



Actualités OFS BFS Aktuell FSO News

14 Health

Neuchâtel, December 2014

Cause of death statistics

Death and its main causes in Switzerland, 2012

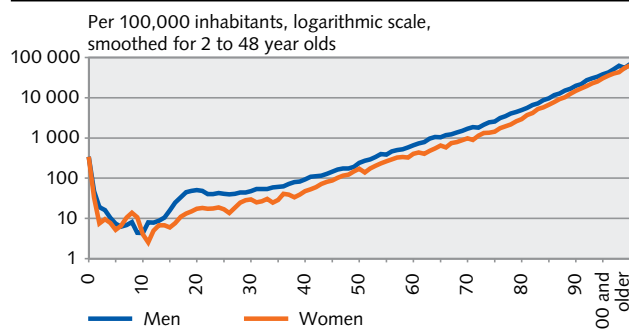
In 2012, 64,173 people died in Switzerland. Life expectancy at birth was 80.5 years for men and 84.7 years for women. Today the majority of people are aged over 80 when they die. Because disease among young people is less common or can be more effectively treated, more people are dying at an older age 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 34 deaths per 10,000 live births. The risk of dying for children aged between 2 and 17 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). The death rate is lower for females than for males, except for the 4 to 10 year olds.

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, 12% 45 to 64 years, 42% 65 to 84 years and 43% over 85 years.

Mortality rate by age, 2012

G 1

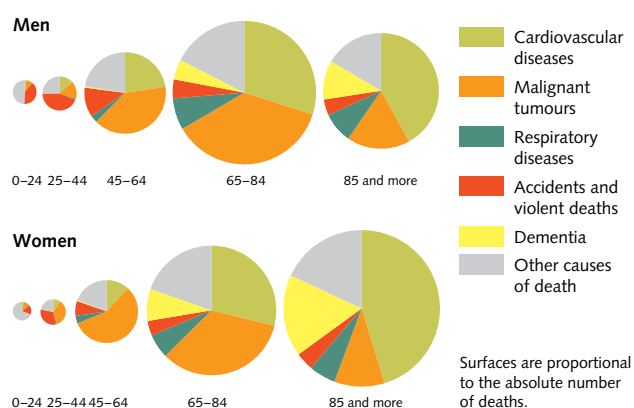


Source: FSO – BEVNAT

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Leading causes of death by age group in 2012

G 2



Source: FSO – Causes of death statistics

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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 47 to 79 year old men is cancer. Among women cancer is the most frequent cause of death from age 37 to 79. External causes, especially accidents and suicide are the main cause of death among 12 to 46 year old men and 16 to 36 year old women. Among newborns, congenital illnesses and birth-related problems cause 89% of deaths.

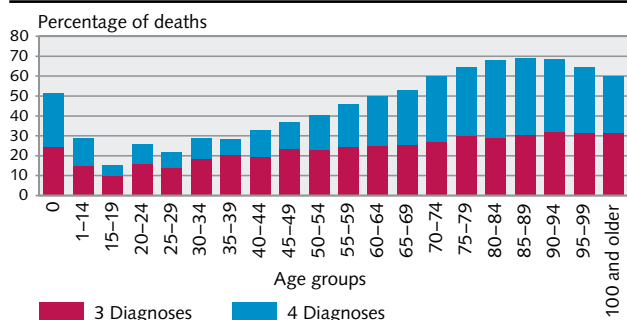
Multi-morbidity

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, 29% three and 33% four.

The number of diagnoses increases with age (Graph G 3). The greatest number of diagnoses are registered for 80 to 94 year-olds.

Multiple causes of death by age, 2012

G 3



Source: FSO – Causes of death statistics

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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 diagnose are taken into account.

The most frequent causes of death are cardiovascular diseases, from which 22,000 people died. Cardiovascular disease also contributed to the death of a further 18,000 persons who died from another main cause of death. The main diagnoses are, therefore, responsible for 55% of deaths.

T 1 Main and secondary diagnoses, 2012

	Number of main diagnoses	Number of secondary diagnoses	% of main diagnoses
Cardiovascular diseases	21,674	18,083	54.5
Cancer	16,490	1,687	90.7
Respiratory organs	3,906	11,411	25.5
Other causes	3,650	1,701	68.2
Dementia	5,739	4,596	55.5
All other diagnoses	12,714	27,773	31.4

Source: FSO – Causes of death statistics

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Cancer, on the other hand, appears 16,000 times as main cause of death, accounting for 91% of cancer cases. In contrast, diseases of the respiratory organs are the main cause of only 26% 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 5700 persons died from dementia (56%), a further 4600 were also affected (44%). Therefore dementia was recorded for a total of 10,300 deceased persons.

Does dementia cause death?

In the cause of death statistics, the main cause of death is the illness which caused the person to become ill in the first place. 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.

Seasonal mortality in the year 2012

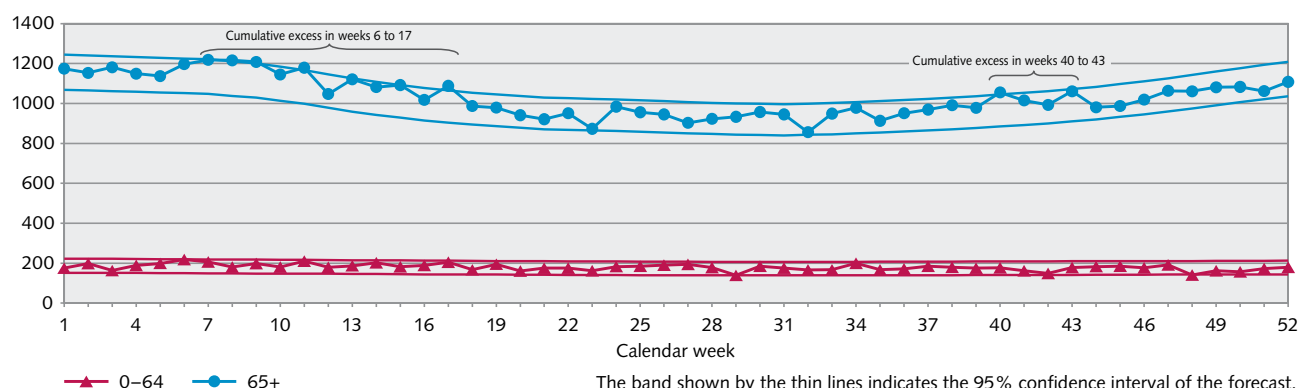
The number of cases of death is subject to considerable seasonal fluctuation. If the 62,000 deaths were evenly distributed over the months of the year, there would be 5200 deaths per month. In reality more people die in the winter half-year, with a maximum of 5900 deaths in January. In the summer half-year (June to September) markedly fewer people die with 4800 deaths. This normal seasonal fluctuation concerns almost exclusively persons aged over 65 years.

The FSO continuously examines whether there is excess mortality. The model used 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 2012, there were 63,700 deaths, 1400 more than would have been expected according to the trend of the past ten years. This divergence of 2.2% can be described as moderate. It is due to a slight excess in mortality among persons aged 65 and over in the months of February, March, April and October 2012 (Graph G 4).

Weekly number of deaths 2012

G 4



Source: FSO – BEVNAT

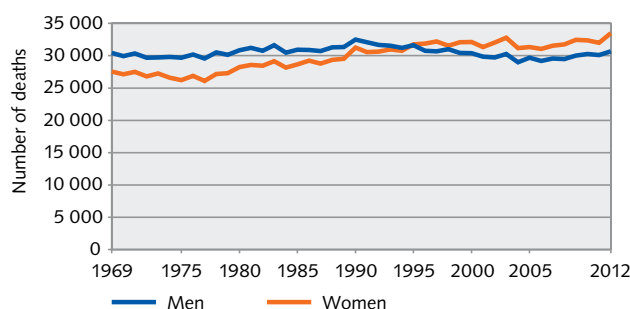
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Number of deaths: trends and forecast

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 (Graph G5). Due to the high proportion of women among elderly people, since 1995 more women have died than men.

Number of deaths 1969–2012

G 5



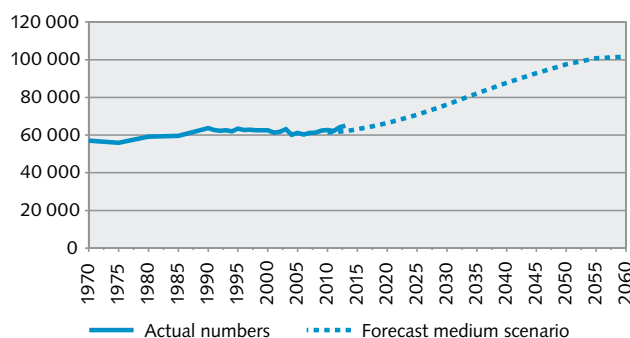
Source: FSO – BEVNAT

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The FSO's population development scenarios show that the number of deaths will sharply increase over the next few years and decades (Graph G6). This is mainly due to the demographic development, the increase in the proportion of older people in our country.

Trends in number of deaths until 2060

G 6



Source: FSO – Scenarios

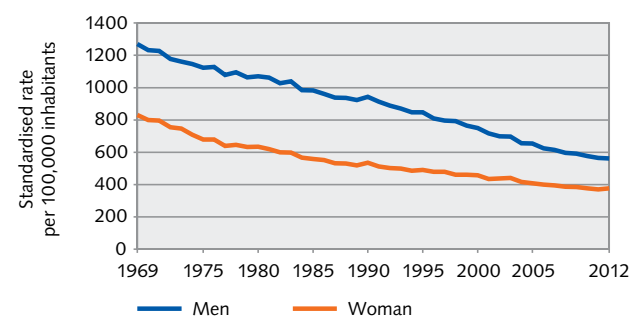
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Trends in the mortality rate

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 G7). The mortality rate among women decreased faster

Trends in mortality rate until 2012

G 7



Source: FSO – Causes of death statistics

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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.

Trends in potential years of life lost

“Early” mortality is measured by the number of years of potential life lost (YPLL). In 2012, men lost 110,000 potential years, women 63,000.

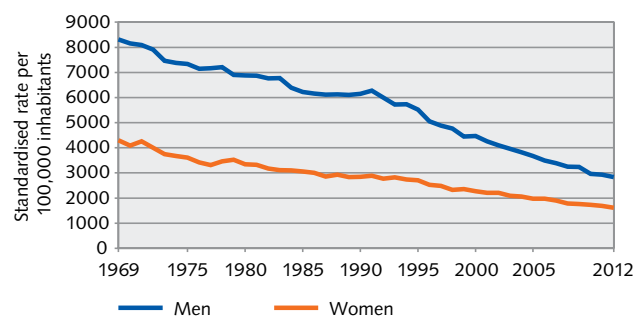
Definition

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 has fallen by more than half since 1969 (Graph G8). 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 1969–2012

G 8



Source: FSO – Causes of death statistics

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Cause of death indicators

Causes of death can be illustrated by using different indicators by which aspects can be revealed. 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 are an indicator for premature mortality. They show where prevention can play a particularly important role. The average age of death is a clear way of showing that different health problems occur at different phases of life.

The largest discrepancy is seen between external causes (especially accidents and suicide) and dementia. The average age of death for men due to dementia is 85 years,

T2 Indicators for the main causes of death, 2012

	Number	% of all deaths	Crude rate ¹	Standardised rate ²	YPLL abs. ³	% of YPLL	YPLL stand. rate ⁴	Average age of death (years)
Men								
Cardiovascular diseases	9,745	31.7	247.0	170.5	19,010	17.5	474.6	79.6
Cancer	9,024	29.4	228.7	168.3	32,039	29.5	814.0	73.0
Respiratory organs	2,057	6.7	52.1	35.4	2,365	2.2	59.2	80.6
External causes	2,151	7.0	54.5	44.7	29,598	27.3	826.0	61.6
Dementia	1,746	5.7	44.3	28.7	188	0.2	4.5	85.4
All other diagnoses	5,974	19.5	151.4	113.2	25,288	23.3	659.8	72.5
All causes of death	30,697	100.0	778.0	560.8	108,487	100.0	2838.1	75.4
Women								
Cardiovascular diseases	11,929	35.6	294.4	111.8	6,697	10.9	170.4	86.2
Cancer	7,466	22.3	184.3	109.8	28,820	46.8	729.0	73.5
Respiratory organs	1,849	5.5	45.6	19.5	1,855	3.0	47.4	83.4
External causes	1,499	4.5	37.0	20.4	10,061	16.3	286.5	74.6
Dementia	3,993	11.9	98.6	33.9	178	0.3	4.1	88.3
All other diagnoses	6,740	20.1	166.4	80.3	13,982	22.7	379.4	79.7
All causes of death	33,476	100.0	826.3	375.7	61,593	100.0	1616.8	81.6

Source: FSO – Causes of death statistics

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¹ Crude rate: Number of deaths per 100,000 inhabitants.² Standardised rate: Direct age-standardisation with European standard population 1980³ YPLL: Potential years of life lost of persons dying before age 70.⁴ YPLL standardised rate: YPLL per 100,000 inhabitants, age-standardised

for accidents or suicide the age is 24 years younger. This is why for men only 0.2% of years of potential life are lost due to dementia, but 27.3% due to external causes.

Among women the greatest discrepancy is between dementia and cancer. The average age of women dying from dementia is 88 years; for cancer 73. They lose 0.3% of potential years of life to dementia but 47% 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.

Missing data

For 3.0% of deaths in 2012 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 2.2% of deaths in Switzerland and 86% of deaths abroad. The percentage of unknown causes of death decreases from around the age of 35 years with increasing age.

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.

Further information on the cause of death statistics on the internet: Swiss Federal Statistical Office → Topics → Health → Health of the population → Mortality, causes of death

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