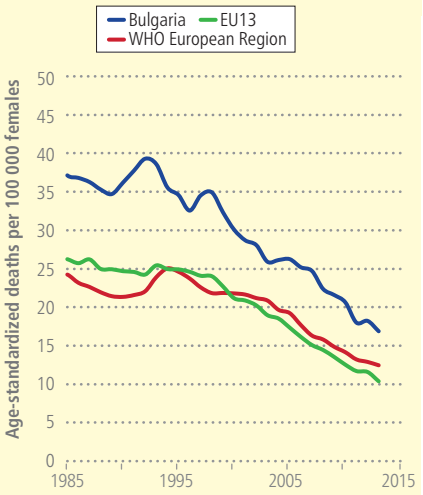


Fig. 33. **Age-standardized death rate from malignant neoplasms for males, aged 0–64 years, per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

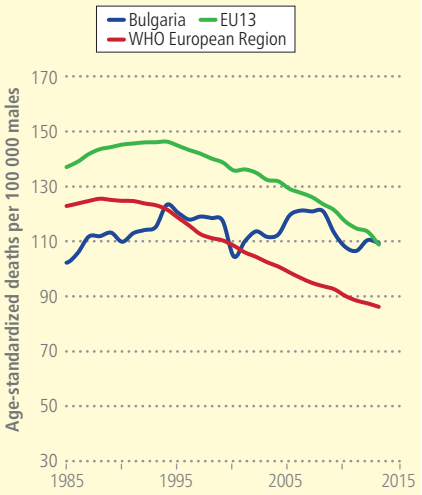
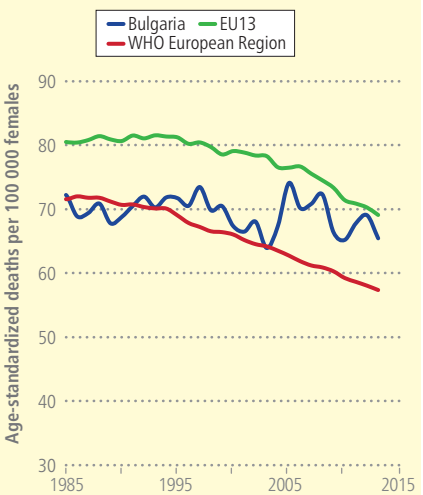


Fig. 34. **Age-standardized death rate from malignant neoplasms for females, aged 0–64 years per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013



The premature mortality rate from trachea, bronchus and lung cancer increased by around 10% between 2000 and 2013 to approach 20.7/100 000. This is slightly lower than the 2013 rate for the EU13 (21.9/100 000) yet higher than that of the Region (15.9/100 000). The values for Bulgaria represent an increasing trend, which is contrary to the decreasing trends in both the EU13 and the Region.

As evidenced in the rates for males and females between 2000 and 2013 (Fig. 35, 36), there is no sign that the wide gender gap for this indicator in Bulgaria is narrowing. The 2013 rate for males was 35.4/100 000 while the corresponding rate for females was 7.0/100 000. The age-standardized mortality rate for females has increased steadily over the past two decades, but more slowly than the average increase in the EU13 (Fig. 36).

The premature mortality rate from malignant neoplasms of the female breast (breast cancer) decreased by 17.9% in Bulgaria between 2000 and 2013 to approach 12.5 per 100 000 females (Fig. 37). This rate is in line with the average for the EU13 and slightly higher than that of the Region (12.3/100 000). As seen in Fig. 37, however, there is a very large year-to-year variation in the trend over the recent decades.

Fig. 35. **Age-standardized death rate from trachea, bronchus and lung cancer for males, aged 0–64 years, per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013

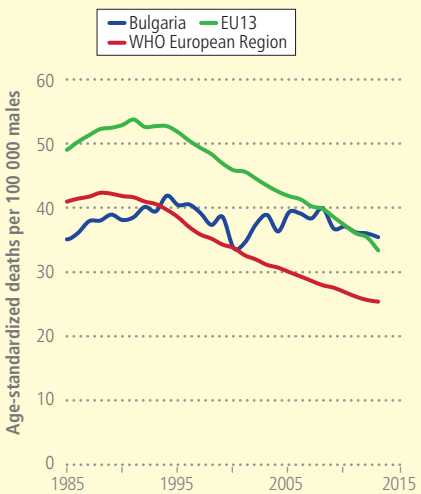


Fig. 36. **Age-standardized death rate from trachea, bronchus and lung cancer for females, aged 0–64 years, per 100 000 population,** Bulgaria, WHO European Region and EU13, 1985–2013.

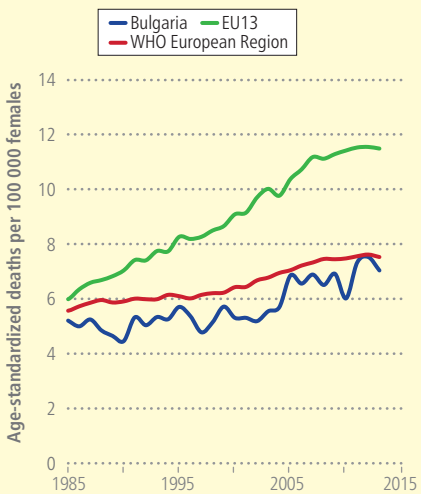


Fig. 37. **Age-standardized death rate from breast cancer per 100 000 females aged 0–64 years,** Bulgaria, WHO European Region and EU13, 1985–2013

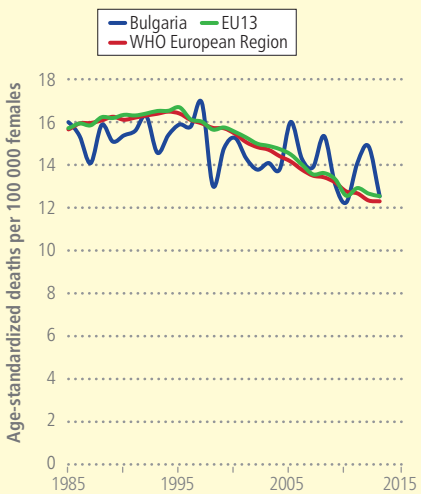
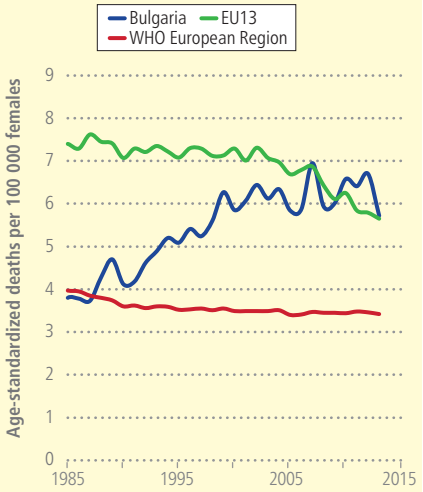


Fig. 38. **Age-standardized death rate from cancer of the cervix uteri per 100 000 females aged 0–64 years,**
Bulgaria, WHO European Region and EU13, 1985–2013



Since the 1980s, the premature mortality rate for cancer of the cervix uteri has increased in Bulgaria (Fig. 38). This alarming trend is in contrast with the observed values for the Region and the EU13, both of which show a steady decline. In 2013, the death rate from cancer of the cervix uteri was 5.7 per 100 000 females in Bulgaria, which was 67.3% above the regional average (3.4/100 000) but almost in line with that of the EU13 (5.4/100 000).

There was a similar increase in the mortality rate for cancer of other parts of the uterus in Bulgaria, which approached 6.9 per 100 000 females by 2013. This is higher than the rates for both the Region (4.4/100 000) and the EU13 (5.0/100 000).

Risk factors and determinants of health

Several factors – including genetics; physical, social and cultural environments; and health behaviour – affect the health and well-being of individuals and populations. Risk factors such as unhealthy diet, low levels of physical activity, smoking and harmful alcohol consumption are linked to elevated blood pressure, high serum cholesterol and overweight. These risk factors contribute to premature mortality from cardiovascular diseases and cancers in particular, which are the two main causes of death in the Region. Risk factors also contribute to a wide range of other chronic illnesses and thus affect quality of life in general.

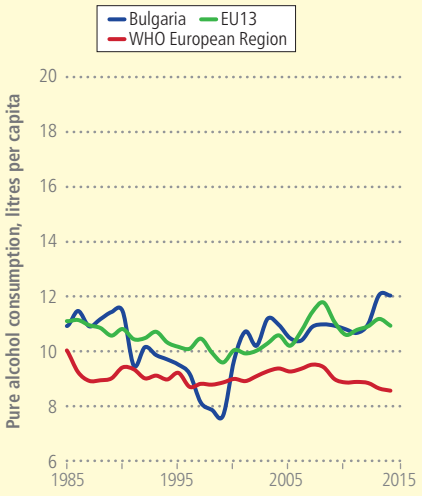
Alcohol consumption

The consumption of alcohol is measured as the recorded amount of alcohol consumed per adult aged 15 years and over during a calendar year in a country, expressed in litres of pure (100%) alcohol.[8]

In 2014, the recorded figure on pure alcohol consumption per capita for the adult population in Bulgaria was around 12 litres (Fig. 39) – higher than the same year's averages for the Region (8.6 litres) and the EU13 (10.9 litres). This level of consumption in Bulgaria represents an increase of around 24.1% since 2000.

Although sales figures do not cover the unrecorded consumption of alcohol, the Global Health Observatory estimates that the unrecorded consumption of alcohol in Bulgaria is moderate: 1.1 litres per capita in 2010 *(9)*.

Fig. 39. **Pure alcohol consumption, recorded litres per capita, aged 15+ years,** Bulgaria, WHO European Region and EU13, 1985–2014

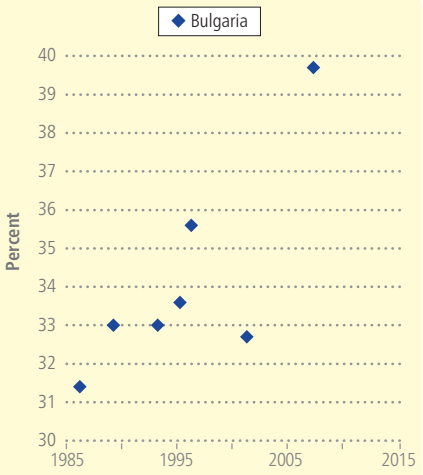


Tobacco smoking

Data on Bulgaria for 2007 indicated that the prevalence of regular daily smokers among adults aged 15 years and over had increased for both sexes since 2001 (Fig. 40). For men, the increase was 2.8 percentage points (from 43.8% in 2001 to 46.6% in 2007); for women, the increase was 9.7 percentage points (from 23.0% in 2001 to 32.7% in 2007).

[8] Measurements are based on sales figures among people aged 15 years and over.

Fig. 40. **Percentage of regular daily smokers in the population aged 15+ years,** Bulgaria, latest available data



According to data from the WHO Global Youth Tobacco Survey on the prevalence of current tobacco use[9] among adolescents aged 13–15 years, around 31.8% of girls and 26.4% of boys in Bulgaria were current cigarette smokers between 2007 and 2014 *(9)*. National data indicates that in 2014 the average percentage of daily smokers among the Bulgarian population aged 20 years and over was 32.4% (36.5% for males and 28.5% for females) *(10)*.

Dietary intake, overweight, obesity and physical activity

Between 2000 and 2009, the average number of calories available per person per day in Bulgaria remained almost the same. As of 2009, an average Bulgarian had 2791 kilocalories (kcal) available per day, which was lower than the average for both the EU13 (3314.6 kcal) and the Region (3340.1 kcal).

In 2009, an estimated 32.7% of total energy came from fat, which was in line with the average for the EU13 (32.1%) and the Region (32.9%). The amount of fruits and vegetables available per person per year (105.0 kg) was much lower than the average for both the EU13 (187.1 kg) and the Region (228.3 kg) and less than half of the WHO recommendation of 400 g/day. Data from 2004 show that salt intake in Bulgaria was between 12.5 and 14.5 g per day for men and between 11.4 and 16.6 g per day for women.

In 2014, the Global Health Observatory estimated that 64.1% of men and 54.4% of women in Bulgaria were overweight (body mass index (BMI) of 25 or more) *(9)*. These values represent an increase of 2.5 and 1.6 percentage points for men and women, respectively, since 2010. The prevalence of obesity (BMI of 30 or more) also increased by two percentage points over the same period. In 2014, the rate of obesity was higher among women (24.5%) than men (21.8%). The averages for the Region were lower for overweight in men (62.5%) but slightly higher for overweight in women (55.0%). Its averages for obesity for both men and women (21.4% and 24.6%, respectively), however, were in line with Bulgaria's.

Global Health Observatory data from 2010 for the Bulgarian adult population (aged 18 years and higher) show that 77.0% of Bulgarians meet WHO-recommended physical activity levels for health. Males (81.0%) are more likely to meet the recommended levels than females (73.3%) *(9)*.

[9] This includes tobacco use in any form in the past 30 days.

Comparative risk assessment

WHO estimates for the number of disability-adjusted life-years (DALYs) attributable to selected risk factors only apply at the regional level, and so estimates produced by the Institute for Health Metrics and Evaluation, which are available at the country level, are used here *(10)*. The Institute estimates that the highest burden of disease in Bulgaria is caused by dietary risks and high systolic blood pressure. Estimates of the top 10 risk factors and the associated burden of disease measured in DALYs for Bulgaria are given in Table 2, disaggregated by sex.

Table 2. **Top 10 risk factors and the associated age-standardized burden of disease for Bulgaria,** by sex, 2013

Risk factor	DALYs (average rate per 100 000 population)
Females	
High systolic blood pressure	4101
Dietary risks	3636
High BMI	3264
High fasting plasma glucose	1611
Tobacco smoke	1548
Low glomerular filtration rate	964
High total cholesterol	856
Alcohol and drug use	841
Low physical activity	756
Child and maternal malnutrition	682
Males	
Dietary risks	7320
High systolic blood pressure	6671
Tobacco smoke	6201
High BMI	4285
Alcohol and drug use	3215
High fasting plasma glucose	2398
High total cholesterol	1764
Air pollution	1495
Low glomerular filtration rate	1374
Low physical activity	1017

Source: Institute for Health Metrics and Evaluation *(10)*.

Health system

The key indicators for the Bulgarian health system in 2000 and 2014 are shown in Table 3. The number of hospital beds fell by 4% between 2000 and 2014; the 2013 rate (713/100 000), however, was still 11.9% higher than the EU13 average and 28.7% higher than the average for the Region.

In terms of human health resources in Bulgaria, the availability of physicians, dentists and nurses has been increasing since 2000. In 2014, the numbers of physicians and dentists were much higher than the averages for the EU13 (40.6% and 68.3%, respectively) and the Region (23.7% and 83.0%, respectively). The availability of nurses, however, was 21.1% below the average for the EU13 and 34.5% below the average for the Region.

Despite the fact that the number of midwives in Bulgaria has decreased since 2000, the rate is still higher than the averages for the Region and the EU13.

Table 3. **Key indicators on health resources, use of health services and health expenditure,** Bulgaria, WHO European Region and EU13, 2014

	Bulgaria			WHO European Region	EU13
	2000	2014	Change since 2000		
Hospital beds per 100 000	741.1	713.0	– 4%	553.9	637.3
Physicians per 100 000	336.9	398.7	+ 18%	322.3	283.6
Dentists per 100 000	83.0	97.7	+ 18%	53.4	58.0
Nurses per 100 000	435.9	485.0	+ 11%	740.4	614.6
Midwives per 100 000	50.6	45.2	– 11%	39.9	38.0
Inpatient care discharges per 100	15.4	32.2	+ 109%	17.9	19.7
Average length of stay, all hospitals (days)	11.5	5.4	– 53%	8.7	7.5
Outpatient contacts per person per year	5.4[a]	5.9	+ 9%	7.6	7.5
Total health expenditure as percentage of GDP[b]	6.1	8.4	+ 38%	8.2	6.8
Total health expenditure, PPP$ per capita[b]	384.2	1398.9	+ 264%	2574.7	1595.9
Public-sector health expenditure as percentage of total health expenditure[b]	60.9	54.6	– 10[c]	67.9	72.9
Private household out-of-pocket payments as percentage of total health expenditure[b]	39.1	44.2	+ 13[c]	26.6	23.2

[a] The reference year is 1999 as there are no available data for 2000.
[b] WHO estimates.
[c] Change in percentage points.
Source: WHO European Health for All database *(4)*.

The number of inpatient care discharges per 100 inhabitants increased substantially between 2000 and 2014 (from 15.4/100 to 32.2/100). The 2014 rate was much higher than the average for both the EU13 (19.7/100) and the Region (17.9/100).

The average length of stay in all hospitals has declined by 53% in Bulgaria since 2000. In 2014, the average stay was 5.4 days – around 2.1 days shorter than the EU13's average (7.5 days) and around 3.3 days shorter than the Region's (8.7 days).

The average number of outpatient contacts per person per year has increased in Bulgaria by 9% since 1999. In 2014 it was 5.9, which was lower than both the EU13 average (7.5) and that of the Region (7.6).

WHO's estimates for total health expenditure show that Bulgaria's share of GDP increased from 6.1% in 2000 to 8.4% in 2014. This was higher than the average for both the Region (8.2%) and the EU13 (6.8%).

The 2014 data on total health expenditure (expressed as PPP) per capita show that the level of spending in Bulgaria has increased by 264% since 2000. However, this level (US$ 1398.90) is 12.3% lower than the average for the EU13 (US$ 1595.93) and 45.7% lower than that for the Region (US$ 2574.70).

WHO's 2014 estimate of public sector health expenditure in Bulgaria was 54.6% of total health expenditure, a significant decrease from 61.0% in 2000. This was 13.4 percentage points under the average for the Region (67.9%) and 18.3 points below the average for the EU13 (72.9%). Accordingly, private household out-of-pocket expenditure for the same year was very high. At 44.2% of total health expenditure in Bulgaria, it was one of the highest values in the Region and nearly double the average for the EU13 (23.2%). Out-of-pocket payment is becoming the main source of health care financing in Bulgaria *(11)*: its share of total spending on health rose from 39% in 2000 to 44% in 2014. As the largest single source of health care financing in the country *(11)*, out-of-pocket payments are likely to lead to significant barriers to access and financial hardship for many Bulgarians.

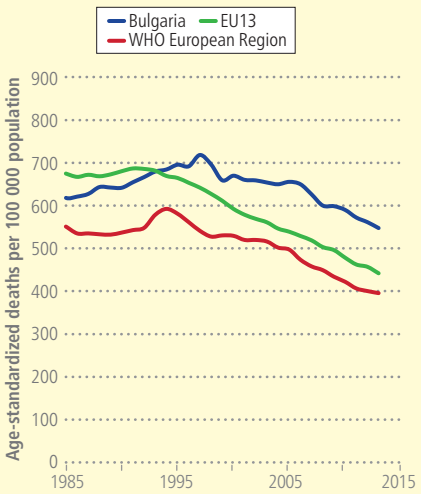
There are two main types of health insurance in Bulgaria: compulsory insurance for all citizens, and voluntary (complementary) insurance[10]. People are entitled to publicly financed health services if they make financial contributions to the health insurance scheme. Coverage by the compulsory health insurance programme, however, requires a contribution of approximately 8% of an individual's monthly taxable income. By early 2011, a large number of people in Bulgaria could not pay their monthly contribution, and more than 1.7 million (including unemployed people), did not have access to publicly financed health coverage. Furthermore, in 2010, less than 3% of the Bulgarian population was covered by private health insurance *(11)*. This is a major cause for concern in terms of social protection and the ability of the country to meet the health needs of such a large group of vulnerable people

A detailed description of the health system is given in *Bulgaria: health system review (11).*

[10] According to Article 82 (1) of the Bulgarian Health Insurance Act, voluntary health insurance is based on a contract for medical insurance under Chapter 40, Section IV of the Insurance Code *(12)*.

Health 2020

Fig. 41. **Deaths from major noncommunicable diseases, 30–69 years**, Bulgaria, WHO European Region and EU13, 1985–2013



Health 2020 is the health policy of the Region. It aims to support action across government and society to significantly improve the health and well-being of populations, reduce health inequalities, strengthen public health and ensure people-centred health systems that are universal, equitable, sustainable and of high quality *(1)*. Member States in the Region agreed on a set of core indicators to monitor progress towards Health 2020 policy targets *(3)*. The newly revised country profiles on health and well-being and accompanying highlights on health and well-being constitute a country-by-country means of reporting progress towards achieving the overarching targets of Health 2020.

Target 1. Reduce premature mortality rate by 2020

Bulgaria has made progress in reducing premature mortality.[11] The age-standardized overall premature mortality rate combined for the four selected major noncommunicable diseases (cardiovascular diseases, cancer, diabetes mellitus and chronic respiratory diseases) declined by 18.3% between 2000 and 2013 (Fig. 41). However, the annual decline in this indicator – around 1.0% between 2000 and 2013 for both sexes – remains below the Health 2020 target *(3)* of 1.5% per year.

Despite Bulgaria's progress, premature mortality rates in the country remain high in comparison to averages for the Region and the EU13, particularly for diseases of the circulatory system (including cerebrovascular disease). The rates of malignant neoplasms are also much higher in Bulgaria than in the Region as a whole.

Overall, Bulgaria's progress in reducing premature mortality between 2000 and 2013 (Table 4) was more significant for females (– 24.2%) than males (– 15%). This, along with other estimates on health indicators for both sexes, indicates an obvious increase in the gender gap.

[11] The Health 2020 monitoring framework *(2)* defines premature mortality as mortality in people aged 30–69 years in order to align with the WHO global monitoring framework for the prevention and control of noncommunicable diseases *(13)*.

Premature mortality from digestive diseases increased by 14.2% in Bulgaria, from around 38.3/100 000 in 2000 to around 43.8/100 000 in 2013. The 2013 rate was slightly above the Region's average (42.0/100 000), yet 12.3% lower than that of the EU13 (49.9/100 000).

Mortality from external causes of injuries and poisoning[12] decreased between 2000 and 2013 by 39.3%. This decline was more significant for women (– 50.1%) than for men (– 36.1%), and the gender difference in the age-standardized mortality rate remained high: in 2013, the likelihood of a Bulgarian man dying from external causes of injuries and poisoning was around 4.3-fold that of a Bulgarian woman. Nevertheless, the gender gap decreased by around 30.2% between 2000 and 2013.

When the risk factors contributing to the age-standardized burden of disease are considered (Table 2, above), it is apparent that high systolic blood pressure and dietary risks contribute to the greatest share of DALYs. This could explain Bulgaria's high rate of premature death (age-standardized) from diseases of the circulatory system, including cerebrovascular conditions, compared to the EU13 and the Region.

Furthermore, 2013 figures show that the prevalence of regular tobacco use (age-standardized) in Bulgaria is high (36.8%) and above the average for both the EU13 (30.8%) and the Region (29.2%). In 2013, 44.3% of men and 29.8% of women were regular daily smokers. Total per capita alcohol consumption also increased after 2000, and in 2014 was higher than the values for both the EU13 and the Region (Fig. 39). In addition to high systolic blood pressure and dietary risks, tobacco smoking and alcohol consumption could therefore be contributing to Bulgaria's overall premature mortality from noncommunicable diseases.

[12] Death caused by external causes and poisoning is considered premature mortality regardless of age.

Table 4. **Core indicators for monitoring Health 2020 policy targets in Bulgaria,** most recent year available

Target	Health 2020 core indicators	Value			Year
		Male	Female	Total	
1. Reduce premature mortality[a]	Premature mortality rate from cardiovascular disease, cancer, diabetes mellitus and chronic respiratory diseases, among people aged 30 to under 70 years (age-standardized estimate)	783.6	338.9	547.4	2013
	Prevalence of tobacco use among adults aged 15 years and over (age-standardized estimate)[b]	44.3	29.8	36.8	2013
	Pure alcohol consumption per capita among adults aged 15 years and over (recorded data)	-	-	12.0	2014
	Prevalence of overweight and obese (BMI ≥25) adults aged 18 years and over (age-standardized estimate) *(6)*	64.1	54.4	59.1	2014
	Mortality rate from external causes of injury and poisoning, all ages (age-standardized estimate)	52.8	12.3	31.7	2013
2. Increase life expectancy	Life expectancy at birth, in years	71.4	78.7	75.0	2013
3. Reduce inequities[c]	Infant death per 1000 live births	8.3	6.3	7.3	2013
	Proportion of children of official primary-school age not enrolled (net enrolment rate)	3.5	3.5	3.5	2013
	Unemployment rate (percentage) *(5)*	12.3	10.4	11.4	2014
	National policy addressing reduction of health inequities established and documented	NA	NA	Yes	2014
	Gini coefficient	-	-	35.4	2014
4. Enhance well-being[d]	Overall life satisfaction among adults aged 15 years and over *(14)*	-	-	4.4	2014
	Availability of social support among adults aged 50 years and over	-	-	83.0	2013
	Percentage of population with improved sanitation facilities *(15)*	-	-	86.0	2015
5. Universal coverage and "right to health"	Private household out-of-pocket expenditure as proportion of total health expenditure	-	-	44.2	2014
	Percentage of children vaccinated against measles (1 dose)	-	-	92.0	2015
	Percentage of infants vaccinated against poliomyelitis (3 doses)	-	-	91.0	2015
	Percentage of children vaccinated against rubella (1 dose by second birthday)	-	-	94.0	2013
	Total health expenditure as percentage of GDP	-	-	8.4	2014
6. National targets	Establishment of process for target-setting documented	NA	NA	Yes	2014
	Evidence documenting: (a) national health strategy aligned with Health 2020 (b) implementation plan (c) accountability mechanism	 NA NA NA	 NA NA NA	 Yes Yes Yes	 2014 2014 2014

NA: not applicable.

[a] Target 1 includes percentage of children vaccinated against measles (1 dose), poliomyelitis (3 doses) and rubella (1 dose).

[b] Prevalence includes both daily and occasional (less than daily) use among adults aged 15 years and over.

[c] Target 3 includes life expectancy at birth.

[d] Target 4 includes the Gini coefficient, the unemployment rate and the proportion of children not enrolled in primary school.

Source: WHO European Health for All database *(4)* unless otherwise specified.

Target 2. Increase life expectancy

Life expectancy at birth in Bulgaria was 71.4 years for males and 78.7 years for females in 2013, representing an increase of 2.9 years for males and 3.6 years for females since 2000. The current annual rates of increase (from 2006 to 2010) for males and females do not yet reach the Health 2020 target *(3)*. They are also lower than those of the Region, where the life expectancy at birth increased between 2000 and 2013 by four years for males (to 74.2 years) and by approximately three years for females (to 80.8 years).

Target 3. Reduce inequities in health

In terms of children's health, Bulgaria's progress in closing gaps in health status associated with social determinants is in line with Health 2020 recommendations *(3)*. In 2013, infant mortality rates were 8.3/1000 live births for boys and 6.3/1000 live births for girls, representing a decrease of 42.9% for boys and 47.3% for girls since 2000. For both sexes, infant mortality rates were still higher than EU13 and regional averages.

However, Bulgaria's maternal mortality rate (moving average, three years) fell by around 74% in 1999–2001 and 2010–2012 to approach 5.0/100 000 live births. This rate is well below the average for the Region (11.8/100 000) and below the average for the EU13 (8.1/100 000).

The proportion of children of official primary-school age not enrolled increased by 67.1%, from 2.1% for both sexes in 2000 to around 3.5% for both sexes in 2013. This is higher than the average for the Region (2.7%) and below the average for the EU13 (4.7%).

According to ILOSTAT estimates, Bulgaria's unemployment rate decreased from 16.2% in 2000 to 11.4% in 2014. This rate was slightly above those for the EU13 (10.6%) and the Region (9.1%). The gap between the sexes increased between 2000 and 2014; the unemployment rate among males (16.6% and 12.3% in 2000 and 2014, respectively) was higher than that among females (15.8% and 10.4% in 2000 and 2014, respectively) *(6)*.

The international inequality indicator (Gini coefficient) increased by 10.4 points in Bulgaria, from 25.0 in 2000 to 35.4 in 2013. This was above the values for both the Region (33.4) and the EU13 (30.6).

Bulgaria has produced a number of national strategies aimed at reducing health inequities and addressing the social determinants of health *(16)*. The first priority in Bulgaria's national health strategy (2014–2020) is to create the conditions for health for all throughout the life-course. This involves seven main policies that cover health for mothers and babies (0–1 year); health for children and adolescents (1–19 years); health for people of working age (20–65 years); health of older people (over 65 years); actions to protect and improve mental health; assuring the best possible health for people with disabilities; and assuring health for vulnerable groups *(17)*.

In July 2011, the Bulgarian government adopted a health strategy for disadvantaged persons who belong to ethnic minorities *(16)*. In May 2012, it also adopted the Roma Integration Strategy of the Republic of Bulgaria (2012–2020) *(16)* and an action plan for its implementation.

Target 4. Enhance the well-being of the population

Monitoring well-being with a set of indicators is a relatively new construct, and further country data is required for adequate trend analysis. Data from the Gallup World Poll for 2014, obtained through the United Nations Development Programme's Human Development Reports *(14)*, give Bulgaria an overall life satisfaction index of 4.4 on a scale of 0 (least satisfied) to 10 (most satisfied). This is lower than the average for the Region (6.0).

Among people aged 50 years and over, 83.0% reported in 2013 that they had relatives or friends on whom they could count when in trouble. This figure is in line with the EU13 value (82.8%), yet slightly lower than that of the Region (85.3%). As of 2015, 99.4% of both rural and urban populations in Bulgaria lived in homes connected to a water supply system, and 86.0% had access to a sewage system, septic tank or other hygienic means of sewage disposal. The later rate is almost the same as that of 1990 (85.3%).

Target 5. Ensure universal coverage and the right to the highest attainable level of health

Over time there has been a substantial decline in the public share of total spending on health (Table 2); the public share fell from 61% in 2000 to 54% in 2014. Private household out-of-pocket payments are higher in Bulgaria than in most of the other countries in the

Region. Between 2000 and 2014, the already very high share of out-of-pocket payments grew even further, rising from 39% to 44% of total spending on health. This likely results in inequitable access to health care and financial hardship for many households – especially poorer households – which may in turn exacerbate poverty and have a negative impact on health.

According to Eurostat data for 2014, nearly 10% of the poorest income quintile in Bulgaria experienced an unmet need for medical care due to its high expense. This is the fifth-highest rate in the EU and indicates that, for many Bulgarians, access to health services is severely limited by financial barriers *(18)*.

Target 6. Set national goals and targets related to health

By 2014, Bulgaria had documented a process for setting targets and adopted a national health strategy (2014–2020) *(17)* encompassing targets and indicators aligned with Health 2020 *(3)*. The strategy includes an accountability mechanism (defining responsible institutions) as well as an implementation plan and timeline *(19)* also aligned with Health 2020 *(3)*. Bulgaria's Ministry of Health established a permanent working group for the management, control and implementation of the strategy's action plan.

The strategy includes a comprehensive policy that addresses, among other things, the need for establishing universal health coverage, strengthening the health system, and tackling noncommunicable diseases, communicable diseases, and maternal and child health. Analogously, the national programme for prevention and control of noncommunicable diseases *(20)* includes an implementation plan *(21)* with established targets approved by relevant stakeholders and, where possible (taking into consideration the local context), aligned with the WHO global monitoring framework for the prevention and control of noncommunicable diseases *(13)*.

Conclusions

Although the health status of the Bulgarian population has steadily improved for a number of health indicators over the past three decades, some improvements have been relatively slow. The most recent data indicate that the health situation for several indicators is either in line with or worse than the averages for the Region and the EU13.

Between 2000 and 2013, life expectancy at birth in Bulgaria increased to 71.4 for males and 78.7 for females, but remained below the averages for the Region and the EU13. Similarly, life expectancy at 65 years increased between 2000 and 2013 by 2.1 years to approach 16.3 years, but was still lower than the values for the Region and the EU13 (18.3 and 17.5 years, respectively). During the same period, the gender gap for these indicators increased significantly in Bulgaria, particularly for life expectancy at 65 years. Between 2000 and 2015, the healthy life expectancy in Bulgaria increased by approximately three years, and yet this is also still below regional and EU13 averages.

The country has one of the lowest rates of natural population growth in the Region, as well as a shrinking working-age population. This is cause for concern. The infant mortality rate per 1000 live births has declined rapidly, but remains higher than that of the EU13 and the Region. Vaccination rates for measles increased between 2000 and 2013 but dropped slightly afterwards, while those for poliomyelitis remained fairly stable; by 2014, poliomyelitis vaccination rates (88% and 91% in 2014 and 2015, respectively) were lower than the average for the Region and slightly higher than the average for the EU13 (both around 96% in 2014).

The incidence of tuberculosis decreased in Bulgaria between 2000 and 2014, and was below regional and EU13 averages in 2014. The incidence of HIV increased 5.7-fold between 2000 and 2014, though the incidence in 2014 remained in line with the average for the EU13 and substantially below that of the Region. Of concern is the rate of increase for this indicator, which is higher than the average for the EU13. The incidence of AIDS increased 4.5-fold between 2000 and 2014, although the 2014 rate was in line with the average for the EU13 and substantially below that of the Region.

There was a rapid increase in the incidence and prevalence of cancer in Bulgaria between 2000 and 2013; Bulgaria's prevalence of cancer is greater than that of the Region and the EU13, and the country's increase in the incidence of cervix uteri cancer is particularly alarming.

By 2013, the highest burden of disease in Bulgaria was caused by high systolic blood pressure and dietary risks. Furthermore, the recorded figure on pure alcohol consumption per capita for the adult population in Bulgaria increased and was higher than the 2014 averages for the Region and for the EU13. However, the unrecorded consumption of alcohol (2010 estimate) in Bulgaria was relatively low.

Data on Bulgaria for 2007 indicated that the prevalence of regular daily smokers among adults aged 15 years and over increased for both sexes since 2001, but the amount of increase in the smoking rate among women was much higher than that among men. The prevalence of both overweight and obesity increased by two percentage points between 2010 and 2014, which was slightly higher than the 2014 average for the Region and lower than that for the EU13.

Deaths from diseases (all ages) of the circulatory system, malignant neoplasms and external causes of injury and poisoning (accidents, homicides and suicides) are the main killers in the Region. In Bulgaria in 2013, they caused around 83.6% of all deaths – still higher than the values for both the Region and the EU13. Over the past decades there has been a decrease in age-standardized mortality rate (all ages) from diseases of the circulatory system in Bulgaria, yet the recorded rates between 2000 and 2013 were still much higher than those for both the Region and the EU13. There is no sign of a reduction in this gap.

Since 2000, the average rate of deaths from malignant neoplasms has steadily decreased in both the Region and the EU13. In Bulgaria, however, the rate increased by 10% between 2000 and 2013. Bulgaria's 2013 rate was still lower than the EU13 average, but slightly higher than that for the Region. Similarly, Bulgaria's increasing rate of deaths from diseases of the digestive system contrasted with the steady overall decline in the averages for the Region and the EU13. Bulgaria's 2013 figures, however, were lower than the regional and EU13 averages for the same year.

There were obvious improvements in Bulgaria between 2000 and 2013 in age-standardized mortality rates from external causes of injury and poisoning; suicide, homicides and intentional injury; motor vehicle accidents; diseases of the respiratory system; and maternal deaths. Rates for these indicators were lower than the recorded averages for both the Region and the EU13.

Between 2000 and 2013, the rate of premature mortality (all causes) before the age of 65 in Bulgaria was higher than the averages for the Region and the EU13. Bulgaria's 2013 rate was the ninth highest in the Region.

Premature mortality from diseases of the circulatory system had decreased in Bulgaria by 2013, yet the rates for men and women were still much higher than the averages for the Region and the EU13. The rate of deaths from cerebrovascular diseases revealed a similar trend. The rate of premature deaths from ischaemic heart disease, however, had substantially decreased by 2013; Bulgaria's 2013 rate was in line with that of the EU13 and lower than that of the Region. Yet, for the same period, the rates of premature deaths from malignant neoplasms for both sexes were above regional averages. There was also a steady increase in premature mortality rates for females from trachea, bronchus and lung cancer, and cancer of the cervix uteri.

Bulgaria has made progress in complying with Health 2020 targets for reducing premature mortality (among people aged 30–69 years) from four major noncommunicable diseases (cardiovascular diseases, cancer, diabetes mellitus and chronic respiratory diseases). However, in 2013, Bulgaria's rate was still very high and its annual reduction was below the regional target of 1.5% per year. This situation contributes to the widening gap between Bulgaria's rates and those for the Region as a whole.

Overall, between 2000 and 2013, Bulgaria's mortality rate (all ages, all causes) decreased by 22.9%, while its premature mortality rate (all causes) decreased by 19.5%. The gender gap increased (in favour of females) for both indicators.

In 2014, the WHO estimate of public sector health expenditure (as a percentage of total health expenditure) was very low (54.6%), while the out-of-pocket share was very high. This situation, along with the relatively high rate of unemployed and other persons who have lost their entitlement to publicly financed health coverage, threatens to exacerbate inequities in access to health services and increase

financial hardship for households. Financial protection against the cost of ill health is likely to be extremely weak in Bulgaria, and the risk of impoverishing and catastrophic health expenditure is likely to be high – particularly for poorer households. In 2014, data on the self-reported unmet need for medical care due to it being too expensive showed Bulgaria to have the fifth-highest share in the EU.

More encouraging is the increase in availability of physicians, dentists and nurses in Bulgaria between 2000 and 2014. Though the availability of nurses did improve, it was substantially below the averages for the Region and the EU13. Despite a decrease in the number of midwives in the country by 2014, their availability was still greater than the averages for both the Region and the EU13. The average number of outpatient contacts increased by 2014, but was lower than regional and EU13 averages.

Objective indicators of well-being in Bulgaria show mixed results when compared to the EU13 and the Region. Subjective well-being (life satisfaction) indicators show that Bulgaria is lagging behind both regional and EU13 averages.

Inequality in Bulgaria, as measured by the Gini coefficient and the proportion of out-of-school children, is noticeably rising. Importantly, a number of national strategies now aim to reduce health inequities and address the social determinants of health. The country's recently adopted national health policy (2014–2020) is also aligned with Health 2020.

Although Bulgaria has achieved significant improvements in the health status of its population in recent years, several indicators still lag behind averages for the Region and the EU13. High levels of selected risk factors and a growing burden of noncommunicable diseases – combined with a substantial decline in the public share of total spending on health, a large increase in the share of out-of-pocket payments and a large increase in the number of people who have lost their entitlement to publicly financed health coverage – pose serious challenges to the health system. Careful implementation of well-planned health programmes, along with close monitoring of health trends, will allow Bulgaria to meet the health needs of its people and improve its health profile in the coming years.

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Annex 1. ICD-10 codes

Table A1. **ICD-10 codes for causes of death**

Cause of death	ICD-10 codes
Cancer of cervix uteri	C53
Cancer of colon, rectum and anus	C18–C21
Cancer of female breast	C50
Cancer of prostate	C61
Cancer of trachea, bronchus and lung	C33–C34
Cancer of stomach	C16
Cerebrovascular diseases	I60–I69
Chronic liver disease and cirrhosis	K70, K73, K74, K76
Diseases of the circulatory system	I00–I99
Diseases of the digestive system	K00–K93
Diseases of the respiratory system	J00–J99
External causes of injury and poisoning	V00–V99, W00–W99, X00–X99, Y00–Y99
Homicide and intentional injury	X85–X99, Y00–Y09
Infectious and parasitic diseases	A00–A99, B00–B99
Ischaemic heart disease	I20–I25
Malignant neoplasms	C00–C97
Motor vehicle traffic accidents	V02–V04, V09, V12–V14, V20–V79, V82, V87, V89
Suicide and self-inflicted injury	X60–X84
Symptoms, signs and ill-defined conditions	R00–R53, R55–R99
Tuberculosis	A15–A19, B90

Annex 2. Selected mortality data

Table A2. **Selected mortality for total population by sex in Bulgaria,** 2013 (age-standardized death rate per 100 000 population and percentage change since 2000)

Cause of death	Sex	Bulgaria		WHO European Region		EU13	
		Rate	Change (%)	Rate	Change (%)	Rate	Change (%)
All causes	Both	883.9	– 22.9	737.9	– 22.3	773.8	– 23.3
	Male	1150.8	– 18.4	963.5	– 23.4	1030.0	– 22.3
	Female	668.8	– 27.5	566.2	– 21.5	578.5	– 24.8
Infectious and parasitic diseases	Male	7.9	– 34.1	17.1	– 22.3	9.1	– 27.2
	Female	3.8	– 33.5	8.1	+ 6.6	4.5	– 6.5
Malignant neoplasms	Male	226.3	+ 18.0	208.5	– 14.4	256.9	– 11.2
	Female	118.0	+ 1.4	118.1	– 9.4	140.0	– 8.8
Diseases of the circulatory system	Male	676.3	– 22.9	419.3	– 26.8	467.7	– 29.0
	Female	432.8	– 30.2	269.3	– 28.6	296.8	– 32.7
Diseases of the respiratory system	Male	45.3	– 29.6	66.4	– 28.7	62.2	– 15.8
	Female	20.4	– 37.9	30.6	– 22.0	26.8	– 19.9
Diseases of the digestive system	Male	51.8	+ 9.7	46.8	– 5.5	55.1	– 19.2
	Female	19.2	+ 25.9	25.7	– 1.4	26.4	– 14.5
Symptoms, signs and ill-defined conditions	Male	35.7	– 49.2	39.5	– 14.9	33.9	– 23.3
	Female	24.5	– 57.1	25.5	– 20.3	16.7	– 34.0
External causes of injury and poisoning	Male	52.8	– 36.1	83.4	– 37.0	79.6	– 29.0
	Female	12.3	– 50.1	24.7	– 33.0	20.8	– 37.0
Motor vehicle road traffic injuries	Male	8.9	– 40.7	13.4	– 27.1	10.9	– 52.4
	Female	2.2	– 54.4	4.1	– 27.2	3.0	– 51.4
Suicide and self-inflicted injuries	Male	13.5	– 42.8	18.7	– 34.9	24.1	– 19.5
	Female	3.0	– 59.5	4.4	– 27.8	4.2	– 34.7
Homicide and intentional injury	Male	1.5	– 69.8	4.4	– 60.0	1.8	– 60.1
	Female	0.7	– 61.7	1.4	– 59.9	0.9	– 48.5

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