

TRENDS IN THE CANCER SURVIVAL GAP BETWEEN ELDERLY AND MIDDLE-AGED PATIENTS IN SWITZERLAND

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Objective

A widening cancer survival gap has been reported in a number of countries, because older patients shared less in the survival improvements as compared with younger patients (Ref. 1). We assessed the survival of elderly (75-94) and middle aged (60-74) patients in Switzerland for major types of cancer, with an emphasis on the question whether age-related survival gaps have changed over time.

Background

Prognosis is known to worsen with age for adult cancer patients (Ref. 2,3): Higher risk for comorbidities in older age affects cancer treatment, care, and recovery.

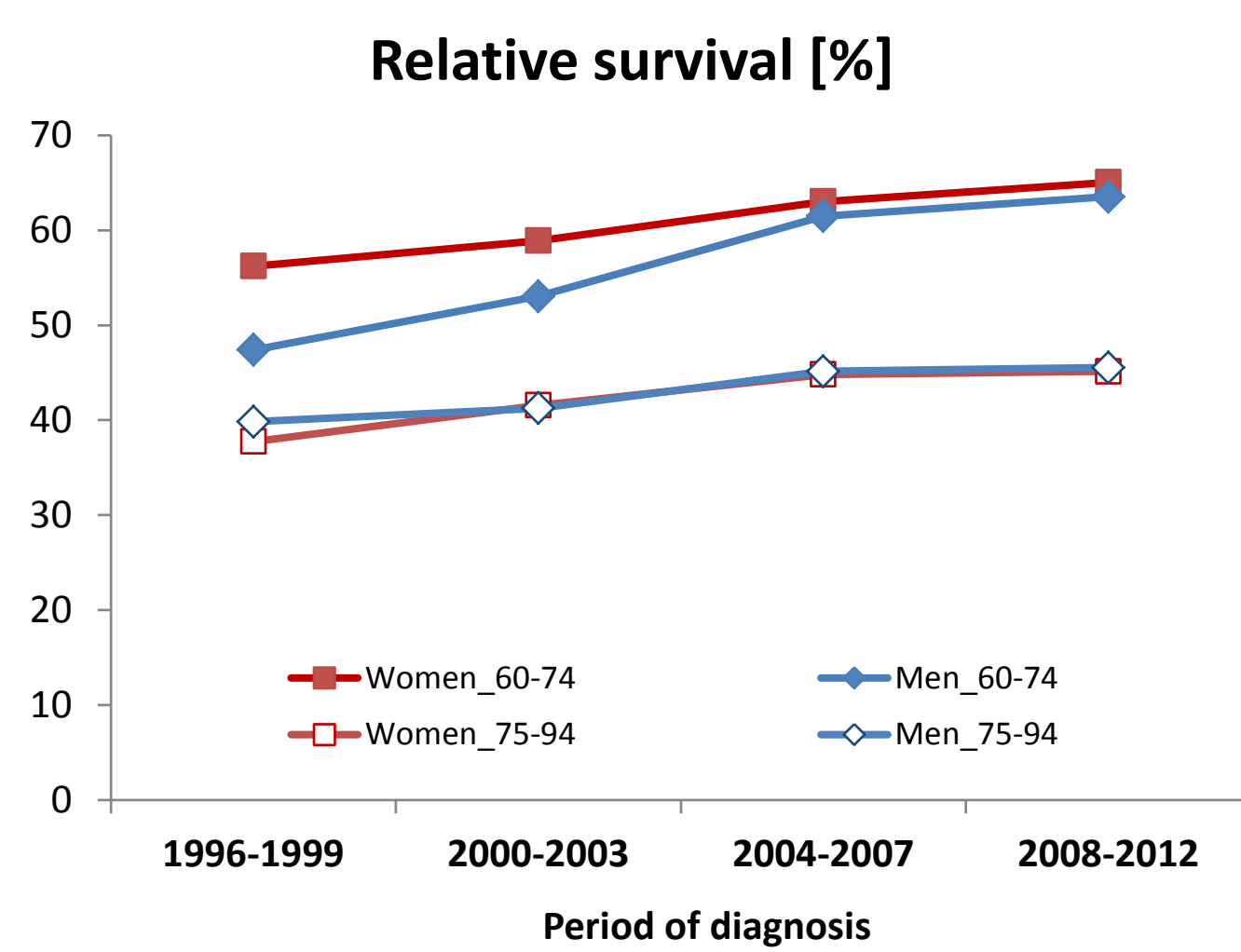
Late age tumours may be more aggressive or diagnosed at late stage. Less aggressive treatments and fewer tests in the elderly to determine cancer stage, important for optimal treatment.

Elderly are under-represented in clinical trials, thus safety and efficacy of therapies are less well investigated.

Elderly are less likely to have a social support system.

Five-year survival trends for all cancers combined*

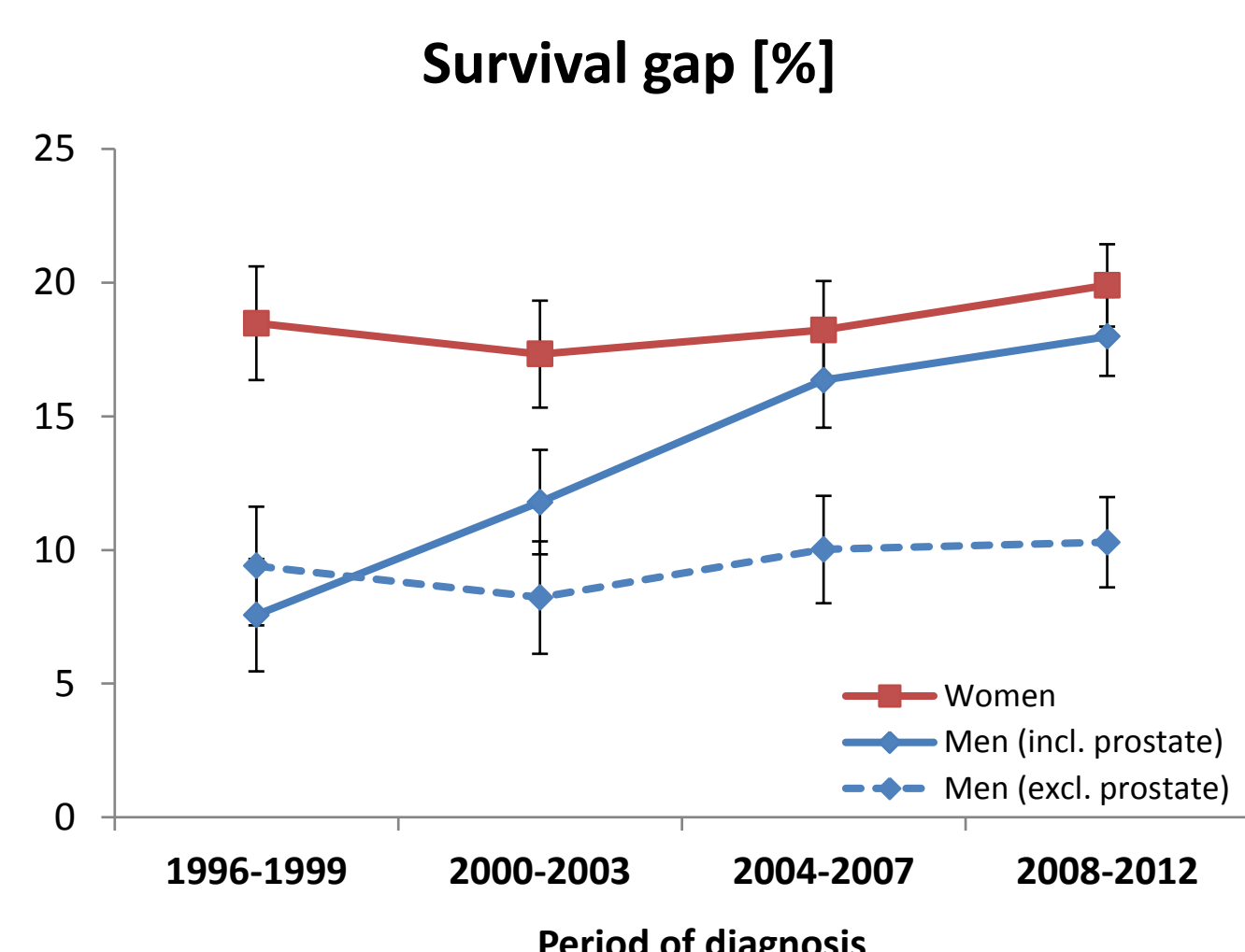
*: excluding non-melanotic skin cancer



Relative survival (RS): a smaller proportion of elderly cancer patients survived, as compared with middle-aged patients, after taking account of the generally higher mortality risk in the elderly.

RS is similar in elderly men and women, while middle-aged women survived better than middle-aged men.

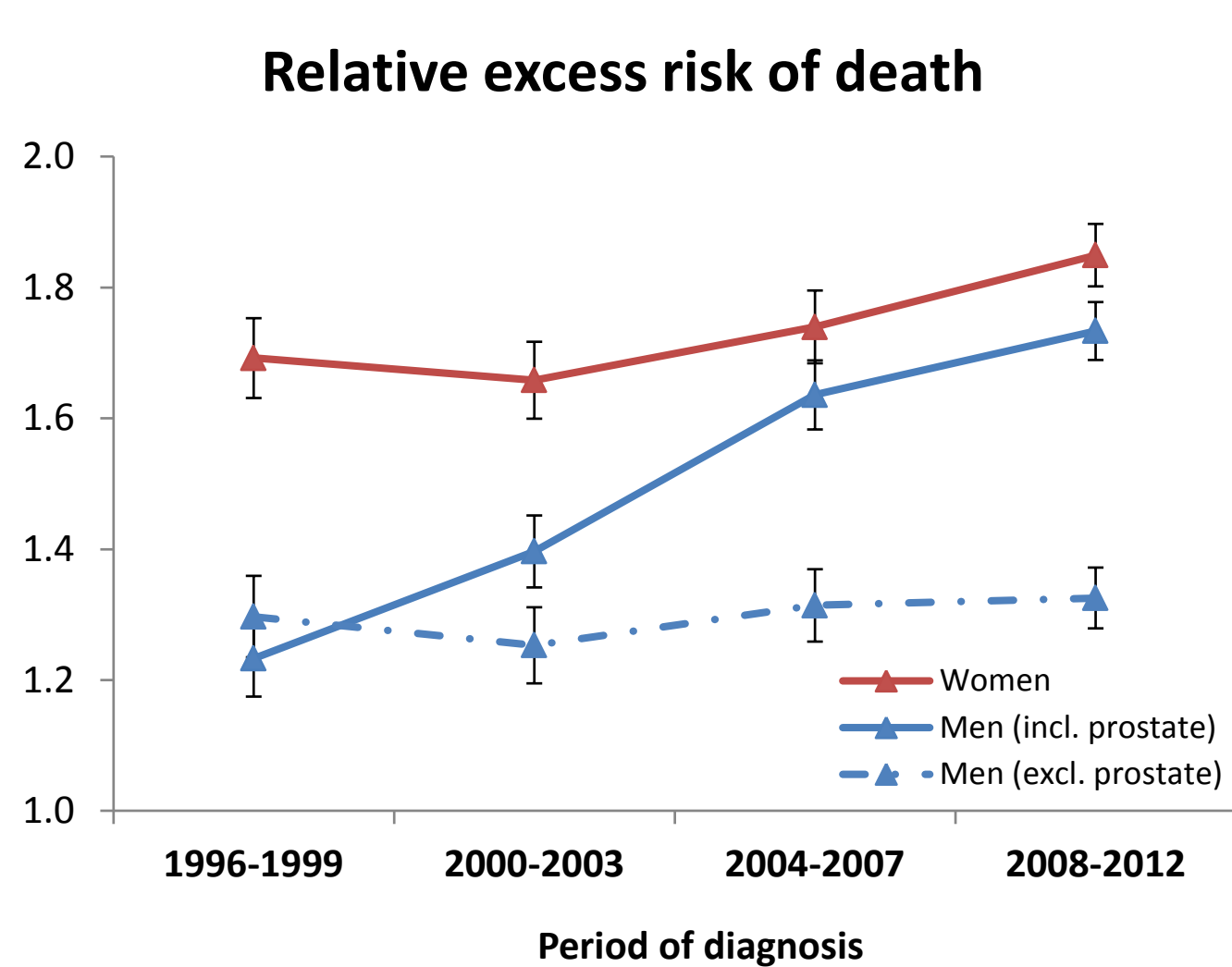
RS increased over time for both age groups and both genders.



Survival gap: the absolute difference between RS of elderly and RS of middle-aged cancer patients.

The survival gap remained stable over time in women due to similar survival gains in both age-groups.

The survival gap in men increased steeply over time due to larger survival gains of middle-aged versus elderly men. Prostate cancer was mainly responsible for the all cancer survival gap trend.



Relative excess risk (RER) of cancer death due to high age: the ratio of log-RS of elderly divided by log-RS of middle-aged cancer patients. RER is affected by cancer lethality, giving higher weight to age effects at good prognosis.

The RER increased slightly over time in women.

In men, the RER trend was much more pronounced. Prostate cancer was mainly responsible for the all cancer RER trend.

References

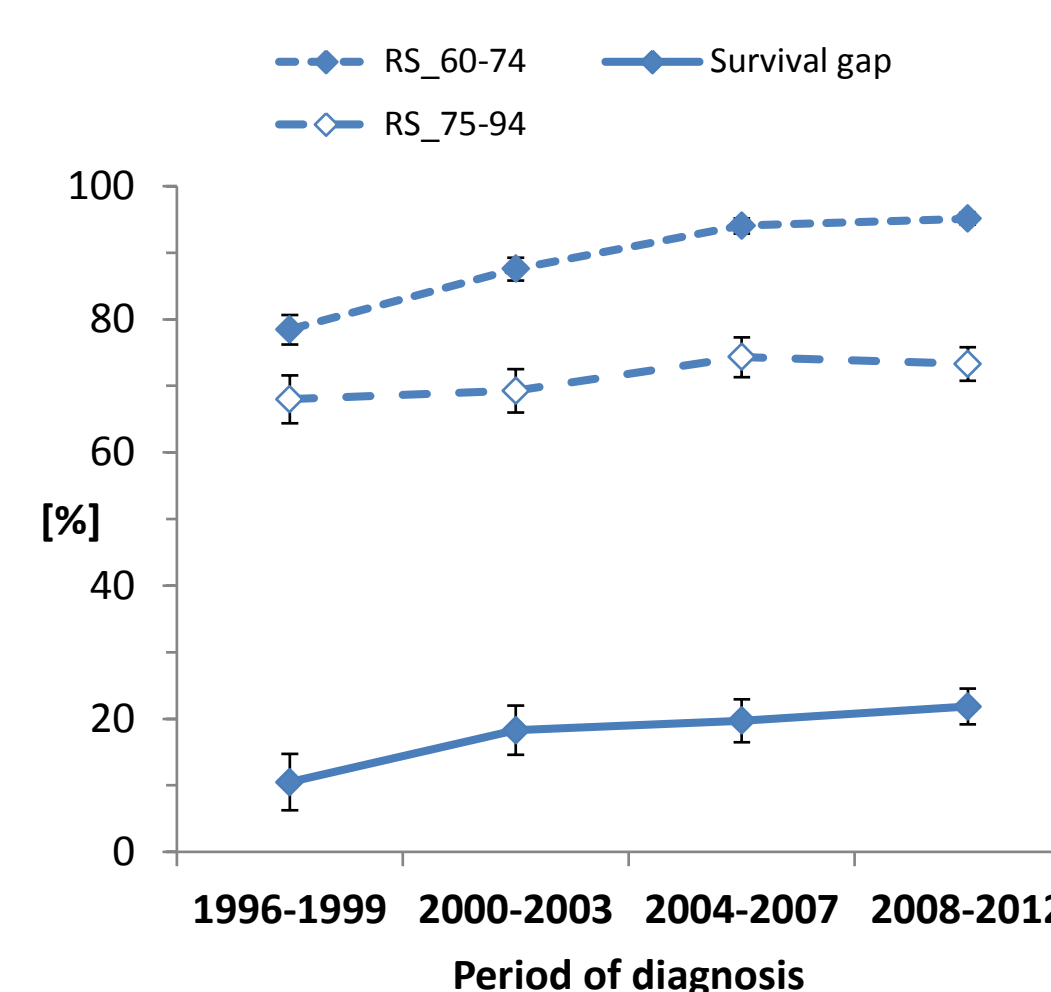
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Data and Methods

This study is based on the National Core Dataset (NCD) managed by the National Institute for Cancer Epidemiology and Registration (NICER) with the purpose of national cancer monitoring in Switzerland. Six cantonal cancer registries (CRs) are combined to represent Switzerland, covering 42% of the total population. All invasive primary cancers with age at diagnosis 60-94, and actively followed-up vital status are included. Five-year relative survival (RS) was calculated as the ratio of observed survival of cancer cases and the expected survival of persons in the general population after matching for age, sex, calendar year of death, and cantonal pool. Period type survival analysis was used which defines cases by follow-up dates within the analysis periods 1996-1999, 2000-2003, 2004-2007, and 2008-2012. In total, N=241'780 diagnoses from 228'257 patients were included. Relative excess risk of dying from cancer due to high age (RER) was calculated as the ratio of the logarithm of RS in elderly divided by the logarithm of RS in middle-aged persons (Ref. 1).

Selected cancer-specific findings:

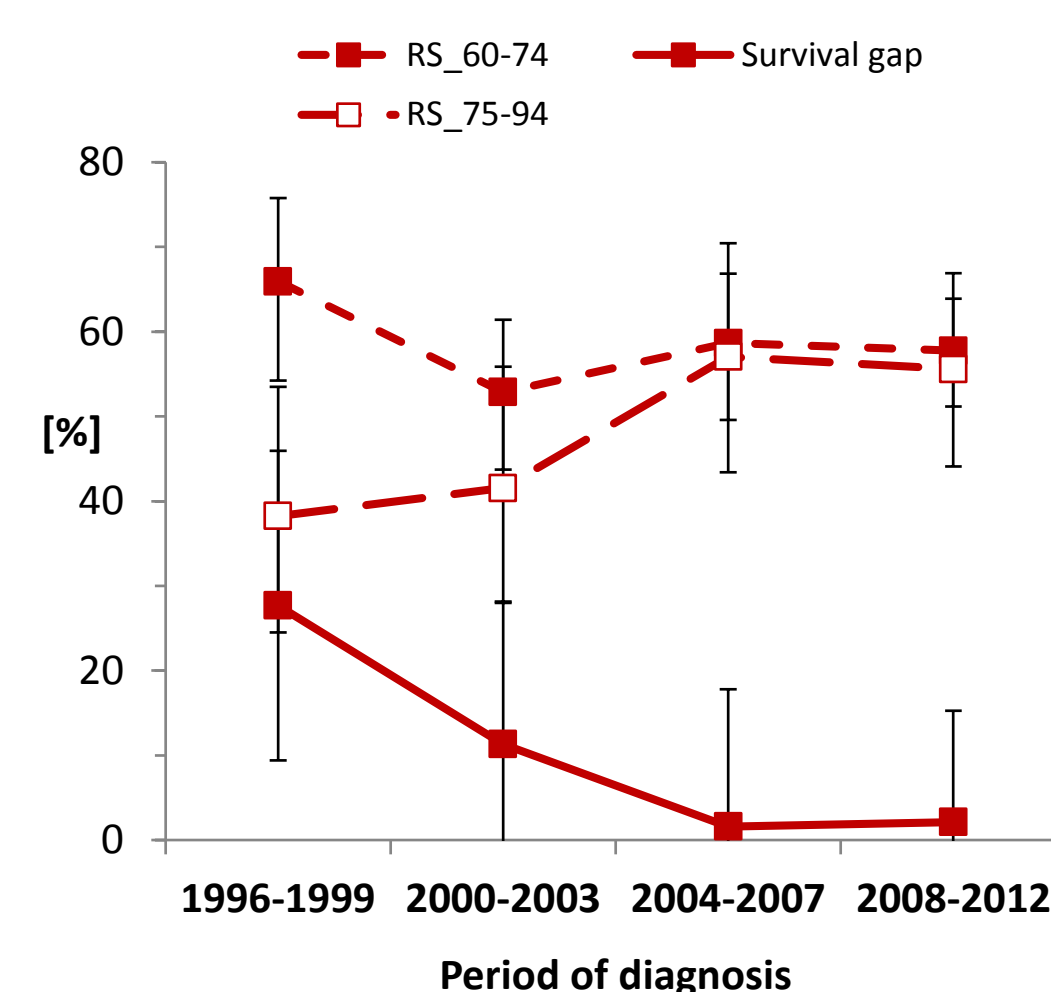
Prostate cancer



There was a prominent widening of the survival gap because of **larger survival gains of middle-aged men** as compared with those of elderly men.

Interpretation: part of the survival gain in middle-aged men is likely the effect of overdiagnosis due to opportunistic PSA-screening.

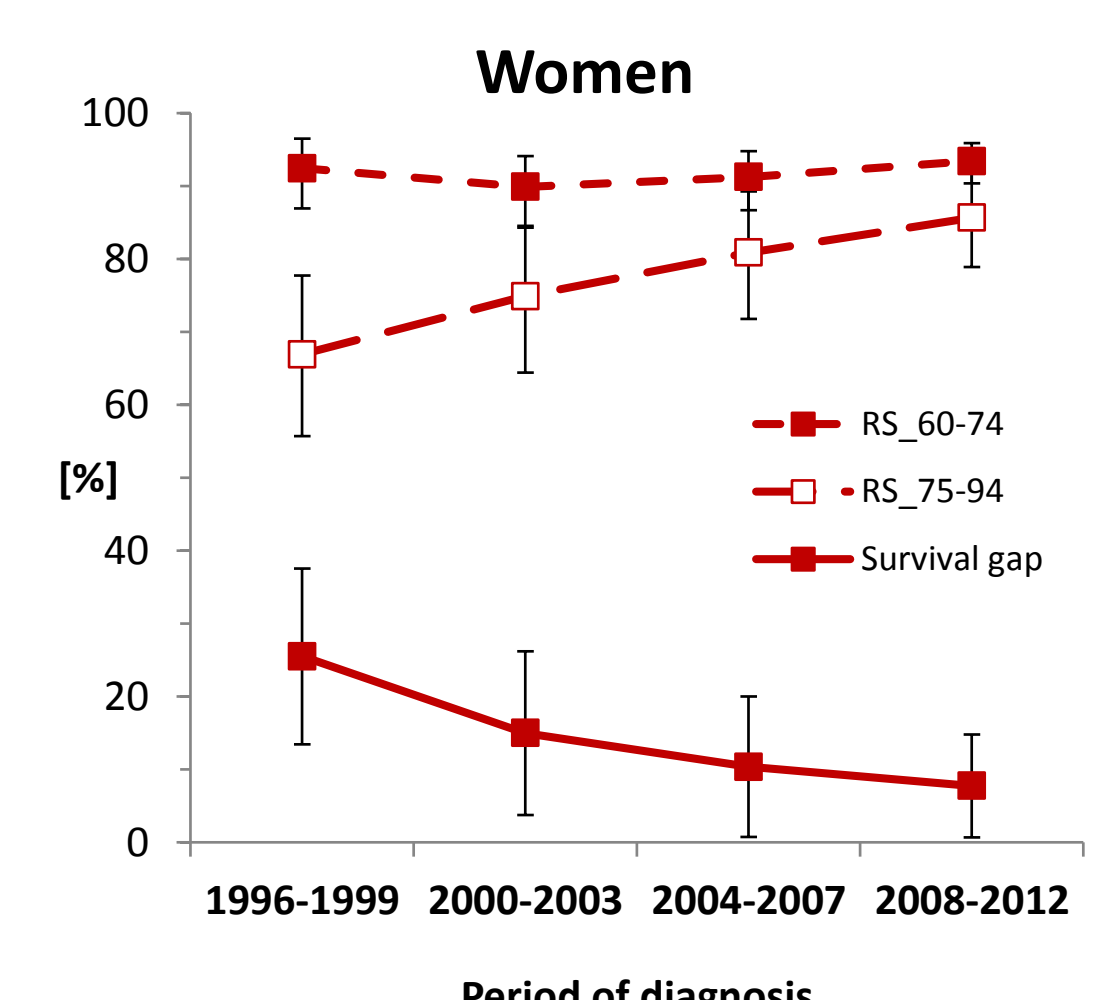
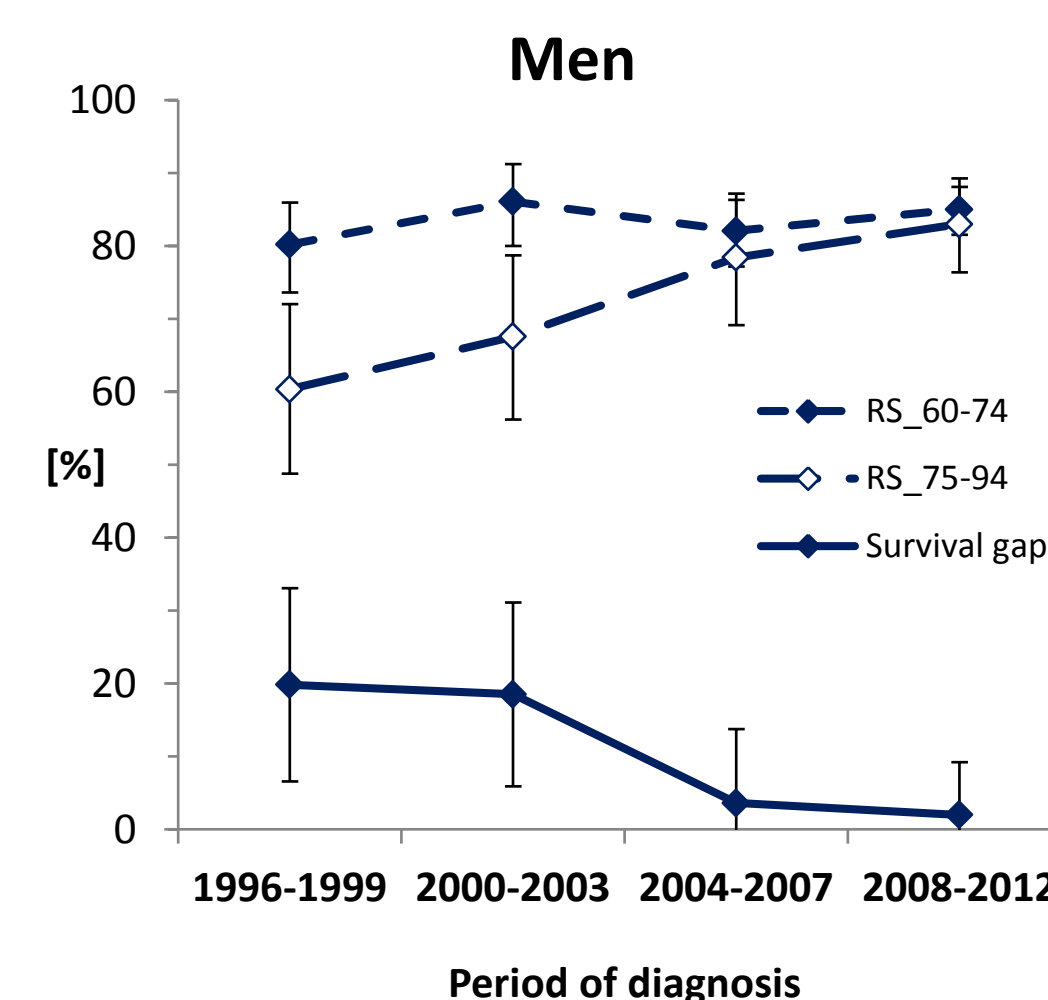
Oral cavity/pharyngeal cancer in women



There was a prominent closing of the survival gap because of **larger survival gains of elderly women** as compared with stagnating survival of middle-aged women.

Interpretation: age-specific trends in tobacco and alcohol use, together with changing sexual mores and increasing orogenital sexual practices have been implicated in stagnating survival rates for women (Ref. 4).

Melanoma



Due to **survival gains almost exclusively on the part of elderly men or women**, their survival disadvantage has largely disappeared.

Interpretation: earlier diagnosis due to improved health behaviour in the elderly, or physicians judging more elderly fit for complete diagnostics and curative treatment (Ref. 5).

Summary

- In contrast to reports from other countries, survival gaps did not widen in Switzerland, with the notable exception of prostate cancer.
- Swiss survival gaps remained stable over time for breast, large bowel, uterine, ovarian, lung cancer, and non-Hodgkin lymphoma (not shown).
- Swiss survival gaps were greatly reduced in oral cavity/pharyngeal cancer in women, and for both genders in melanoma and renal cancer.