

Amended version: The data in table T2 on page 4 have been replaced.



Neuchâtel, February 2017

## Cause of death statistics

# Death and its main causes in Switzerland, 2014

**In 2014, 63,938 people died in Switzerland. Life expectancy at birth was 81.0 years for men and 85.2 years for women. Today the majority of people are aged over 80 when they die. Because disease among young people is less common or can be more effectively treated, more people are dying at an older age and from diseases that are typical for this age group.**

The probability of dying at a young age is small. The infant mortality rate is 39 deaths per 10 000 live births. The risk of dying for children aged between 2 and 14 is less than 1 in 10 000. The death rate shows exponential growth with increasing age and can only be demonstrated on a logarithmic scale (Graph G1). It is also lower among women than among men, with the exception of children aged 4 to 10 years.

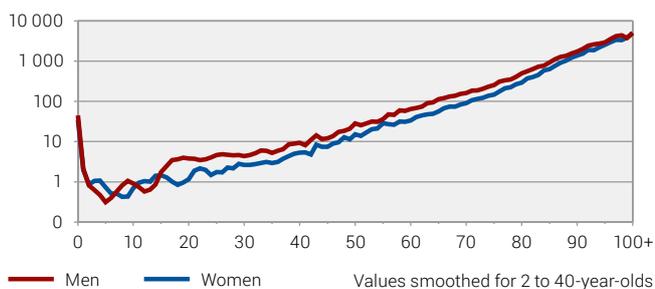
Graph G2 shows the distribution of deaths by age and sex. 1% of deceased persons were aged up to 24 years, 2% 25 to 44 years, 11% 45 to 64 years, 42% 65 to 84 years and 43% over 85 years.

Overall, deaths caused by cardiovascular disease are most common. This statement, however, only applies to the total of deaths and to those aged over 80. It does not apply to the younger age groups. The main cause of death among 48 to 80 year old men is cancer. Among women cancer is the most frequent cause of death from age 39 to 79. External causes, especially accidents and suicide are the main cause of death among 16 to 43 year old men and 13 to 38 year old women. Among newborns, congenital illnesses and birth-related problems cause 86% of deaths.

### Mortality rate by age, 2014

Age-specific death rates, per 10 000

G 1

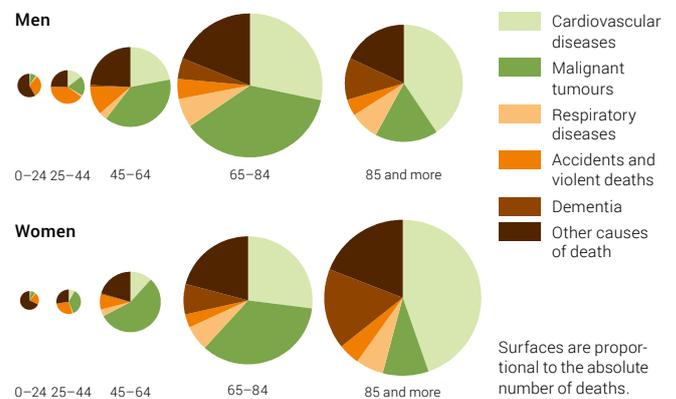


Source: FSO – BEVNAT

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### Leading causes of death by age group

G 2



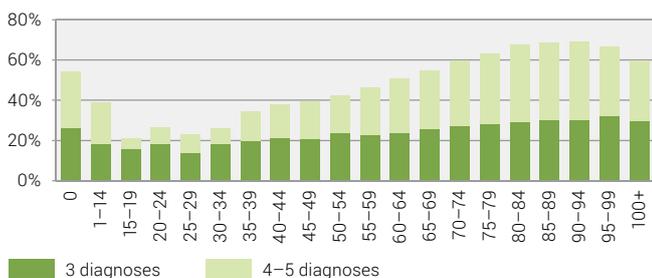
Source: FSO – Causes of death statistics

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### Multi-morbidity

Up to four diagnoses are registered in the cause of death statistics, in exceptional cases up to five. 11% of deaths have one diagnosis, 23% two, 28% three and 34% four. In 3% of deaths, the diagnosis is unknown. The number of diagnoses increases with age (Graph G3). The greatest number of diagnoses are registered for 80 to 94 year-olds.

### Multiple causes of death by age, 2014 G 3



Source: FSO – Causes of death statistics © FSO 2017

If two or more illnesses have led to death, the additional ones are recorded as secondary diagnoses. These diagnoses can arise from the same or from another major illness group. In the following Table 1, only the secondary diagnoses from another illness group to that of the main diagnoses are taken into account.

The most frequent causes of death are cardiovascular diseases, from which 21 000 people died. Cardiovascular disease also contributed to the death of a further 17 000 persons who died from another main cause of death. The main diagnoses are, therefore, responsible for 55% of deaths.

### Main and secondary diagnoses, 2014 T 1

	Number of main diagnoses	Number of secondary diagnoses	% as main diagnoses
Cardiovascular diseases	20 972	17 376	54.7
Cancer	16 765	1 788	90.4
Respiratory organs	3 834	11 366	25.2
Other causes	3 696	1 972	65.2
Dementia	5 759	4 208	57.8
All other diagnoses	12 912	28 360	31.3

Source: FSO – Cause of death statistics © FSO 2017

Cancer, on the other hand, appears 17 000 times as main cause of death, accounting for 90% of cancer cases. In contrast, diseases of the respiratory organs are the main cause of only 25% of deaths. The reason for this is that persons who are weakened by a serious illness often fall ill with pneumonia from which they die. Pneumonia accounts for a high percentage of respiratory diseases. The flu (influenza) also often affects people who are already weakened by another major illness and does not therefore appear as main cause of death.

While 5 800 persons died from dementia (58%), a further 4 200 were also affected (42%). Therefore dementia was recorded for a total of 10 000 deceased persons.

### Does dementia cause death?

In the cause of death statistics, the main cause of death is the illness which appeared when the person first became ill. The causal chain is the decisive factor. In the case of dementia, the progressive loss of brain function often results in the failure of the respiratory centre or control of the swallowing process, which may lead to terminal pneumonia. But there are also many other subsequent illnesses associated with the general breakdown of the central vital functions.

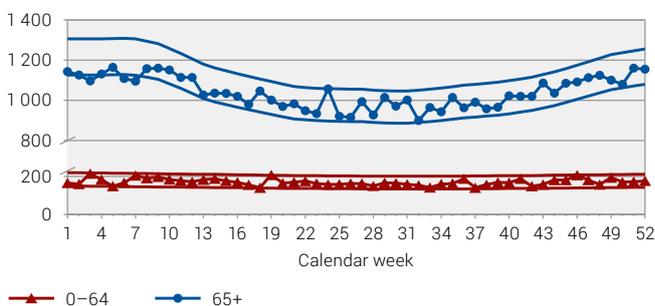
### The mortality rate for the year 2014:

The number of cases of death is subject to considerable seasonal fluctuation. If the 64 000 deaths were evenly distributed over the months of the year, there would be 5 300 deaths per month. In reality more people die in the winter half-year, with a maximum of 6 000 deaths in January. In the summer half-year (June to September) markedly fewer people die with 5000 deaths. This normal seasonal fluctuation concerns almost exclusively persons aged over 65 years.

The model used continuously to examine whether there is excess mortality relies on data from the past ten years and takes into consideration the ageing of the population. Only persons who have died in and were resident in Switzerland are included in the data, i.e. the 500 people with residency in Switzerland who die abroad each year, are not counted.

In 2014, there were 63 000 deaths, 1 500 fewer than would have been expected according to the trend of the past ten years. This divergence of -2.4% can be described as moderate. It can be attributed to the below-average mortality of the 65 and over age group in the months of January to April 2014, which followed the high excess mortality of this age group in 2013 (G4).

### Weekly number of deaths 2014 G 4



The band shown by the thin lines indicates the 95% confidence interval of the forecast.

Source: FSO – BEVNAT © FSO 2017

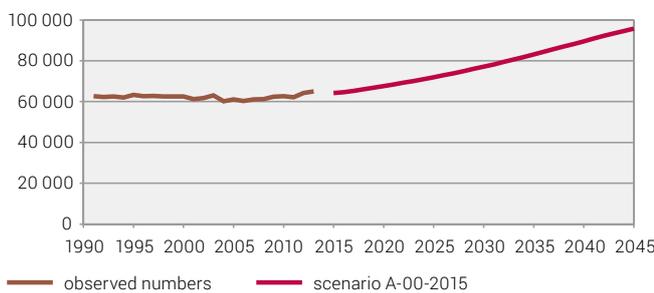
### Number of deaths: trends and forecast

For the past 50 years, approximately 60 000 persons have died annually in Switzerland. The last time the number of deaths was below 60 000 was in 1987. Over the next 20 years, the number of deaths was around 62 000. Due to the high proportion of women among elderly people, since 1995 more women have died than men.

The FSO's population development scenarios for 2015–2045 show that the number of deaths will sharply increase over the next few years and decades (Graph G5). This is mainly due to the demographic development, the increase in the number of older people in our country.

### Number of deaths 1990–2045

G 5



Source: FSO – BEVNAT

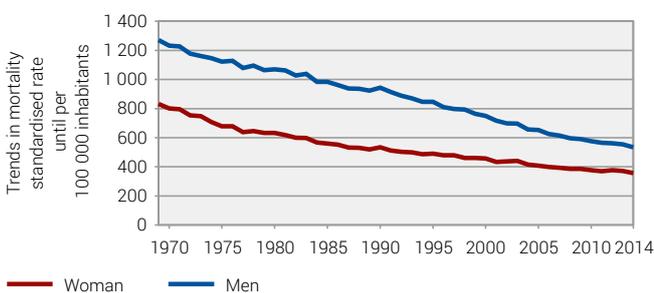
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### Trends in the mortality rate

The standardised mortality rate merges the age-specific mortality rates into one figure. The time series shows the considerable decrease over the last few decades (Graph G6). The mortality rate among women decreased faster than the mortality rate among men until 1977. Since then, the drop has been relatively slower and rates among men and women have further converged.

### Mortality in Switzerland, 1969–2014

G 6



Source: FSO – Causes of death statistics

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### Trends in potential years of life lost

“Early” mortality is measured by the number of *years of potential life lost* (YPLL). In 2014, men lost 104 000 potential years, women 59 000.

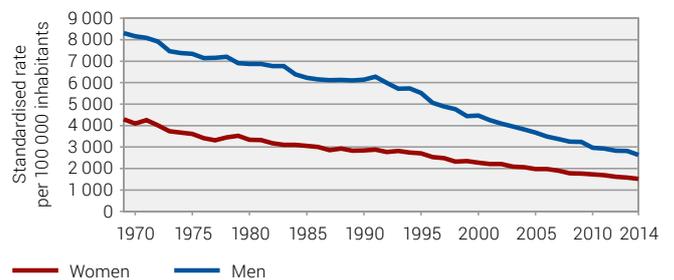
#### Definition

The years of potential life lost (YPLL) is an indicator used to calculate premature mortality. In order to calculate the YPLL, the total number of deaths in each age group is weighted according to the number of years of life left until the upper age reference of 70. If death occurs at the age of 5 years, for example, the number of YPLL is 65. The upper age reference is commonly set at 70 for reasons of comparability (used e.g. by the OECD).

The standardised rate of the YPLL per 100 000 inhabitants is now only a third of its size in 1969 (G7). Whereas for women this decline has been continuous, for men it came to a temporary halt in the second half of the 1980s due to the Aids epidemic. Since then, however, YPLL rates for men have declined at a faster pace than for women.

### Potential years of life lost 1969–2014

G 7



Source: FSO – Causes of death statistics

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### Cause of death indicators

Causes of death can be illustrated by using various indicators to show different aspects. Table 2 shows eight indicators. The simplest are the absolute number and the percentage of all deaths. These numbers can be directly compared with one another and show very simply which causes of death are common and which are rare. The crude rate puts the number of deaths in relation to the number of inhabitants but does not take the age distribution of the population into account. Standardised rates do take this into account and can therefore be used to compare mortality between different points in time and among different regions. The years of potential life lost (YPLL) are an indicator for premature mortality. They show where prevention can play a particularly important role.

## Indicators for the main causes of death, 2014

T2

	Number	% of all deaths	Crude rate <sup>1</sup>	Standardised rate <sup>2</sup>	YPLL abs. <sup>3</sup>	% of YPLL	YPLL stand. rate <sup>4</sup>	Average age at death (years)
<b>Men</b>								
<b>All causes of death</b>	<b>30950</b>	<b>100.0</b>	<b>764.6</b>	<b>534.2</b>	<b>103952</b>	<b>100.0</b>	<b>2635.0</b>	<b>75.6</b>
Cardiovascular diseases	9 483	30.6	234.3	156.1	18 150	17.5	438.4	79.8
Cancer	9 297	30.0	229.7	163.8	31 807	30.6	784.8	73.2
Respiratory organs	1 965	6.3	48.5	32.2	2 660	2.6	66.0	80.0
External causes	2 122	6.9	52.4	41.3	25 908	24.9	698.8	63.7
Dementia	1 873	6.1	46.3	28.8	265	0.3	6.1	85.7
All other diagnoses	6 210	20.1	153.4	112.1	25 162	24.2	640.8	72.4
<b>Women</b>								
<b>All causes of death</b>	<b>32988</b>	<b>100.0</b>	<b>796.7</b>	<b>356.1</b>	<b>58730</b>	<b>100.0</b>	<b>1517</b>	<b>81.8</b>
Cardiovascular diseases	11 489	34.8	277.5	103.0	5 943	10.1	147.9	86.5
Cancer	7 468	22.6	180.4	105.3	26 773	45.6	661.4	73.8
Respiratory organs	1 869	5.7	45.1	19.1	1 588	2.7	39.0	83.4
External causes	1 574	4.8	38.0	20.1	10 078	17.2	282.9	75.7
Dementia	3 886	11.8	93.8	31.9	213	0.4	4.7	88.4
All other diagnoses	6 702	20.3	161.9	76.7	14 135	24.1	380.5	79.8

<sup>1</sup> Crude rate: Number of deaths per 100 000 inhabitants

<sup>2</sup> Standardised rate: direct age-standardisation with European standard population 1980

<sup>3</sup> YPLL: Potential years of life lost of persons dying before age 70

<sup>4</sup> YPLL standardised rate: YPLL per 100,000 inhabitants, age-standardised

Source: FSO – Cause of death statistics

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The average age at death is a clear way of showing that different health problems occur at different phases of life. The widest gap can be seen between external causes (especially accidents and suicide) and dementia. On average men die from dementia aged 85, whereas accidental deaths or suicide occur when they are 22 years younger. This is why men lose only 0.3% of years of potential life to dementia, but 24.9% to external causes.

Among women the widest gap is between dementia and cancer. Their average age at death from dementia is 88 and from cancer 73. They lose 0.4% of potential years of life to dementia but 46% to cancer. The age at which men and women die from accidents differs greatly, as frequent falls among women in old age often prove fatal.

### Data source and methods

The Swiss Cause of Death Statistics were introduced in 1876. They are based on the medical certificate of cause of death. Diagnoses are recorded in words, the coding is based on the ICD-10 and is conducted in the Federal Statistical Office according to the rules defined by the WHO. All collected data are treated anonymously and strictly confidentially and are subject to the provisions of the Federal Data Protection Act of 19 June 1992 (SR 235.1). Publications on the cause of death statistics relate to persons who were resident in Switzerland, i.e. who were part of the permanent resident population independent of their nationality and place of death.

### Missing data

For 3.1% of deaths in 2014 the cause of death is unknown. This is either because no diagnosis could be made or because this information was not communicated to the FSO. Information is incomplete for 2.3% of deaths in Switzerland (99%) and 86.6% of deaths abroad (1%). The percentage of unknown causes of death decreases from around the age of 35 years with increasing age.

**Further information on the cause of death statistics on the internet:** [www.statistik.ch](http://www.statistik.ch) → Look for Statistics → 14 – Health

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