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Krebsregister des Kantons Zürich

Overview on Cancer Incidence and Mortality Canton Zurich, 1984 - 2008

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Preamble and Methods

The Cancer Registry of the Canton Zurich is a population-based, epidemiological registry. It provides important information on the cancer burden in the canton Zurich. This information can be used to plan and evaluate more efficiently prevention and screening strategies.

The Cancer Registry Zurich exists since 1980. It is the biggest cancer registry in Switzerland. With approx. 1.3 million inhabitants in the catchment area and about one third of all registered cancer cases in Switzerland, the Cancer Registry Zurich has an essential importance for the Swiss cancer epidemiology.

Methods

This report shows data of the Canton Zurich (ZH, black curve) in comparison to Alemannic Switzerland, i.e. German-speaking cantons (SA, green curve) as well as to overall Switzerland (CH, red curve). The data were analysed at the National Institute of Cancer Epidemiology and Registration (NICER).
The present document contains extrapolated estimated numbers of new cases and incidence rates for the whole of Switzerland. More than half of the Swiss cantons, 15 of 26, are covered by cancer registration. This represents 63% of the total population. However, the degree of coverage is very different between the two main cultural parts of the country: 47% for German-speaking cantons compared to 100% for French- and Italian-speaking cantons. Taking this into account, the statistical estimates are computed separately for each part and then added together. Incidence estimates for all German-speaking cantons combined are extrapolated from the age-, sex- and cancer-specific incidence rates averaged over German-speaking cantons registering cancer.

In this report all cancer localisations are presented apart from very rare ones. In order to compare the cancer burden between the cantons a standardization of the data is necessary. For age standardization the European standard population was used. The rates are presented as cases per 100’000 inhabitants and year. The structure of the presentation is the following:

- The first figure shows the age standardized incidence rate by mean annual trends.
- The second figure presents the age standardized incidence rate by period (5-year period).
- The third figure shows the age standardized mortality rate by period (5-year period).

For more detailed data please contact the cancer registry directly, see contact information on the back cover of the report.

Important note for Zurich data
In the canton of Zurich, some pathology institutions and hospitals withheld data which caused underregistration in the years 2007 and 2008. Because of the suspected underreporting, an estimation for the missing cases was applied using the following procedure:
The expected number of cases per cancer site and sex over all ages combined are extrapolated linearly from a recent calendar period of observed data. The allocation of expected counts into age classes follows the mean age distribution of the observed data. Expected counts are preferred over observed counts only if certain criteria are fulfilled:

1. expected counts ≥20;
2. observed counts are ≤95% of expected counts
3. observed counts are ≥ 5 less than expected counts

The data for Zurich 2007 was estimated for some cancer sites based on observed counts 2000 to 2006. The data for Zurich 2008 was estimated for some cancer sites based on observed counts 2001-2006 and estimations for 2007. These estimates can only be made on the basis that the observed data is complete and reliable.

As an example, figure 1 and 3 show estimated age standardized incidence rate by mean annual trends for ZH, CH and SA calculated with the method described above.
In contrast, figure 2 and 4 present only the observed ZH data for the age standardized annual incidence rates and estimated data for CH and SA.
The decline for the canton Zurich in the incidence years 2007 and 2008 is obvious, especially impressive for prostate cancer.

Figure 1: all cancers except non-melanotic skin (estimated for ZH, CH and SA)

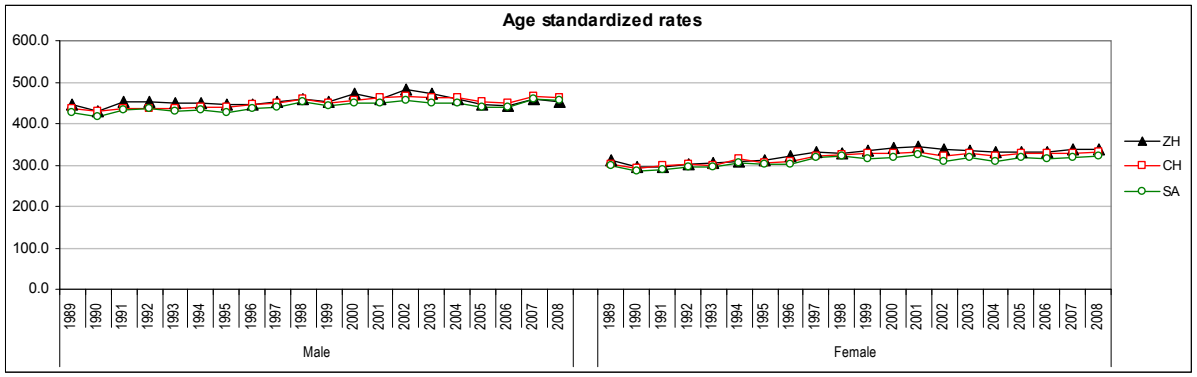


Figure 2: all cancers except non-melanotic skin (observed ZH, estimated for CH and SA)

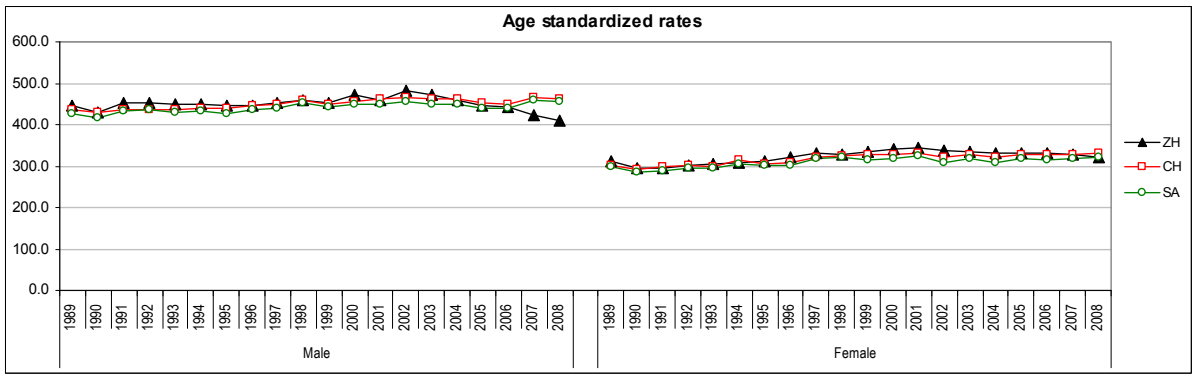


Figure 3: prostate cancer (estimated for ZH, CH and SA)

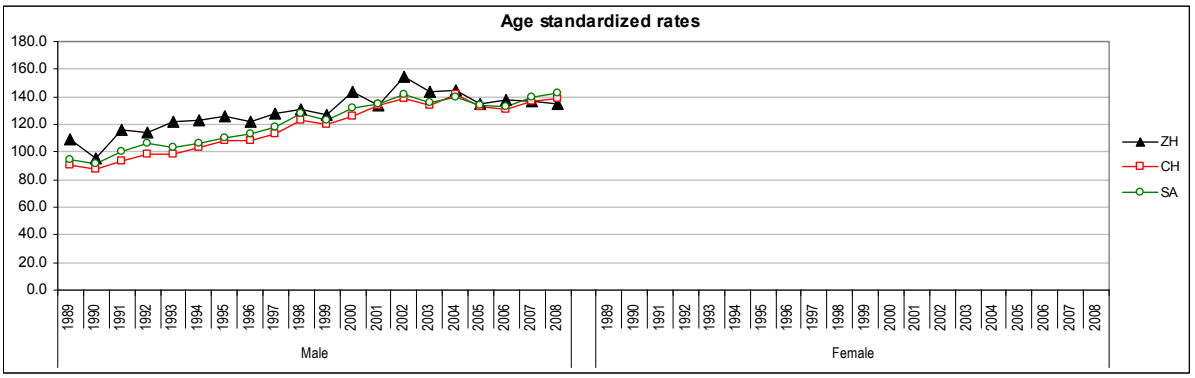
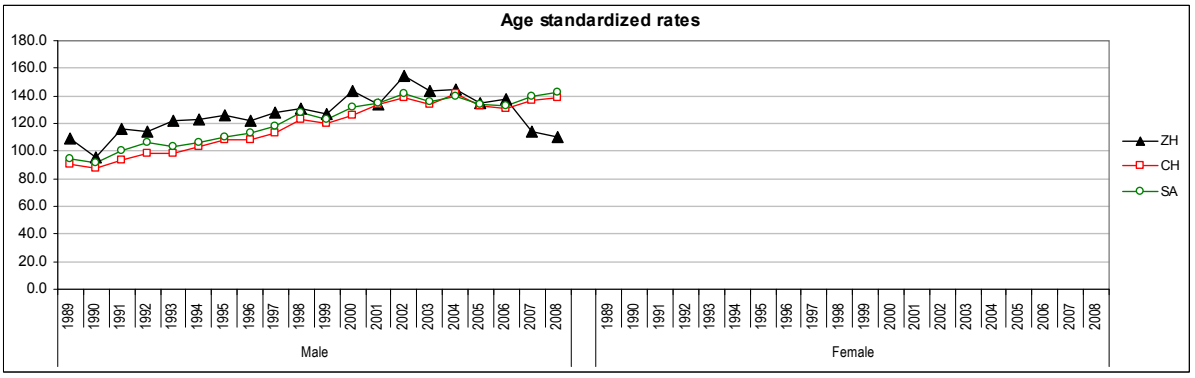


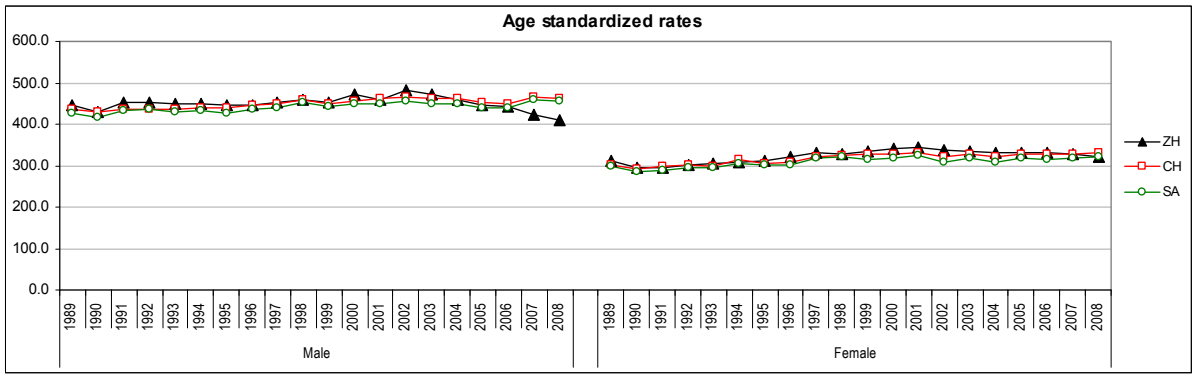
Figure 4: prostate cancer (observed ZH, estimated for CH and SA)



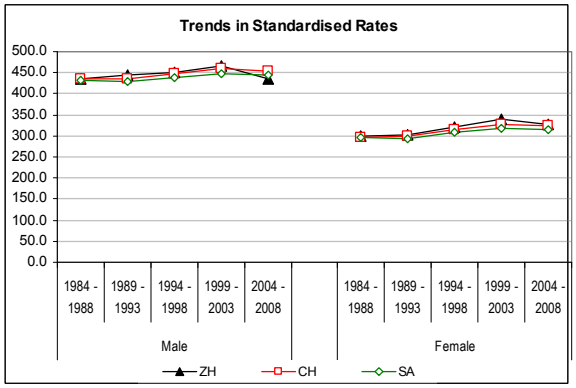
For this report, the presentation of data is the following:
The observed data for the canton Zurich are presented (black curve). However, as the weight of the canton Zurich for the Swiss population amounts to 17%, it would bias the Swiss estimates. Therefore, extrapolations for CH and SA (red and green curve) are based on cantonal data with applied compensation for suspected underreporting.

1 All Cancers except non-melanotic Skin

Incidence: mean annual trends

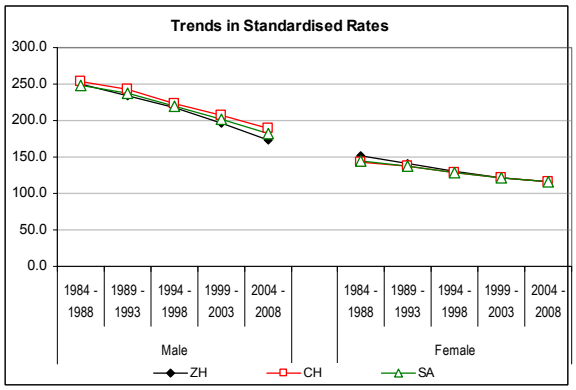


European standardized incidence rate by period



The incidence rates of all tumour localisations slightly increase over the past 25 years. Men are more affected than women. There is not much difference between the canton of Zurich and the German-speaking cantons as well as overall Switzerland. However, a small reduction in the incidence rate for the canton of Zurich can be noticed for the years 2007-2008. This is probably due to missing cases because of limited access to some pathology institutions and hospitals.

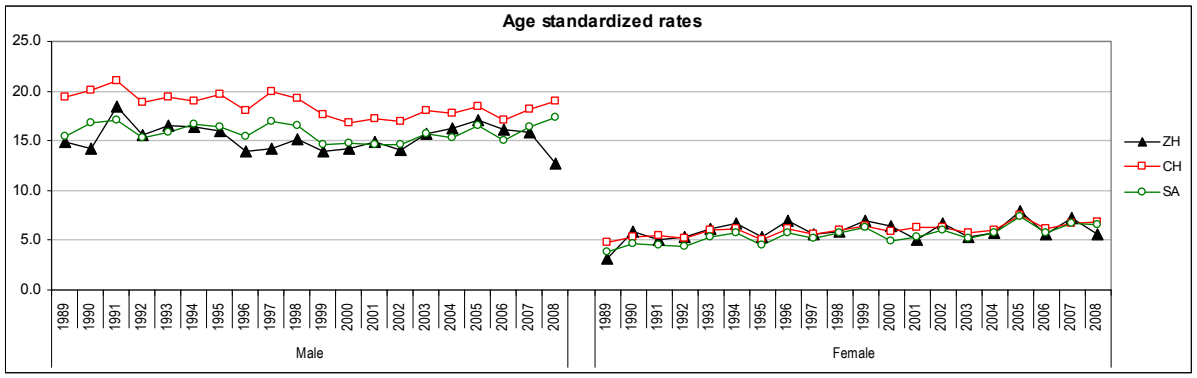
European standardized mortality rate by period



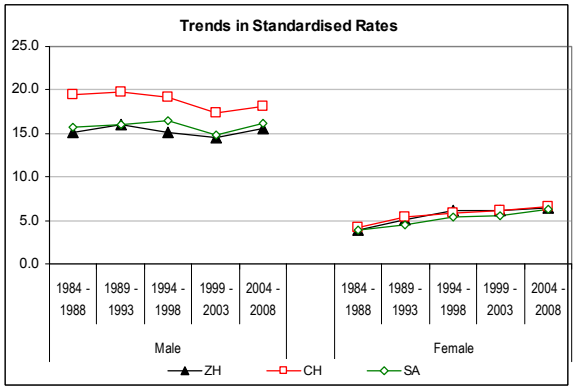
The mortality rate, however, continuously decreases over the past decades in all cantons of Switzerland. The reduction is more prominent in males than in females. However, the male mortality rate with 174-189 deaths per 100'000 inhabitants and year in the period 2004-2008 is still higher than the rate of women (116/100'000 deaths per year in the same period).

2 Oral Cavity & Pharynx (ICD-10 C00-14)

Incidence: mean annual trends

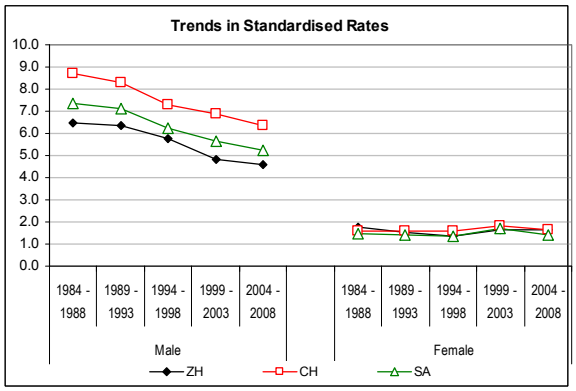


European standardized incidence rate by period



The cancer localisations of oral cavity & pharynx contain all tumours of the lips, the tongue, the ground and roof of the mouth, the salivary glands, the palatine tonsils and the throat.
In general, men have a more than twofold higher risk than women. Whereas there are no significant differences among women in the various regions, men of the canton Zurich have a lower risk of incidence than in other cantons. Over the years a slight increase in women can be noted, while the incidence rate in men is relatively stable.

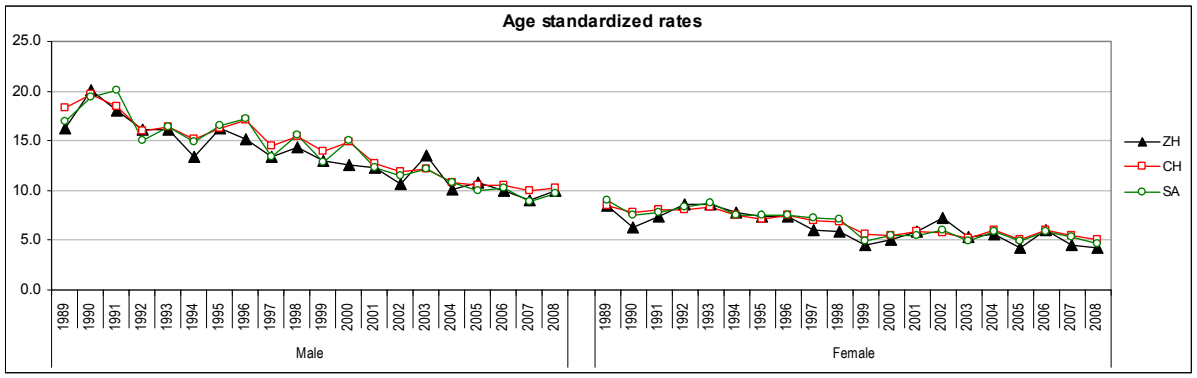
European standardized mortality rate by period



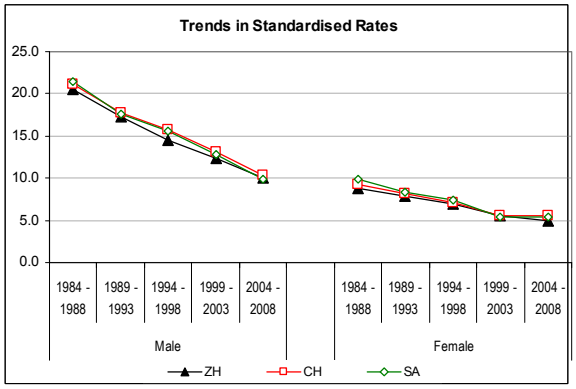
The mortality rates of men are decreasing over the years. The canton of Zurich has the lowest mortality rate in comparison to German-speaking and overall Switzerland. However, the male mortality rate is still about threefold higher than the female rate. The risk of mortality for women seems to be quite unchanged over all the periods.

3 Stomach (ICD-10 C16)

Incidence: mean annual trends

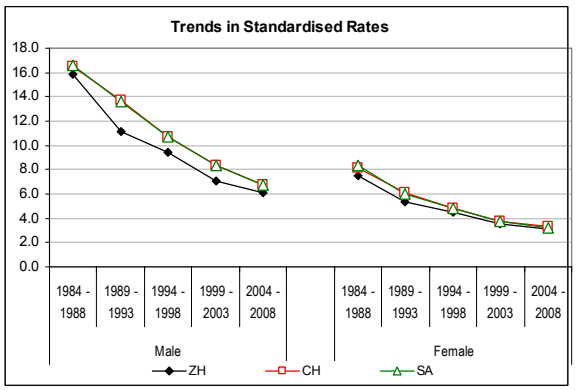


European standardized incidence rate by period



A favourable reduction of stomach cancer can be noticed in Switzerland similar to international trends. For both men and women there are no regional differences in stomach cancer incidence. Men have a more significant reduction in incidence than women over the years. But their risk is still about twofold higher than for women.

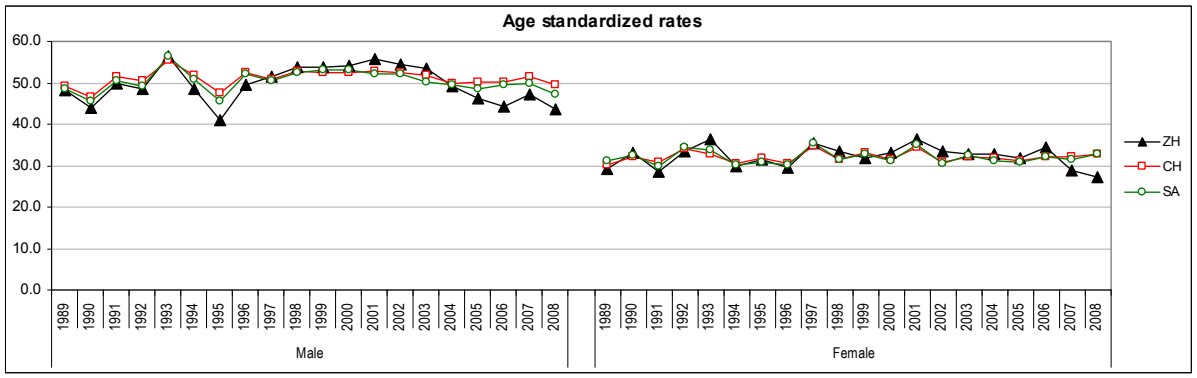
European standardized mortality rate by period



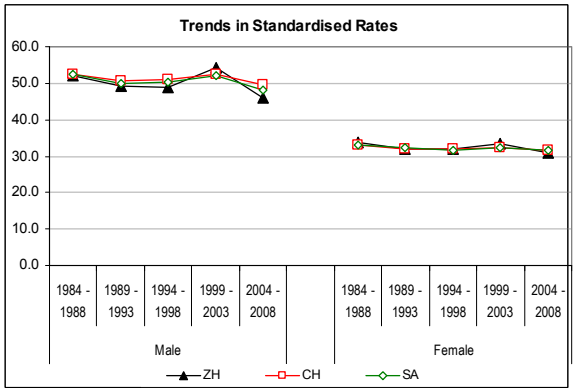
The mortality rates of stomach cancer are decreasing as well. From the period 1984-1988 to the period 2004-2008 the male mortality rate falls from about 16 deaths per 100'000 inhabitants and year to ca. 6 deaths. The female rate decreases from ca. 8/100'000 to 3/100'000 deaths and is therefore still lower than the male one. In comparison to other cantons the mortality rates of men is constantly lower. No regional differences are seen for the female risk.

4 Colon, Rectum (ICD-10 C18-20)

Incidence: mean annual trends

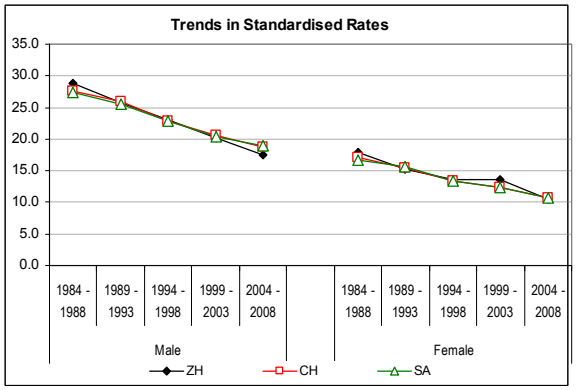


European standardized incidence rate by period



In the canton of Zurich colon and rectum cancer is the third most common tumour localisation in men and the second most frequent tumour in women. The male yearly incidence rate is on average 50/100'000 cases, the female rate about 32/100'000 cases. There is a slight increase in incidence until the year 2001, afterwards the rates are declining. No regional differences for men and women are seen.

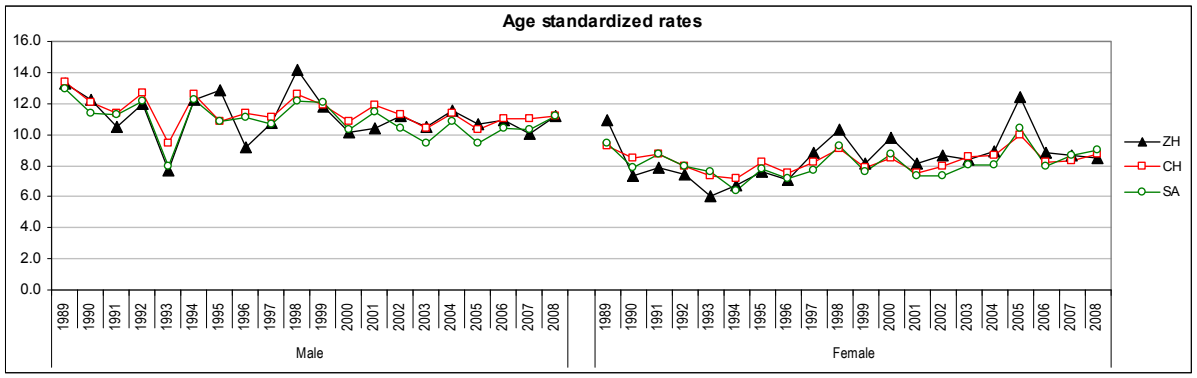
European standardized mortality rate by period



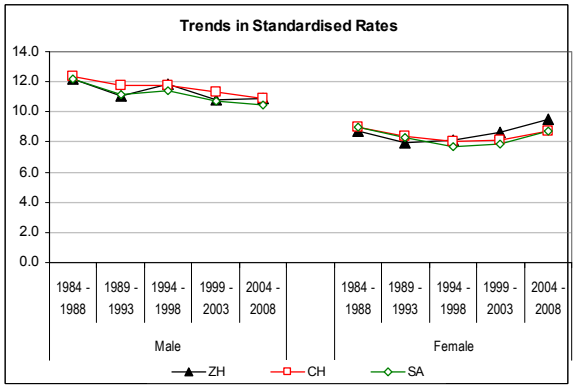
Whereas the incidence rates show no remarkable changes, the mortality rates present a clear and continuous reduction over the years. This decrease can be observed for all cantons. The mortality risk for men is still higher than for women.

5 Pancreas (ICD-10 C25)

Incidence: mean annual trends

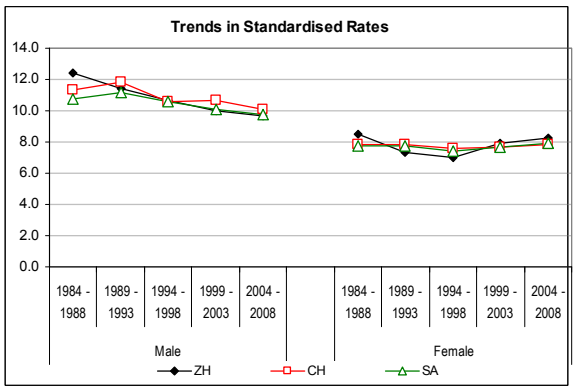


European standardized incidence rate by period



Pancreas cancer affects both, women and men, in nearly the same extent. The incidence rates are similar all over Switzerland. For men the rates seem to be slightly decreasing since the end of the 1990s to about 11 cases per 100'000 inhabitants. In contrast, the female incidence rates, especially for women of the canton Zurich are increasing during this time to a level of 9/100'000 cases.

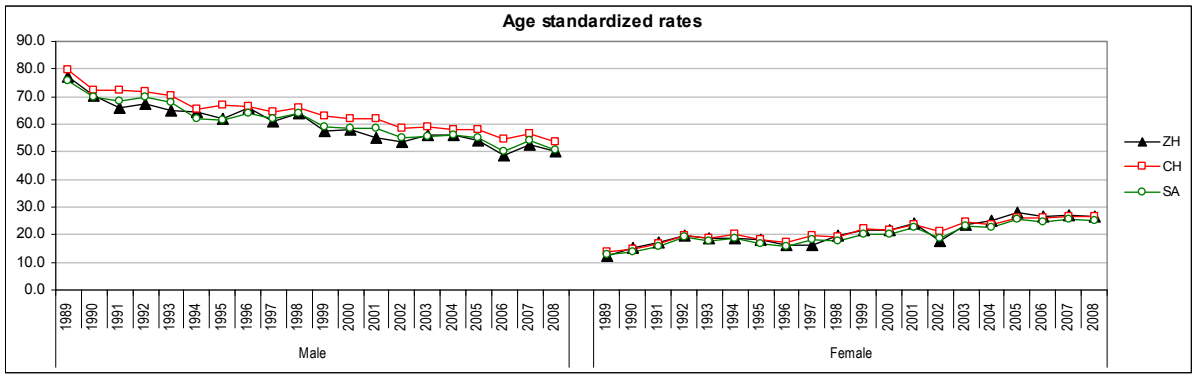
European standardized mortality rate by period



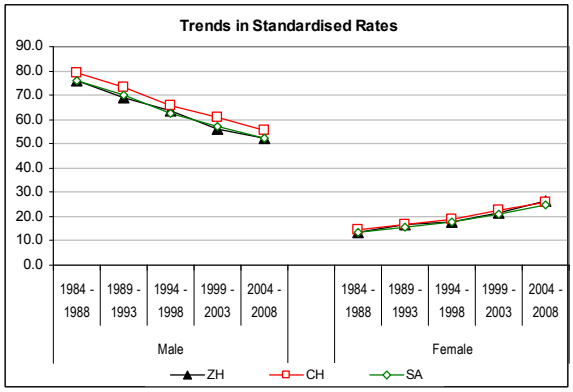
The mortality rates show a similar trend as the incidence rate. For the canton Zurich the male mortality risk is constantly declining. The trends for the German-speaking cantons and overall Switzerland follow this tendency. However, the mortality rate for women remains more or less unchanged in all regions at a slightly lower level than the male mortality risk with ca. 8 deaths per 100'000 inhabitants.

6 Lung, Bronchus, Trachea (ICD-10 C33-34)

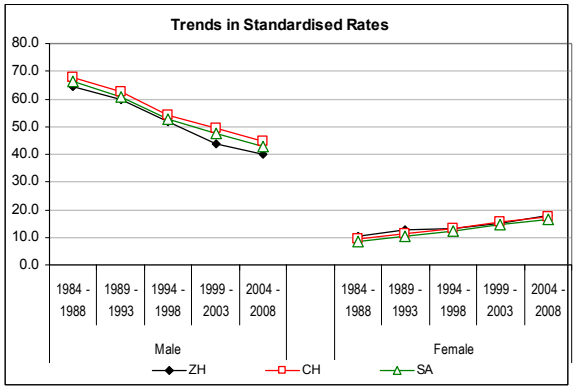
Incidence: mean annual trends



European standardized incidence rate by period



European standardized mortality rate by period

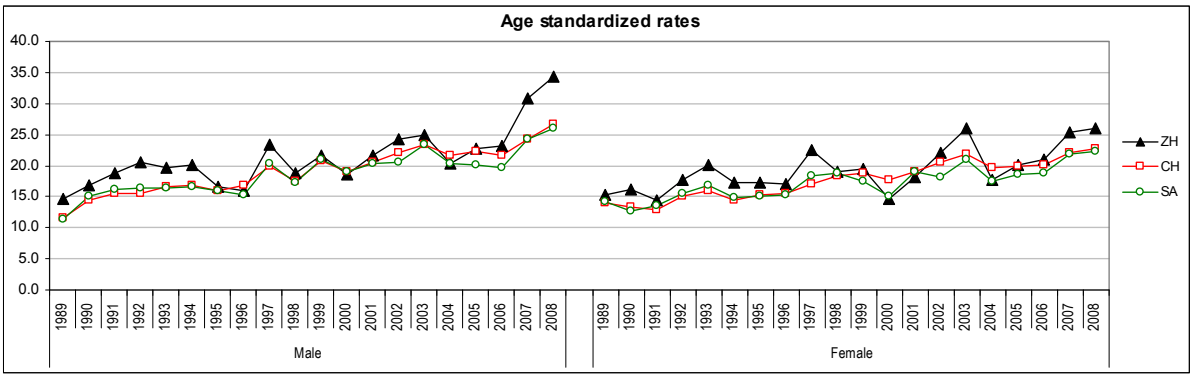


Lung cancer, which also includes the tumours of the bronchus and trachea, is the second most common cancer in men and the third most frequent one in women. Since the 1980s the male incidence rates are constantly decreasing to a level of 50/100'000 cases in 2008. The male incidence rate of the canton Zurich is always slightly lower than those of the other regions. However, the incidence rate for women goes in the opposite direction, continually increasing to 27/100'000 cases in 2008. In contrast to men, the female rates are similar in all regions.

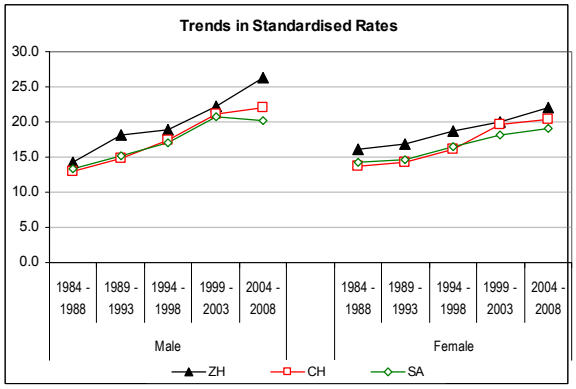
According to the incidence rates the mortality rates in men are decreasing as well in all Swiss cantons. The male mortality rate for the last period (2004-2008) amounts to 40/100'000 deaths per year in the canton Zurich and is the most common cause of death in cancer. Still much lower, but constantly increasing is the female mortality rate in Switzerland. It is 18'/100'000 deaths per year for the last period in the canton Zurich and the second most common cause of death in cancer.

7 Skin Melanoma (ICD-10 C43)

Incidence: mean annual trends

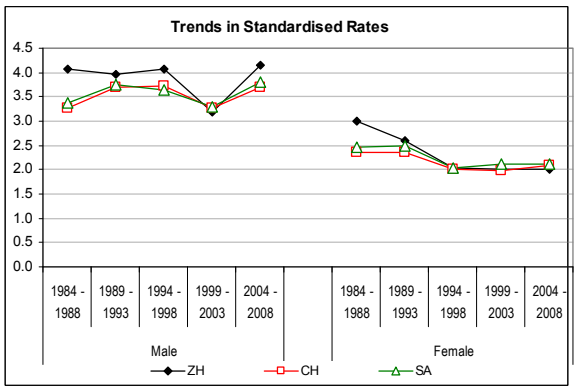


European standardized incidence rate by period



Skin melanoma is the fourth most common cancer in the canton Zurich. For both, men and women, the incidence rates are increasing over the last decades. The periodical rates of the canton Zurich are always higher than those of the other Swiss cantons leading to an incidence rate of 34/100'000 cases in men and 26/100'000 cases in women in the year 2008.

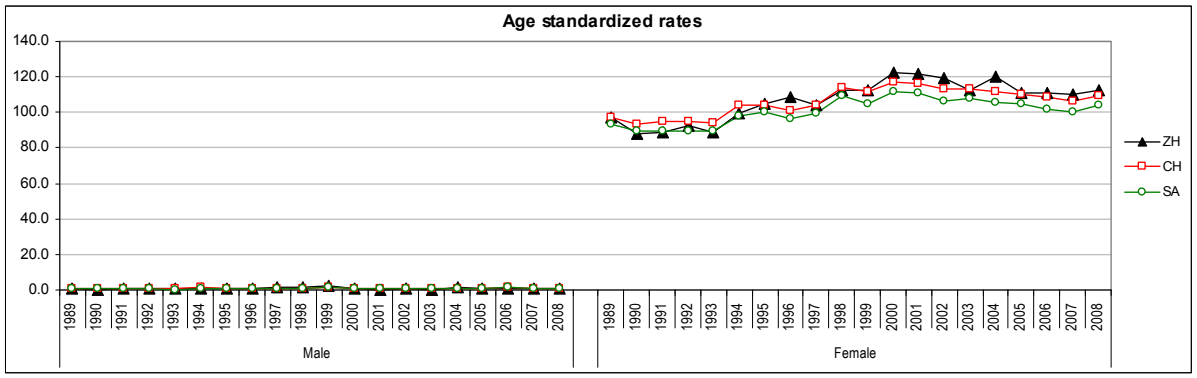
European standardized mortality rate by period



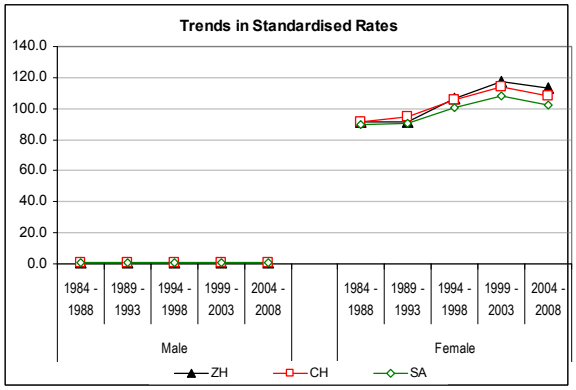
Due to the good prognosis of skin melanoma the mortality rates are at a much lower level than the incidence rates. In all Swiss cantons the male mortality risk remains more or less unchanged during the last periods between 3-4/100'000 deaths. The female mortality risk reduces slightly from 3 to 2 deaths per 100'000 inhabitants and year.

8 Breast (ICD-10 C 50)

Incidence: mean annual trends

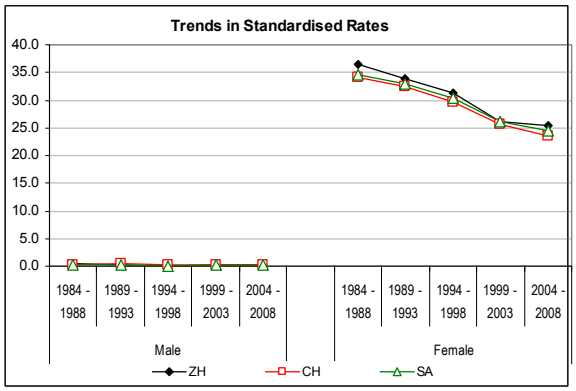


European standardized incidence rate by period



Breast cancer is the most common cancer in women of the canton Zurich. Along with other Swiss cantons the incidence rates were increasing until the year 2000. Since then the rates are slightly decreasing to 112/100'000 cases in the canton Zurich. The values for the German-speaking cantons (SA) and overall Switzerland (CH) are minimal lower, namely 104/100'000 respectively 110/100'000 cases.

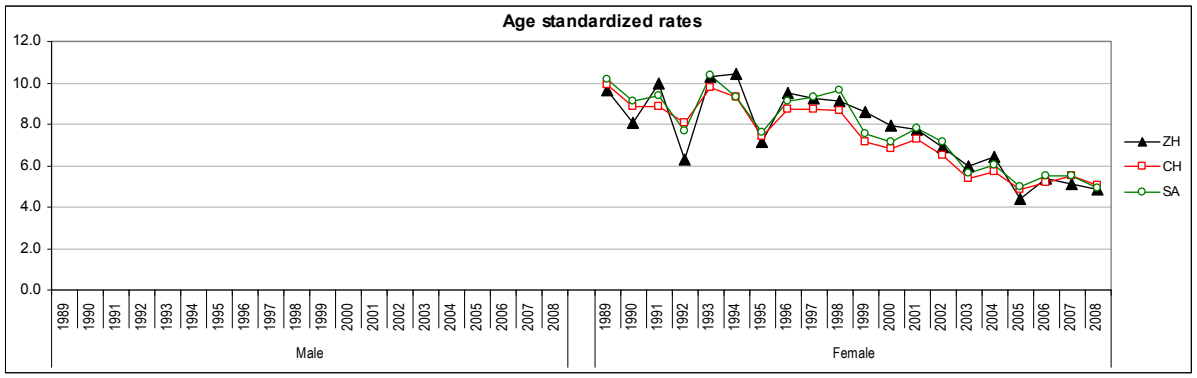
European standardized mortality rate by period



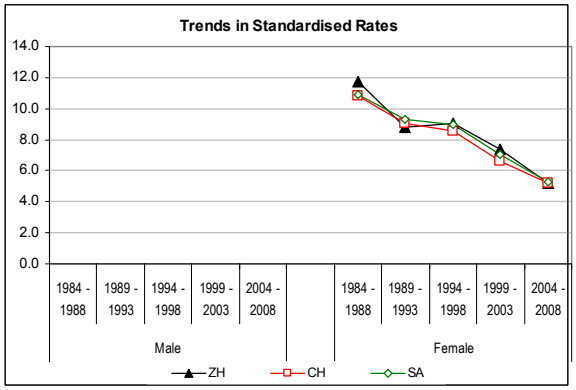
Although the mortality rate for breast cancer is decreasing, it still remains the most common cause of death in the canton Zurich. The rate for the canton Zurich is with 25/100'000 deaths slightly above the Swiss-German and overall Switzerland rates.

9 Cervix Uteri (ICD-10 C 53)

Incidence: mean annual trends

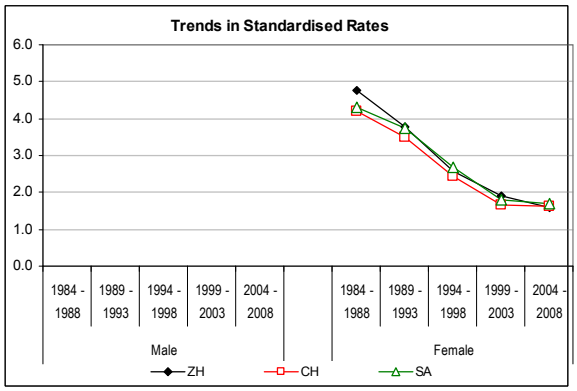


European standardized incidence rate by period



Cancer of the cervix uteri (in-situ cases are not included) are decreasing according to international trends. The declining rates are similar in all cantons in Switzerland. In 2008 the age standardized rate is 5 cases per 100'000 inhabitants for all regions.

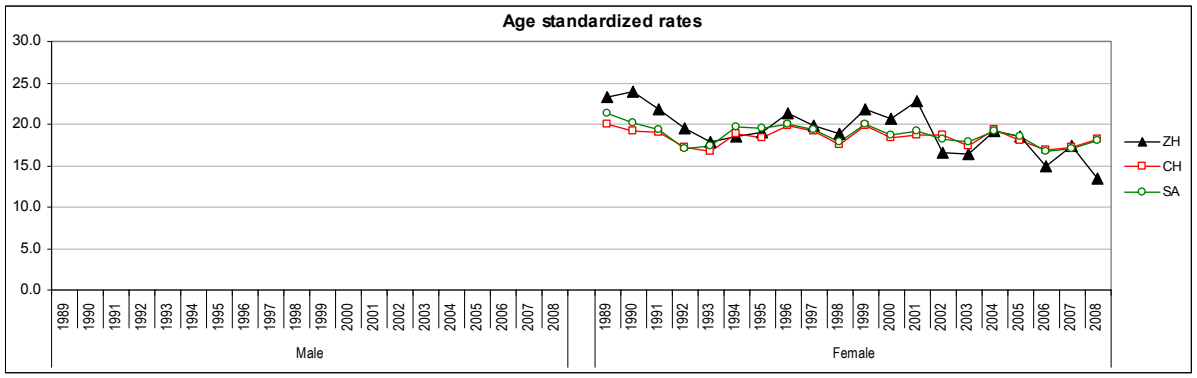
European standardized mortality rate by period



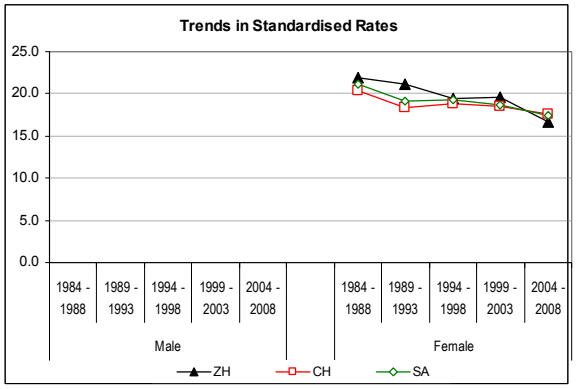
The mortality rates follow the same pattern as the incidence rates. They are constantly decreasing over the decades and are now stable at a level of 1.6/100'000 deaths per year.

10 Corpus Uteri & NOS (ICD-10 C54-55)

Incidence: mean annual trends



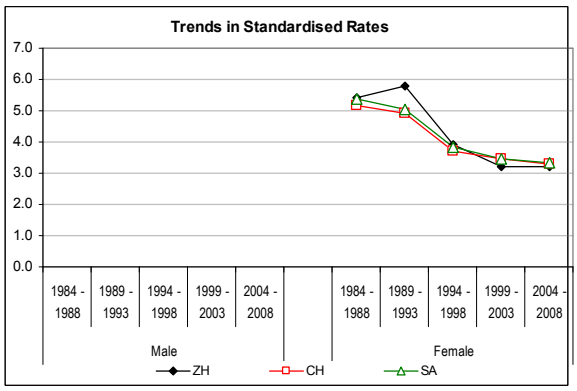
European standardized incidence rate by period



These rates include the malignant neoplasm of the corpus uteri and other parts of the uterus not other specified.

The periodical trends show a modest but steady decrease of the incidence from 22/100'000 cases in the period 1984-1988 to 17/100'000 cases in the period 2004-2008. There are no major differences observed between the regions.

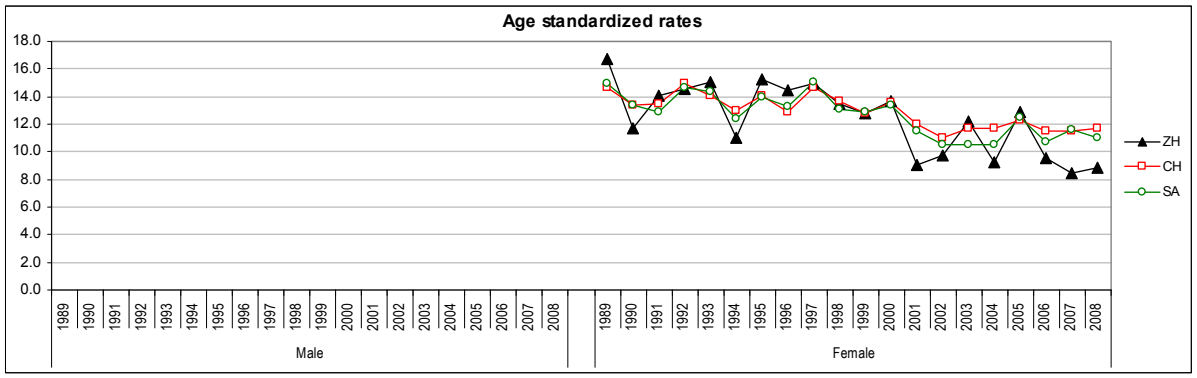
European standardized mortality rate by period



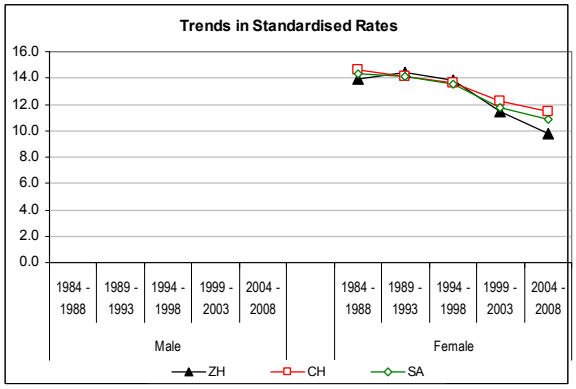
Due to the good prognosis of the uterus carcinoma the mortality rates decline at a much lower level than the incidence rates. For the period 1984-1988 the mortality risk is ca. 5/100'000 deaths per year decreasing to about 3/100'000 deaths per year in the period 2004-2008.

11 Ovary (ICD-10 C 56)

Incidence: mean annual trends

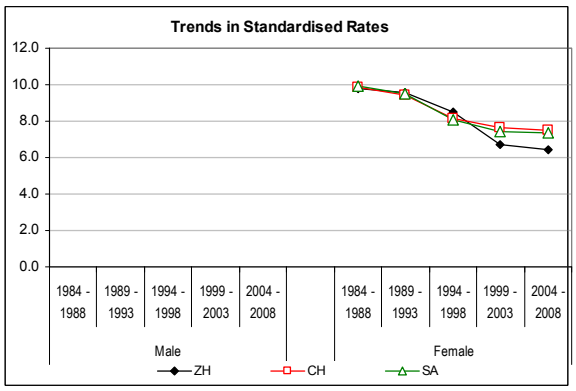


European standardized incidence rate by period



Ovary cancer is on the eighth position of the cancer incidence in women. Over the periods the incidence rates are decreasing, especially since the period 1994-1998. The reduction of the incidence is more pronounced in the canton Zurich than in other parts of Switzerland. In 2008 the incidence rate for the canton Zurich is 9/100'000 cases, i.e. 82 absolute cases in the canton.

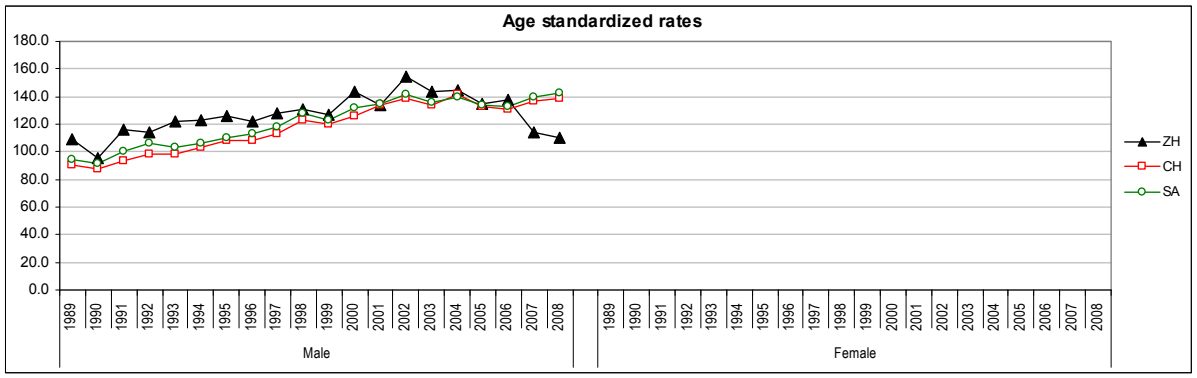
European standardized mortality rate by period



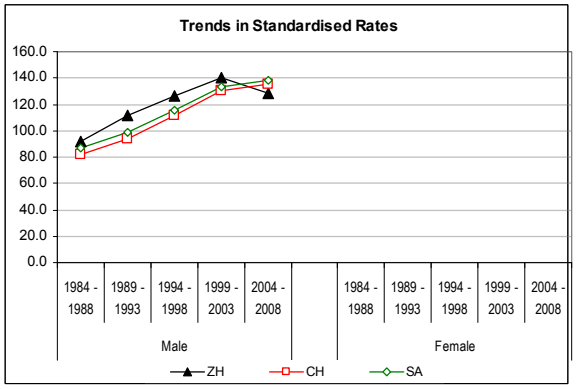
Parallel to the incidence rates the mortality rates are decreasing in Switzerland as well. Nevertheless, it is the fifth most common cause of death in women. Starting with a mortality rate of 10/100'000 deaths in the period 1984-1988 for all regions it declines to 6/100'000 deaths in 2004-2008 for the canton Zurich. The other cantons are slightly higher with 7/100'000 deaths.

12 Prostate (ICD-10 C61)

Incidence: mean annual trends

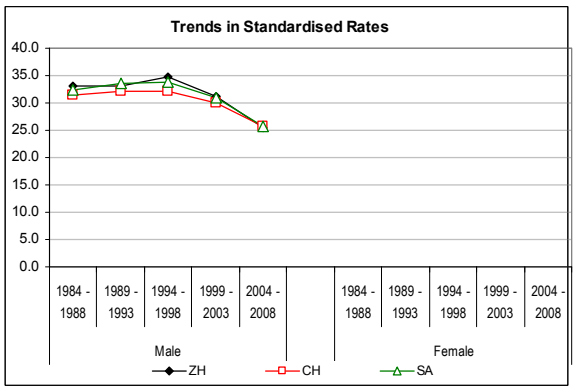


European standardized incidence rate by period



Prostate cancer is the most common cancer in men with the highest incidence rate of 155/100'000 cases in 2005 for the canton Zurich. Afterwards the rates are decreasing in the canton, whereas in other regions of Switzerland the incidence rates are more or less unchanged. The remarkable reduction in 2007/2008 for the canton Zurich may be due to the fact of limited access to data of some institutions.

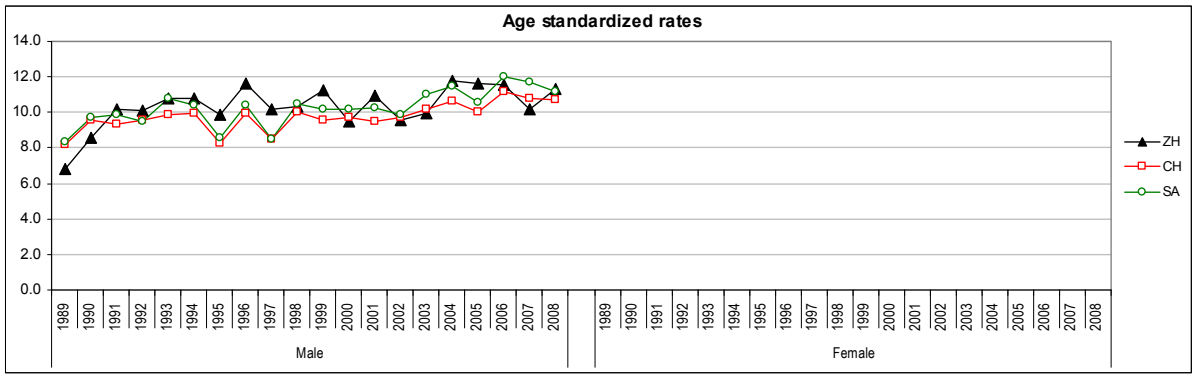
European standardized mortality rate by period



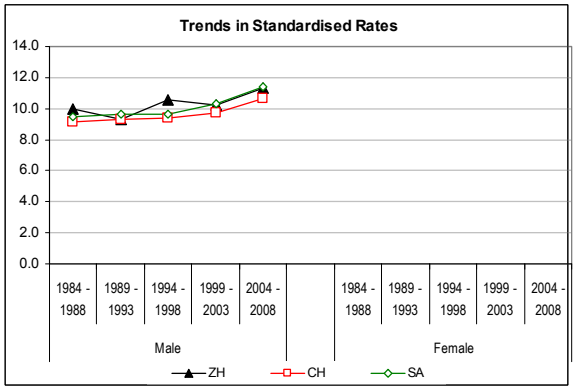
While an increasing trend followed by a stabilization on a high level can be observed for the incidence rate, the prostate cancer mortality rates are decreasing since the period 1994-1998. Starting with a mortality risk of 32-33/100'000 deaths in the years 1984-1988, it ranks at 25-26/100'000 deaths in the last period. Despite the good prognosis it is the second most common cause of death in the canton Zurich. There are no relevant differences in the trends of the mortality rates in Switzerland.

13 Testis (ICD-10 C 62)

Incidence: mean annual trends

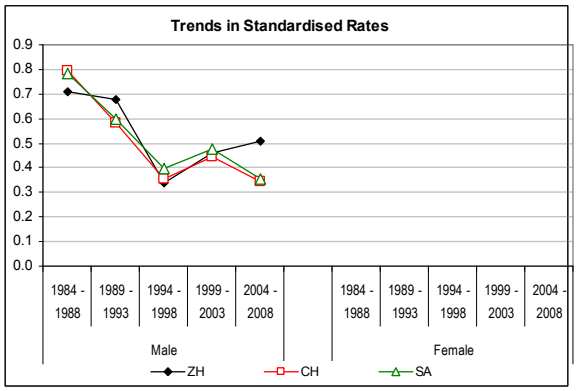


European standardized incidence rate by period



Mostly younger men between 30 and 39 years of age are affected by testis cancer. It accounts for about 3% of all cancer localisations in men and ranks on the ninth position of male cancer incidence in the canton Zurich. Not only in the canton Zurich but also in other cantons a modest increase in incidence can be observed with a rate of 11/100'000 cases in 2008.

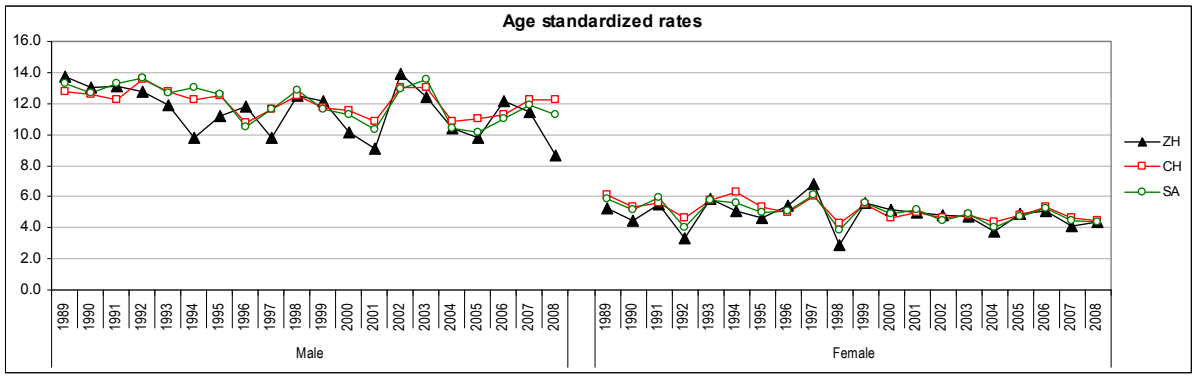
European standardized mortality rate by period



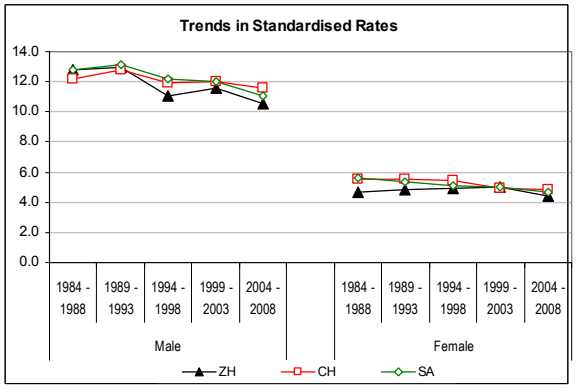
The mortality rate in testis cancer is very low. In the canton Zurich 2-4 men die of testis cancer per year. Because of these small numbers the interpretation of the mortality trends over the periods is difficult.

14 Kidney (ICD-10 C 64)

Incidence: mean annual trends

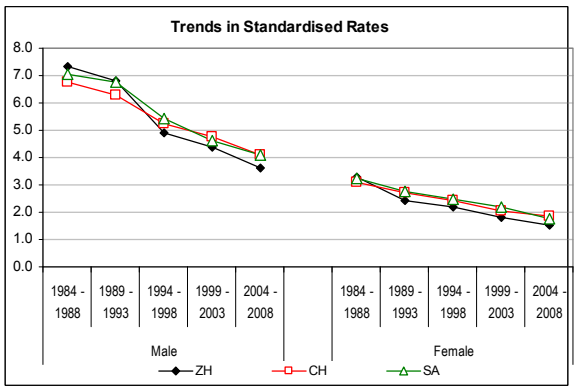


European standardized incidence rate by period



Kidney cancer is more common in men than in women. A slight reduction in the male incidence rate can be observed since the end of the 1980s. The rate for Zurich men is always a bit lower than for other Swiss men. In contrast, the female incidence rates remain more or less unchanged at a level of 5 cases per 100'000 inhabitants and year.

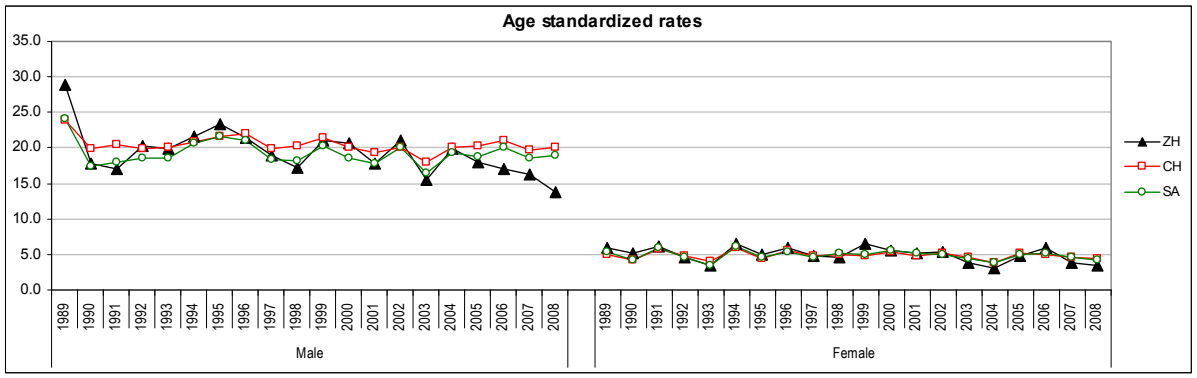
European standardized mortality rate by period



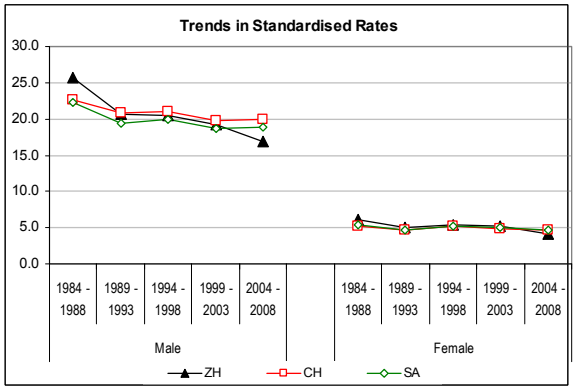
Whereas the incidence rates do not show any relevant changes, the mortality rates present a remarkable decline over the past 25 years. The decrease of mortality is more pronounced in men than in women. However, it has to be considered that the mortality rate of men is still at a higher level than for women. No regional differences can be observed.

15 Bladder (ICD-10 C67)

Incidence: mean annual trends

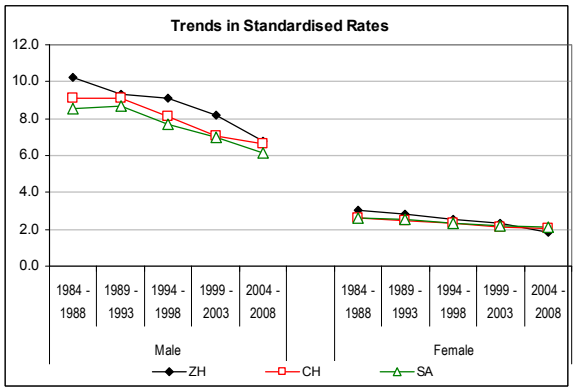


European standardized incidence rate by period



Bladder cancer incidence is much higher in men than in women. Men have up to a fivefold higher risk to be affected by this tumour than women. In general, the Swiss trends of the incidence rate remain stable over the periods at a level of about 20/100'000 cases for men and 5/100'000 cases for women. Only for men of the canton Zurich a reduction from 26/100'000 cases per year in 1984-1988 to 17/100'000 cases per year in 2004-2008 can be observed.

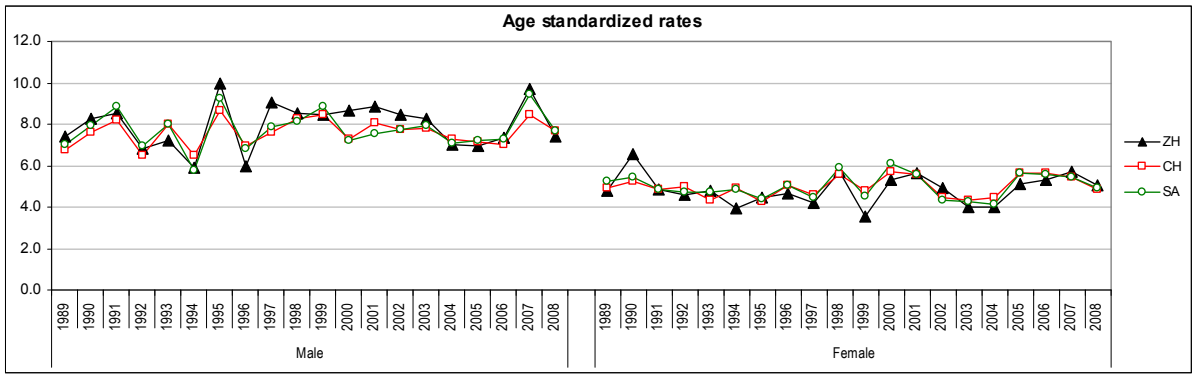
European standardized mortality rate by period



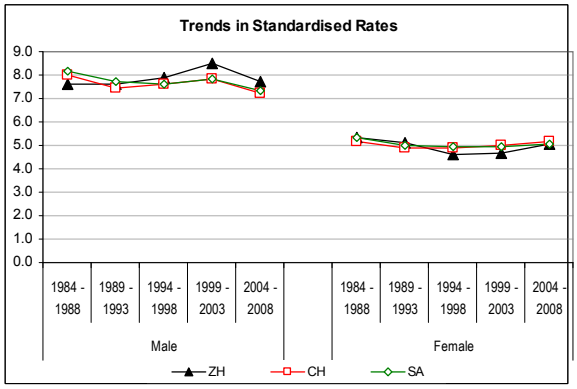
Although a reduction in the mortality rates, can be noted, it is the fifth most common cause of death in Zurich men. The decrease of the mortality risk is more pronounced in men, but still the rates remain at a higher level than for women. For the last period the mortality rate is about 6-7/100'000 deaths in men and 2/100'000 deaths in women.

16 Brain & Central Nerves (ICD-10 C70-72)

Incidence: mean annual trends



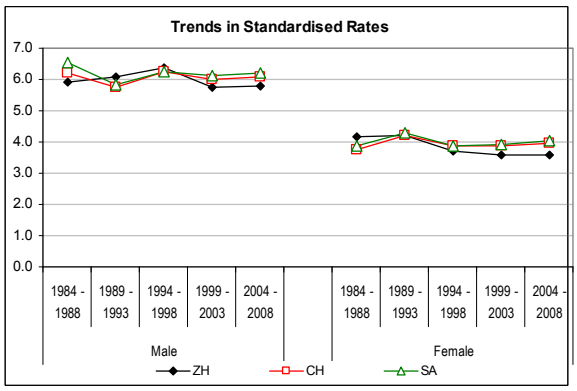
European standardized incidence rate by period



This category includes all tumours of the brain, the meninges, the spinal cord and the central nerves.

Men have a slightly higher risk than women to be affected by a brain tumour. The incidence rates remain relatively constant over the years and are between 7-8/100'000 cases per year in men and ca. 5/100'000 cases per year in women. No major regional differences can be observed.

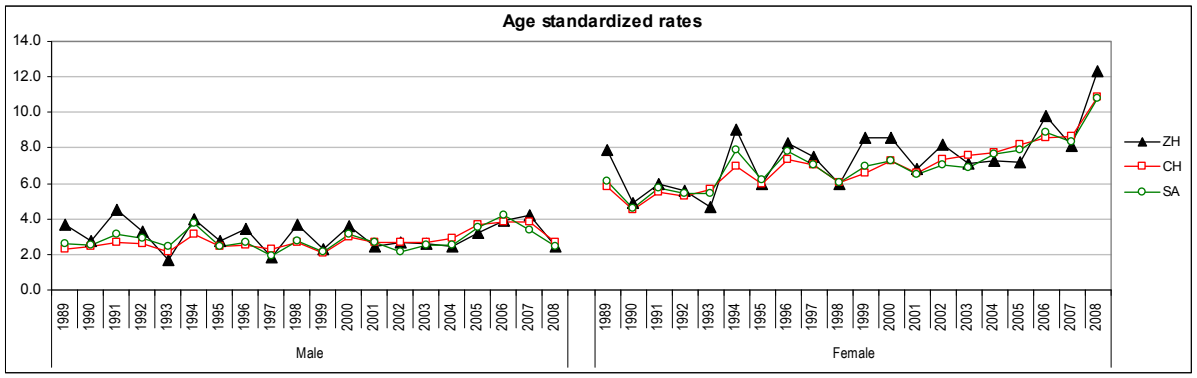
European standardized mortality rate by period



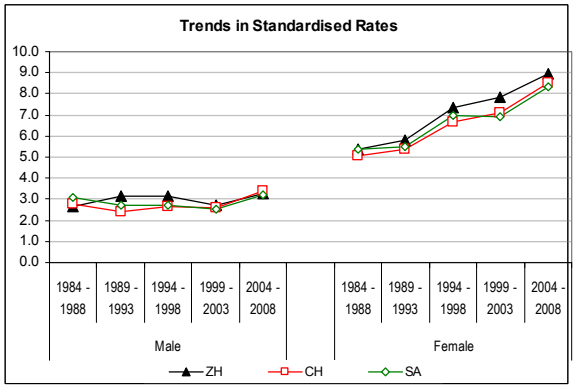
The mortality trends are also quite unchanged during the last 25 years. Due to the poor prognosis they are nearly as high as the incidence rates. The male mortality risk is about 6/100'000 deaths and the female mortality rate about 4/100'000 deaths. No relevant differences between the cantons are noted.

17 Thyroid (ICD-10 C73)

Incidence: mean annual trends

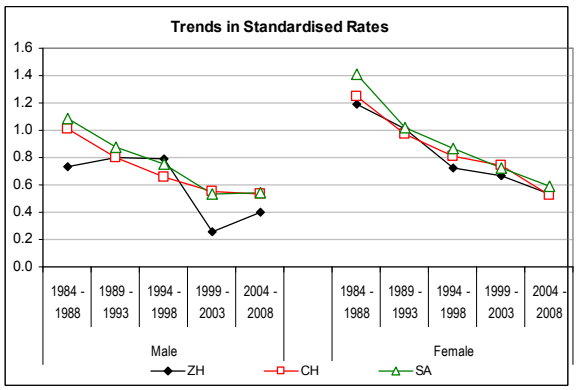


European standardized incidence rate by period



Thyroid cancer is a tumour localisation which affects more women than men. The risk for women is in the period of 2004-2008 about three times higher than for men. Whereas the male incidence rates remain relatively unchanged over the last 25 years at a level of ca. 3/100'000 cases, the female incidence rate increases from 5 to about 9 cases per 100'000 inhabitants per year. The incidence curve of the Zurich women is slightly above the curves of German-speaking and overall Switzerland.

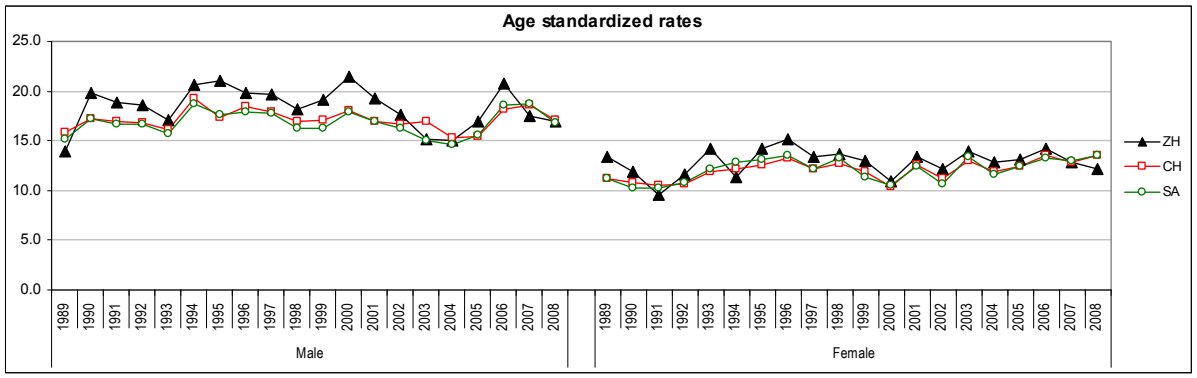
European standardized mortality rate by period



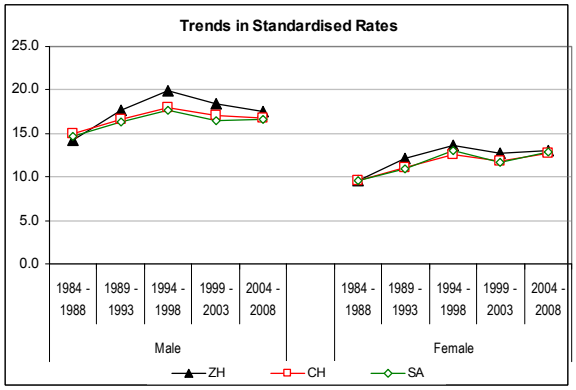
While the incidence of thyroid cancer is increasing, the mortality rate is decreasing. For all cantons the mortality risk shows a similar profile. However, because of the very small numbers the interpretation of the time trends has to made be carefully.

18 Non Hodgkin Lymphoma (ICD-10 C82-88)

Incidence: mean annual trends



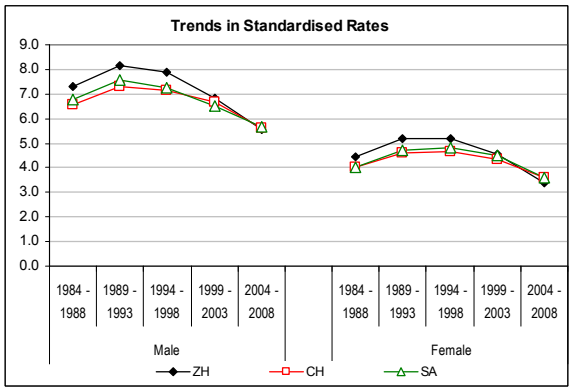
European standardized incidence rate by period



Non Hodgkin lymphomas are a heterogeneous group of various malignant diseases of lymphatic tissue.

Men are more affected by this group of cancer than women. The incidence rates range between 15-20 in men versus 10-13 cases per 100'000 inhabitants and year in women. A slight increase in both, men and women can be observed over the different periods. The incidence rate of the canton Zurich is always marginally higher than the rates of the other regions.

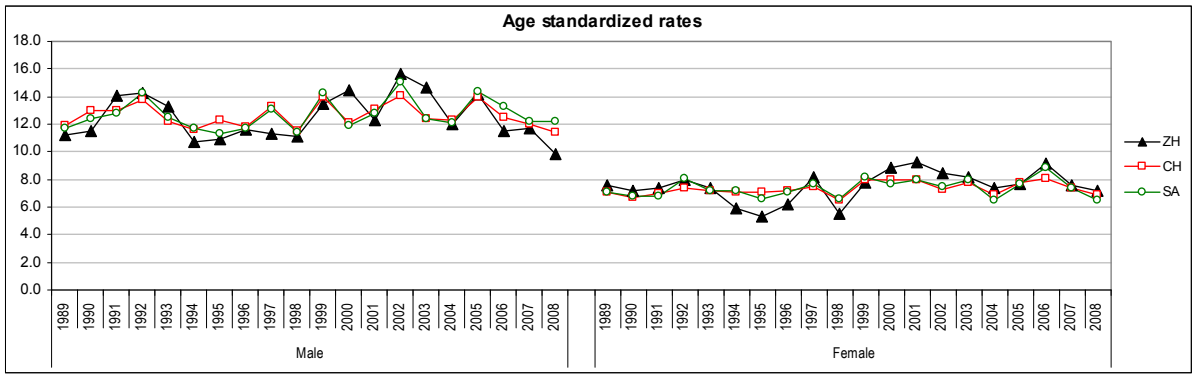
European standardized mortality rate by period



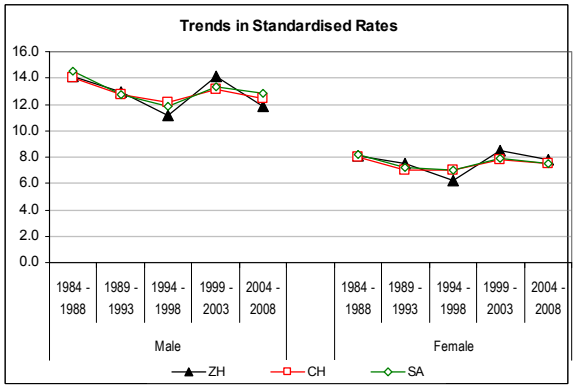
After an initial increase of the mortality rates for both men and women in the 1980s, the mortality risk is decreasing since the 1990s. Showing no major regional differences the yearly mortality rate in men is on average 5.6/100'000 deaths for the period 2004-2008 and the mortality rate in women about 3.5/100'000 deaths for the same period.

19 Leukaemia (ICD-10 C91-95)

Incidence: mean annual trends



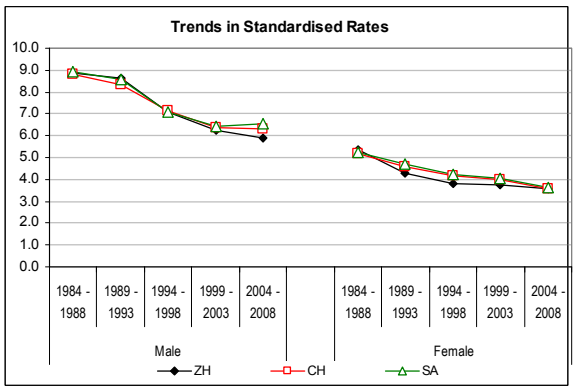
European standardized incidence rate by period



For statistical reasons all forms of leukaemia are included in this category, namely the myeloid and lymphoid leukaemia as well as other forms of leukaemia.

Regarding the incidence rates, a modest reduction can be observed from 1984 to 1998 for both sexes. Afterwards the incidence rate is slightly increasing with a stabilization in the last period. Men are more affected than women by this cancer group (12-13 versus 8 cases per 100'000 inhabitants and year). There are no regional differences.

European standardized mortality rate by period



While the incidence rates do not show any significant changes, the mortality rates present a remarkable decreasing trend over the different periods for men and women. The reduction is more pronounced in men with a final rate of about 6-6.5/100'000 deaths in the last period 2004-2008. The female rate for this period is 3.5/100'000 deaths.

Contact

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