

Cancer in Norway 2007

Cancer incidence, mortality,
survival and prevalence in Norway

Special issue:
*Long-term cancer survival:
patterns and trends in Norway 1965-2007*



Cancer in Norway 2007

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General requests for cancer information, data or possible research collaborations are welcome, and should be sent to datautlevering@kreftregisteret.no



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Foreword

The Cancer Registry of Norway continues its mission to provide national cancer incidence data to the community in a timely manner, compiling and reporting incidence statistics for the last complete year within the twelve months that follow. The attention to rapid dissemination of high quality data is ensured by the committed efforts of the hospitals and the clinical community in providing cancer reports, alongside the dedication and skill of the Registry staff in ensuring the efficient retrieval of reports and the dispatch of reminders. As with 2006, we have quantified the minor degree of under-reporting and judged it sufficiently slight to enable the dissemination and utilization of the cancer incidence data from 1953 right through to the end of 2007.

Each year our annual reports include a Special Issue on a theme of national importance. Last year's report documented the data quality at the Registry via a comprehensive review of comparability, completeness, validity and timeliness. Completeness was, for example, quantified and estimated to be close to 99% for the registration period 2001-5. Two review articles on the practical aspects and methods for cancer registries, and a further article summarizing the data quality at the Registry are currently in press in the *European Journal of Cancer*.

The Special Issue of *Cancer in Norway 2007* is entitled *Long-term cancer survival: patterns and trends in Norway 1965-2007* and provides both a description of cancer survival for patients with one of 23 frequently diagnosed cancers in Norway today, as well as an examination of how national survival has been changing over the last four decades. An emphasis is placed on the use of methodological developments that visually describe the survival of cancer patients in Norway, both from contemporary and historical perspectives. Multidisciplinary expertise will be required to adequately interpret these findings however, and we will actively engage with the cancer research community in Norway, with a view to generating peer-reviewed collaborative research articles focusing on the explanations and implications of these survival results.

We believe that this activity, as part of the Registry's commitment to research on the clinical follow-up of cancer patients in Norway, will ensure even closer collaboration with the national health and research community, yielding important research that further our joint efforts towards the amelioration of cancer control in Norway.



Oslo, December 2008
Frøydis Langmark
Director

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Data Sources and Methods

The population of Norway

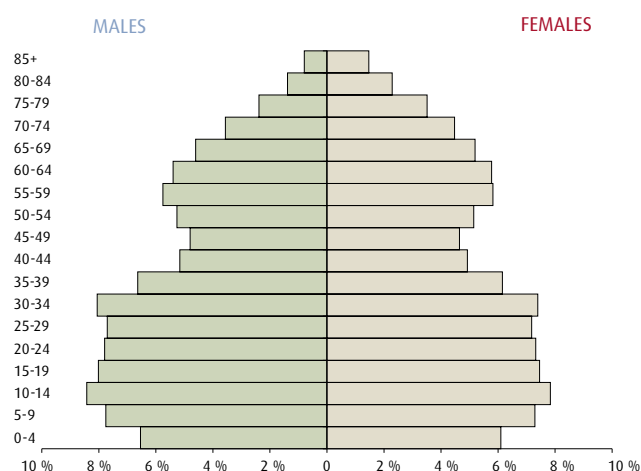
The Norwegian population is principally white Caucasian, with an immigrant population (from over 200 countries) comprising almost 10% of the total population of 4.7 million in 2007 (Table 1). Figure 1 illustrates the changing age structure of Norway, comparing population estimates in 1980 and 2007 with projections for 2030 (Statistics Norway, 2008). The population of Norway has been increasing since records began, and this growth is expected to continue in the next decades. The total number of inhabitants in Norway has increased by 12% during the last 25 years, largely as a result of rising life expectancy and more recently, increases in net immigration. By 2030, the size of the population is expected to increase a further 23% to about 5.8 million (Statistics Norway, 2008). The elderly will represent an increasingly large proportion of the population of Norway in the next quarter of a century. It is projected that by 2030 over one million inhabitants, or one-fifth of the population will be aged 65 or over.

Table 1: Number of inhabitants in Norway 31.12.2007

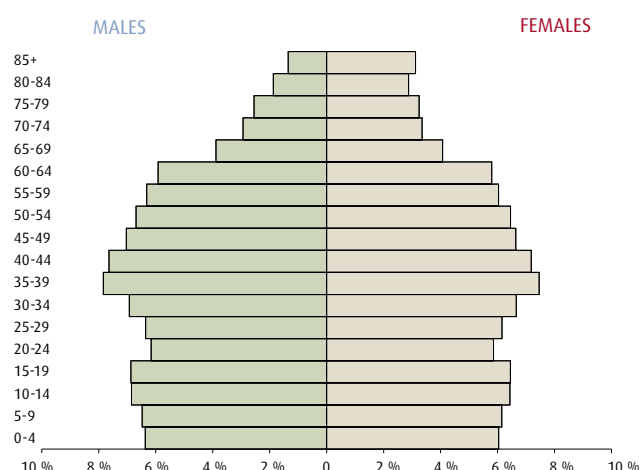
Age	Males	Females
0-4	150 230	143 573
5-9	152 786	146 175
10-14	161 611	153 002
15-19	162 135	153 434
20-24	145 319	139 256
25-29	149 913	146 444
30-34	163 393	158 255
35-39	184 876	177 412
40-44	180 238	170 748
45-49	165 866	157 928
50-54	157 849	153 543
55-59	149 005	143 518
60-64	139 546	137 808
65-69	91 690	96 810
70-74	69 180	79 750
75-79	60 091	77 193
80-84	44 157	68 450
85+	31 805	74 182
Total	2 359 690	2 377 481

Figure 1

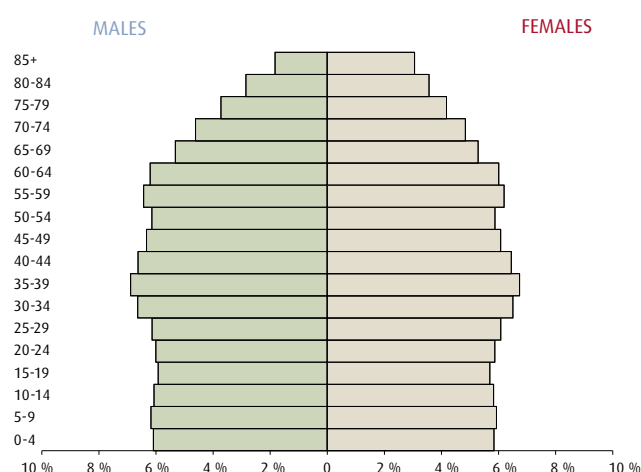
Age structure of the Norwegian population, 1980



Age structure of the Norwegian population, 2007



Age structure of the Norwegian population, 2030*



*Forecast, Statistics Norway 2008

Data sources and registration routines at the Cancer Registry of Norway

The Cancer Registry of Norway has, since 1952, systematically collected notifications on cancer for the Norwegian population, and the total number of registrations of cancer collected for a given year has, from the following year, 1953, been considered to be very close to complete. The reporting of neoplasms (and certain precancerous lesions) has been compulsory following a directive from the Ministry of Health and Social Affairs in 1951. A Health Registry Act came into force in 2002 that included statutory regulations for the Registry (*Regulations on the collection and processing of personal health data in the Cancer Registry of Norway*), strengthening the legal obligation to report new cases to the Registry and defining its main objectives as:

- To collect and, within the scope of the Regulations, process data relating to cases of cancer and carry out studies in Norway in order to document the distribution of cancer in the country and describe changes over time;
- To conduct, promote and provide a basis for research to develop knowledge of the causes of cancer, their diagnosis and natural course, and the effects of treatment via the follow-up of patients, with a view to improving the quality of preventive measures and medical assistance to combat cancer;
- To provide advice and information to public administrative bodies, special interest groups, and the general population, including measures that may help prevent the development of cancer.

Notifications and sources of information

The sources of information and the notification process are illustrated in Figure 2. Hospitals, laboratories, general practitioners and *Statistics Norway* provide the key information that enables the Registry to collect, code and store data on cancer patients in Norway. Information from clinical notifications, pathological notifications and death certificates are the main reporting sources, and these are processed and registered in the incidence registry. Since 1998, information from the Patient Administrative Data (PAD) system in the hospitals has proven an important additional source for identifying patients that were unregistered.

Clinical and pathological notifications

The Cancer Registry Regulations, as issued by the Ministry of Health and Social Affairs, require all hospitals, laboratories and general practitioners in Norway to report all new cases of cancer, irrespective of whether the patient is treated, admitted, or seen only as an out-

patient. The Registry also receives mandatory reports from individual physicians, and from pathology and cytology laboratories. There are two generic paper-based forms for the reporting of solid or non-solid tumours, respectively. Some specific sites (colorectum, breast, ovary, prostate, malignant lymphoma and chronic lymphatic leukaemia) are reported on separate forms with extended information on case history and treatment. Notifications of pathological information are received from hospitals and individual laboratories. These notifications may provide either histological, cytological or autopsy information.

Death certificates

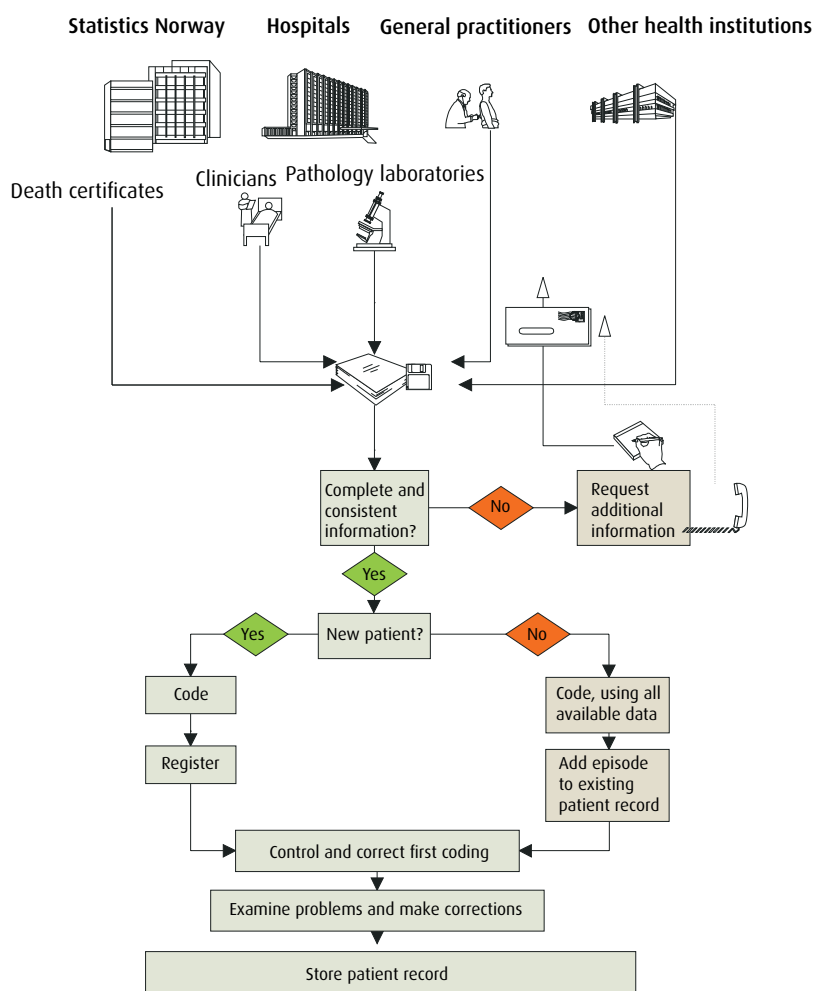
Records held in the Registry are supplemented with relevant information on vital status from the National Population Registry, and are regularly matched with the Cause of Death Register run by the National Statistics Bureau, *Statistics Norway*. The Registry receives and registers the death certificates in one or several batches in a given year. The automated procedure that matches registered patients to death certificates is an important aspect in maintaining quality control, facilitating a high level of completeness and ensuring validity of the Registry data items.

Death certificates are also a complementary source of information on new cancer cases; those inconsistently specified or unmatched to registry files are subject to further scrutiny. Cancer cases first identified from death certificates are traced back to the certifying hospital or physician. The Registry needs to ascertain from the registrar completing the certificate whether the patient had been investigated and diagnosed when alive, or whether the diagnosis was made following death. A reminder is sent to the physician or institution responsible for the treatment of the patient before death, as indicated on the death certificate. In many cases, a nursing home is the point of contact, and they refer the Registry to the treating physician or hospital where the cancer was diagnosed.

The Patient Administrative Database (PAD)

Since 2002 the Registry has received data files from the PAD system running in all Norwegian hospitals. These files contain information on all patients treated for malignant and premalignant conditions from 1998, and PAD has been a key source to the Registry in ascertaining information on unreported cases since that date.

Figure 2: Sources of information and the processes of cancer registration at the Registry



Data items registered in the Cancer Registry of Norway

There is obligatory reporting and registration at the Registry of the following:

- All definitely malignant neoplasms (e.g. carcinoma, sarcoma, malignant lymphoma, leukaemia and malignant teratoma).
- All precancerous cases.
- All histologically benign tumours of the central nervous system and meninges.
- All histologically benign transitional cell papillomas of the urinary tract.
- All tumours of the endocrine glands within the central nervous system.

Dispatching of reminders

It is mandatory to report clinical information on new cases of cancer within two months of the diagnosis. Reminders are therefore sent to all hospitals and physicians failing to initially report new cases, or in cases where the received forms do not yield relevant information. About 40 000 reminders are sent annually, including, in some instances, repeat requests for information. There are two main sources of information used to send out reminders to the reporting institutions and physicians:

Reminders sent out on the basis of pathological information or death certificates

Pathology and cytology laboratories regularly send copies of pathology reports and autopsies to the Registry. Death certificates are received from the Deaths Registry at Statistics Norway. In those cases where the clinical form for the cancer case notified from these sources is missing, information on the hospital/ward/physician responsible for the diagnosis and treatment of the patient is used to send out the reminder.

Reminders sent out on the basis of PAD

The Registry augments existing sources of information with electronic patient forms received directly from each Norwegian Hospital. The PAD system database captures all C- and some D-diagnoses (D00.0- D48.9) (ICD-10) and these can be matched with the current information in the Registry database. Reminders are sent for those cases where no information about the specific diagnosis exists in the Registry.

Reminders for colorectal cancers

A Rectal Cancer Registry has been running at the Registry since 1994, with extended information on the cancer patient, including operational technique and time to local recurrence. The information from the Rectal Cancer Registry has not been integrated with the main database of the Cancer Registry (the incidence registry). From 1 January 2007, cancers of the colon were added, and a new extended clinical notification form was introduced in a Colorectal Cancer Registry. The new notification form was filled out on paper, but an electronic notification form was developed by Autumn 2008. All the notifications were entered into the electronic form late 2008, together with a new electronic pathology form, and exported into the incidence registry. The electronic notification system is web-based, and will be rolled-out to the hospitals in 2009. In essence, this means that the clinicians can fill out the notification electronically, and the form, pending manual approval at the Registry, can enter di-

rectly into the database of the Registry. Unfortunately, it was not possible to send out reminders for colorectal cancers due to the late registration in 2008. See *Update on completeness and timeliness of incidence 2007* regarding how this has affected completeness.

Data quality at the Registry

Cancer in Norway 2006 included as a Special Issue an overview and comprehensive assessment of the data quality at the Cancer Registry of Norway. The report is available at www.cancerregistry.no. From this work several research articles have been published in the last year. Larsen et al (2008) have reported that the coding and classification systems, follow for the most part, international standards, while estimated overall completeness was 98.8% for the registration period 2001–2005, a lower completeness was observed for haematological malignancies and cancers of the central nervous system. Overall under-reporting for the year 2005 as a result of early publication was estimated at approximately 2.2% at the date of publication (November 2006). An accompanying two-part review provided an update of the practical aspects and techniques for addressing the data quality at a cancer registry generally, including the documentation of comparability, validity and timeliness of registry data (Bray and Parkin, 2008), as well as methods for the evaluation of registry completeness (Parkin and Bray, 2008).

Two indicators of accuracy for the period are included in Table 2, namely the percentage morphologically verified (MV%), and the percentage of death certificate only registrations (%DCO). See the above references for further details.

Update on the comparability of incidence 2007

The rules developed jointly by the International Association of Cancer Registries (IACR) and the International Agency for Research on Cancer (IARC) for the registration and reporting of multiple neoplasms (IACR, 2005) have in this issue of Cancer in Norway been fully implemented. Previous recommendations have been followed that define that the recognition of two or more primary cancers does not depend on time, and that only one tumour shall be recognized as arising in an organ or pair of organs. Exceptions to this last rule are systemic and multicentric cancers which are counted only once. Rules for twelve groups of histologies, considered to be special cases with regards to the defining of multiple tumours, have now been observed, in line with the recommendations. Thus, a tumour in the same organ with a different histology within another group is counted as a new tumour.

On the basis of these new procedures, minor changes are observed in the reported total and site-specific incidence in 2007 and in previous years. To illustrate, the net effect on the total number of cancers reported in 2007 - on counting before and after the application of IARC recommendations - is the addition of 106 cancers, about half of which are either non-melanomas of the skin, or female breast cancers.

Update on completeness and timeliness of incidence 2006

Table 3 gives the number of cancer cases diagnosed in the year 2006 as enumerated on 19 November 2007, and 27 November 2008. The number of cancer cases reported and appearing in CiN 2006 were about 3% fewer than those available a year later, with the differences varying by site (+0.8% for breast cancers, +18.6% for cancers of the CNS, for example). By comparing the shortfall in incidence in 2006 (when CiN 2006 was published), with the accumulation of late registrations one year later (at the time of extracting the incidence data for this report), we can estimate the expected number of cases missing for 2006. It is observed that the net effect of the accrual of registrations 12-24 months beyond the year of diagnosis (2006) further increased the number of new registrations for that year by approximately 750 cases.

Update on completeness and timeliness of incidence 2007

Reminders have not been sent out for clinical notifications for colorectal cancers diagnosed in 2007 (see *Reminders for colorectal cancers*). Most of the cases have nevertheless been collected, either from pathology reports (approximately 96 % of colorectal cancers are morphologically verified), death certificates, or clinical notifications sent in without reminders. In 2007, a total of 3375 cases of colorectal cancers have been registered, compared to 3453 published for 2006. Compared to the 2006 numbers, we lack 2.3 % of the cases due to not sending notifications yet. From Table 3, the numbers are expected to further increase by 1-1.5 %, as there will be some cases arriving at the Registry more than one year after the year of diagnosis (see Table 3).

The incidence registry

The incidence registry contains the basic data items collected from clinicians and pathologists, as well as from administrative patient discharge and mortality sources. As of December 2008, the Incidence registry contained information from 1953 on 1 374 648 cancer cases and premalignant conditions in 1 119 216 persons. A total of 3 284 963 notifications have been

received since 1969. For all cases registered since 1953, 86.5% are histologically verified and 1.3% of the diagnoses are based on death certificates alone. The incidence registry is updated continuously with information on both new cases, as well as cases diagnosed in previous years.

Statistical methods used in this report

Four measures are used in this report to describe the burden and risk of disease: incidence, mortality, survival and prevalence. The accompanying Special Issue is dedicated to examining long-term cancer survival in Norway, and thus the first part of this years report does not include a Chapter on survival.

Incidence and mortality refer to the number of new cases and deaths occurring, respectively. The latter is the product of incidence and the fatality of a given cancer, the proportion of cancer patients that die. Both measures can be expressed as the absolute number of cases (or deaths), or as the incidence (or mortality) rate, taking into account the size of the population at risk. Rates are essential in the comparisons between groups, and within groups over time. The denominator is the underlying person-time at risk in which the cases or deaths in the numerator arose. Prevalence and survival (see below) are proportions rather than rates as there is no time dimension, although the term is frequently attached to both measures.

Cancer incidence and mortality in Norway are presented in this report as both numbers and rates. Several types of rates are used in this report.

Age-specific rates

There are compelling grounds for adjusting for the effects of age when comparing cancer risk in populations. Age is a very strong determinant of cancer risk. The *crude rate*, a rate based on the frequency of cancer in the entire population, is calculated ignoring possible stratifications by age. Although the measure can be useful as an indicator of the extent of burden, its utility in comparing cancer risk is severely limited where there are differing age structures across groups, or where demographic changes have impacted on the size and age structure of a population over time.

To obtain a more accurate picture of the true risk of cancer, rates are calculated for each age strata, usually grouped in five-year intervals. The age-specific rate for age class i , denoted as r_i is obtained by dividing the number of events in each age class d_i by the corresponding person-years of observation Y_i and multiplying by 100 000:

$$r_i = d_i / Y_i \times 100\,000$$

Rates are given separately for males and females, because of the often very different cancer patterns by sex. Age and sex-specific incidence and mortality rates are the foundation of epidemiological analysis of cancer frequency data.

Age-standardised rates

To facilitate comparisons however, a summary rate is required that absorbs the schedule of age-specific rates in each comparison group. The summary measure that appears in this report is the age-standardised rate (ASR), a statistic that is independent of the effects of age, thus allowing comparisons of cancer risk between different groups. The calculation of the ASR is an example of direct standardisation, whereby the observed age-specific rates are applied to a standard population. The populations in each age class of the Standard Population are known as the *weights* to be used in the standardisation process. Many possible sets of weights, w_i , can be used. The *world* standard population, a commonly-used reference, is utilised in this report (Segi, 1960; Doll *et al.*, 1966). Although the weights of the world standard fail to resemble those of the Norwegian population in 2007 (Figure 2), this observation is of relatively little importance, since it is the *ratio* of ASRs, an estimate of the age-adjusted relative risk between populations or within a population over time, that is the focus of interest. This characteristic has been shown to be rather insensitive to the choice of standard (Bray *et al.*, 2002).

For weights w_i in the i th age class of the world standard and for A age classes with $i = 1, 2, \dots, A$, r_i , as before, is the age-specific rate in the i th age class. The ASR is calculated as:

$$ASR = \frac{\sum_i r_i w_i}{\sum_i w_i} \times 100\,000$$

Cumulative Risk

The cumulative risk is the probability that an individual will develop the cancer under study during a certain age span, in the absence of other competing causes of death (Day, 1982). The age span over which the risk is accumulated must be specified, and in this report, the range 0–74 years is used and provides an approximation of the lifetime risk of developing cancer. If the cumulative risk is less than 10%, as is the case for most

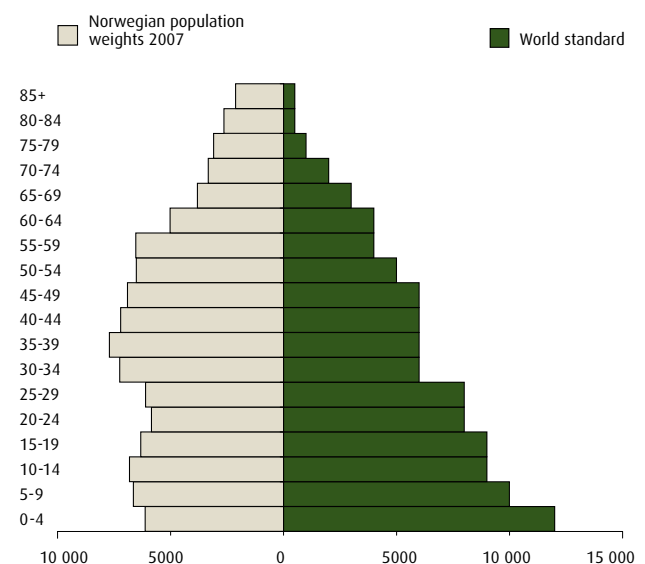
cancer forms, it is reasonably approximated by the cumulative rate. The cumulative rate is the summation of the age-specific rates over each year of age from birth to a defined upper age limit. As age-specific incidence rates are computed according to five-year age groups, the cumulative rate is five times the sum of the age-specific rates calculated over the five-year age groups, assuming the age-specific rates are the same for all ages within the five-year age stratum:

$$5 \sum_i r_i$$

The cumulative rate has several advantages over age-standardised rates. Firstly, as a form of direct standardization, the problem of choosing an arbitrary reference population is eliminated. Secondly, as an approximation to the cumulative risk, it has a greater intuitive appeal, and is more directly interpretable as a measurement of lifetime risk, assuming no other causes of death are in operation. The precise mathematical relationship between the two is:

$$\text{cumulative risk} = 1 - \exp(-\text{cumulative rate})$$

Figure 3: Comparison of population weights



Survival

The Special Issue in this report provides a comprehensive overview of cancer survival in Norway, and includes documentation of the statistical methods used.

Prevalence

Prevalence is the proportion of a population that has the disease at a given point in time. It is a rather complex measure of cancer incidence, fatality, and other influences operating in affected individuals prior to death or *cure*. Although prevalence usefully describes the number of individuals requiring care for disease like hypertension and diabetes, many persons diagnosed with cancer in the past may now be considered cured, in that they no longer have an excess risk of death. Some residual disability may be present however, subsequent to a specific treatment intervention, for example.

Lifetime cancer prevalence can be defined as all persons living and ever diagnosed with cancer, and such a measure can easily be derived at the Cancer Registry of Norway given the very long-term registration of cases, and complete follow up of vital status over many years. Although such statistics are provided in this report, *partial* prevalence estimates are perhaps of more utility in quantifying resource requirements: the numbers of persons alive as of 31 December 2007, whom were diagnosed with cancer within one year, one to four years, five to nine years, and 10 or more years, are therefore also incorporated into this report.

Definitions*

Incidence

The number of new cases of cancer in a defined population within a specific period of time.

Incidence rate

The number of new cases that arise in a population (incidence) divided by the number of people who are at risk of getting cancer in the same period. The rate is expressed per 100 000 person-years**.

Crude rate

As above, with rates estimated for the entire population ignoring possible stratifications, such as by age group.

Age-specific rate

A rate calculated on stratifying by age, often based on a five-year interval.

Age-standardised incidence rate

Age-standardised (or age-adjusted) incidence rates are summary rates which would have been observed, given the schedule of age-specific rates, in a population with the age composition of a given standard population. The World standard population (Doll *et al*, 1966) is used in this report.

Prevalence

Prevalence is the proportion of a population that has the disease at a given point in time.

* Last's "A Dictionary of Epidemiology 4th Ed" was consulted.

** *Person-years* is a measurement that combines persons and time (in years) as the denominator in rates.

Table 2 - Percentage distribution of MV (morphologically verified) and DCO (death certificate only) by primary site - 2003-07

ICD10	Site	Cases	MV %	DCO %
C00-96	All sites	125438	88.9	1.6
C00-14	Mouth, pharynx	2119	97.2	0.2
C00	Lip	454	99.3	0.0
C01-02	Tongue	401	98.0	0.2
C03-06	Mouth, other	441	99.3	0.0
C07-08	Salivary glands	198	84.8	0.5
C09-14	Pharynx	625	97.6	0.3
C15-26	Digestive organs	26514	88.7	2.7
C15	Oesophagus	966	94.2	1.2
C16	Stomach	2725	95.4	1.2
C17	Small intestine	510	96.7	0.6
C18	Colon	11322	94.6	2.1
C19-21	Rectum, rectosigmoid, anus	5994	96.8	1.1
C22	Liver	643	74.3	5.0
C23-24	Gallbladder, bile ducts	691	67.3	4.3
C25	Pancreas	3210	56.7	6.5
C26	Other digestive organs	453	54.1	17.7
C30-34, C38	Respiratory organs	12919	78.8	2.2
C30-31	Nose, sinuses	220	97.7	0.5
C32	Larynx, epiglottis	560	97.1	1.1
C33-34	Lung, trachea	12037	77.8	2.2
C38	Mediastinum, pleura	102	61.8	8.8
C40-41	Bone	211	97.2	0.5
C43	Melanoma of the skin	5620	99.2	0.2
C44	Skin, non-melanoma	6652	98.9	0.1
C45	Mesothelioma	382	88.0	0.0
C46	Kaposi's sarcoma	49	95.9	2.0
C47	Autonomic nervous system	53	98.1	0.0
C48-49	Soft tissues	681	95.3	0.1
C50	Breast	13921	97.3	0.3
C51-58	Female genital organs	7628	95.3	1.0
C53	Cervix uteri	1445	98.8	0.2
C54	Corpus uteri	3236	98.7	0.4
C55	Uterus, other	51	76.5	9.8
C56	Ovary	2214	89.2	1.5
C51-52, C57	Other female genital	663	93.8	3.2
C58	Placenta	19	52.6	0.0
C60-63	Male genital organs	20712	95.4	1.3
C61	Prostate	19150	95.1	1.3
C62	Testis	1335	99.6	0.3
C60, C63	Other male genital	227	98.2	0.4
C64-68	Urinary organs	9559	93.1	1.3
C64	Kidney excl. renal pelvis	2898	86.1	2.3
C65	Renal pelvis	338	93.8	0.3
C66-68	Bladder, ureter, urethra	6323	96.3	0.9
C69	Eye	312	47.4	0.3
C70-72, D42-43	Central nervous system	4855	61.8	1.4
C73	Thyroid gland	1086	94.2	0.7
C37, C74-75	Other endocrine glands	691	79.7	2.2
C39, C76, C80	Other or unspecified	2472	54.0	11.0
C81-96	Lymphoid and haematopoietic tissue	9002	75.7	1.9
C81	Hodgkin lymphoma	598	98.5	0.0
C82-85, C96	Non-Hodgkin lymphoma	3897	96.7	0.3
C88	Malignant immunoproliferative diseases	218	62.4	3.2
C90	Multiple myeloma	1644	51.3	3.5
C91-95	Leukaemia	2645	55.9	3.5

Table 3 - Registered cancer cases in Norway, 2006 as obtained from the incidence registry extracted 19th November 2007 and 27th November 2008

ICD10	Site	Cases diagnosed 2006 as of			
		19.11.07	27.11.08	Difference	%
C00-96	All sites	24488	25127	639	2.6
C00-14	Mouth, pharynx	467	482	15	3.2
C00	Lip	104	123	19	18.3
C01-02	Tongue	84	85	1	1.2
C03-06	Mouth, other	109	108	-1	-0.9
C07-08	Salivary glands	37	37	0	0.0
C09-14	Pharynx	133	129	-4	-3.0
C15-26	Digestive organs	5133	5270	137	2.7
C15	Oesophagus	187	191	4	2.1
C16	Stomach	500	508	8	1.6
C17	Small intestine	103	109	6	5.8
C18	Colon	2278	2309	31	1.4
C19-21	Rectum, rectosigmoid, anus	1175	1188	13	1.1
C22	Liver	114	126	12	10.5
C23-24	Gallbladder, bile ducts	119	129	10	8.4
C25	Pancreas	582	636	54	9.3
C26	Other digestive organs	75	74	-1	-1.3
C30-34, C38	Respiratory organs	2504	2625	121	4.8
C30-31	Nose, sinuses	38	38	0	0.0
C32	Larynx, epiglottis	125	129	4	3.2
C33-34	Lung, trachea	2322	2440	118	5.1
C38	Mediastinum, pleura	19	18	-1	-5.3
C40-41	Bone	39	41	2	5.1
C43	Melanoma of the skin	1178	1200	22	1.9
C44	Skin, non-melanoma	1339	1357	18	1.3
C45	Mesothelioma	63	69	6	9.5
C46	Kaposi's sarcoma	11	13	2	18.2
C47	Autonomic nervous system	13	14	1	7.7
C48-49	Soft tissues	140	144	4	2.9
C50	Breast	2687	2709	22	0.8
C51-58	Female genital organs	1522	1547	25	1.6
C53	Cervix uteri	294	311	17	5.8
C54	Corpus uteri	639	647	8	1.3
C55	Uterus, other	14	12	-2	-14.3
C56	Ovary	447	450	3	0.7
C51-52, C57	Other female genital	125	123	-2	-1.6
C58	Placenta	3	4	1	33.3
C60-63	Male genital organs	4110	4140	30	0.7
C61	Prostate	3815	3844	29	0.8
C62	Testis	255	255	0	0.0
C60, C63	Other male genital	40	41	1	2.5
C64-68	Urinary organs	1852	1904	52	2.8
C64	Kidney excl. renal pelvis	529	551	22	4.2
C65	Renal pelvis	72	74	2	2.8
C66-68	Bladder, ureter, urethra	1251	1279	28	2.2
C69	Eye	57	60	3	5.3
C70-72, D42-43	Central nervous system	789	936	147	18.6
C73	Thyroid gland	215	222	7	3.3
C37, C74-75	Other endocrine glands	25	29	4	16.0
C39, C76, C80	Other or unspecified	512	480	-32	-6.3
C81-96	Lymphoid and haematopoietic tissue	1832	1885	53	2.9
C81	Hodgkin lymphoma	116	116	0	0.0
C82-85, C96	Non-Hodgkin lymphoma	852	864	12	1.4
C88	Malignant immunoproliferative diseases	38	44	6	15.8
C90	Multiple myeloma	305	314	9	3.0
C91-95	Leukaemia	521	547	26	5.0

Table 4 Number of new cases by primary site and sex - 2007

ICD10	Site	Males	Females	Total
C00-96	All sites	14001	11942	25943
C00-14	Mouth, pharynx	281	163	444
C00	Lip	65	54	119
C01-02	Tongue	59	23	82
C03-06	Mouth, other	41	38	79
C07-08	Salivary glands	21	24	45
C09-14	Pharynx	95	24	119
C15-26	Digestive organs	2712	2574	5286
C15	Oesophagus	131	55	186
C16	Stomach	332	213	545
C17	Small intestine	60	47	107
C18	Colon	1039	1225	2264
C19-21	Rectum, rectosigmoid, anus	612	499	1111
C22	Liver	93	52	145
C23-24	Gallbladder, bile ducts	54	81	135
C25	Pancreas	341	337	678
C26	Other digestive organs	50	65	115
C30-34, C38	Respiratory organs	1597	1133	2730
C30-31	Nose, sinuses	28	32	60
C32	Larynx, epiglottis	77	16	93
C33-34	Lung, trachea	1474	1076	2550
C38	Mediastinum, pleura	18	9	27
C40-41	Bone	22	23	45
C43	Melanoma of the skin	569	623	1192
C44	Skin, non-melanoma	744	674	1418
C45	Mesothelioma	60	14	74
C46	Kaposi's sarcoma	3	3	6
C47	Autonomic nervous system	6	4	10
C48-49	Soft tissues	65	87	152
C50	Breast	19	2761	2780
C51-58	Female genital organs		1453	1453
C53	Cervix uteri		261	261
C54	Corpus uteri		604	604
C55	Uterus, other		10	10
C56	Ovary		449	449
C51-52, C57	Other female genital		128	128
C58	Placenta		1	1
C60-63	Male genital organs	4724		4724
C61	Prostate	4391		4391
C62	Testis	295		295
C60, C63	Other male genital	38		38
C64-68	Urinary organs	1409	575	1984
C64	Kidney excl. renal pelvis	382	240	622
C65	Renal pelvis	54	21	75
C66-68	Bladder, ureter, urethra	973	314	1287
C69	Eye	29	29	58
C70-72, D42-43	Central nervous system	450	544	994
C73	Thyroid gland	64	154	218
C37, C74-75	Other endocrine glands	77	57	134
C39, C76, C80	Other or unspecified	197	258	455
C81-96	Lymphoid and haematopoietic tissue	973	813	1786
C81	Hodgkin lymphoma	64	50	114
C82-85, C96	Non-Hodgkin lymphoma	418	379	797
C88	Malignant immunoproliferative diseases	26	14	40
C90	Multiple myeloma	170	150	320
C91-95	Leukaemia	295	220	515

Incidence

There were 25 943 new cases of cancer in Norway in 2007, of which 14 001 occurred among men and 11 942 among women (Table 4). Cancers of the prostate, female breast, colon and lung constitute half of the total cancer burden (13 096 new cases). Prostate cancer is the most common cancer in men (4391), followed by colorectal (1651) and lung cancer (1474). Breast cancer is the most frequent neoplasm in women, with 2761 new cases in 2007, followed by colorectal and lung cancer, with 1724 and 1076 incident cases, respectively.

Cancer rates increase rapidly with age, with the vast majority in Norway – about 86% in men and 77% in women occurring in persons aged over 55 (Figure 4). The highest proportion of cancers occur in the 55-74 age group, with almost half of all cancers diagnosed in men, and approximately 40% of those diagnosed in women, occurring within this age range. A further one-third of all new cases occur among elderly men and women (aged 75 or over). About one in five cancers diagnosed in women occur within the ages 30 to 54, a higher proportion than seen in men (about one in ten men).

The relative impact of different forms of cancer varies considerably with age. Figure 5 identifies those cancer sites that contribute substantially to the disease burden in children (aged 0-14), adolescents and young adults (15-29), the middle-aged and the elderly (30-54, 55-74 and age 75 or over).

Table 5 compares the age-standardised rates and sex ratios for selected cancer types in 1978-1982 and 2003-2007. Men tend to have higher rates of incidence for most cancer forms in both time periods, with the exceptions of melanoma of the skin, and, most notably, thyroid cancer. The highest male:female (M:F) ratios are seen for several head and neck cancers, although a number of the most frequent cancer forms - lung, bladder, stomach and rectum - are consistently more common among men. The declines in M:F ratios for several neoplasms over the 25 year period may in part be due to declining incidence trends in men, alongside increasing trends in women for certain cancers. For lung cancer, the reduction of the M:F ratios over the last two to three decades points to more rapidly increasing trends in cancer rates among women relative to men.

Sex-specific time trends in incidence rates for a number of common neoplasms are shown in Figure 6. Of note are: 1) the unparalleled and continuing increases in prostate cancer incidence since 1990, as a result of the rapidly increasing use of the Prostate Specific Antigen (PSA) test since it became commercially available in 1989; 2) the continued increases in both breast cancer and lung cancer among women, and colon cancer in both sexes; 3) the continuing declines in stomach cancer in both sexes; and 4) the rapid increases in a number of cancers for which the underlying causes (and prospects for primary prevention) remain enigmatic: testicular cancer in men and non-Hodgkin lymphoma in both sexes.

Figure 4: Percentage distribution of cancer incidence by age, 2003-2007

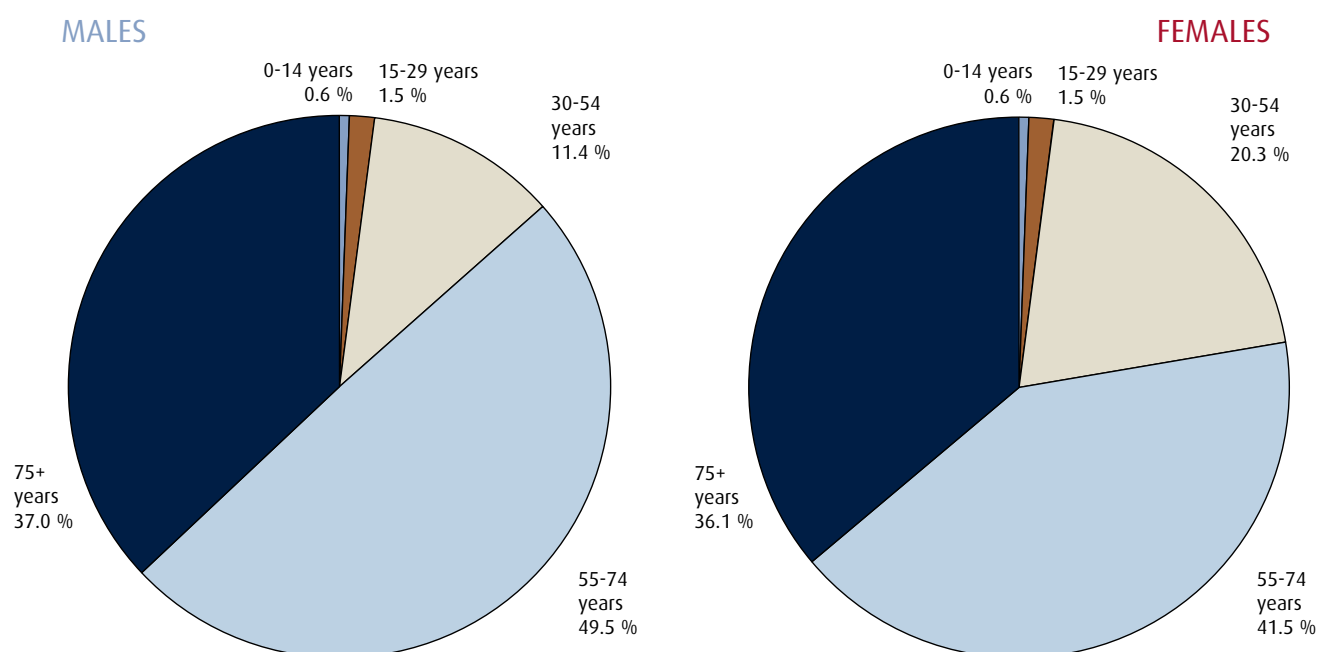
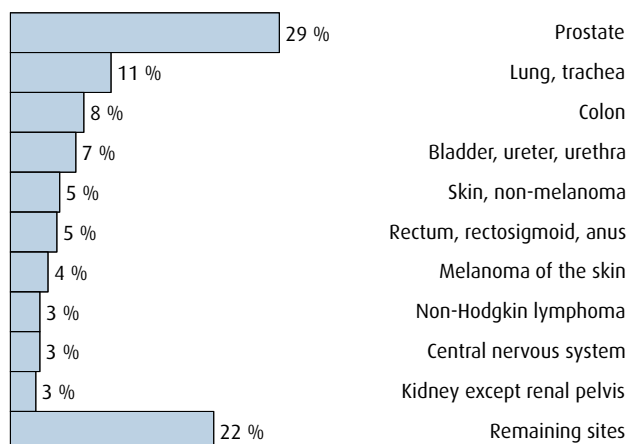
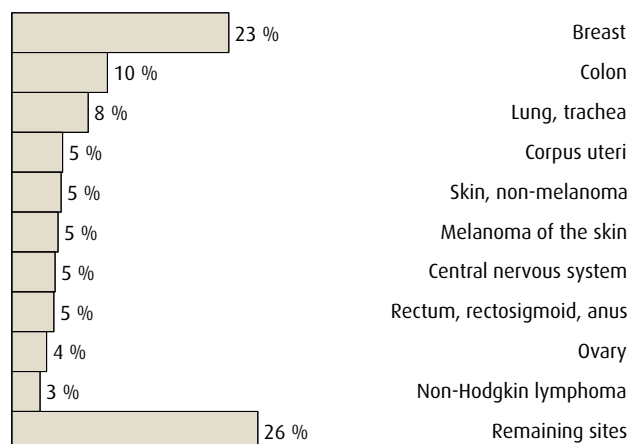


Figure 5: The most frequent incident cancers by age and sex, 2003–2007

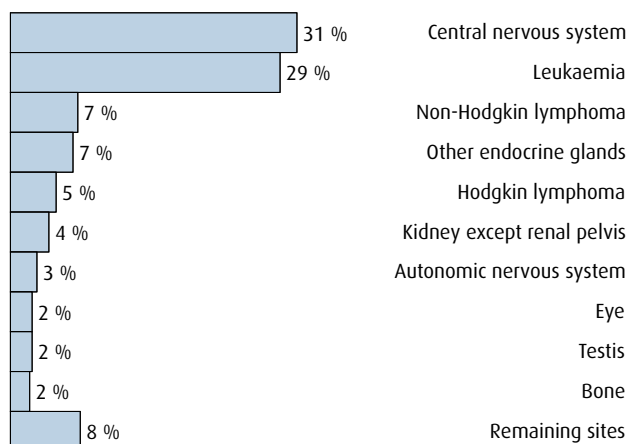
MALES all ages (66 181 cases)



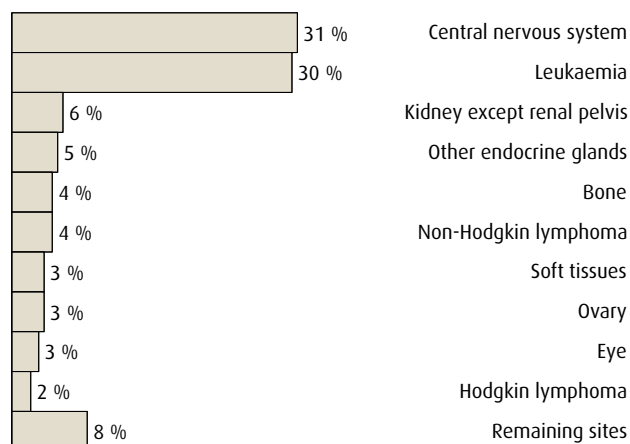
FEMALES all ages (59 258 cases)



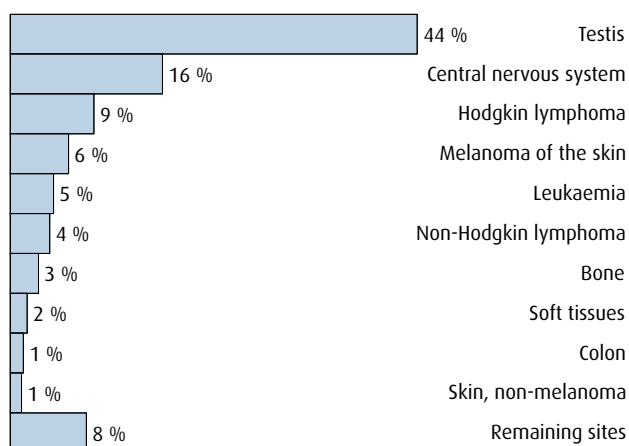
MALES 0–14 years (386 cases)



FEMALES 0–14 years (345 cases)



MALES 15–29 years (989 cases)



FEMALES 15–29 years (879 cases)

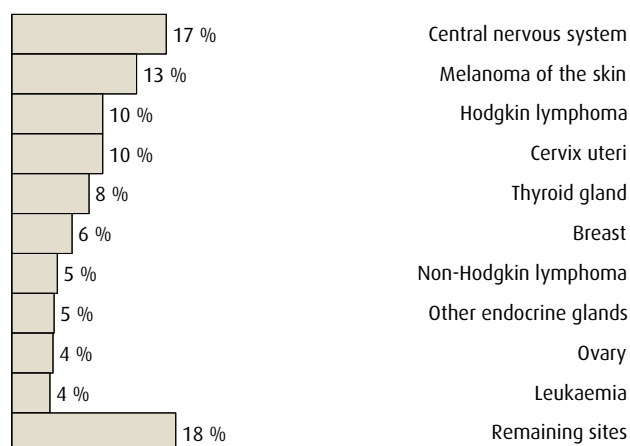
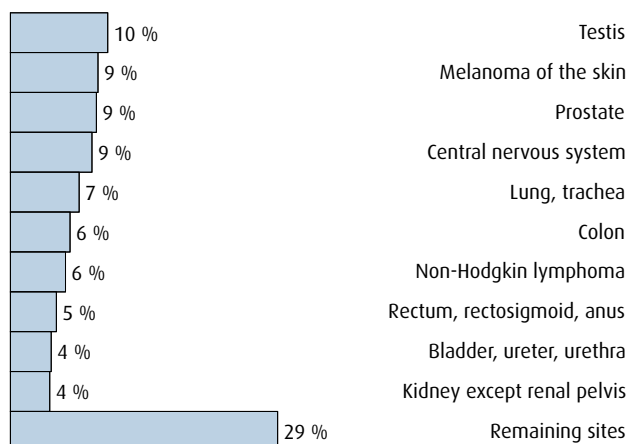
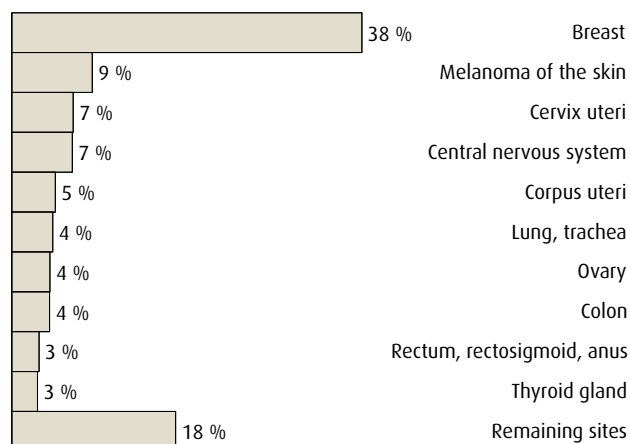


Figure 5 cont.

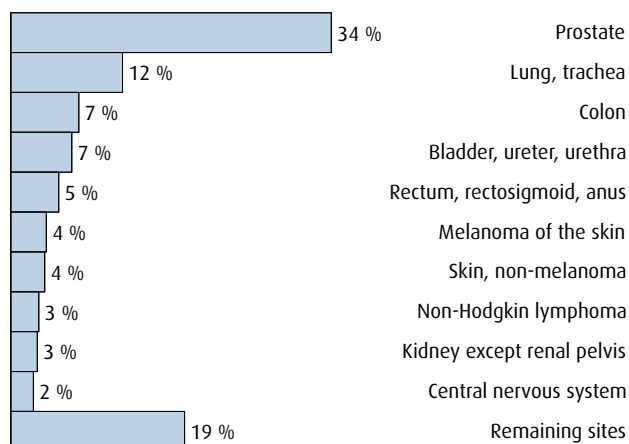
MALES 30–54 years (7451 cases)



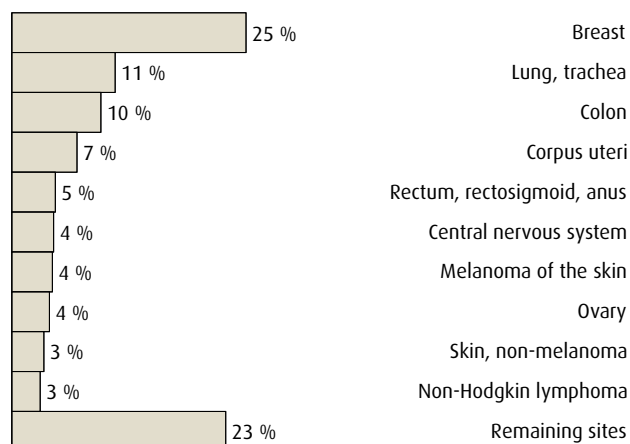
FEMALES 30–54 years (12 003 cases)



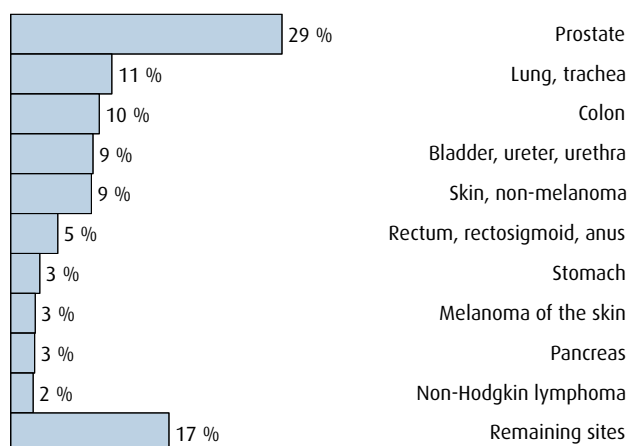
MALES 55–74 years (32 764 cases)



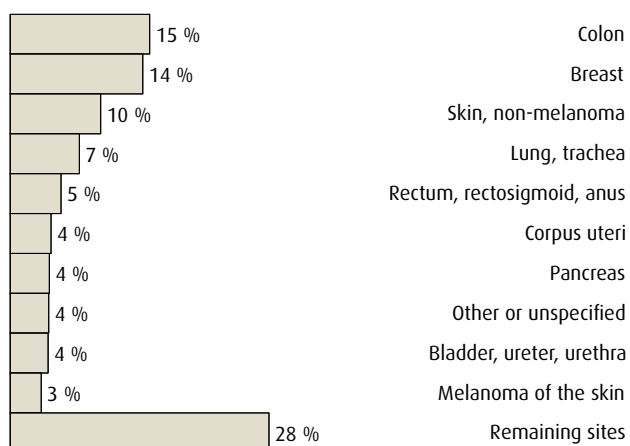
FEMALES 55–74 years (24 617 cases)



MALES 75+ years (24 617 cases)



FEMALES 75+ years (24 501 cases)



The total number of new cases in Norway has been increasing in the last decade (Table 7), as it has been since the Registry began reporting. This observation reflects real increases in the risk of several common cancers including cancers of the female breast, colorectum and lung, although it may also relate to an increasing ability to diagnose the disease with time.

The increases in these common cancers are partially compensated by decreasing incidence trends of several cancer types, notably stomach cancer (in both sexes) and cervix cancer in women. Melanoma of the skin is stabilising in both sexes, while rates of lung cancer in men have stabilised and are beginning to decline (Figure 6).

As was described in Figure 1, a larger proportion of the increasing burden can be attributed to the demographic effects of population growth and ageing (see the special issue of CiN 2005, for predictions of cancer in Norway up to 2020, by Health Region.)

Tables 9-14 provide further information on the distribution of cancer incidence in Norway. The number of incident cases and rates are tabulated according to year of diagnosis, age group and county of residence.

The cumulative risk is shown in Table 6 and sorted according to the lifetime risk in men in Figure 7. Among men, the highest cumulative risk of 11.9 is that of prostate cancer, and indicates, in the absence of competing causes of death, that approximately one in eight men currently develop this cancer in their lifetime (defined as ages 0-74). The corresponding risk of developing lung cancer is much lower in comparison, estimated at 4.5.

In women, the cumulative risk of breast cancer ranks highest, with the figure of 8.2 indicating that about one in 12 women develop this disease, in the absence of other causes. As with men, colorectal and lung cancers rank second and third.

Further information

The complete tabular descriptions in this report can be downloaded from our redesigned website in various formats. The previous Special Issues on regional predictions and data quality in CiN 2005 and CiN 2006, respectively are also available online:

www.cancerregistry.no

Table 5: Sex ratios (male:female) of age-adjusted rates (world) in 1978-82 and 2003-2007 for selected primary sites, sorted in descending order in the latest period

ICD10	Site	1978-82			2003-07		
		M	F	M/F ratio	M	F	M/F ratio
C32	Larynx, epiglottis	3.1	0.3	10.3	2.7	0.4	7.0
C15	Oesophagus	2.7	0.7	3.8	3.7	1.0	3.5
C66-68	Bladder, ureter, urethra	18.1	5.5	3.3	22.1	6.3	3.5
C09-14	Pharynx	1.6	0.5	3.2	2.7	0.9	3.0
C01-02	Tongue	1.0	0.4	2.7	1.5	0.7	2.2
C22	Liver	1.8	1.0	1.8	2.1	1.0	2.1
C65	Renal pelvis	1.0	0.4	2.2	1.0	0.5	2.0
C64	Kidney excl. renal pelvis	7.5	4.0	1.9	9.8	5.1	1.9
C16	Stomach	18.0	9.2	2.0	7.7	4.1	1.9
C00	Lip	3.4	0.4	7.9	1.3	0.8	1.7
C33-34	Lung, trachea	30.9	7.3	4.2	36.2	23.0	1.6
C90	Multiple myeloma	4.6	3.0	1.5	4.5	3.0	1.5
C19-21	Rectum, rectosigmoid, anus	14.7	10.1	1.5	16.8	11.4	1.5
C91-95	Leukaemia	8.1	5.4	1.5	9.0	6.3	1.4
C81	Hodgkin lymphoma	2.6	1.6	1.6	2.8	2.0	1.4
C82-85, C96	Non-Hodgkin lymphoma	6.2	4.5	1.4	11.7	8.6	1.4
C25	Pancreas	8.4	5.3	1.6	7.8	6.1	1.3
C18	Colon	17.1	17.4	1.0	25.3	23.2	1.1
C23-24	Gallbladder, bile ducts	1.1	1.6	0.7	1.5	1.4	1.1
C43	Melanoma of the skin	8.9	10.4	0.9	15.2	16.4	0.9
C73	Thyroid gland	1.6	5.1	0.3	1.9	4.8	0.4

Figure 6: Time trends in age-standardised incidence rates (world) in Norway for selected cancers (semi-log scale)

MALES

FEMALES

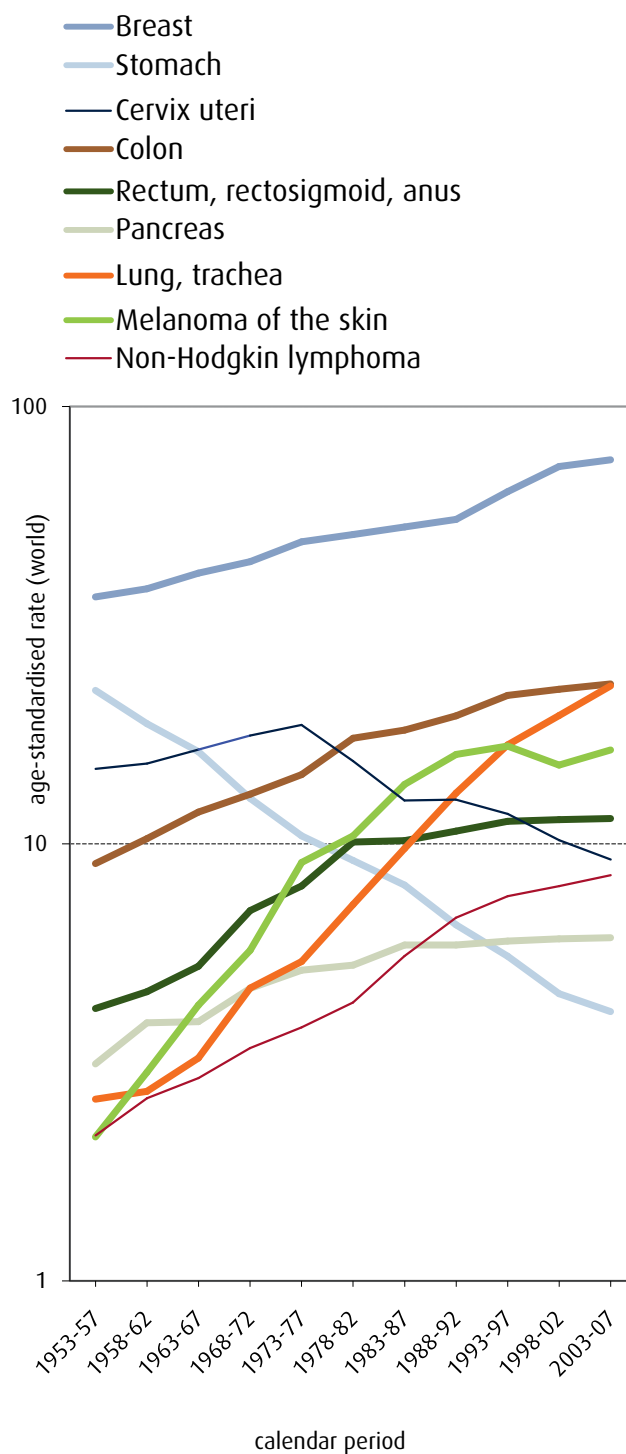
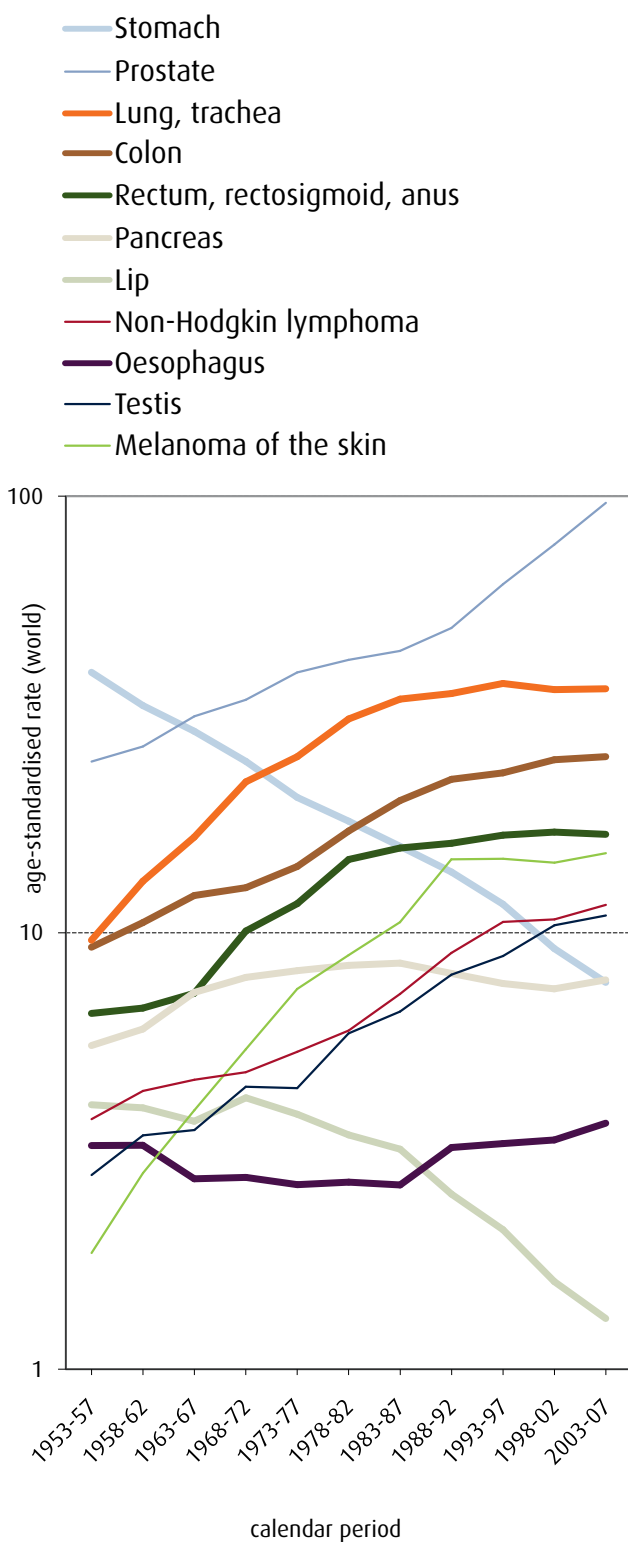
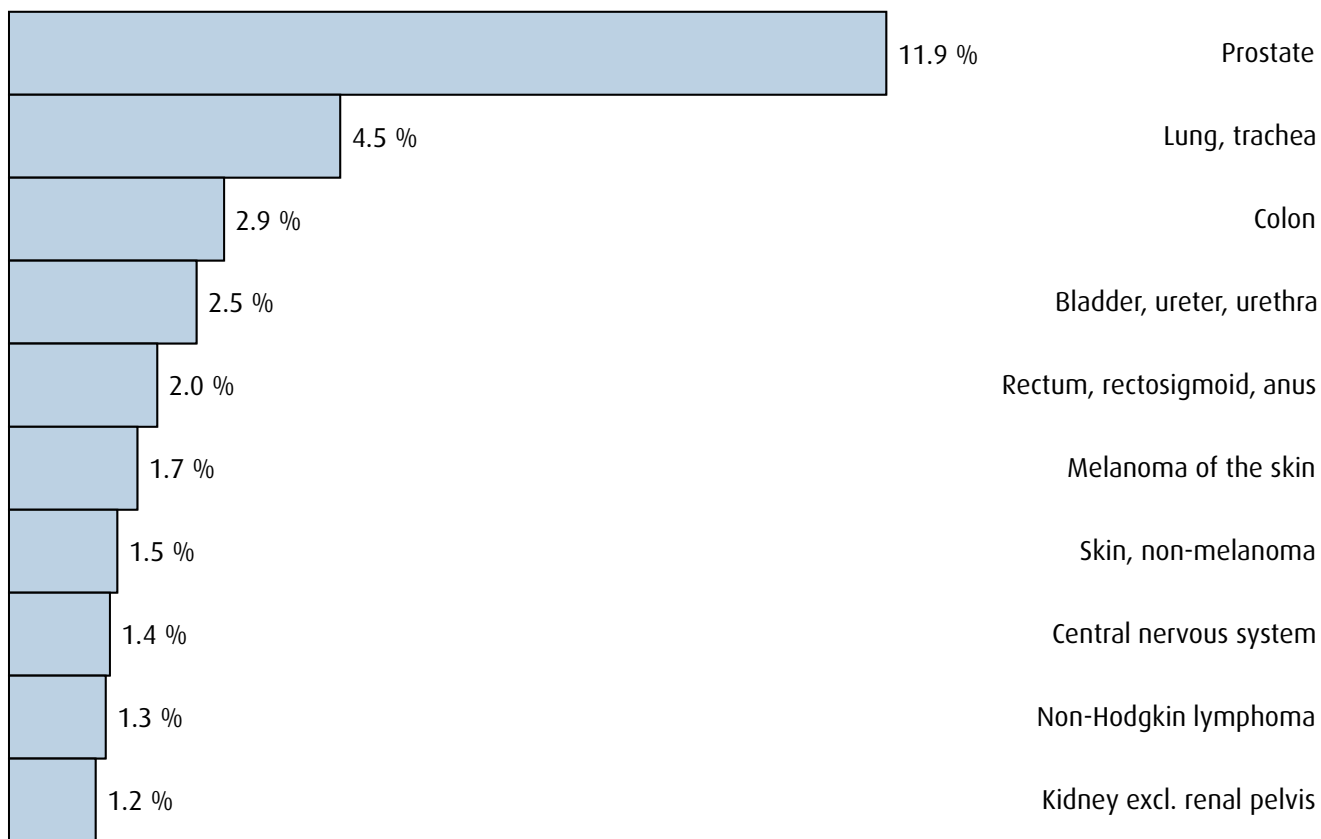


Figure 7: Cumulative risk of developing cancer by the age of 75 for selected cancers by sex - 2003-2007

MALES



FEMALES

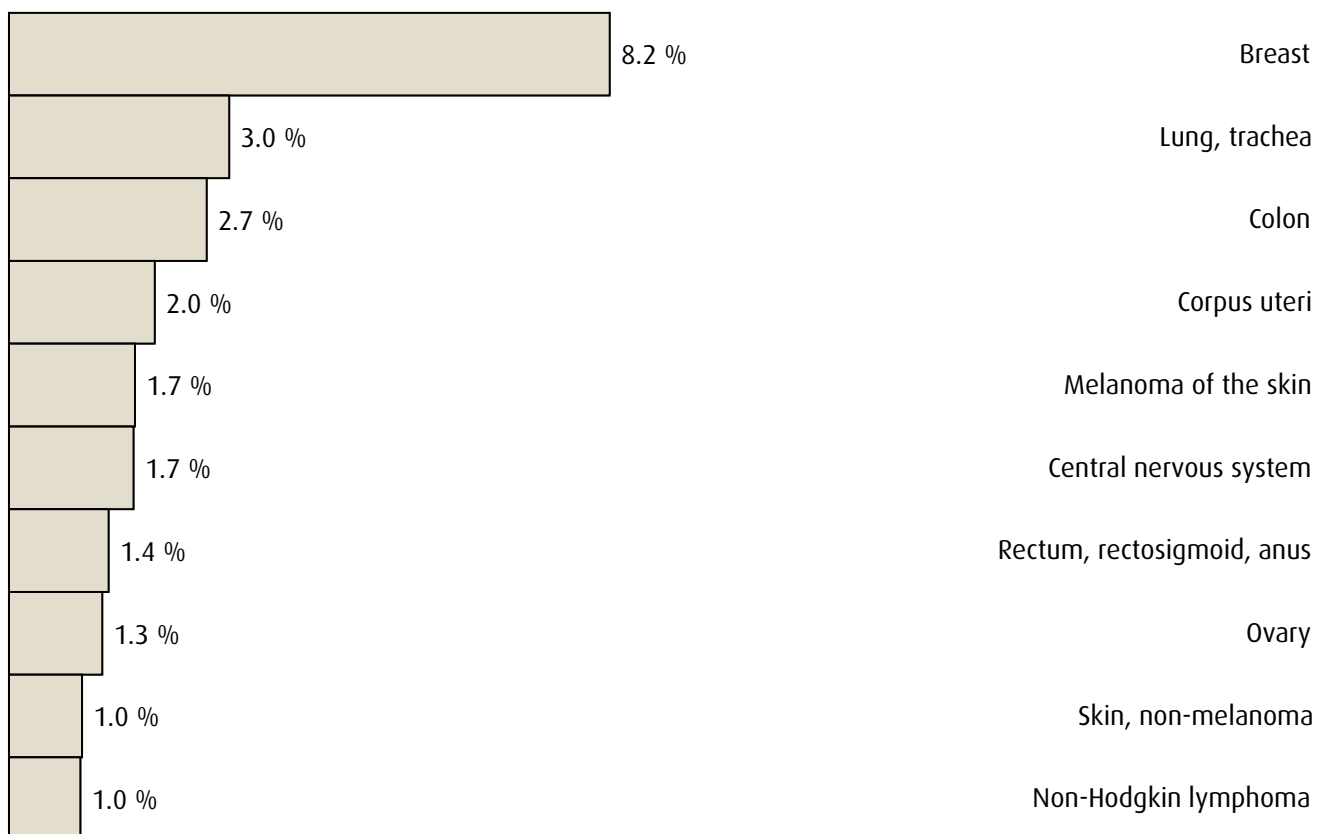


Table 6 Cumulative risk of developing cancer by the age of 75 by primary site and sex - 2003-2007

ICD10	Site	Males	Females
C00-96	All sites	33.4	27.4
C00-14	Mouth, pharynx	0.9	0.4
C00	Lip	0.2	0.1
C01-02	Tongue	0.2	0.1
C03-06	Mouth, other	0.2	0.1
C07-08	Salivary glands	0.1	0.1
C09-14	Pharynx	0.3	0.1
C15-26	Digestive organs	7.6	5.7
C15	Oesophagus	0.5	0.1
C16	Stomach	0.9	0.5
C17	Small intestine	0.2	0.1
C18	Colon	2.9	2.7
C19-21	Rectum, rectosigmoid, anus	2.0	1.4
C22	Liver	0.2	0.1
C23-24	Gallbladder, bile ducts	0.2	0.2
C25	Pancreas	0.9	0.7
C26	Other digestive organs	0.1	0.1
C30-34, C38	Respiratory organs	4.9	3.1
C30-31	Nose, sinuses	0.1	0.1
C32	Larynx, epiglottis	0.3	0.0
C33-34	Lung, trachea	4.5	3.0
C38	Mediastinum, pleura	0.0	0.0
C40-41	Bone	0.1	0.1
C43	Melanoma of the skin	1.7	1.7
C44	Skin, non-melanoma	1.5	1.0
C45	Mesothelioma	0.2	0.0
C46	Kaposi's sarcoma	0.0	0.0
C47	Autonomic nervous system	0.0	0.0
C48-49	Soft tissues	0.2	0.3
C50	Breast	0.0	8.2
C51-58	Female genital organs		4.4
C53	Cervix uteri		0.9
C54	Corpus uteri		2.0
C55	Uterus, other		0.0
C56	Ovary		1.3
C51-52, C57	Other female genital		0.3
C58	Placenta		0.0
C60-63	Male genital organs	12.8	
C61	Prostate	11.9	
C62	Testis	0.8	
C60, C63	Other male genital	0.1	
C64-68	Urinary organs	3.8	1.4
C64	Kidney excl. renal pelvis	1.2	0.6
C65	Renal pelvis	0.1	0.1
C66-68	Bladder, ureter, urethra	2.5	0.8
C69	Eye	0.1	0.1
C70-72, D42-43	Central nervous system	1.4	1.7
C73	Thyroid gland	0.2	0.5
C37, C74-75	Other endocrine glands	0.2	0.2
C39, C76, C80	Other or unspecified	0.5	0.5
C81-96	Lymphoid and haematopoietic tissue	3.0	2.1
C81	Hodgkin lymphoma	0.2	0.2
C82-85, C96	Non-Hodgkin lymphoma	1.3	1.0
C88	Malignant immunoproliferative diseases	0.1	0.0
C90	Multiple myeloma	0.5	0.4
C91-95	Leukaemia	0.9	0.6

Table 7a Number of new cases by primary site and year - 1998-2007

MALES

ICD10	Site	Year									
		1998	99	00	01	02	03	04	05	06	2007
C00-96	All sites	11362	11408	11598	11725	11681	12584	13235	13081	13280	14001
C00-14	Mouth, pharynx	257	253	277	242	258	251	258	243	276	281
C00	Lip	53	59	63	52	61	42	37	44	71	65
C01-02	Tongue	49	51	42	51	50	52	53	46	47	59
C03-06	Mouth, other	42	50	56	36	47	53	52	39	52	41
C07-08	Salivary glands	22	22	28	21	23	17	17	25	15	21
C09-14	Pharynx	91	71	88	82	77	87	99	89	91	95
C15-26	Digestive organs	2544	2505	2552	2668	2631	2686	2800	2746	2675	2712
C15	Oesophagus	126	134	103	121	123	137	149	133	147	131
C16	Stomach	387	372	366	370	334	345	350	302	298	332
C17	Small intestine	45	39	45	66	46	58	44	51	66	60
C18	Colon	942	901	988	1001	970	992	1074	1065	1061	1039
C19-21	Rectum, rectosigmoid, anus	606	592	618	631	684	676	693	688	641	612
C22	Liver	69	86	71	80	83	74	81	74	85	93
C23-24	Gallbladder, bile ducts	59	61	54	70	52	55	68	78	56	54
C25	Pancreas	272	275	270	290	306	311	301	318	290	341
C26	Other digestive organs	38	45	37	39	33	38	40	37	31	50
C30-34, C38	Respiratory organs	1373	1438	1453	1499	1518	1565	1544	1542	1585	1597
C30-31	Nose, sinuses	25	24	26	23	28	17	25	24	18	28
C32	Larynx, epiglottis	88	113	111	120	115	92	99	99	117	77
C33-34	Lung, trachea	1246	1283	1302	1340	1363	1439	1409	1409	1438	1474
C38	Mediastinum, pleura	14	18	14	16	12	17	11	10	12	18
C40-41	Bone	18	21	20	22	28	21	28	26	24	22
C43	Melanoma of the skin	450	468	467	485	474	479	487	585	554	569
C44	Skin, non-melanoma	552	544	589	598	667	654	693	672	746	744
C45	Mesothelioma	52	55	51	61	51	65	72	72	49	60
C46	Kaposi's sarcoma	6	3	3	6	6	5	9	9	8	3
C47	Autonomic nervous system	7	7	7	4	5	7	2	6	5	6
C48-49	Soft tissues	51	46	51	50	55	48	52	47	61	65
C50	Breast	21	14	17	13	14	20	14	18	14	19
C60-63	Male genital organs	3255	3324	3357	3207	3047	3724	4143	3980	4141	4724
C61	Prostate	2988	3048	3079	2905	2767	3414	3831	3670	3844	4391
C62	Testis	234	249	250	271	239	257	267	260	256	295
C60, C63	Other male genital	33	27	28	31	41	53	45	50	41	38
C64-68	Urinary organs	1177	1124	1127	1183	1243	1253	1413	1286	1316	1409
C64	Kidney excl. renal pelvis	304	284	272	322	328	333	392	352	348	382
C65	Renal pelvis	30	34	38	34	37	32	52	28	45	54
C66-68	Bladder, ureter, urethra	843	806	817	827	878	888	969	906	923	973
C69	Eye	26	27	35	23	31	41	31	27	35	29
C70-72, D42-43	Central nervous system	325	348	344	379	375	417	390	447	393	450
C73	Thyroid gland	46	46	53	53	54	53	51	68	79	64
C37, C74-75	Other endocrine glands	49	62	66	56	73	82	60	68	66	77
C39, C76, C80	Other or unspecified	285	276	261	236	234	249	206	218	215	197
C81-96	Lymphoid and haematopoietic tissue	868	847	868	940	917	964	982	1021	1038	973
C81	Hodgkin lymphoma	51	59	64	53	52	84	73	65	66	64
C82-85, C96	Non-Hodgkin lymphoma	366	329	385	355	341	379	409	420	472	418
C88	Malignant immunoproliferative diseases	17	20	14	28	29	34	26	22	22	26
C90	Multiple myeloma	169	155	151	181	165	164	178	214	176	170
C91-95	Leukaemia	265	284	254	323	330	303	296	300	302	295

Table 7b Number of new cases by primary site and year - 1998-2007

FEMALES

ICD10	Site	Year									
		1998	99	00	01	02	03	04	05	06	2007
C00-96	All sites	10320	10342	10876	10987	11396	11480	11867	11967	12002	11942
C00-14	Mouth, pharynx	137	133	127	141	133	129	131	182	205	163
C00	Lip	28	19	23	32	26	23	24	41	53	54
C01-02	Tongue	24	34	29	27	27	25	26	32	38	23
C03-06	Mouth, other	36	25	29	35	34	29	40	43	54	38
C07-08	Salivary glands	20	22	23	24	18	20	11	26	22	24
C09-14	Pharynx	29	33	23	23	28	32	30	40	38	24
C15-26	Digestive organs	2493	2410	2564	2471	2548	2548	2562	2616	2595	2574
C15	Oesophagus	50	45	56	52	48	56	54	60	44	55
C16	Stomach	262	234	240	210	258	222	218	235	210	213
C17	Small intestine	53	40	47	47	62	48	50	43	43	47
C18	Colon	1114	1082	1156	1138	1137	1232	1184	1199	1251	1225
C19-21	Rectum, rectosigmoid, anus	506	504	534	514	520	505	573	563	544	499
C22	Liver	41	62	52	48	45	41	41	61	41	52
C23-24	Gallbladder, bile ducts	82	83	89	62	80	83	64	79	73	81
C25	Pancreas	330	294	334	345	351	319	332	315	346	337
C26	Other digestive organs	55	66	56	55	47	42	46	61	43	65
C30-34, C38	Respiratory organs	673	793	827	845	858	935	977	987	1054	1133
C30-31	Nose, sinuses	19	17	13	15	15	12	28	17	19	32
C32	Larynx, epiglottis	21	19	20	22	18	18	13	17	12	16
C33-34	Lung, trachea	628	746	786	800	821	903	924	948	1017	1076
C38	Mediastinum, pleura	5	11	8	8	4	2	12	5	6	9
C40-41	Bone	9	28	22	21	20	19	15	17	16	23
C43	Melanoma of the skin	442	482	534	530	555	547	556	574	646	623
C44	Skin, non-melanoma	462	457	511	485	521	570	581	674	644	674
C45	Mesothelioma	10	9	10	5	8	11	10	9	20	14
C46	Kaposi's sarcoma	2	3	8	0	3	2	3	2	5	3
C47	Autonomic nervous system	8	2	4	5	4	3	7	4	9	4
C48-49	Soft tissues	50	64	75	68	64	69	87	82	83	87
C50	Breast	2435	2419	2533	2636	2708	2746	2806	2814	2709	2761
C51-58	Female genital organs	1490	1378	1428	1494	1541	1491	1570	1565	1549	1453
C53	Cervix uteri	346	288	286	300	313	297	269	306	312	261
C54	Corpus uteri	520	492	565	594	588	626	686	673	647	604
C55	Uterus, other	11	7	15	6	11	13	8	8	12	10
C56	Ovary	477	460	455	449	522	425	465	424	451	449
C51-52, C57	Other female genital	133	125	105	142	104	126	138	148	123	128
C58	Placenta	3	6	2	3	3	4	4	6	4	1
C64-68	Urinary organs	499	502	518	517	585	565	576	585	581	575
C64	Kidney excl. renal pelvis	187	184	181	187	213	202	210	235	204	240
C65	Renal pelvis	21	27	18	26	30	37	27	18	24	21
C66-68	Bladder, ureter, urethra	291	291	319	304	342	326	339	332	353	314
C69	Eye	30	30	20	28	34	34	37	24	25	29
C70-72, D42-43	Central nervous system	390	419	417	474	516	522	585	564	543	544
C73	Thyroid gland	116	121	147	130	144	132	170	163	152	154
C37, C74-75	Other endocrine glands	62	54	42	51	69	75	71	66	69	57
C39, C76, C80	Other or unspecified	298	296	325	286	309	306	285	274	265	258
C81-96	Lymphoid and haematopoietic tissue	714	742	764	800	776	776	838	765	832	813
C81	Hodgkin lymphoma	43	39	64	33	43	53	46	49	48	50
C82-85, C96	Non-Hodgkin lymphoma	302	333	322	334	342	334	367	337	382	379
C88	Malignant immunoproliferative diseases	15	8	11	16	20	14	21	17	22	14
C90	Multiple myeloma	141	157	123	173	162	152	152	150	138	150
C91-95	Leukaemia	213	205	244	244	209	223	252	212	242	220

Table 8a Age-adjusted (world) incidence rates per 100 000 person-years by primary site and year - 1998-2007

MALES

ICD10	Site	Year									
		1998	99	00	01	02	03	04	05	06	2007
C00-96	All sites	318.5	321.0	323.5	322.4	318.3	338.4	349.2	339.9	340.3	354.0
C00-14	Mouth, pharynx	8.0	7.8	8.4	7.2	7.8	7.6	7.6	6.9	7.4	7.7
C00	Lip	1.5	1.6	1.8	1.4	1.7	1.1	1.0	1.1	1.7	1.6
C01-02	Tongue	1.6	1.6	1.3	1.6	1.6	1.7	1.6	1.3	1.2	1.6
C03-06	Mouth, other	1.3	1.6	1.7	1.1	1.4	1.6	1.5	1.1	1.4	1.1
C07-08	Salivary glands	0.7	0.7	0.8	0.6	0.7	0.5	0.5	0.7	0.4	0.6
C09-14	Pharynx	2.9	2.4	2.9	2.5	2.4	2.7	3.0	2.6	2.7	2.7
C15-26	Digestive organs	67.1	67.4	67.0	69.6	68.4	68.7	70.3	67.9	64.8	65.1
C15	Oesophagus	3.5	3.7	2.8	3.2	3.5	3.7	4.0	3.5	3.9	3.3
C16	Stomach	9.6	9.5	9.3	9.1	8.6	8.5	8.2	7.1	6.9	7.8
C17	Small intestine	1.3	1.1	1.3	1.9	1.3	1.7	1.2	1.3	1.8	1.5
C18	Colon	24.3	24.1	25.8	25.5	24.8	24.7	26.5	26.1	24.9	24.2
C19-21	Rectum, rectosigmoid, anus	16.7	16.5	16.5	17.3	18.0	17.8	17.8	17.3	15.7	15.4
C22	Liver	1.9	2.4	1.9	2.0	2.3	2.1	1.8	2.1	2.3	2.4
C23-24	Gallbladder, bile ducts	1.5	1.5	1.4	1.9	1.3	1.4	1.7	2.0	1.3	1.3
C25	Pancreas	7.4	7.3	7.0	7.7	7.9	8.0	7.9	7.7	7.3	8.0
C26	Other digestive organs	0.9	1.2	1.0	0.9	0.8	0.9	1.1	0.8	0.7	1.1
C30-34, C38	Respiratory organs	39.4	40.9	39.8	40.6	41.1	41.6	39.7	38.7	40.1	38.9
C30-31	Nose, sinuses	0.8	0.8	0.8	0.6	0.9	0.5	0.7	0.7	0.4	0.8
C32	Larynx, epiglottis	2.5	3.2	3.3	3.1	3.3	2.7	2.7	2.6	3.2	2.0
C33-34	Lung, trachea	35.6	36.3	35.4	36.4	36.7	38.0	36.0	35.2	36.2	35.7
C38	Mediastinum, pleura	0.4	0.5	0.4	0.5	0.3	0.4	0.3	0.3	0.3	0.4
C40-41	Bone	0.9	0.8	0.9	0.9	1.2	0.8	1.1	1.0	1.0	0.7
C43	Melanoma of the skin	14.6	14.6	14.2	14.8	14.3	14.4	14.4	16.5	15.2	15.6
C44	Skin, non-melanoma	13.6	13.4	14.5	14.3	15.7	14.8	15.0	14.5	15.8	15.1
C45	Mesothelioma	1.3	1.7	1.3	1.6	1.4	1.7	1.8	1.8	1.2	1.4
C46	Kaposi's sarcoma	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.2	0.2	0.1
C47	Autonomic nervous system	0.3	0.4	0.3	0.2	0.3	0.4	0.1	0.4	0.2	0.3
C48-49	Soft tissues	1.7	1.6	1.7	1.6	1.7	1.4	1.6	1.4	1.9	1.9
C50	Breast	0.5	0.3	0.5	0.4	0.3	0.5	0.3	0.5	0.3	0.5
C60-63	Male genital organs	88.6	91.2	94.0	88.3	82.3	99.0	110.3	105.0	107.3	122.1
C61	Prostate	77.6	80.1	82.6	76.3	71.1	87.1	98.4	92.7	95.8	109.0
C62	Testis	10.1	10.3	10.5	11.1	10.0	10.4	11.0	10.9	10.5	12.1
C60, C63	Other male genital	0.9	0.7	0.8	0.9	1.2	1.5	1.0	1.4	1.0	1.0
C64-68	Urinary organs	32.2	30.1	29.8	31.0	32.5	32.3	35.1	31.8	31.9	33.9
C64	Kidney excl. renal pelvis	9.0	8.2	8.0	9.4	9.6	9.4	10.9	9.4	9.5	10.0
C65	Renal pelvis	0.9	0.9	0.9	0.9	0.9	0.7	1.3	0.8	1.1	1.3
C66-68	Bladder, ureter, urethra	22.2	21.0	20.9	20.8	22.0	22.2	23.0	21.6	21.2	22.6
C69	Eye	1.0	1.1	1.0	0.7	1.0	1.2	1.1	0.8	1.1	0.8
C70-72, D42-43	Central nervous system	11.6	12.5	11.9	13.0	13.4	14.8	12.8	14.7	12.6	14.8
C73	Thyroid gland	1.6	1.5	1.8	1.8	1.7	1.7	1.6	2.1	2.3	1.7
C37, C74-75	Other endocrine glands	1.9	2.3	2.5	2.1	2.4	2.9	2.1	2.0	2.3	2.4
C39, C76, C80	Other or unspecified	7.2	6.7	6.6	5.4	5.7	5.7	4.6	4.9	5.0	4.3
C81-96	Lymphoid and haematopoietic tissue	27.1	26.8	27.2	28.7	27.0	28.8	29.3	28.8	29.6	26.7
C81	Hodgkin lymphoma	2.2	2.5	2.7	2.1	2.2	3.4	3.0	2.7	2.5	2.3
C82-85, C96	Non-Hodgkin lymphoma	11.4	10.3	12.0	10.7	9.8	11.1	11.9	11.4	12.9	11.3
C88	Malignant immunoproliferative diseases	0.4	0.5	0.4	0.8	0.8	0.8	0.6	0.5	0.5	0.6
C90	Multiple myeloma	4.4	4.0	3.9	5.0	4.3	4.2	4.5	5.3	4.5	4.1
C91-95	Leukaemia	8.7	9.4	8.3	10.1	9.9	9.3	9.3	8.9	9.2	8.4

Table 8b Age-adjusted (world) incidence rates per 100 000 person-years by primary site and year - 1998-2007

FEMALES

ICD10	Site	Year									
		1998	99	00	01	02	03	04	05	06	2007
C00-96	All sites	261.6	263.4	271.5	275.8	282.9	280.7	288.3	286.0	286.1	278.1
C00-14	Mouth, pharynx	3.6	3.6	3.1	3.2	3.3	3.2	3.1	4.1	5.0	3.5
C00	Lip	0.7	0.5	0.5	0.7	0.6	0.4	0.5	0.7	1.2	1.0
C01-02	Tongue	0.7	0.9	0.7	0.5	0.7	0.6	0.7	0.7	0.9	0.5
C03-06	Mouth, other	0.9	0.6	0.7	0.6	0.9	0.7	0.9	0.9	1.2	0.7
C07-08	Salivary glands	0.5	0.7	0.6	0.7	0.5	0.6	0.2	0.7	0.5	0.6
C09-14	Pharynx	0.9	1.0	0.6	0.6	0.8	0.9	0.8	1.1	1.1	0.7
C15-26	Digestive organs	50.2	49.3	50.7	50.0	50.7	49.9	51.4	50.5	50.6	48.8
C15	Oesophagus	1.2	0.9	1.0	1.1	0.9	1.1	1.1	1.2	0.9	0.9
C16	Stomach	4.7	4.6	4.7	3.9	4.8	3.9	4.5	4.4	3.9	3.9
C17	Small intestine	1.2	1.1	1.3	1.1	1.5	1.0	1.2	1.0	1.1	1.1
C18	Colon	22.5	22.3	22.8	22.8	22.5	23.8	23.3	22.6	23.5	22.9
C19-21	Rectum, rectosigmoid, anus	11.4	11.0	11.6	11.3	11.5	10.9	12.0	11.8	11.7	10.7
C22	Liver	1.0	1.3	1.1	1.1	1.0	0.9	1.0	1.4	0.8	1.0
C23-24	Gallbladder, bile ducts	1.4	1.7	1.7	1.4	1.4	1.4	1.2	1.5	1.5	1.6
C25	Pancreas	6.2	5.5	5.9	6.4	6.4	6.3	6.3	5.6	6.5	5.7
C26	Other digestive organs	0.8	1.0	0.7	0.8	0.7	0.6	0.8	1.1	0.7	1.0
C30-34, C38	Respiratory organs	17.5	21.1	21.7	21.7	21.5	23.1	23.4	23.2	24.5	25.5
C30-31	Nose, sinuses	0.5	0.4	0.3	0.4	0.5	0.3	0.5	0.4	0.5	0.7
C32	Larynx, epiglottis	0.5	0.5	0.5	0.6	0.5	0.5	0.3	0.5	0.3	0.4
C33-34	Lung, trachea	16.4	19.9	20.8	20.6	20.5	22.3	22.4	22.2	23.7	24.2
C38	Mediastinum, pleura	0.1	0.2	0.2	0.2	0.0	0.0	0.2	0.1	0.1	0.1
C40-41	Bone	0.4	1.1	0.9	0.9	0.9	0.8	0.6	0.6	0.6	0.8
C43	Melanoma of the skin	13.3	14.8	15.6	15.6	16.3	15.7	15.7	16.0	18.2	16.3
C44	Skin, non-melanoma	7.9	7.8	8.4	8.6	8.4	9.2	9.6	10.2	10.1	10.4
C45	Mesothelioma	0.3	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.4	0.3
C46	Kaposi's sarcoma	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0
C47	Autonomic nervous system	0.3	0.1	0.3	0.2	0.3	0.1	0.3	0.2	0.4	0.2
C48-49	Soft tissues	1.3	1.7	2.0	2.1	1.6	1.9	2.5	2.5	2.2	2.3
C50	Breast	70.2	68.8	73.0	75.6	77.0	77.2	77.5	76.6	73.3	73.2
C51-58	Female genital organs	42.2	39.3	39.1	40.6	41.7	39.8	41.1	40.7	39.3	36.8
C53	Cervix uteri	11.7	9.8	9.3	9.8	10.3	9.5	8.7	9.9	9.7	8.3
C54	Corpus uteri	13.5	13.4	14.8	15.0	15.0	16.1	17.0	16.4	15.4	14.8
C55	Uterus, other	0.2	0.1	0.3	0.1	0.2	0.2	0.2	0.1	0.2	0.1
C56	Ovary	13.7	13.0	12.3	12.5	13.8	11.1	12.3	10.8	11.1	11.1
C51-52, C57	Other female genital	3.0	2.8	2.3	3.1	2.2	2.8	2.7	3.2	2.7	2.5
C58	Placenta	0.1	0.3	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.1
C64-68	Urinary organs	10.5	11.5	11.0	11.2	12.3	11.7	11.3	12.4	12.1	11.9
C64	Kidney excl. renal pelvis	4.3	4.7	4.2	4.2	4.7	4.8	4.8	5.4	4.9	5.5
C65	Renal pelvis	0.3	0.6	0.4	0.6	0.6	0.8	0.4	0.3	0.5	0.4
C66-68	Bladder, ureter, urethra	5.9	6.2	6.3	6.4	7.0	6.0	6.0	6.6	6.7	6.1
C69	Eye	0.9	0.9	0.4	0.7	1.0	0.8	1.0	0.8	0.8	0.8
C70-72, D42-43	Central nervous system	12.3	13.2	13.0	14.5	16.8	15.9	17.3	17.4	15.5	16.0
C73	Thyroid gland	3.8	3.8	5.1	4.3	4.6	4.2	5.4	5.1	4.8	4.7
C37, C74-75	Other endocrine glands	2.5	1.8	1.6	2.0	2.3	2.8	2.3	2.5	2.4	1.9
C39, C76, C80	Other or unspecified	5.4	5.3	5.6	4.5	5.1	4.7	4.8	4.4	4.5	4.1
C81-96	Lymphoid and haematopoietic tissue	18.7	19.1	19.7	19.9	18.8	19.5	21.0	18.4	21.4	20.4
C81	Hodgkin lymphoma	2.0	1.6	2.7	1.4	1.6	2.1	1.7	2.0	2.1	1.9
C82-85, C96	Non-Hodgkin lymphoma	7.5	8.4	7.9	8.3	8.1	7.9	8.9	7.9	9.1	9.2
C88	Malignant immunoproliferative diseases	0.3	0.2	0.2	0.3	0.4	0.3	0.4	0.3	0.5	0.3
C90	Multiple myeloma	2.8	3.2	2.5	3.5	3.3	2.8	3.1	3.2	2.6	3.1
C91-95	Leukaemia	6.2	5.8	6.4	6.4	5.4	6.4	6.8	5.1	7.1	5.9

Table 9a Number of new cases by primary site and five-year age group - 2007

ICD10	Site	0-4	5-9	10-14	15-19	20-24	25-29
C00-96	All sites	28	14	25	52	63	107
C00-14	Mouth, pharynx	0	0	0	0	2	1
C00	Lip	0	0	0	0	0	0
C01-02	Tongue	0	0	0	0	0	1
C03-06	Mouth, other	0	0	0	0	0	0
C07-08	Salivary glands	0	0	0	0	1	0
C09-14	Pharynx	0	0	0	0	1	0
C15-26	Digestive organs	1	1	1	1	2	3
C15	Oesophagus	0	0	0	0	0	0
C16	Stomach	0	0	0	0	1	0
C17	Small intestine	0	0	0	0	0	0
C18	Colon	0	0	1	0	1	2
C19-21	Rectum, rectosigmoid, anus	0	0	0	0	0	1
C22	Liver	1	1	0	0	0	0
C23-24	Gallbladder, bile ducts	0	0	0	0	0	0
C25	Pancreas	0	0	0	0	0	0
C26	Other digestive organs	0	0	0	1	0	0
C30-34, C38	Respiratory organs	0	1	0	2	0	1
C30-31	Nose, sinuses	0	1	0	1	0	0
C32	Larynx, epiglottis	0	0	0	0	0	0
C33-34	Lung, trachea	0	0	0	1	0	1
C38	Mediastinum, pleura	0	0	0	0	0	0
C40-41	Bone	0	0	1	3	1	0
C43	Melanoma of the skin	0	0	1	1	2	10
C44	Skin, non-melanoma	0	0	0	2	0	1
C45	Mesothelioma	0	0	0	0	0	0
C46	Kaposi's sarcoma	0	0	0	0	0	0
C47	Autonomic nervous system	1	0	1	0	0	1
C48-49	Soft tissues	1	0	0	2	0	3
C50	Breast	0	0	0	0	0	0
C60-63	Male genital organs	0	0	2	13	33	54
C61	Prostate	0	0	0	1	0	0
C62	Testis	0	0	2	12	33	54
C60, C63	Other male genital	0	0	0	0	0	0
C64-68	Urinary organs	2	0	0	0	1	5
C64	Kidney excl. renal pelvis	2	0	0	0	1	2
C65	Renal pelvis	0	0	0	0	0	0
C66-68	Bladder, ureter, urethra	0	0	0	0	0	3
C69	Eye	1	0	0	0	0	0
C70-72, D42-43	Central nervous system	12	5	11	18	13	16
C73	Thyroid gland	0	0	0	0	1	1
C37, C74-75	Other endocrine glands	2	0	2	1	1	2
C39, C76, C80	Other or unspecified	0	0	0	0	0	0
C81-96	Lymphoid and haematopoietic tissue	8	7	6	9	7	9
C81	Hodgkin lymphoma	0	0	2	2	4	4
C82-85, C96	Non-Hodgkin lymphoma	1	1	2	3	1	2
C88	Malignant immunoproliferative diseases	0	0	0	0	0	0
C90	Multiple myeloma	0	0	0	0	0	0
C91-95	Leukaemia	7	6	2	4	2	3

Age												
30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	
146	175	232	341	722	1169	1950	1996	2009	2104	1672	1196	
0	2	13	19	33	32	41	41	34	31	16	16	
0	0	2	1	7	6	4	14	9	7	7	8	
0	0	3	8	6	8	3	10	4	10	4	2	
0	0	1	0	4	5	12	5	8	2	3	1	
0	1	2	3	1	0	4	0	5	2	0	2	
0	1	5	7	15	13	18	12	8	10	2	3	
11	26	31	77	138	212	333	370	407	448	384	266	
0	0	1	4	12	12	19	17	21	23	12	10	
0	3	2	11	20	20	37	37	56	58	57	30	
1	3	0	4	5	4	10	8	5	10	7	3	
5	10	12	27	48	66	108	127	169	183	168	112	
3	4	7	10	27	76	92	101	99	82	67	43	
2	3	5	8	7	3	13	7	7	11	15	10	
0	0	2	1	4	4	8	6	9	9	4	7	
0	3	2	10	13	24	44	60	34	65	45	41	
0	0	0	2	2	3	2	7	7	7	9	10	
2	4	15	24	91	148	239	224	256	288	205	97	
0	0	3	3	0	2	5	3	3	3	3	1	
0	0	0	2	8	12	10	16	7	13	8	1	
2	4	12	19	83	133	219	203	245	268	192	92	
0	0	0	0	0	1	5	2	1	4	2	3	
1	4	0	1	2	1	1	1	0	4	2	0	
8	18	26	36	63	57	83	63	61	54	47	39	
6	4	7	7	16	28	38	68	93	155	162	157	
0	0	0	1	2	6	8	8	11	13	7	4	
0	0	0	0	0	1	0	0	0	0	1	1	
0	0	0	1	0	0	2	0	0	0	0	0	
0	5	4	5	6	7	4	6	6	7	7	2	
0	0	1	5	0	1	3	2	0	3	2	2	
62	42	39	55	167	391	794	847	743	671	458	353	
0	0	5	28	152	381	780	836	736	667	455	350	
61	41	34	25	12	6	5	7	3	0	0	0	
1	1	0	2	3	4	9	4	4	4	3	3	
3	12	21	27	76	124	189	177	214	242	204	112	
3	5	13	14	38	42	50	43	56	51	42	20	
0	1	0	2	2	2	7	8	9	11	7	5	
0	6	8	11	36	80	132	126	149	180	155	87	
0	0	0	3	4	0	7	4	1	5	3	1	
22	19	29	25	29	46	40	46	35	25	33	26	
2	4	4	2	7	8	12	1	4	10	4	4	
3	3	6	7	5	7	10	3	11	8	5	1	
0	1	1	5	10	12	15	22	27	29	33	42	
26	31	35	41	73	88	131	113	106	111	99	73	
12	7	6	2	5	4	5	3	3	3	2	0	
9	17	11	19	37	48	60	57	40	43	39	28	
0	0	0	0	1	0	5	4	5	6	4	1	
0	2	8	6	10	12	23	20	22	29	22	16	
5	5	10	14	20	24	38	29	36	30	32	28	

Table 9b Number of new cases by primary site and five-year age group - 2007

ICD10	Site	0-4	5-9	10-14	15-19	20-24	25-29
C00-96	All sites	31	17	15	26	52	92
C00-14	Mouth, pharynx	0	0	0	0	2	0
C00	Lip	0	0	0	0	0	0
C01-02	Tongue	0	0	0	0	0	0
C03-06	Mouth, other	0	0	0	0	0	0
C07-08	Salivary glands	0	0	0	0	1	0
C09-14	Pharynx	0	0	0	0	1	0
C15-26	Digestive organs	0	1	1	1	3	9
C15	Oesophagus	0	0	0	0	0	0
C16	Stomach	0	0	0	0	0	0
C17	Small intestine	0	0	0	0	0	0
C18	Colon	0	1	0	0	2	6
C19-21	Rectum, rectosigmoid, anus	0	0	0	0	1	1
C22	Liver	0	0	1	1	0	0
C23-24	Gallbladder, bile ducts	0	0	0	0	0	1
C25	Pancreas	0	0	0	0	0	0
C26	Other digestive organs	0	0	0	0	0	1
C30-34, C38	Respiratory organs	0	1	0	0	0	2
C30-31	Nose, sinuses	0	1	0	0	0	1
C32	Larynx, epiglottis	0	0	0	0	0	0
C33-34	Lung, trachea	0	0	0	0	0	1
C38	Mediastinum, pleura	0	0	0	0	0	0
C40-41	Bone	1	1	0	3	0	0
C43	Melanoma of the skin	0	0	0	2	9	12
C44	Skin, non-melanoma	0	0	0	0	1	1
C45	Mesothelioma	0	0	0	0	0	0
C46	Kaposi's sarcoma	0	0	0	0	0	0
C47	Autonomic nervous system	1	0	0	0	0	0
C48-49	Soft tissues	0	2	1	0	0	2
C50	Breast	0	0	0	0	4	7
C51-58	Female genital organs	1	0	1	2	4	22
C53	Cervix uteri	0	0	0	0	2	18
C54	Corpus uteri	0	0	0	0	0	2
C55	Uterus, other	0	0	0	0	0	0
C56	Ovary	1	0	1	1	1	1
C51-52, C57	Other female genital	0	0	0	0	1	1
C58	Placenta	0	0	0	1	0	0
C64-68	Urinary organs	4	0	0	0	2	1
C64	Kidney excl. renal pelvis	4	0	0	0	1	1
C65	Renal pelvis	0	0	0	0	0	0
C66-68	Bladder, ureter, urethra	0	0	0	0	1	0
C69	Eye	1	0	0	1	0	0
C70-72, D42-43	Central nervous system	10	6	5	8	10	10
C73	Thyroid gland	0	0	0	1	3	8
C37, C74-75	Other endocrine glands	1	0	0	1	4	3
C39, C76, C80	Other or unspecified	0	0	0	0	0	1
C81-96	Lymphoid and haematopoietic tissue	12	6	7	7	10	14
C81	Hodgkin lymphoma	0	0	1	6	2	7
C82-85, C96	Non-Hodgkin lymphoma	2	1	3	0	4	5
C88	Malignant immunoproliferative diseases	0	0	0	0	0	0
C90	Multiple myeloma	0	0	0	0	0	0
C91-95	Leukaemia	10	5	3	1	4	2

FEMALES

Age												
30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	
153	255	398	617	907	1116	1492	1273	1226	1341	1394	1537	
2	3	1	7	8	13	18	23	20	17	20	29	
1	1	0	1	1	3	9	6	3	6	6	17	
0	0	0	2	1	3	3	2	5	1	4	2	
0	0	0	0	2	0	3	7	7	5	7	7	
1	1	1	3	1	1	3	2	4	3	1	2	
0	1	0	1	3	6	0	6	1	2	2	1	
8	9	31	55	121	163	254	288	313	394	443	480	
0	0	1	1	1	3	5	4	7	11	11	11	
2	1	0	10	8	15	16	22	26	24	41	48	
2	0	1	1	6	6	7	5	2	7	7	3	
3	4	15	21	55	74	110	139	147	200	226	222	
1	2	7	17	29	38	70	69	66	70	68	60	
0	0	0	0	1	1	6	2	13	10	9	8	
0	1	1	1	5	5	10	8	11	15	13	10	
0	1	3	2	15	19	27	36	36	52	61	85	
0	0	3	2	1	2	3	3	5	5	7	33	
2	6	10	36	55	119	177	157	178	175	133	82	
1	0	1	1	2	4	3	2	2	4	5	5	
1	0	0	1	1	1	4	2	3	1	1	1	
0	6	9	34	51	113	170	153	172	167	125	75	
0	0	0	0	1	1	0	0	1	3	2	1	
1	2	1	2	1	1	0	2	2	2	3	1	
20	44	36	43	53	62	75	51	44	64	52	56	
0	4	8	5	18	35	35	57	68	87	126	229	
0	0	1	1	0	1	0	0	4	3	3	1	
0	0	0	0	0	0	0	0	0	0	1	2	
0	0	0	1	1	0	1	0	0	0	0	0	
1	2	4	7	6	9	12	13	5	6	10	7	
40	86	169	262	350	367	416	293	168	187	200	212	
32	30	61	91	145	156	220	147	145	142	138	116	
26	20	29	32	29	16	26	10	18	18	10	7	
2	5	11	24	65	78	111	76	71	60	54	45	
0	0	0	0	0	1	1	0	1	1	3	3	
4	3	17	31	43	47	72	52	44	51	48	32	
0	2	4	4	8	14	10	9	11	12	23	29	
0	0	0	0	0	0	0	0	0	0	0	0	
0	4	9	9	30	39	75	66	80	90	90	76	
0	2	5	6	15	24	37	22	28	42	29	24	
0	0	0	0	1	1	3	3	1	6	3	3	
0	2	4	3	14	14	35	41	51	42	58	49	
1	1	1	0	2	7	4	3	2	1	1	4	
16	26	28	38	52	58	59	50	55	41	35	37	
11	16	11	24	8	9	19	9	11	6	7	11	
4	3	2	9	4	1	7	4	6	3	2	3	
1	0	0	4	5	12	24	17	32	33	40	89	
14	19	25	23	48	64	96	93	93	90	90	102	
8	5	6	0	2	2	2	2	2	1	3	1	
4	8	13	15	29	33	49	45	41	39	43	45	
0	0	0	0	1	1	0	2	2	4	0	4	
0	2	3	3	7	12	17	19	22	27	23	15	
2	4	3	5	9	16	28	25	26	19	21	37	

Table 10a Age-specific incidence rates per 100 000 person-years by primary site and five-year age group - 2007

ICD10	Site	0-4	5-9	10-14	15-19	20-24	25-29
C00-96	All sites	18.6	9.2	15.5	32.1	43.4	71.4
C00-14	Mouth, pharynx	0.0	0.0	0.0	0.0	1.4	0.7
C00	Lip	0.0	0.0	0.0	0.0	0.0	0.0
C01-02	Tongue	0.0	0.0	0.0	0.0	0.0	0.7
C03-06	Mouth, other	0.0	0.0	0.0	0.0	0.0	0.0
C07-08	Salivary glands	0.0	0.0	0.0	0.0	0.7	0.0
C09-14	Pharynx	0.0	0.0	0.0	0.0	0.7	0.0
C15-26	Digestive organs	0.7	0.7	0.6	0.6	1.4	2.0
C15	Oesophagus	0.0	0.0	0.0	0.0	0.0	0.0
C16	Stomach	0.0	0.0	0.0	0.0	0.7	0.0
C17	Small intestine	0.0	0.0	0.0	0.0	0.0	0.0
C18	Colon	0.0	0.0	0.6	0.0	0.7	1.3
C19-21	Rectum, rectosigmoid, anus	0.0	0.0	0.0	0.0	0.0	0.7
C22	Liver	0.7	0.7	0.0	0.0	0.0	0.0
C23-24	Gallbladder, bile ducts	0.0	0.0	0.0	0.0	0.0	0.0
C25	Pancreas	0.0	0.0	0.0	0.0	0.0	0.0
C26	Other digestive organs	0.0	0.0	0.0	0.6	0.0	0.0
C30-34, C38	Respiratory organs	0.0	0.7	0.0	1.2	0.0	0.7
C30-31	Nose, sinuses	0.0	0.7	0.0	0.6	0.0	0.0
C32	Larynx, epiglottis	0.0	0.0	0.0	0.0	0.0	0.0
C33-34	Lung, trachea	0.0	0.0	0.0	0.6	0.0	0.7
C38	Mediastinum, pleura	0.0	0.0	0.0	0.0	0.0	0.0
C40-41	Bone	0.0	0.0	0.6	1.9	0.7	0.0
C43	Melanoma of the skin	0.0	0.0	0.6	0.6	1.4	6.7
C44	Skin, non-melanoma	0.0	0.0	0.0	1.2	0.0	0.7
C45	Mesothelioma	0.0	0.0	0.0	0.0	0.0	0.0
C46	Kaposi's sarcoma	0.0	0.0	0.0	0.0	0.0	0.0
C47	Autonomic nervous system	0.7	0.0	0.6	0.0	0.0	0.7
C48-49	Soft tissues	0.7	0.0	0.0	1.2	0.0	2.0
C50	Breast	0.0	0.0	0.0	0.0	0.0	0.0
C60-63	Male genital organs	0.0	0.0	1.2	8.0	22.7	36.0
C61	Prostate	0.0	0.0	0.0	0.6	0.0	0.0
C62	Testis	0.0	0.0	1.2	7.4	22.7	36.0
C60, C63	Other male genital	0.0	0.0	0.0	0.0	0.0	0.0
C64-68	Urinary organs	1.3	0.0	0.0	0.0	0.7	3.3
C64	Kidney excl. renal pelvis	1.3	0.0	0.0	0.0	0.7	1.3
C65	Renal pelvis	0.0	0.0	0.0	0.0	0.0	0.0
C66-68	Bladder, ureter, urethra	0.0	0.0	0.0	0.0	0.0	2.0
C69	Eye	0.7	0.0	0.0	0.0	0.0	0.0
C70-72, D42-43	Central nervous system	8.0	3.3	6.8	11.1	8.9	10.7
C73	Thyroid gland	0.0	0.0	0.0	0.0	0.7	0.7
C37, C74-75	Other endocrine glands	1.3	0.0	1.2	0.6	0.7	1.3
C39, C76, C80	Other or unspecified	0.0	0.0	0.0	0.0	0.0	0.0
C81-96	Lymphoid and haematopoietic tissue	5.3	4.6	3.7	5.6	4.8	6.0
C81	Hodgkin lymphoma	0.0	0.0	1.2	1.2	2.8	2.7
C82-85, C96	Non-Hodgkin lymphoma	0.7	0.7	1.2	1.9	0.7	1.3
C88	Malignant immunoproliferative diseases	0.0	0.0	0.0	0.0	0.0	0.0
C90	Multiple myeloma	0.0	0.0	0.0	0.0	0.0	0.0
C91-95	Leukaemia	4.7	3.9	1.2	2.5	1.4	2.0

Age												
30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	
89.4	94.7	128.7	205.6	457.4	784.5	1397.4	2176.9	2904.0	3501.4	3786.5	3760.4	
0.0	1.1	7.2	11.5	20.9	21.5	29.4	44.7	49.1	51.6	36.2	50.3	
0.0	0.0	1.1	0.6	4.4	4.0	2.9	15.3	13.0	11.6	15.9	25.2	
0.0	0.0	1.7	4.8	3.8	5.4	2.1	10.9	5.8	16.6	9.1	6.3	
0.0	0.0	0.6	0.0	2.5	3.4	8.6	5.5	11.6	3.3	6.8	3.1	
0.0	0.5	1.1	1.8	0.6	0.0	2.9	0.0	7.2	3.3	0.0	6.3	
0.0	0.5	2.8	4.2	9.5	8.7	12.9	13.1	11.6	16.6	4.5	9.4	
6.7	14.1	17.2	46.4	87.4	142.3	238.6	403.5	588.3	745.5	869.6	836.3	
0.0	0.0	0.6	2.4	7.6	8.1	13.6	18.5	30.4	38.3	27.2	31.4	
0.0	1.6	1.1	6.6	12.7	13.4	26.5	40.4	80.9	96.5	129.1	94.3	
0.6	1.6	0.0	2.4	3.2	2.7	7.2	8.7	7.2	16.6	15.9	9.4	
3.1	5.4	6.7	16.3	30.4	44.3	77.4	138.5	244.3	304.5	380.5	352.1	
1.8	2.2	3.9	6.0	17.1	51.0	65.9	110.2	143.1	136.5	151.7	135.2	
1.2	1.6	2.8	4.8	4.4	2.0	9.3	7.6	10.1	18.3	34.0	31.4	
0.0	0.0	1.1	0.6	2.5	2.7	5.7	6.5	13.0	15.0	9.1	22.0	
0.0	1.6	1.1	6.0	8.2	16.1	31.5	65.4	49.1	108.2	101.9	128.9	
0.0	0.0	0.0	1.2	1.3	2.0	1.4	7.6	10.1	11.6	20.4	31.4	
1.2	2.2	8.3	14.5	57.7	99.3	171.3	244.3	370.0	479.3	464.3	305.0	
0.0	0.0	1.7	1.8	0.0	1.3	3.6	3.3	4.3	5.0	6.8	3.1	
0.0	0.0	0.0	1.2	5.1	8.1	7.2	17.5	10.1	21.6	18.1	3.1	
1.2	2.2	6.7	11.5	52.6	89.3	156.9	221.4	354.1	446.0	434.8	289.3	
0.0	0.0	0.0	0.0	0.0	0.7	3.6	2.2	1.4	6.7	4.5	9.4	
0.6	2.2	0.0	0.6	1.3	0.7	0.7	1.1	0.0	6.7	4.5	0.0	
4.9	9.7	14.4	21.7	39.9	38.3	59.5	68.7	88.2	89.9	106.4	122.6	
3.7	2.2	3.9	4.2	10.1	18.8	27.2	74.2	134.4	257.9	366.9	493.6	
0.0	0.0	0.0	0.6	1.3	4.0	5.7	8.7	15.9	21.6	15.9	12.6	
0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	2.3	3.1	
0.0	0.0	0.0	0.6	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	
0.0	2.7	2.2	3.0	3.8	4.7	2.9	6.5	8.7	11.6	15.9	6.3	
0.0	0.0	0.6	3.0	0.0	0.7	2.1	2.2	0.0	5.0	4.5	6.3	
37.9	22.7	21.6	33.2	105.8	262.4	569.0	923.8	1074.0	1116.6	1037.2	1109.9	
0.0	0.0	2.8	16.9	96.3	255.7	559.0	911.8	1063.9	1110.0	1030.4	1100.5	
37.3	22.2	18.9	15.1	7.6	4.0	3.6	7.6	4.3	0.0	0.0	0.0	
0.6	0.5	0.0	1.2	1.9	2.7	6.4	4.4	5.8	6.7	6.8	9.4	
1.8	6.5	11.7	16.3	48.1	83.2	135.4	193.0	309.3	402.7	462.0	352.1	
1.8	2.7	7.2	8.4	24.1	28.2	35.8	46.9	80.9	84.9	95.1	62.9	
0.0	0.5	0.0	1.2	1.3	1.3	5.0	8.7	13.0	18.3	15.9	15.7	
0.0	3.2	4.4	6.6	22.8	53.7	94.6	137.4	215.4	299.5	351.0	273.5	
0.0	0.0	0.0	1.8	2.5	0.0	5.0	4.4	1.4	8.3	6.8	3.1	
13.5	10.3	16.1	15.1	18.4	30.9	28.7	50.2	50.6	41.6	74.7	81.7	
1.2	2.2	2.2	1.2	4.4	5.4	8.6	1.1	5.8	16.6	9.1	12.6	
1.8	1.6	3.3	4.2	3.2	4.7	7.2	3.3	15.9	13.3	11.3	3.1	
0.0	0.5	0.6	3.0	6.3	8.1	10.7	24.0	39.0	48.3	74.7	132.1	
15.9	16.8	19.4	24.7	46.2	59.1	93.9	123.2	153.2	184.7	224.2	229.5	
7.3	3.8	3.3	1.2	3.2	2.7	3.6	3.3	4.3	5.0	4.5	0.0	
5.5	9.2	6.1	11.5	23.4	32.2	43.0	62.2	57.8	71.6	88.3	88.0	
0.0	0.0	0.0	0.0	0.6	0.0	3.6	4.4	7.2	10.0	9.1	3.1	
0.0	1.1	4.4	3.6	6.3	8.1	16.5	21.8	31.8	48.3	49.8	50.3	
3.1	2.7	5.5	8.4	12.7	16.1	27.2	31.6	52.0	49.9	72.5	88.0	

Table 10b Age-specific incidence rates per 100 000 person-years by primary site and five-year age group - 2007

ICD10	Site	0-4	5-9	10-14	15-19	20-24	25-29
C00-96	All sites	21.6	11.6	9.8	16.9	37.3	62.8
C00-14	Mouth, pharynx	0.0	0.0	0.0	0.0	1.4	0.0
C00	Lip	0.0	0.0	0.0	0.0	0.0	0.0
C01-02	Tongue	0.0	0.0	0.0	0.0	0.0	0.0
C03-06	Mouth, other	0.0	0.0	0.0	0.0	0.0	0.0
C07-08	Salivary glands	0.0	0.0	0.0	0.0	0.7	0.0
C09-14	Pharynx	0.0	0.0	0.0	0.0	0.7	0.0
C15-26	Digestive organs	0.0	0.7	0.7	0.7	2.2	6.1
C15	Oesophagus	0.0	0.0	0.0	0.0	0.0	0.0
C16	Stomach	0.0	0.0	0.0	0.0	0.0	0.0
C17	Small intestine	0.0	0.0	0.0	0.0	0.0	0.0
C18	Colon	0.0	0.7	0.0	0.0	1.4	4.1
C19-21	Rectum, rectosigmoid, anus	0.0	0.0	0.0	0.0	0.7	0.7
C22	Liver	0.0	0.0	0.7	0.7	0.0	0.0
C23-24	Gallbladder, bile ducts	0.0	0.0	0.0	0.0	0.0	0.7
C25	Pancreas	0.0	0.0	0.0	0.0	0.0	0.0
C26	Other digestive organs	0.0	0.0	0.0	0.0	0.0	0.7
C30-34, C38	Respiratory organs	0.0	0.7	0.0	0.0	0.0	1.4
C30-31	Nose, sinuses	0.0	0.7	0.0	0.0	0.0	0.7
C32	Larynx, epiglottis	0.0	0.0	0.0	0.0	0.0	0.0
C33-34	Lung, trachea	0.0	0.0	0.0	0.0	0.0	0.7
C38	Mediastinum, pleura	0.0	0.0	0.0	0.0	0.0	0.0
C40-41	Bone	0.7	0.7	0.0	2.0	0.0	0.0
C43	Melanoma of the skin	0.0	0.0	0.0	1.3	6.5	8.2
C44	Skin, non-melanoma	0.0	0.0	0.0	0.0	0.7	0.7
C45	Mesothelioma	0.0	0.0	0.0	0.0	0.0	0.0
C46	Kaposi's sarcoma	0.0	0.0	0.0	0.0	0.0	0.0
C47	Autonomic nervous system	0.7	0.0	0.0	0.0	0.0	0.0
C48-49	Soft tissues	0.0	1.4	0.7	0.0	0.0	1.4
C50	Breast	0.0	0.0	0.0	0.0	2.9	4.8
C51-58	Female genital organs	0.7	0.0	0.7	1.3	2.9	15.0
C53	Cervix uteri	0.0	0.0	0.0	0.0	1.4	12.3
C54	Corpus uteri	0.0	0.0	0.0	0.0	0.0	1.4
C55	Uterus, other	0.0	0.0	0.0	0.0	0.0	0.0
C56	Ovary	0.7	0.0	0.7	0.7	0.7	0.7
C51-52, C57	Other female genital	0.0	0.0	0.0	0.0	0.7	0.7
C58	Placenta	0.0	0.0	0.0	0.7	0.0	0.0
C64-68	Urinary organs	2.8	0.0	0.0	0.0	1.4	0.7
C64	Kidney excl. renal pelvis	2.8	0.0	0.0	0.0	0.7	0.7
C65	Renal pelvis	0.0	0.0	0.0	0.0	0.0	0.0
C66-68	Bladder, ureter, urethra	0.0	0.0	0.0	0.0	0.7	0.0
C69	Eye	0.7	0.0	0.0	0.7	0.0	0.0
C70-72, D42-43	Central nervous system	7.0	4.1	3.3	5.2	7.2	6.8
C73	Thyroid gland	0.0	0.0	0.0	0.7	2.2	5.5
C37, C74-75	Other endocrine glands	0.7	0.0	0.0	0.7	2.9	2.0
C39, C76, C80	Other or unspecified	0.0	0.0	0.0	0.0	0.0	0.7
C81-96	Lymphoid and haematopoietic tissue	8.4	4.1	4.6	4.6	7.2	9.6
C81	Hodgkin lymphoma	0.0	0.0	0.7	3.9	1.4	4.8
C82-85, C96	Non-Hodgkin lymphoma	1.4	0.7	2.0	0.0	2.9	3.4
C88	Malignant immunoproliferative diseases	0.0	0.0	0.0	0.0	0.0	0.0
C90	Multiple myeloma	0.0	0.0	0.0	0.0	0.0	0.0
C91-95	Leukaemia	7.0	3.4	2.0	0.7	2.9	1.4

FEMALES

Age												
30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	
96.7	143.7	233.1	390.7	590.7	777.6	1082.7	1314.9	1537.3	1737.2	2036.5	2071.9	
1.3	1.7	0.6	4.4	5.2	9.1	13.1	23.8	25.1	22.0	29.2	39.1	
0.6	0.6	0.0	0.6	0.7	2.1	6.5	6.2	3.8	7.8	8.8	22.9	
0.0	0.0	0.0	1.3	0.7	2.1	2.2	2.1	6.3	1.3	5.8	2.7	
0.0	0.0	0.0	0.0	1.3	0.0	2.2	7.2	8.8	6.5	10.2	9.4	
0.6	0.6	0.6	1.9	0.7	0.7	2.2	2.1	5.0	3.9	1.5	2.7	
0.0	0.6	0.0	0.6	2.0	4.2	0.0	6.2	1.3	2.6	2.9	1.3	
5.1	5.1	18.2	34.8	78.8	113.6	184.3	297.5	392.5	510.4	647.2	647.1	
0.0	0.0	0.6	0.6	0.7	2.1	3.6	4.1	8.8	14.2	16.1	14.8	
1.3	0.6	0.0	6.3	5.2	10.5	11.6	22.7	32.6	31.1	59.9	64.7	
1.3	0.0	0.6	0.6	3.9	4.2	5.1	5.2	2.5	9.1	10.2	4.0	
1.9	2.3	8.8	13.3	35.8	51.6	79.8	143.6	184.3	259.1	330.2	299.3	
0.6	1.1	4.1	10.8	18.9	26.5	50.8	71.3	82.8	90.7	99.3	80.9	
0.0	0.0	0.0	0.0	0.7	0.7	4.4	2.1	16.3	13.0	13.1	10.8	
0.0	0.6	0.6	0.6	3.3	3.5	7.3	8.3	13.8	19.4	19.0	13.5	
0.0	0.6	1.8	1.3	9.8	13.2	19.6	37.2	45.1	67.4	89.1	114.6	
0.0	0.0	1.8	1.3	0.7	1.4	2.2	3.1	6.3	6.5	10.2	44.5	
1.3	3.4	5.9	22.8	35.8	82.9	128.4	162.2	223.2	226.7	194.3	110.5	
0.6	0.0	0.6	0.6	1.3	2.8	2.2	2.1	2.5	5.2	7.3	6.7	
0.6	0.0	0.0	0.6	0.7	0.7	2.9	2.1	3.8	1.3	1.5	1.3	
0.0	3.4	5.3	21.5	33.2	78.7	123.4	158.0	215.7	216.3	182.6	101.1	
0.0	0.0	0.0	0.0	0.7	0.7	0.0	0.0	1.3	3.9	2.9	1.3	
0.6	1.1	0.6	1.3	0.7	0.7	0.0	2.1	2.5	2.6	4.4	1.3	
12.6	24.8	21.1	27.2	34.5	43.2	54.4	52.7	55.2	82.9	76.0	75.5	
0.0	2.3	4.7	3.2	11.7	24.4	25.4	58.9	85.3	112.7	184.1	308.7	
0.0	0.0	0.6	0.6	0.0	0.7	0.0	0.0	5.0	3.9	4.4	1.3	
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	2.7	
0.0	0.0	0.0	0.6	0.7	0.0	0.7	0.0	0.0	0.0	0.0	0.0	
0.6	1.1	2.3	4.4	3.9	6.3	8.7	13.4	6.3	7.8	14.6	9.4	
25.3	48.5	99.0	165.9	227.9	255.7	301.9	302.7	210.7	242.2	292.2	285.8	
20.2	16.9	35.7	57.6	94.4	108.7	159.6	151.8	181.8	184.0	201.6	156.4	
16.4	11.3	17.0	20.3	18.9	11.1	18.9	10.3	22.6	23.3	14.6	9.4	
1.3	2.8	6.4	15.2	42.3	54.3	80.5	78.5	89.0	77.7	78.9	60.7	
0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.0	1.3	1.3	4.4	4.0	
2.5	1.7	10.0	19.6	28.0	32.7	52.2	53.7	55.2	66.1	70.1	43.1	
0.0	1.1	2.3	2.5	5.2	9.8	7.3	9.3	13.8	15.5	33.6	39.1	
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
0.0	2.3	5.3	5.7	19.5	27.2	54.4	68.2	100.3	116.6	131.5	102.5	
0.0	1.1	2.9	3.8	9.8	16.7	26.8	22.7	35.1	54.4	42.4	32.4	
0.0	0.0	0.0	0.0	0.7	0.7	2.2	3.1	1.3	7.8	4.4	4.0	
0.0	1.1	2.3	1.9	9.1	9.8	25.4	42.4	63.9	54.4	84.7	66.1	
0.6	0.6	0.6	0.0	1.3	4.9	2.9	3.1	2.5	1.3	1.5	5.4	
10.1	14.7	16.4	24.1	33.9	40.4	42.8	51.6	69.0	53.1	51.1	49.9	
7.0	9.0	6.4	15.2	5.2	6.3	13.8	9.3	13.8	7.8	10.2	14.8	
2.5	1.7	1.2	5.7	2.6	0.7	5.1	4.1	7.5	3.9	2.9	4.0	
0.6	0.0	0.0	2.5	3.3	8.4	17.4	17.6	40.1	42.7	58.4	120.0	
8.8	10.7	14.6	14.6	31.3	44.6	69.7	96.1	116.6	116.6	131.5	137.5	
5.1	2.8	3.5	0.0	1.3	1.4	1.5	2.1	2.5	1.3	4.4	1.3	
2.5	4.5	7.6	9.5	18.9	23.0	35.6	46.5	51.4	50.5	62.8	60.7	
0.0	0.0	0.0	0.0	0.7	0.7	0.0	2.1	2.5	5.2	0.0	5.4	
0.0	1.1	1.8	1.9	4.6	8.4	12.3	19.6	27.6	35.0	33.6	20.2	
1.3	2.3	1.8	3.2	5.9	11.1	20.3	25.8	32.6	24.6	30.7	49.9	

Table 11a Average annual number of new cases by primary site and 5-year period 1953-2007

ICD10	Site	1953-57	1958-62	1963-67
C00-96	All sites	3604	4191	4892
C00-14	Mouth, pharynx	172	187	191
C00	Lip	90	96	98
C01-02	Tongue	16	20	22
C03-06	Mouth, other	21	24	24
C07-08	Salivary glands	10	11	13
C09-14	Pharynx	35	36	35
C15-26	Digestive organs	1593	1667	1779
C15	Oesophagus	73	81	75
C16	Stomach	880	825	787
C17	Small intestine	13	9	14
C18	Colon	206	261	329
C19-21	Rectum, rectosigmoid, anus	147	166	196
C22	Liver	15	22	28
C23-24	Gallbladder, bile ducts	13	22	24
C25	Pancreas	120	147	197
C26	Other digestive organs	128	135	129
C30-34, C38	Respiratory organs	255	377	510
C30-31	Nose, sinuses	18	20	19
C32	Larynx, epiglottis	24	36	58
C33-34	Lung, trachea	203	308	424
C38	Mediastinum, pleura	10	13	9
C40-41	Bone	20	12	18
C43	Melanoma of the skin	38	61	87
C44	Skin, non-melanoma	83	81	71
C45	Mesothelioma	0	1	2
C46	Kaposi's sarcoma	1	2	4
C47	Autonomic nervous system	17	18	16
C48-49	Soft tissues	19	23	28
C50	Breast	6	7	8
C60-63	Male genital organs	650	791	1002
C61	Prostate	582	709	913
C62	Testis	51	62	65
C60, C63	Other male genital	17	19	25
C64-68	Urinary organs	255	336	453
C64	Kidney excl. renal pelvis	70	110	138
C65	Renal pelvis	6	10	12
C66-68	Bladder, ureter, urethra	178	215	303
C69	Eye	19	18	18
C70-72, D42-43	Central nervous system	109	122	142
C73	Thyroid gland	17	23	26
C37, C74-75	Other endocrine glands	5	7	9
C39, C76, C80	Other or unspecified	41	70	95
C81-96	Lymphoid and haematopoietic tissue	302	388	435
C81	Hodgkin lymphoma	40	48	55
C82-85, C96	Non-Hodgkin lymphoma	80	101	121
C88	Malignant immunoproliferative diseases	0	0	0
C90	Multiple myeloma	49	75	85
C91-95	Leukaemia	133	163	174

Period							
1968-72	1973-77	1978-82	1983-87	1988-92	1993-97	1998-2002	2003-07
5786	6784	7833	8790	9643	10693	11555	13236
227	239	242	260	254	258	257	262
118	115	108	103	87	71	58	52
22	27	30	38	38	42	49	51
32	30	41	46	49	57	46	47
15	16	14	14	21	18	23	19
41	52	49	59	60	70	82	92
1905	2019	2246	2365	2422	2486	2580	2724
83	82	90	86	105	110	121	139
727	639	602	561	505	438	366	325
17	18	21	28	27	36	48	56
369	442	563	693	797	858	960	1046
294	361	477	526	557	592	626	662
44	51	56	67	61	56	78	81
26	32	39	48	52	54	59	62
232	254	279	297	289	283	283	312
114	140	119	58	30	59	38	39
716	870	1089	1248	1310	1420	1456	1567
24	24	22	21	23	20	25	22
67	81	92	109	103	108	109	97
610	746	955	1108	1173	1271	1307	1434
15	19	19	10	10	20	15	14
18	24	22	23	20	22	22	24
123	179	221	278	406	438	469	535
121	192	233	307	397	519	590	702
5	13	20	29	39	39	54	64
5	7	6	10	15	11	5	7
13	11	9	8	7	6	6	5
36	47	50	43	44	48	51	55
9	11	12	12	13	12	16	17
1191	1469	1714	1922	2249	2754	3238	4142
1084	1355	1563	1746	2037	2505	2957	3830
85	88	122	148	187	210	249	267
22	25	29	27	25	40	32	45
555	711	844	1019	1093	1135	1171	1335
164	179	219	252	266	271	302	361
21	30	32	35	32	41	35	42
370	502	593	731	795	823	834	932
23	22	24	25	24	29	28	33
152	173	201	236	241	288	354	419
39	37	47	44	49	45	50	63
23	25	36	42	40	55	61	71
131	168	193	242	289	295	258	217
494	568	626	676	730	832	888	996
63	64	64	49	53	50	56	70
135	153	178	235	286	332	355	420
3	7	9	8	9	20	22	26
101	133	152	156	158	166	164	180
192	211	224	228	223	263	291	299

Table 11b Average annual number of new cases by primary site and 5-year period 1953-2007

ICD10	Site	1953-57	1958-62	1963-67
C00-96	All sites	3842	4327	4836
C00-14	Mouth, pharynx	61	62	70
C00	Lip	8	8	8
C01-02	Tongue	13	12	15
C03-06	Mouth, other	12	13	14
C07-08	Salivary glands	7	8	14
C09-14	Pharynx	22	21	19
C15-26	Digestive organs	1313	1403	1502
C15	Oesophagus	24	25	32
C16	Stomach	608	563	538
C17	Small intestine	9	7	11
C18	Colon	237	297	381
C19-21	Rectum, rectosigmoid, anus	108	130	164
C22	Liver	10	13	13
C23-24	Gallbladder, bile ducts	38	52	51
C25	Pancreas	82	111	129
C26	Other digestive organs	197	207	183
C30-34, C38	Respiratory organs	84	95	124
C30-31	Nose, sinuses	13	14	13
C32	Larynx, epiglottis	2	3	6
C33-34	Lung, trachea	64	74	97
C38	Mediastinum, pleura	5	5	8
C40-41	Bone	13	10	10
C43	Melanoma of the skin	46	68	98
C44	Skin, non-melanoma	56	51	38
C45	Mesothelioma	0	0	1
C46	Kaposi's sarcoma	0	0	1
C47	Autonomic nervous system	17	14	9
C48-49	Soft tissues	18	20	25
C50	Breast	855	968	1114
C51-58	Female genital organs	792	909	997
C53	Cervix uteri	322	346	377
C54	Corpus uteri	154	191	232
C55	Uterus, other	20	22	17
C56	Ovary	232	275	306
C51-52, C57	Other female genital	63	72	61
C58	Placenta	2	3	4
C64-68	Urinary organs	164	205	230
C64	Kidney excl. renal pelvis	63	82	92
C65	Renal pelvis	5	5	7
C66-68	Bladder, ureter, urethra	96	117	131
C69	Eye	15	17	17
C70-72, D42-43	Central nervous system	93	114	124
C73	Thyroid gland	50	54	65
C37, C74-75	Other endocrine glands	6	7	6
C39, C76, C80	Other or unspecified	38	58	74
C81-96	Lymphoid and haematopoietic tissue	220	272	331
C81	Hodgkin lymphoma	29	35	40
C82-85, C96	Non-Hodgkin lymphoma	50	71	90
C88	Malignant immunoproliferative diseases	0	0	0
C90	Multiple myeloma	36	41	70
C91-95	Leukaemia	105	124	131

FEMALES

Period							
1968-72	1973-77	1978-82	1983-87	1988-92	1993-97	1998-2002	2003-07
5596	6443	7308	8073	8847	9827	10784	11852
76	82	90	109	112	129	134	162
11	13	16	21	29	29	26	39
17	18	15	27	24	22	28	29
17	16	24	27	29	39	32	41
14	10	16	13	14	18	21	21
17	24	18	22	16	21	27	33
1633	1785	2077	2177	2220	2405	2497	2579
27	31	34	35	37	43	50	54
468	416	406	380	326	293	241	220
16	19	23	27	31	29	50	46
452	547	716	809	902	1046	1125	1218
241	291	398	427	462	499	516	537
27	29	37	44	46	38	50	47
60	55	73	84	74	75	79	76
169	202	231	281	291	310	331	330
172	195	160	91	51	72	56	51
174	207	276	373	508	658	799	1017
13	13	14	15	15	16	16	22
7	7	11	11	12	21	20	15
148	179	246	343	477	614	756	974
5	9	5	4	4	8	7	7
13	14	14	14	15	18	20	18
133	218	277	376	463	507	509	589
69	129	161	231	321	424	487	629
2	3	2	5	8	8	8	13
3	4	3	6	6	5	3	3
17	8	5	6	9	9	5	5
31	39	41	48	45	45	64	82
1260	1460	1602	1769	1911	2186	2546	2767
1159	1267	1284	1295	1346	1403	1466	1526
410	444	389	338	358	338	307	289
282	333	375	394	427	465	552	647
13	7	8	5	6	9	10	10
358	349	378	452	447	465	473	443
92	131	131	101	102	124	122	133
4	2	3	3	7	3	3	4
283	342	392	429	481	501	524	576
113	125	141	162	188	192	190	218
12	17	19	17	20	25	24	25
157	200	232	249	272	284	309	333
17	21	22	20	25	30	28	30
128	162	197	229	264	330	443	552
95	112	139	143	137	127	132	154
14	19	35	42	40	44	56	68
101	128	182	237	304	311	303	278
389	444	508	563	633	687	759	805
45	43	40	35	37	32	44	49
115	125	158	214	264	285	327	360
1	4	5	6	8	12	14	18
87	112	127	133	140	141	151	148
141	160	178	176	185	216	223	230

Table 12a Age-adjusted (world) incidence rates per 100 000 person-years by primary site and five-year period 1953-2007

ICD10	Site	1953-57	1958-62	1963-67
C00-96	All sites	165.2	174.1	186.8
C00-14	Mouth, pharynx	7.8	7.8	7.3
C00	Lip	4.0	4.0	3.7
C01-02	Tongue	0.7	0.8	0.8
C03-06	Mouth, other	0.9	1.0	0.9
C07-08	Salivary glands	0.5	0.5	0.5
C09-14	Pharynx	1.6	1.5	1.4
C15-26	Digestive organs	71.7	67.3	65.7
C15	Oesophagus	3.3	3.3	2.7
C16	Stomach	39.5	33.1	29.0
C17	Small intestine	0.6	0.4	0.6
C18	Colon	9.3	10.5	12.2
C19-21	Rectum, rectosigmoid, anus	6.5	6.7	7.3
C22	Liver	0.7	0.9	1.1
C23-24	Gallbladder, bile ducts	0.6	0.9	0.9
C25	Pancreas	5.5	6.0	7.3
C26	Other digestive organs	5.7	5.4	4.7
C30-34, C38	Respiratory organs	12.0	16.1	19.9
C30-31	Nose, sinuses	0.8	0.8	0.7
C32	Larynx, epiglottis	1.2	1.5	2.2
C33-34	Lung, trachea	9.6	13.1	16.6
C38	Mediastinum, pleura	0.5	0.5	0.4
C40-41	Bone	1.2	0.7	0.9
C43	Melanoma of the skin	1.8	2.8	3.9
C44	Skin, non-melanoma	3.6	3.2	2.5
C45	Mesothelioma	0.0	0.0	0.1
C46	Kaposi's sarcoma	0.1	0.1	0.1
C47	Autonomic nervous system	0.9	0.9	0.7
C48-49	Soft tissues	1.0	1.0	1.2
C50	Breast	0.2	0.3	0.3
C60-63	Male genital organs	28.2	30.9	35.8
C61	Prostate	24.7	26.7	31.3
C62	Testis	2.8	3.4	3.5
C60, C63	Other male genital	0.8	0.8	0.9
C64-68	Urinary organs	11.8	14.0	17.2
C64	Kidney excl. renal pelvis	3.4	4.8	5.4
C65	Renal pelvis	0.3	0.4	0.5
C66-68	Bladder, ureter, urethra	8.1	8.8	11.3
C69	Eye	0.9	0.8	0.8
C70-72, D42-43	Central nervous system	5.8	6.0	6.8
C73	Thyroid gland	0.8	1.0	1.1
C37, C74-75	Other endocrine glands	0.3	0.4	0.4
C39, C76, C80	Other or unspecified	1.9	2.9	3.7
C81-96	Lymphoid and haematopoietic tissue	15.2	17.8	18.4
C81	Hodgkin lymphoma	2.2	2.5	2.6
C82-85, C96	Non-Hodgkin lymphoma	4.0	4.6	5.0
C88	Malignant immunoproliferative diseases	0.0	0.0	0.0
C90	Multiple myeloma	2.3	3.0	3.2
C91-95	Leukaemia	6.8	7.7	7.5

Period							
1968-72	1973-77	1978-82	1983-87	1988-92	1993-97	1998-2002	2003-07
206.0	226.0	247.6	265.2	281.8	305.3	320.7	344.3
8.1	8.2	8.0	8.6	8.2	8.3	7.8	7.4
4.2	3.8	3.4	3.2	2.5	2.1	1.6	1.3
0.8	1.0	1.0	1.3	1.3	1.4	1.5	1.5
1.1	1.0	1.4	1.6	1.6	1.9	1.4	1.4
0.5	0.6	0.5	0.4	0.7	0.5	0.7	0.5
1.5	1.8	1.6	2.1	2.1	2.4	2.6	2.7
65.2	64.8	68.0	68.5	68.4	68.2	67.9	67.3
2.8	2.6	2.7	2.6	3.2	3.3	3.4	3.7
24.7	20.4	18.0	15.8	13.8	11.6	9.2	7.7
0.6	0.6	0.7	0.9	0.9	1.1	1.4	1.5
12.7	14.2	17.1	20.1	22.5	23.2	24.9	25.3
10.1	11.7	14.7	15.6	16.0	16.7	17.0	16.8
1.6	1.7	1.8	2.1	1.8	1.7	2.1	2.1
0.9	1.0	1.1	1.4	1.5	1.4	1.5	1.5
7.9	8.2	8.4	8.5	8.1	7.7	7.4	7.8
3.9	4.4	3.4	1.5	0.8	1.5	1.0	0.9
26.1	29.7	35.4	38.8	39.6	41.9	40.3	39.8
0.8	0.8	0.7	0.7	0.7	0.6	0.8	0.6
2.5	2.8	3.1	3.5	3.3	3.4	3.1	2.7
22.2	25.3	30.9	34.3	35.3	37.3	36.1	36.2
0.6	0.7	0.7	0.3	0.3	0.6	0.4	0.3
0.8	1.1	1.0	1.0	0.9	1.0	0.9	0.9
5.4	7.4	8.9	10.6	14.7	14.8	14.5	15.2
4.1	5.8	6.8	8.4	10.3	13.0	14.3	15.1
0.2	0.4	0.6	0.9	1.2	1.1	1.4	1.6
0.2	0.2	0.2	0.3	0.4	0.3	0.1	0.2
0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3
1.5	1.8	1.9	1.6	1.6	1.7	1.7	1.7
0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
39.4	44.7	48.9	51.7	58.7	72.9	88.9	108.8
34.1	39.5	42.2	44.2	49.9	62.9	77.6	96.6
4.4	4.4	5.9	6.6	8.0	8.8	10.4	11.0
0.8	0.8	0.9	0.9	0.8	1.1	0.9	1.2
19.6	23.8	26.6	30.5	31.5	31.6	31.1	33.0
6.0	6.4	7.5	8.2	8.2	8.2	8.8	9.8
0.8	1.0	1.0	1.1	1.0	1.2	0.9	1.0
12.8	16.4	18.1	21.2	22.4	22.3	21.4	22.1
1.0	0.9	1.0	1.0	0.9	1.0	1.0	1.0
7.0	7.6	8.5	9.5	9.4	10.8	12.5	14.0
1.5	1.5	1.6	1.5	1.8	1.6	1.7	1.9
1.1	1.1	1.6	1.8	1.6	2.1	2.2	2.3
4.6	5.6	5.9	7.0	8.0	7.8	6.3	4.9
19.5	20.6	21.9	22.6	24.0	26.6	27.4	28.7
2.8	2.7	2.6	2.0	2.2	2.2	2.3	2.8
5.3	5.4	6.2	7.9	9.4	10.7	10.8	11.7
0.1	0.2	0.3	0.2	0.3	0.5	0.6	0.6
3.5	4.3	4.6	4.6	4.5	4.5	4.3	4.5
7.8	7.9	8.1	7.9	7.6	8.7	9.3	9.0

Table 12b Age-adjusted (world) incidence rates per 100 000 person-years by primary site and five-year period 1953-2007

ICD10	Site	1953-57	1958-62	1963-67
C00-96	All sites	159.9	166.0	172.3
C00-14	Mouth, pharynx	2.4	2.2	2.3
C00	Lip	0.3	0.3	0.3
C01-02	Tongue	0.5	0.4	0.5
C03-06	Mouth, other	0.5	0.5	0.4
C07-08	Salivary glands	0.3	0.3	0.5
C09-14	Pharynx	0.9	0.8	0.6
C15-26	Digestive organs	49.1	47.7	46.0
C15	Oesophagus	0.9	0.8	0.9
C16	Stomach	22.4	18.8	16.2
C17	Small intestine	0.4	0.3	0.4
C18	Colon	9.0	10.3	11.8
C19-21	Rectum, rectosigmoid, anus	4.2	4.6	5.2
C22	Liver	0.4	0.5	0.5
C23-24	Gallbladder, bile ducts	1.4	1.7	1.6
C25	Pancreas	3.1	3.9	3.9
C26	Other digestive organs	7.2	6.8	5.4
C30-34, C38	Respiratory organs	3.4	3.5	4.2
C30-31	Nose, sinuses	0.5	0.5	0.4
C32	Larynx, epiglottis	0.1	0.1	0.2
C33-34	Lung, trachea	2.6	2.7	3.2
C38	Mediastinum, pleura	0.2	0.2	0.3
C40-41	Bone	0.7	0.6	0.5
C43	Melanoma of the skin	2.1	3.0	4.3
C44	Skin, non-melanoma	2.1	1.7	1.2
C45	Mesothelioma	0.0	0.0	0.0
C46	Kaposi's sarcoma	0.0	0.0	0.0
C47	Autonomic nervous system	0.8	0.6	0.5
C48-49	Soft tissues	0.8	0.9	1.0
C50	Breast	36.7	38.3	41.6
C51-58	Female genital organs	35.2	37.9	39.2
C53	Cervix uteri	14.8	15.3	16.4
C54	Corpus uteri	6.7	7.6	8.6
C55	Uterus, other	0.7	0.8	0.5
C56	Ovary	10.4	11.4	11.6
C51-52, C57	Other female genital	2.5	2.6	2.0
C58	Placenta	0.1	0.2	0.2
C64-68	Urinary organs	6.6	7.4	7.5
C64	Kidney excl. renal pelvis	2.8	3.1	3.2
C65	Renal pelvis	0.2	0.2	0.2
C66-68	Bladder, ureter, urethra	3.6	4.1	4.0
C69	Eye	0.7	0.8	0.7
C70-72, D42-43	Central nervous system	4.6	5.4	5.4
C73	Thyroid gland	2.1	2.2	2.7
C37, C74-75	Other endocrine glands	0.3	0.3	0.3
C39, C76, C80	Other or unspecified	1.6	2.1	2.4
C81-96	Lymphoid and haematopoietic tissue	10.4	11.4	12.5
C81	Hodgkin lymphoma	1.5	1.7	1.8
C82-85, C96	Non-Hodgkin lymphoma	2.3	2.8	3.3
C88	Malignant immunoproliferative diseases	0.0	0.0	0.0
C90	Multiple myeloma	1.4	1.5	2.2
C91-95	Leukaemia	5.2	5.4	5.2

FEMALES

Period							
1968-72	1973-77	1978-82	1983-87	1988-92	1993-97	1998-2002	2003-07
187.0	203.8	215.2	224.8	237.0	257.3	271.0	283.8
2.3	2.3	2.4	2.8	2.9	3.3	3.4	3.8
0.3	0.4	0.4	0.5	0.7	0.6	0.6	0.8
0.4	0.5	0.4	0.7	0.6	0.6	0.7	0.7
0.5	0.4	0.6	0.6	0.7	1.0	0.7	0.9
0.5	0.3	0.5	0.4	0.4	0.5	0.6	0.5
0.6	0.7	0.5	0.7	0.5	0.6	0.8	0.9
45.6	45.9	49.1	47.9	47.6	49.8	50.2	50.2
0.7	0.7	0.7	0.8	0.8	0.9	1.0	1.0
12.7	10.4	9.2	8.0	6.5	5.5	4.5	4.1
0.5	0.6	0.6	0.7	0.8	0.7	1.2	1.1
13.0	14.4	17.4	18.2	19.6	21.9	22.6	23.2
7.0	8.0	10.1	10.2	10.7	11.3	11.4	11.4
0.8	0.8	1.0	1.0	1.1	0.9	1.1	1.0
1.6	1.3	1.6	1.7	1.5	1.5	1.5	1.4
4.7	5.1	5.3	5.9	5.9	6.0	6.1	6.1
4.5	4.5	3.2	1.5	0.8	1.1	0.8	0.8
5.5	6.2	8.1	10.6	13.9	18.0	20.7	23.9
0.4	0.4	0.3	0.4	0.3	0.4	0.4	0.5
0.2	0.2	0.3	0.3	0.3	0.6	0.5	0.4
4.7	5.4	7.3	9.7	13.1	16.8	19.6	23.0
0.2	0.3	0.1	0.1	0.1	0.2	0.1	0.1
0.6	0.6	0.6	0.6	0.6	0.7	0.8	0.7
5.7	9.1	10.4	13.7	16.0	16.7	15.1	16.4
1.8	3.2	3.5	4.7	6.0	7.7	8.2	9.9
0.1	0.1	0.0	0.2	0.2	0.2	0.2	0.2
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
0.8	0.4	0.3	0.3	0.4	0.4	0.2	0.2
1.3	1.3	1.4	1.5	1.4	1.4	1.7	2.3
44.2	49.1	51.0	53.0	55.2	63.8	72.9	75.6
43.9	46.2	44.1	42.1	41.8	41.7	40.6	39.5
17.7	18.7	15.5	12.6	12.6	11.7	10.2	9.2
9.8	11.0	12.2	12.3	12.8	13.5	14.3	15.9
0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.2
13.2	12.6	12.8	14.4	13.6	13.4	13.1	11.3
2.7	3.6	3.3	2.5	2.4	2.8	2.7	2.8
0.2	0.1	0.1	0.2	0.3	0.1	0.1	0.2
8.3	9.4	10.0	10.0	11.2	11.1	11.3	11.9
3.6	3.9	4.0	4.1	4.8	4.7	4.4	5.1
0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5
4.4	5.1	5.5	5.5	6.0	5.8	6.4	6.3
0.7	0.8	0.8	0.7	0.8	1.0	0.8	0.8
5.6	6.7	7.7	8.6	9.3	11.2	14.0	16.4
3.7	4.5	5.1	5.2	4.8	4.3	4.3	4.8
0.6	0.8	1.6	1.9	1.6	1.7	2.0	2.4
3.0	3.4	4.3	5.0	6.2	6.1	5.2	4.5
13.3	13.9	14.7	15.9	17.0	18.2	19.3	20.1
1.9	1.7	1.6	1.3	1.4	1.4	1.8	2.0
3.9	3.9	4.5	6.0	7.1	7.6	8.1	8.6
0.0	0.1	0.2	0.1	0.2	0.3	0.3	0.4
2.5	3.0	3.0	3.0	3.0	2.8	3.1	3.0
5.1	5.3	5.4	5.5	5.3	6.1	6.0	6.3

Table 13a Average annual number of new cases by primary site and county - 2003-2007

ICD10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud
C00-96	All sites	13236	774	1256	1288	646	589	739
C00-14	Mouth, pharynx	262	18	27	30	14	9	14
C00	Lip	52	4	5	3	4	1	3
C01-02	Tongue	51	3	5	6	3	2	2
C03-06	Mouth, other	47	4	5	5	2	2	3
C07-08	Salivary glands	19	1	2	1	1	1	0
C09-14	Pharynx	92	6	10	15	3	3	6
C15-26	Digestive organs	2724	169	255	253	130	116	139
C15	Oesophagus	139	7	15	15	6	8	9
C16	Stomach	325	21	21	29	15	14	13
C17	Small intestine	56	4	4	6	2	2	3
C18	Colon	1046	65	101	90	53	43	56
C19-21	Rectum, rectosigmoid, anus	662	45	64	56	31	28	35
C22	Liver	81	5	7	13	2	3	4
C23-24	Gallbladder, bile ducts	62	3	6	6	3	3	2
C25	Pancreas	312	17	32	34	16	15	14
C26	Other digestive organs	39	2	4	4	2	1	2
C30-34, C38	Respiratory organs	1567	98	141	140	73	60	84
C30-31	Nose, sinuses	22	1	1	2	1	2	1
C32	Larynx, epiglottis	97	7	9	10	4	4	6
C33-34	Lung, trachea	1434	89	129	127	68	54	76
C38	Mediastinum, pleura	14	1	2	1	0	1	1
C40-41	Bone	24	1	3	2	1	1	2
C43	Melanoma of the skin	535	35	64	57	25	21	34
C44	Skin, non-melanoma	702	48	63	67	37	25	59
C45	Mesothelioma	64	4	6	6	2	2	6
C46	Kaposi's sarcoma	7	0	0	2	0	0	0
C47	Autonomic nervous system	5	0	1	0	0	0	0
C48-49	Soft tissues	55	3	6	5	4	2	2
C50	Breast	17	2	2	2	0	0	1
C60-63	Male genital organs	4142	215	367	396	209	218	231
C61	Prostate	3830	197	336	357	198	204	217
C62	Testis	267	14	25	33	9	12	12
C60, C63	Other male genital	45	4	5	6	2	2	2
C64-68	Urinary organs	1335	81	125	133	66	58	64
C64	Kidney excl. renal pelvis	361	25	39	35	18	16	19
C65	Renal pelvis	42	2	3	4	2	2	2
C66-68	Bladder, ureter, urethra	932	53	82	94	46	40	43
C69	Eye	33	3	3	4	2	2	1
C70-72, D42-43	Central nervous system	419	22	43	44	17	16	21
C73	Thyroid gland	63	2	7	8	4	3	4
C37, C74-75	Other endocrine glands	71	5	7	6	3	3	3
C39, C76, C80	Other or unspecified	217	15	22	23	9	8	13
C81-96	Lymphoid and haematopoietic tissue	996	54	114	110	49	43	60
C81	Hodgkin lymphoma	70	7	5	9	4	4	4
C82-85, C96	Non-Hodgkin lymphoma	420	19	51	48	22	19	22
C88	Malignant immunoproliferative diseases	26	1	4	3	1	2	1
C90	Multiple myeloma	180	9	20	19	10	8	12
C91-95	Leukaemia	299	18	34	32	13	11	22

Finmark	Troms	Nordland	Nord-Trøndelag	Sør-Trøndelag	More og Romsdal	Sogn og Fjordane	Hordaland	Rogaland	Vest-Agder	Aust-Agder	Telemark	Vestfold
169	403	729	388	744	774	363	1231	1082	470	347	527	718
3	9	17	6	14	11	8	22	20	9	7	11	15
1	1	3	1	4	1	2	3	6	2	2	1	4
1	2	4	1	1	2	2	6	2	1	3	2	3
1	1	2	1	2	2	2	3	4	2	1	2	2
0	0	1	0	1	1	1	2	2	1	0	1	1
1	4	6	3	6	4	2	8	6	2	1	4	4
40	93	163	79	166	171	76	280	211	88	58	98	138
3	5	7	3	7	6	3	12	10	5	4	7	8
9	15	21	11	22	24	11	35	26	9	5	9	15
0	2	4	2	7	4	1	5	4	1	1	2	2
13	34	69	33	60	65	29	104	81	36	20	38	56
10	19	38	17	39	39	20	75	56	21	14	22	32
1	4	4	2	6	4	2	7	5	4	3	2	2
1	2	3	2	4	2	2	7	4	2	2	4	5
3	11	15	9	19	21	6	31	22	9	7	12	18
1	1	1	1	2	5	1	3	3	1	2	2	1
32	58	91	44	90	91	38	147	119	64	47	61	88
1	1	2	0	2	1	1	2	2	1	0	1	1
1	6	6	2	3	6	2	8	7	5	4	4	5
29	51	83	41	84	84	36	136	110	58	42	55	81
0	1	1	1	1	1	0	1	1	0	1	1	1
1	1	1	1	2	1	0	2	2	1	0	1	2
3	11	11	16	35	24	9	47	55	19	13	22	34
5	12	25	17	34	27	14	65	65	37	22	36	44
1	2	2	1	3	3	1	7	4	3	1	2	8
0	0	0	0	0	0	0	1	0	0	0	0	0
0	0	0	0	1	0	0	1	0	0	0	0	0
1	1	3	1	3	2	2	5	5	3	1	2	3
0	0	1	0	2	1	0	1	1	1	0	0	1
47	121	236	127	213	259	134	366	353	151	120	168	212
42	112	223	116	193	239	129	331	325	140	114	158	197
5	8	11	9	19	17	4	30	25	9	5	9	12
1	1	2	1	2	3	0	4	3	2	1	2	3
17	41	82	39	80	80	33	129	110	42	30	52	74
6	9	21	12	20	21	8	31	32	11	5	14	18
0	2	2	1	3	3	1	4	3	1	2	1	5
10	31	59	26	57	56	24	94	75	29	23	36	51
1	0	2	1	2	1	2	3	2	2	1	1	2
4	15	19	13	27	26	11	44	34	13	12	18	20
1	1	3	2	3	5	3	5	4	2	1	3	2
0	1	4	2	4	7	3	5	7	3	2	2	4
2	6	15	7	9	9	6	22	14	4	7	10	13
12	29	52	33	56	57	23	79	74	30	23	39	59
1	1	3	2	4	5	2	6	5	2	2	2	4
6	15	23	13	22	23	10	31	32	14	11	16	25
0	1	1	2	2	1	1	3	2	0	0	1	1
3	4	10	7	11	10	5	16	12	4	4	9	9
3	8	15	9	17	17	5	23	23	10	6	11	21

Table 13b Average annual number of new cases by primary site and county - 2003-2007

ICD10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud
C00-96	All sites	11852	705	1187	1364	552	498	688
C00-14	Mouth, pharynx	162	10	16	21	8	7	9
C00	Lip	39	2	4	2	2	1	2
C01-02	Tongue	29	1	3	5	2	1	2
C03-06	Mouth, other	41	3	4	5	3	2	3
C07-08	Salivary glands	21	1	2	3	1	1	2
C09-14	Pharynx	33	3	2	6	1	2	2
C15-26	Digestive organs	2579	160	229	280	119	110	141
C15	Oesophagus	54	3	6	8	3	3	4
C16	Stomach	220	12	15	23	10	9	13
C17	Small intestine	46	3	5	5	2	1	3
C18	Colon	1218	76	104	127	55	49	69
C19-21	Rectum, rectosigmoid, anus	537	35	54	58	25	25	29
C22	Liver	47	3	5	5	3	2	2
C23-24	Gallbladder, bile ducts	76	5	6	7	5	5	4
C25	Pancreas	330	21	29	40	13	15	15
C26	Other digestive organs	51	4	5	6	3	2	2
C30-34, C38	Respiratory organs	1017	63	101	129	48	35	56
C30-31	Nose, sinuses	22	1	2	4	0	1	1
C32	Larynx, epiglottis	15	1	1	2	1	1	1
C33-34	Lung, trachea	974	59	97	120	47	33	54
C38	Mediastinum, pleura	7	0	1	2	0	0	0
C40-41	Bone	18	1	1	2	0	1	2
C43	Melanoma of the skin	589	43	64	65	24	22	38
C44	Skin, non-melanoma	629	49	52	62	28	19	55
C45	Mesothelioma	13	1	2	2	0	1	1
C46	Kaposi's sarcoma	3	0	0	0	0	0	0
C47	Autonomic nervous system	5	1	1	0	0	0	0
C48-49	Soft tissues	82	3	10	10	2	3	4
C50	Breast	2767	151	310	340	128	116	162
C51-58	Female genital organs	1526	85	153	167	78	85	85
C53	Cervix uteri	289	16	32	36	12	11	17
C54	Corpus uteri	647	32	67	71	37	40	34
C55	Uterus, other	10	1	1	1	1	0	0
C56	Ovary	443	28	44	46	21	26	25
C51-52, C57	Other female genital	133	7	9	14	7	6	8
C58	Placenta	4	0	0	0	0	0	0
C64-68	Urinary organs	576	36	55	67	27	20	34
C64	Kidney excl. renal pelvis	218	15	21	22	11	8	12
C65	Renal pelvis	25	1	2	4	1	1	2
C66-68	Bladder, ureter, urethra	333	20	32	40	16	11	20
C69	Eye	30	2	4	3	1	1	2
C70-72, D42-43	Central nervous system	552	29	54	55	25	25	29
C73	Thyroid gland	154	5	17	17	9	4	8
C37, C74-75	Other endocrine glands	68	5	7	9	2	2	3
C39, C76, C80	Other or unspecified	278	18	26	37	15	13	15
C81-96	Lymphoid and haematopoietic tissue	805	45	85	99	35	35	46
C81	Hodgkin lymphoma	49	2	6	7	2	2	3
C82-85, C96	Non-Hodgkin lymphoma	360	18	36	45	15	16	18
C88	Malignant immunoproliferative diseases	18	1	3	2	2	1	1
C90	Multiple myeloma	148	8	14	18	7	7	8
C91-95	Leukaemia	230	16	27	27	9	10	15

FEMALES

Finmark	Troms	Nordland	Nord-Trøndelag	Sør-Trøndelag	More og Romsdal	Sogn og Fjordane	Hordaland	Rogaland	Vest-Agder	Aust-Agder	Telemark	Vestfold
150	334	631	324	692	629	261	1086	912	436	281	475	646
2	6	10	3	9	8	4	13	12	7	4	5	9
0	1	1	0	2	3	2	3	6	3	2	1	2
1	1	2	0	2	1	1	3	1	0	0	1	2
0	2	3	1	3	2	1	2	2	1	0	1	3
0	1	1	1	1	2	1	1	1	1	0	1	2
0	1	2	1	1	1	0	3	1	2	1	1	1
35	81	139	72	154	164	68	267	195	82	59	90	134
1	2	2	1	3	1	1	4	4	2	1	2	3
4	11	14	6	13	14	7	23	19	5	4	8	10
0	1	3	1	4	4	1	4	1	2	1	2	2
14	38	66	36	68	83	32	135	93	42	25	43	63
6	14	28	14	32	28	15	58	42	12	13	16	30
1	2	3	1	4	2	1	3	4	2	1	2	2
2	2	2	2	5	4	2	7	6	3	3	4	3
6	9	17	9	22	23	8	30	22	11	9	12	18
0	2	3	1	3	5	1	3	4	2	2	1	4
17	30	61	30	59	47	17	78	69	49	27	40	61
1	1	1	0	1	1	1	2	1	1	1	1	1
0	1	1	0	1	0	0	1	1	1	0	1	1
16	29	58	29	57	46	17	75	67	48	26	38	59
0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	1	1	2	0	1	3	1	1	1	1	1
4	11	16	17	36	28	8	53	61	20	13	26	40
4	10	19	17	34	21	12	53	61	38	21	40	34
0	0	0	0	1	1	0	1	1	0	1	1	1
0	0	1	0	0	1	0	0	0	0	0	0	0
0	0	1	0	0	1	0	1	0	0	0	0	0
2	3	6	4	7	5	2	3	6	3	2	3	4
31	79	142	73	154	149	58	250	213	95	54	107	156
21	43	88	36	81	69	32	146	123	56	37	68	73
4	11	21	7	13	10	6	28	24	11	7	12	12
9	16	36	16	34	31	14	64	50	24	14	29	30
0	1	0	0	0	1	0	1	1	0	0	1	0
7	11	23	10	24	21	8	42	35	16	12	19	23
1	4	7	3	10	7	4	11	12	5	5	6	8
0	1	0	0	0	0	0	0	1	0	0	0	0
9	19	39	17	36	33	13	44	41	22	15	19	30
4	7	14	8	16	13	5	16	15	9	4	8	10
0	1	1	1	2	1	1	1	1	0	1	1	2
4	11	23	8	18	19	7	26	25	13	10	11	19
0	0	2	1	2	3	1	2	3	1	1	1	1
7	15	31	16	42	31	14	51	38	20	14	22	32
2	6	12	4	9	11	4	17	7	5	2	7	7
1	2	4	2	5	4	1	6	4	2	2	2	5
4	8	19	8	16	11	6	26	19	8	7	12	13
12	20	42	24	44	44	17	73	58	29	22	30	43
1	1	4	1	3	2	1	5	4	2	1	1	3
7	8	21	12	21	20	7	32	28	13	10	13	18
0	0	1	1	1	1	0	2	1	0	0	0	0
1	5	7	3	5	11	4	14	9	6	4	6	9
2	6	11	7	14	9	5	21	15	8	6	10	13

Table 14a Age-adjusted (world) incidence rates per 100 000 person-years by county and primary site - 2003-2007

ICD10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud
C00-96	All sites	344.3	338.5	326.1	345.0	342.8	331.3	344.1
C00-14	Mouth, pharynx	7.4	8.7	7.3	8.5	8.6	6.2	7.3
C00	Lip	1.3	1.8	1.2	0.8	2.1	0.8	1.5
C01-02	Tongue	1.5	1.3	1.5	2.0	2.1	1.4	1.0
C03-06	Mouth, other	1.4	2.1	1.4	1.1	1.5	1.2	1.4
C07-08	Salivary glands	0.5	0.7	0.6	0.3	0.9	0.5	0.2
C09-14	Pharynx	2.7	2.8	2.6	4.3	1.9	2.2	3.2
C15-26	Digestive organs	67.3	71.8	62.8	65.0	65.7	62.0	61.8
C15	Oesophagus	3.7	3.1	4.0	4.3	2.9	4.1	4.3
C16	Stomach	7.7	8.4	5.1	7.3	6.5	6.6	5.9
C17	Small intestine	1.5	1.8	1.1	1.6	1.5	0.9	1.4
C18	Colon	25.3	27.3	24.6	22.8	25.2	22.1	24.6
C19-21	Rectum, rectosigmoid, anus	16.8	19.3	15.9	14.5	16.3	15.9	15.7
C22	Liver	2.1	2.4	1.8	3.6	1.5	1.5	1.9
C23-24	Gallbladder, bile ducts	1.5	1.1	1.5	1.5	1.8	1.7	1.1
C25	Pancreas	7.8	7.5	7.9	8.7	9.1	8.3	6.1
C26	Other digestive organs	0.9	0.9	0.9	0.8	0.9	0.8	0.8
C30-34, C38	Respiratory organs	39.8	41.2	34.8	36.6	38.5	32.0	38.3
C30-31	Nose, sinuses	0.6	0.6	0.3	0.6	0.5	0.9	0.5
C32	Larynx, epiglottis	2.7	2.8	2.3	2.8	2.6	2.2	2.7
C33-34	Lung, trachea	36.2	37.4	31.8	33.0	35.3	28.6	35.0
C38	Mediastinum, pleura	0.3	0.3	0.4	0.2	0.0	0.3	0.2
C40-41	Bone	0.9	0.4	0.9	0.9	1.0	0.9	1.5
C43	Melanoma of the skin	15.2	17.6	17.1	15.4	15.6	14.0	17.3
C44	Skin, non-melanoma	15.1	17.4	14.0	14.1	15.2	10.8	22.2
C45	Mesothelioma	1.6	1.4	1.5	1.3	1.3	1.2	2.7
C46	Kaposi's sarcoma	0.2	0.2	0.1	0.5	0.1	0.2	0.1
C47	Autonomic nervous system	0.3	0.0	0.4	0.2	0.0	0.0	0.4
C48-49	Soft tissues	1.7	1.8	1.7	1.4	2.1	1.5	1.7
C50	Breast	0.4	0.8	0.5	0.7	0.2	0.1	0.5
C60-63	Male genital organs	108.8	91.4	98.4	109.4	108.5	123.1	108.2
C61	Prostate	96.6	79.1	87.0	98.2	96.9	108.4	97.6
C62	Testis	11.0	10.7	10.1	9.5	10.1	13.7	9.8
C60, C63	Other male genital	1.2	1.5	1.3	1.7	1.5	1.0	0.9
C64-68	Urinary organs	33.0	34.1	30.8	34.4	33.1	29.5	27.5
C64	Kidney excl. renal pelvis	9.8	11.6	10.5	9.5	10.3	9.0	9.0
C65	Renal pelvis	1.0	1.1	0.9	1.0	0.9	0.9	0.9
C66-68	Bladder, ureter, urethra	22.1	21.4	19.5	23.9	21.9	19.6	17.7
C69	Eye	1.0	1.3	0.7	1.2	0.8	1.8	0.7
C70-72, D42-43	Central nervous system	14.0	12.5	13.7	14.2	12.1	11.8	12.2
C73	Thyroid gland	1.9	1.1	2.1	2.0	2.7	2.0	2.3
C37, C74-75	Other endocrine glands	2.3	2.7	2.3	2.0	2.2	2.2	1.7
C39, C76, C80	Other or unspecified	4.9	5.9	5.2	5.6	4.6	3.8	5.6
C81-96	Lymphoid and haematopoietic tissue	28.7	28.3	31.7	31.4	30.6	28.3	31.9
C81	Hodgkin lymphoma	2.8	4.3	2.1	2.7	4.1	4.0	3.0
C82-85, C96	Non-Hodgkin lymphoma	11.7	9.4	13.7	13.4	12.8	11.4	10.8
C88	Malignant immunoproliferative diseases	0.6	0.4	0.8	0.8	0.4	0.8	0.6
C90	Multiple myeloma	4.5	3.8	5.2	5.1	5.4	4.0	4.8
C91-95	Leukaemia	9.0	10.5	9.9	9.5	8.0	8.2	12.6

Finmark	Troms	Nordland	Nord-Trøndelag	Sør-Trøndelag	More og Romsdal	Sogn og Fjordane	Hordaland	Rogaland	Vest-Agder	Aust-Agder	Telemark	Vestfold
287.7	321.3	340.7	329.4	333.7	352.0	374.6	336.1	372.4	372.2	396.5	339.2	372.5
4.8	7.3	8.5	5.5	6.9	5.5	9.1	6.8	7.3	7.0	8.1	7.6	8.6
1.3	0.5	1.6	0.5	1.7	0.5	1.5	0.9	2.0	1.7	1.8	1.0	1.8
1.5	2.0	2.2	0.9	0.6	0.8	2.2	1.7	0.9	1.3	3.7	1.2	1.7
1.0	1.0	1.1	0.9	1.1	1.1	2.9	1.2	1.4	1.4	0.8	1.6	1.4
0.0	0.5	0.4	0.3	0.6	0.8	0.4	0.4	0.7	0.7	0.0	1.0	0.8
1.0	3.2	3.2	3.0	2.8	2.3	2.1	2.4	2.3	1.9	1.8	2.8	2.8
66.9	72.9	73.0	62.9	68.6	71.6	73.2	72.7	70.4	65.9	62.2	59.5	66.9
4.2	3.5	3.5	2.3	3.0	2.7	3.2	3.6	3.4	3.9	4.1	4.8	4.1
15.0	11.6	8.7	8.1	8.8	9.9	10.0	8.3	8.6	6.1	4.8	6.0	7.1
0.6	1.7	1.9	1.6	3.3	1.9	0.7	1.3	1.4	1.1	1.3	1.5	1.1
21.3	25.9	30.3	26.5	24.1	26.9	27.2	26.5	26.4	26.7	20.2	21.6	26.3
17.2	15.3	17.9	14.1	17.0	16.9	20.4	20.5	19.4	15.6	15.6	12.9	15.6
1.3	3.7	1.7	2.0	2.6	1.4	1.7	2.0	1.7	3.4	3.9	1.7	0.9
1.5	1.7	1.4	1.0	1.6	1.0	2.0	1.7	1.3	1.7	1.7	2.2	2.6
4.4	8.9	7.0	6.7	7.5	8.5	6.9	8.1	7.5	6.6	8.0	7.8	8.9
1.4	0.6	0.6	0.4	0.7	2.3	1.2	0.7	0.9	0.8	2.6	1.0	0.3
51.6	45.1	40.9	35.0	38.6	39.9	39.7	40.5	40.8	51.8	52.4	39.7	44.6
1.5	0.9	0.8	0.1	0.7	0.5	0.9	0.7	0.7	1.0	0.4	0.7	0.4
2.2	5.2	2.6	2.3	1.5	2.9	2.0	2.3	2.4	4.1	3.9	2.9	2.8
47.2	38.4	36.9	32.2	36.0	36.2	36.8	37.1	37.5	46.6	47.4	35.7	41.1
0.7	0.5	0.6	0.4	0.3	0.3	0.0	0.4	0.2	0.1	0.6	0.4	0.4
2.1	1.2	0.7	0.5	0.9	0.9	0.4	0.9	0.9	1.0	0.6	1.0	1.4
5.8	10.2	6.4	15.0	17.2	12.9	10.1	13.8	20.4	16.5	17.1	15.7	19.1
7.2	8.6	9.6	11.0	12.7	9.6	11.9	14.6	19.5	24.0	21.1	18.6	19.7
0.9	1.3	0.9	0.9	1.3	1.2	0.9	2.0	1.4	1.8	1.1	1.3	4.0
0.0	0.1	0.2	0.0	0.2	0.1	0.1	0.3	0.0	0.0	0.5	0.1	0.0
1.1	0.1	0.1	0.0	0.6	0.1	0.7	0.7	0.1	0.0	0.0	0.0	0.2
1.8	1.2	1.8	1.5	1.4	1.2	1.6	1.6	1.8	2.4	1.9	2.1	1.8
0.3	0.2	0.2	0.3	0.8	0.6	0.2	0.3	0.1	0.6	0.6	0.1	0.6
80.4	96.1	110.7	108.9	99.9	118.6	134.6	101.5	121.5	121.3	137.8	107.4	110.3
66.7	86.1	100.2	93.4	86.0	104.3	126.6	88.2	108.8	110.2	128.0	96.0	97.9
12.5	9.2	9.3	14.6	12.8	13.3	7.6	12.2	11.5	10.2	9.2	10.5	10.8
1.2	0.8	1.1	0.9	1.0	1.1	0.4	1.2	1.2	0.9	0.6	0.9	1.6
27.7	30.6	36.0	30.7	34.2	35.3	33.7	33.3	36.3	31.5	32.2	34.3	36.5
11.0	7.1	10.2	10.0	9.8	10.5	8.8	8.9	11.4	9.7	7.0	10.5	10.2
0.4	1.1	1.0	0.9	1.2	1.0	0.8	0.9	1.0	0.7	1.5	0.8	2.3
16.3	22.4	24.8	19.7	23.2	23.8	24.2	23.4	23.9	21.1	23.7	22.9	24.0
0.8	0.4	1.8	0.7	0.9	0.6	2.4	0.8	0.6	1.4	0.9	0.5	1.1
9.2	14.9	11.9	15.5	15.6	15.7	15.9	14.9	14.3	12.8	20.0	15.4	13.5
1.3	0.8	1.6	2.1	1.4	2.9	4.0	1.6	1.5	1.9	1.9	1.8	1.1
0.9	1.1	2.7	2.2	1.8	4.1	3.0	1.7	3.0	2.9	3.2	1.6	2.7
3.3	4.3	6.4	5.2	3.2	3.0	5.9	5.0	4.3	2.8	6.4	5.5	5.8
21.6	24.9	27.4	31.6	27.5	28.4	27.2	23.1	27.9	26.6	28.6	27.0	34.6
2.0	1.7	2.5	3.4	2.9	3.6	3.3	2.3	2.3	2.0	2.7	2.6	2.9
10.6	13.1	12.1	11.5	10.6	11.4	11.3	8.5	11.9	11.9	13.9	10.9	14.3
0.3	0.3	0.4	1.3	0.7	0.5	0.9	0.7	0.6	0.2	0.4	0.3	0.4
3.8	3.0	4.3	5.5	4.8	3.9	4.5	4.1	4.1	3.3	4.8	5.6	4.6
4.9	6.8	8.2	9.8	8.5	9.0	7.2	7.5	9.0	9.3	6.8	7.7	12.4

Table 14b Age-adjusted (world) incidence rates per 100 000 person-years by county and primary site - 2003-2007

ICD10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud
C00-96	All sites	283.8	281.7	281.8	290.0	288.2	276.5	298.7
C00-14	Mouth, pharynx	3.8	3.9	3.7	5.2	3.1	3.2	3.7
C00	Lip	0.8	0.5	1.0	0.4	0.5	0.5	0.7
C01-02	Tongue	0.7	0.6	0.8	1.2	0.7	0.4	0.4
C03-06	Mouth, other	0.9	1.1	0.9	1.1	1.3	1.1	0.9
C07-08	Salivary glands	0.5	0.3	0.4	0.8	0.3	0.5	0.9
C09-14	Pharynx	0.9	1.4	0.7	1.7	0.3	0.7	0.8
C15-26	Digestive organs	50.2	51.3	46.6	48.1	48.6	50.4	51.3
C15	Oesophagus	1.0	0.8	1.2	1.4	1.4	1.0	1.5
C16	Stomach	4.1	3.2	2.8	3.9	3.7	3.8	4.1
C17	Small intestine	1.1	1.1	1.3	1.0	1.3	0.7	1.4
C18	Colon	23.2	24.2	20.7	21.1	21.6	22.1	25.1
C19-21	Rectum, rectosigmoid, anus	11.4	12.5	11.9	10.9	11.0	12.5	11.4
C22	Liver	1.0	0.7	0.9	1.2	1.8	1.1	0.7
C23-24	Gallbladder, bile ducts	1.4	1.7	1.2	1.3	1.4	2.1	1.1
C25	Pancreas	6.1	6.0	5.7	6.5	5.6	6.4	5.7
C26	Other digestive organs	0.8	0.9	0.9	0.9	1.0	0.8	0.4
C30-34, C38	Respiratory organs	23.9	24.6	23.1	25.9	24.2	18.8	23.0
C30-31	Nose, sinuses	0.5	0.5	0.6	0.7	0.0	0.6	0.3
C32	Larynx, epiglottis	0.4	0.5	0.3	0.6	0.3	0.4	0.3
C33-34	Lung, trachea	23.0	23.5	22.1	24.4	23.9	17.6	22.3
C38	Mediastinum, pleura	0.1	0.2	0.1	0.3	0.0	0.2	0.1
C40-41	Bone	0.7	0.5	0.4	0.8	0.3	0.4	0.9
C43	Melanoma of the skin	16.4	20.3	16.6	15.2	14.0	14.5	19.2
C44	Skin, non-melanoma	9.9	13.6	8.5	8.2	8.5	6.0	16.7
C45	Mesothelioma	0.2	0.2	0.3	0.4	0.0	0.2	0.3
C46	Kaposi's sarcoma	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C47	Autonomic nervous system	0.2	0.4	0.4	0.1	0.0	0.0	0.2
C48-49	Soft tissues	2.3	1.9	2.4	2.4	1.6	2.1	1.7
C50	Breast	75.6	69.1	80.7	83.9	77.9	74.8	78.6
C51-58	Female genital organs	39.5	37.5	38.0	38.6	44.2	47.8	39.3
C53	Cervix uteri	9.2	9.4	9.0	9.5	9.4	8.9	10.3
C54	Corpus uteri	15.9	13.9	16.1	16.2	18.7	21.0	15.3
C55	Uterus, other	0.2	0.3	0.2	0.0	0.2	0.2	0.1
C56	Ovary	11.3	11.5	10.8	10.1	12.4	14.7	10.9
C51-52, C57	Other female genital	2.8	2.1	1.9	2.6	3.4	3.0	2.8
C58	Placenta	0.2	0.3	0.0	0.1	0.0	0.0	0.0
C64-68	Urinary organs	11.9	13.1	11.6	12.7	12.4	9.1	13.1
C64	Kidney excl. renal pelvis	5.1	6.2	5.3	4.7	5.6	3.8	5.4
C65	Renal pelvis	0.5	0.4	0.4	0.9	0.5	0.5	0.8
C66-68	Bladder, ureter, urethra	6.3	6.4	5.9	7.1	6.2	4.9	6.8
C69	Eye	0.8	0.9	1.0	0.8	1.2	0.2	0.9
C70-72, D42-43	Central nervous system	16.4	14.9	14.8	14.6	18.5	18.5	16.7
C73	Thyroid gland	4.8	2.2	4.9	4.7	6.5	3.5	4.9
C37, C74-75	Other endocrine glands	2.4	3.2	2.4	2.4	1.7	2.3	2.1
C39, C76, C80	Other or unspecified	4.5	5.0	4.8	5.0	5.6	4.2	4.8
C81-96	Lymphoid and haematopoietic tissue	20.1	19.0	21.5	21.2	20.0	20.6	21.2
C81	Hodgkin lymphoma	2.0	1.5	2.1	2.1	1.8	1.7	1.9
C82-85, C96	Non-Hodgkin lymphoma	8.6	7.2	8.9	9.6	7.7	8.7	8.5
C88	Malignant immunoproliferative diseases	0.4	0.3	0.6	0.4	0.8	0.5	0.3
C90	Multiple myeloma	3.0	2.8	2.9	3.5	2.9	3.3	3.5
C91-95	Leukaemia	6.3	7.3	7.0	5.7	6.8	6.3	7.0

FEMALES

Finmark	Troms	Nordland	Nord-Trøndelag	Sør-Trøndelag	More og Romsdal	Sogn og Fjordane	Hordaland	Rogaland	Vest-Agder	Aust-Agder	Telemark	Vestfold
256.7	256.1	290.6	262.1	288.2	275.4	260.1	274.3	288.1	298.6	290.5	295.1	308.6
2.5	4.2	4.6	2.3	3.8	3.3	4.1	3.2	3.5	5.4	3.1	3.1	3.9
0.5	0.8	0.1	0.0	0.6	0.8	1.6	0.8	1.7	1.9	1.9	0.4	0.3
1.2	0.8	1.3	0.0	0.7	0.5	0.5	0.6	0.5	0.2	0.1	0.6	0.9
0.3	1.1	1.5	0.8	1.1	0.7	0.6	0.7	0.4	0.9	0.1	0.9	1.1
0.0	0.5	0.7	0.6	0.7	0.7	1.3	0.2	0.4	0.5	0.3	0.4	0.7
0.4	1.0	1.1	0.8	0.7	0.6	0.0	1.0	0.4	1.8	0.6	0.9	0.8
49.2	49.4	51.0	45.8	51.3	56.4	55.8	53.9	49.3	47.4	52.0	45.7	52.6
1.9	1.8	0.6	0.8	1.0	0.4	0.7	0.7	0.9	1.1	1.1	1.0	1.0
7.1	7.5	5.0	3.3	3.9	4.3	7.0	4.7	5.0	2.8	3.1	4.7	3.2
0.7	0.6	1.2	0.9	1.4	1.4	1.3	0.9	0.5	1.4	1.0	1.2	1.0
18.9	22.8	24.2	22.5	22.3	27.8	23.7	26.7	23.1	23.3	22.5	22.0	23.4
10.3	8.5	11.4	10.3	11.5	11.1	13.7	13.0	11.3	8.3	12.8	7.8	13.2
0.8	1.2	1.2	0.1	1.5	0.7	1.2	0.9	1.0	1.0	1.2	0.9	0.8
1.7	1.1	0.9	1.5	1.6	1.3	1.6	1.2	1.5	2.1	2.2	2.2	1.2
7.2	5.0	5.5	5.8	7.2	7.4	6.3	5.5	5.5	5.9	7.0	5.5	7.5
0.5	0.8	1.0	0.8	0.8	1.9	0.3	0.3	0.5	1.5	1.0	0.3	1.4
28.3	21.9	26.5	24.4	25.1	20.0	18.5	20.7	23.4	32.6	30.0	24.0	27.1
0.3	0.6	0.6	0.4	0.2	0.5	0.2	0.5	0.2	0.8	0.5	0.5	0.5
0.2	0.6	0.4	0.1	0.6	0.2	0.0	0.4	0.3	0.4	0.4	0.2	0.4
27.8	20.6	25.5	23.8	24.1	19.3	18.3	19.6	22.8	31.4	29.1	23.1	26.1
0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
0.4	0.8	0.4	0.6	1.1	0.1	1.3	1.2	0.2	0.3	1.8	1.1	0.9
7.9	10.1	9.6	18.4	18.2	14.9	9.3	15.5	21.7	16.5	14.1	20.7	21.9
5.9	6.5	6.2	9.3	9.9	6.4	7.3	8.8	13.3	16.9	13.1	14.0	10.2
0.4	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.0	1.1	0.7	0.3
0.1	0.1	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
0.0	0.0	0.4	0.1	0.0	0.8	0.1	0.3	0.3	0.2	0.2	0.2	0.0
2.4	3.1	3.2	4.1	3.1	2.4	2.1	1.2	2.2	2.5	1.8	2.8	2.7
59.3	67.8	74.5	68.1	73.3	74.6	69.1	72.9	76.4	73.8	60.4	73.3	85.8
38.8	37.3	44.9	32.6	36.1	32.9	36.1	41.2	41.2	41.0	42.7	46.5	36.0
8.2	10.8	14.0	8.2	6.9	7.0	7.3	9.1	9.5	10.5	9.4	10.5	7.2
16.8	12.8	17.6	12.1	14.0	13.2	15.1	17.7	15.4	16.6	14.5	18.5	14.5
0.0	0.5	0.1	0.2	0.2	0.2	0.4	0.2	0.3	0.0	0.0	0.3	0.0
11.8	9.0	10.2	10.1	11.5	9.7	8.9	11.4	12.5	11.1	14.4	14.1	10.6
2.0	3.2	2.5	2.1	3.5	2.8	3.8	2.8	3.0	2.8	4.4	3.1	3.2
0.0	1.2	0.4	0.0	0.0	0.0	0.6	0.0	0.5	0.0	0.0	0.0	0.4
13.4	12.2	15.5	11.2	13.2	11.5	9.7	9.4	11.8	11.8	12.4	10.4	11.6
7.1	4.8	6.4	5.6	6.6	4.8	3.5	4.2	4.9	5.4	4.5	4.3	4.5
0.4	1.0	0.5	0.3	0.6	0.3	1.2	0.2	0.3	0.0	1.0	0.2	0.4
5.9	6.4	8.6	5.4	6.0	6.4	5.0	5.0	6.7	6.4	6.9	5.9	6.7
0.6	0.2	0.6	0.9	0.9	1.7	0.8	0.5	1.0	0.9	1.5	0.8	0.8
14.2	16.2	16.1	13.5	21.7	17.3	18.1	14.9	15.1	17.0	20.4	18.4	21.0
4.0	4.8	7.3	5.4	4.4	6.4	5.5	5.9	2.8	5.3	2.4	6.7	4.7
2.1	1.6	2.9	2.2	3.1	2.8	1.7	2.1	1.8	1.8	2.8	1.9	3.6
4.3	3.6	6.0	4.6	4.4	3.1	3.9	4.5	4.1	3.4	4.6	3.6	4.2
22.9	16.2	20.5	18.3	18.6	20.5	16.6	18.0	19.9	21.9	25.9	21.3	21.5
3.7	1.2	2.8	1.6	1.5	2.1	1.8	1.9	2.2	2.1	3.3	1.1	2.0
14.4	6.0	9.0	8.7	8.5	8.8	7.4	7.8	9.0	8.6	9.8	9.7	8.2
0.4	0.0	0.3	0.6	0.5	0.5	0.1	0.2	0.2	0.2	0.3	0.1	0.2
1.6	3.1	2.4	1.9	1.7	3.6	2.8	2.6	2.9	4.0	3.6	2.6	3.7
2.8	5.9	6.0	5.5	6.4	5.5	4.5	5.5	5.6	7.0	8.9	7.8	7.4

Table 15 Number of cancer deaths in Norway by primary site and sex - 2006 (Source: Statistics Norway)

ICD10	Site	Males	Females	Total
C00-96	All sites	5436	4930	10366
C00-14	Mouth, pharynx	82	55	137
C00	Lip	2		2
C01-02	Tongue	14	14	28
C03-06	Mouth, other	15	16	31
C07-08	Salivary glands	6	8	14
C09-14	Pharynx	45	17	62
C15-26	Digestive organs	1546	1506	3052
C15	Oesophagus	131	46	177
C16	Stomach	189	160	349
C17	Small intestine	13	32	45
C18	Colon	535	625	1160
C19-21	Rectum, rectosigmoid, anus	234	181	415
C22	Liver	89	59	148
C23-24	Gallbladder, bile ducts	23	39	62
C25	Pancreas	306	327	633
C26	Other digestive organs	26	37	63
C30-34, C38	Respiratory organs	1256	808	2064
C30-31	Nose, sinuses	6		6
C32	Larynx, epiglottis	33	5	38
C33-34	Lung, trachea	1213	794	2007
C38	Mediastinum, pleura	4	9	13
C40-41	Bone	5	4	9
C43	Melanoma of the skin	143	106	249
C44	Skin, non-melanoma	23	19	42
C45	Mesothelioma	49	11	60
C46	Kaposi's sarcoma	1	4	5
C47	Autonomic nervous system	3	1	4
C48-49	Soft tissues	25	35	60
C50	Breast	4	675	679
C51-58	Female genital organs		612	612
C53	Cervix uteri		79	79
C54	Corpus uteri		74	74
C55	Uterus, other		79	79
C56	Ovary		328	328
C51-52, C57	Other female genital		51	51
C58	Placenta		1	1
C60-63	Male genital organs	1061		1061
C61	Prostate	1042		1042
C62	Testis	11		11
C60, C63	Other male genital	8		8
C64-68	Urinary organs	398	201	599
C64	Kidney excl. renal pelvis	153	80	233
C65	Renal pelvis	4	1	5
C66-68	Bladder, ureter, urethra	241	120	361
C69	Eye	2	3	5
C70-72, D42-43	Central nervous system	154	126	280
C73	Thyroid gland	13	31	44
C37, C74-75	Other endocrine glands	5	9	14
C39, C76, C80	Other or unspecified	184	290	474
C81-96	Lymphoid and haematopoietic tissue	482	434	916
C81	Hodgkin lymphoma	3	6	9
C82-85, C96	Non-Hodgkin lymphoma	168	150	318
C88	Malignant immunoproliferative diseases	4	2	6
C90	Multiple myeloma	138	122	260
C91-95	Leukaemia	169	154	323

Mortality

There were 10 366 cancer deaths in Norway in 2006, 5436 among men and 4930 in women (Table 15). Cancers of the lung, colorectal, prostate and female breast accounted for around half of the total cancer mortality burden. Lung cancer ranked first in men in terms of cancer mortality numbers, responsible for 1213 deaths, followed by prostate cancer (1042 deaths) and colorectal cancer (769 deaths). In women, cancers of the large bowel (806 deaths), lung (794 deaths) and breast (675 deaths) were the most frequent causes of cancer death. Figure 7 shows the distribution of age-standardised mortality rates according to cancer site. Lung cancer is the leading cause of cancer death in both sexes, although the breast cancer mortality rate is almost equal to that of lung cancer in women.

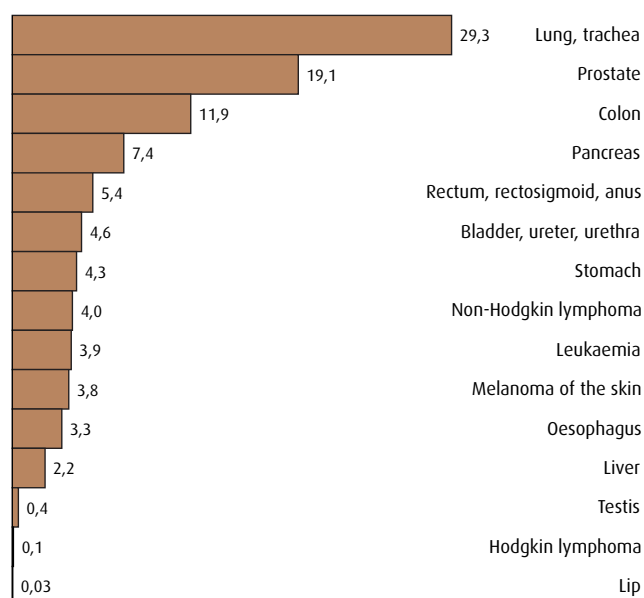
The sex-specific time trends of mortality rates for selected cancer forms are illustrated in Figure 8. There have been rather uniform increases in the mortality

rates of the three most frequent causes of cancer death in Norway - lung, prostate and colorectal cancer - from the 1970s. There is however a suggestion that recent mortality trends are more favorable for these cancers, with rates showing signs of either plateauing or beginning to decline. In women, lung cancer mortality has been rising rapidly in the last decades relative to other cancers. In the last 10 years however, both breast and rectal cancer mortality rates in females have been observed to decline. As observed for incidence, there has been a continual decrease in stomach cancer mortality long-term in Norway for both men and women.

Advances in cancer care, including the development of new treatment regimens and a multidisciplinary approach to cancer care are contributors to the favourable trends in mortality, particularly among younger populations, diagnosed with testicular cancer and leukaemia. The Special Issue this year provides a comprehensive examination of the long-term survival of patients diagnosed with the 23 most frequently diagnosed cancers in Norway between 1965 and 2007.

Figure 8: Age-standardised (world) mortality rates in Norway 2006 for selected cancers
(Source: Statistics Norway)

MALES



FEMALES

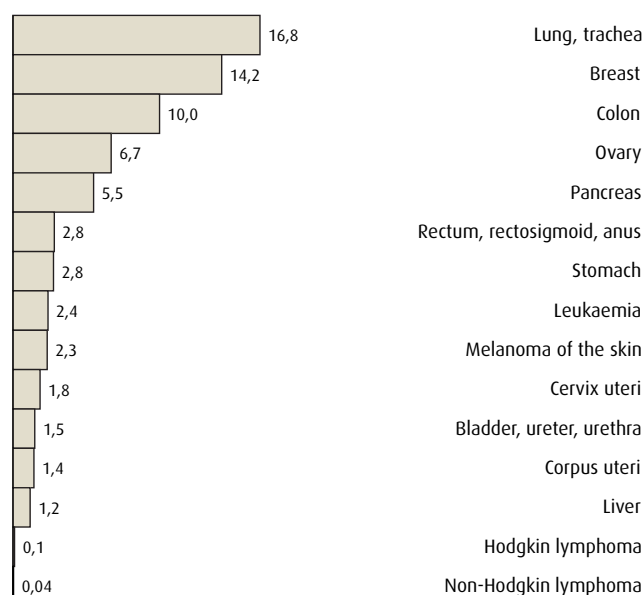
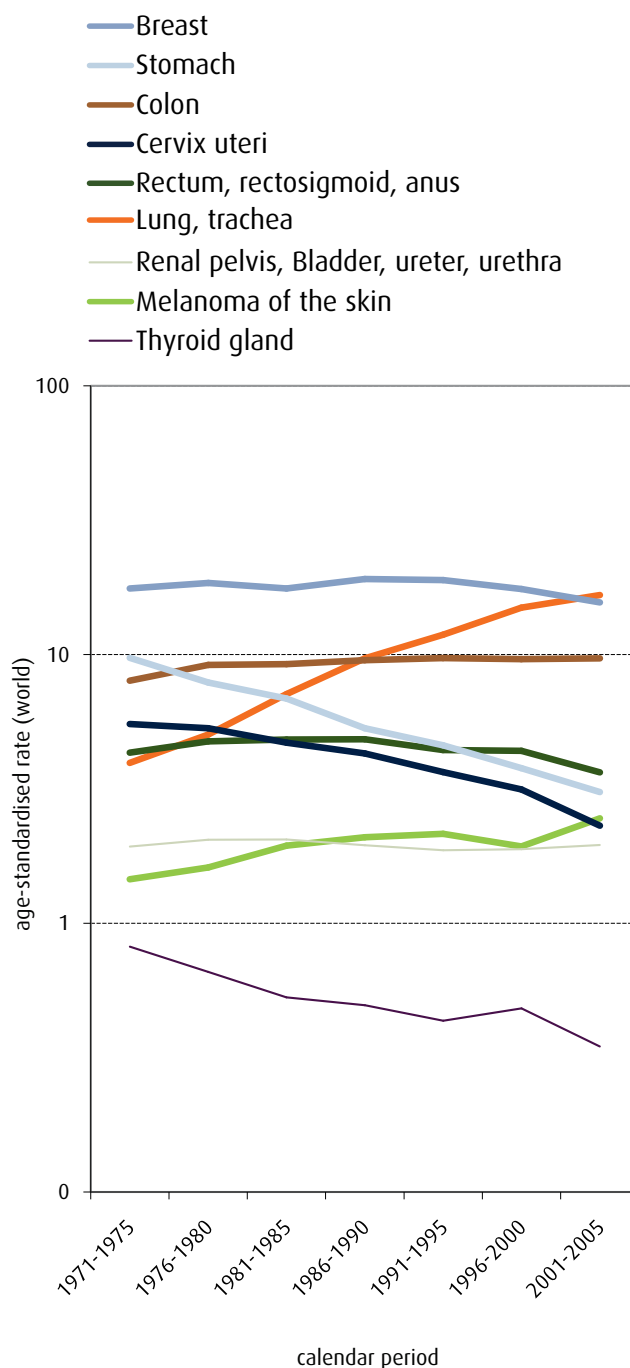
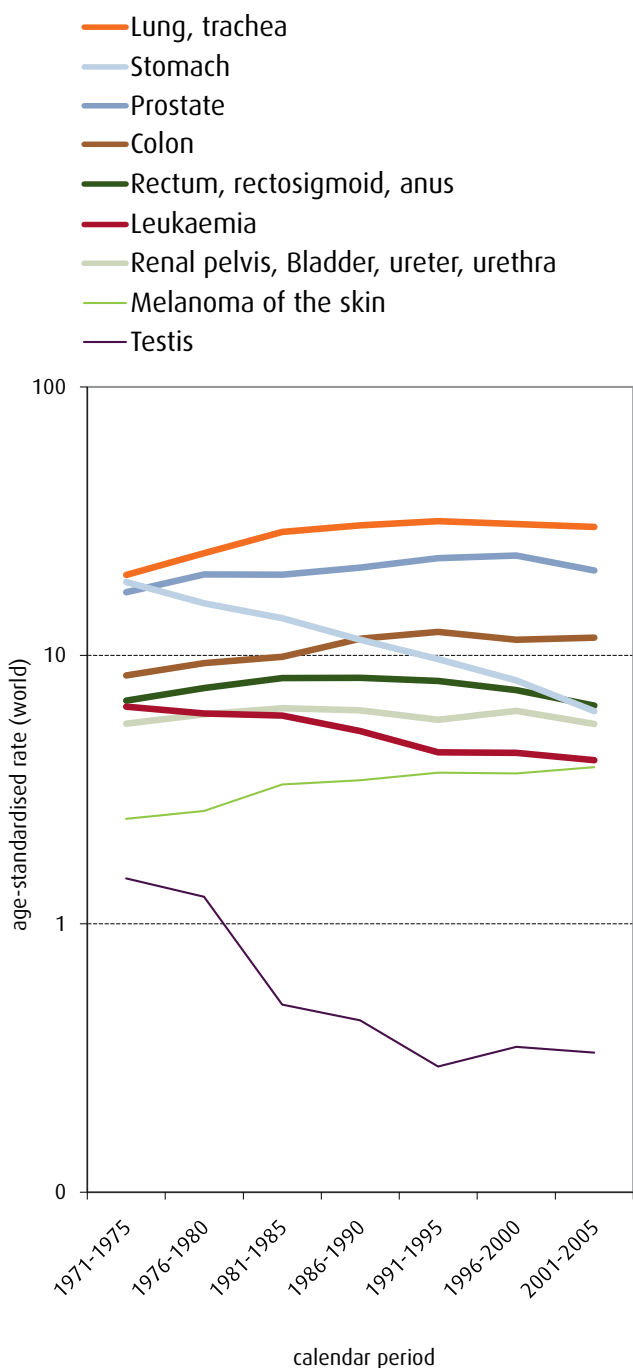


Figure 9: Time trends in age-standardised (world) mortality rates in Norway for selected cancers (semi-log scale)

MALES

FEMALES



Prevalence

As of 31 December 2007, over 183 252 persons were alive having been previously diagnosed with cancer in Norway. The cancer prevalence in Table 16 provides the numbers of persons alive and diagnosed with cancer a given number of years after diagnosis (<1, 4-9, 5-9 and ≥10 years), and approximates the number of patients in Norway (of both sexes) potentially requiring some form of cancer care. A comparison of prevalence with incidence is a good marker of the long-term prognosis of specific cancers or the “survivability” of different cancer forms, given the measure depends on the occurrence of cancer and the subsequent survival.

Breast, colorectal and prostate cancer, frequently-diagnosed cancers associated with reasonable prognosis, have the highest 10-year prevalence counts in Norway. The 8311 persons alive and diagnosed with melanoma of the skin 10 or more years after diagnosis ranks second only to breast cancer (13035 persons), while the prevalence of melanoma is seven times that of lung cancer (740 persons). Differences in prognosis - rather than incidence - may explain much of the site-specific variability in prevalence; while lung cancer incidence is double that of melanoma in Norway, survival following a lung cancer diagnosis is poor, both in absolute and relative terms.

Table 16 Prevalence of cancer 31.12.1997 and 31.12.2007, both sexes

ICD10	Site	Total no. of persons alive		Years after diagnosis			
		31.12.97	31.12.07	<1	1-4	5-9	10+
C00-96	All sites	121074	183252	19910	55973	42194	65175
C00-14	Mouth, pharynx	3008	3467	382	1018	762	1305
C00	Lip	1392	1231	115	270	224	622
C01-02	Tongue	382	574	72	189	152	161
C03-06	Mouth, other	540	605	63	216	121	205
C07-08	Salivary glands	367	452	39	105	111	197
C09-14	Pharynx	385	654	102	254	162	136
C15-26	Digestive organs	20986	28322	3690	9221	6548	8863
C15	Oesophagus	186	289	104	107	44	34
C16	Stomach	2315	1984	345	514	354	771
C17	Small intestine	327	624	89	228	162	145
C18	Colon	11333	15687	1833	5145	3737	4972
C19-21	Rectum, rectosigmoid, anus	6883	9250	965	3022	2258	3005
C22	Liver	109	202	60	58	27	57
C23-24	Gallbladder, bile ducts	201	299	83	91	54	71
C25	Pancreas	348	550	250	184	59	57
C26	Other digestive organs	81	137	26	69	14	28
C30-34, C38	Respiratory organs	4168	5900	1577	2028	1070	1225
C30-31	Nose, sinuses	225	299	55	91	68	85
C32	Larynx, epiglottis	994	1046	85	306	274	381
C33-34	Lung, trachea	2920	4536	1436	1631	729	740
C38	Mediastinum, pleura	57	48	10	10	5	23
C40-41	Bone	441	613	41	122	112	338
C43	Melanoma of the skin	11600	16311	1135	3604	3261	8311
C44	Skin, non-melanoma	7105	10972	1357	3992	2718	2905
C45	Mesothelioma	54	92	44	37	3	8
C46	Kaposi's sarcoma	107	83	5	23	14	41
C47	Autonomic nervous system	223	241	9	31	27	174
C48-49	Soft tissues	856	1166	136	281	213	536
C50	Breast	23435	33889	2684	9530	8640	13035
C51-58	Female genital organs	17129	19851	1253	4253	3775	10570
C53	Cervix uteri	6684	6753	243	948	1008	4554
C54	Corpus uteri	6189	8115	569	2084	1782	3680
C55	Uterus, other	42	53	8	13	13	19
C56	Ovary	3556	4039	343	928	776	1992
C51-52, C57	Other female genital	872	1071	101	333	242	395
C58	Placenta	119	141	1	14	15	111
C60-63	Male genital organs	16586	31419	4437	12498	8187	6297
C61	Prostate	12852	25611	4114	11379	6961	3157
C62	Testis	3566	5515	290	990	1156	3079
C60, C63	Other male genital	297	384	35	134	84	131
C64-68	Urinary organs	11216	14506	1662	4567	3389	4888
C64	Kidney excl. renal pelvis	2787	4011	497	1337	894	1283
C65	Renal pelvis	422	512	66	139	122	185
C66-68	Bladder, ureter, urethra	8238	10225	1125	3172	2429	3499
C69	Eye	718	883	57	204	163	459
C70-72, D42-43	Central nervous system	4615	8673	838	2584	2013	3238
C73	Thyroid gland	3175	4034	194	729	660	2451
C37, C74-75	Other endocrine glands	1220	1920	123	463	421	913
C39, C76, C80	Other or unspecified	456	550	130	187	91	142
C81-96	Lymphoid and haematopoietic tissue	8589	13121	1448	4267	2998	4408
C81	Hodgkin lymphoma	1378	1989	109	415	402	1063
C82-85, C96	Non-Hodgkin lymphoma	3784	5972	683	1990	1403	1896
C88	Malignant immunoproliferative diseases	203	295	34	125	76	60
C90	Multiple myeloma	1050	1336	253	628	281	174
C91-95	Leukaemia	2206	3576	377	1127	844	1228

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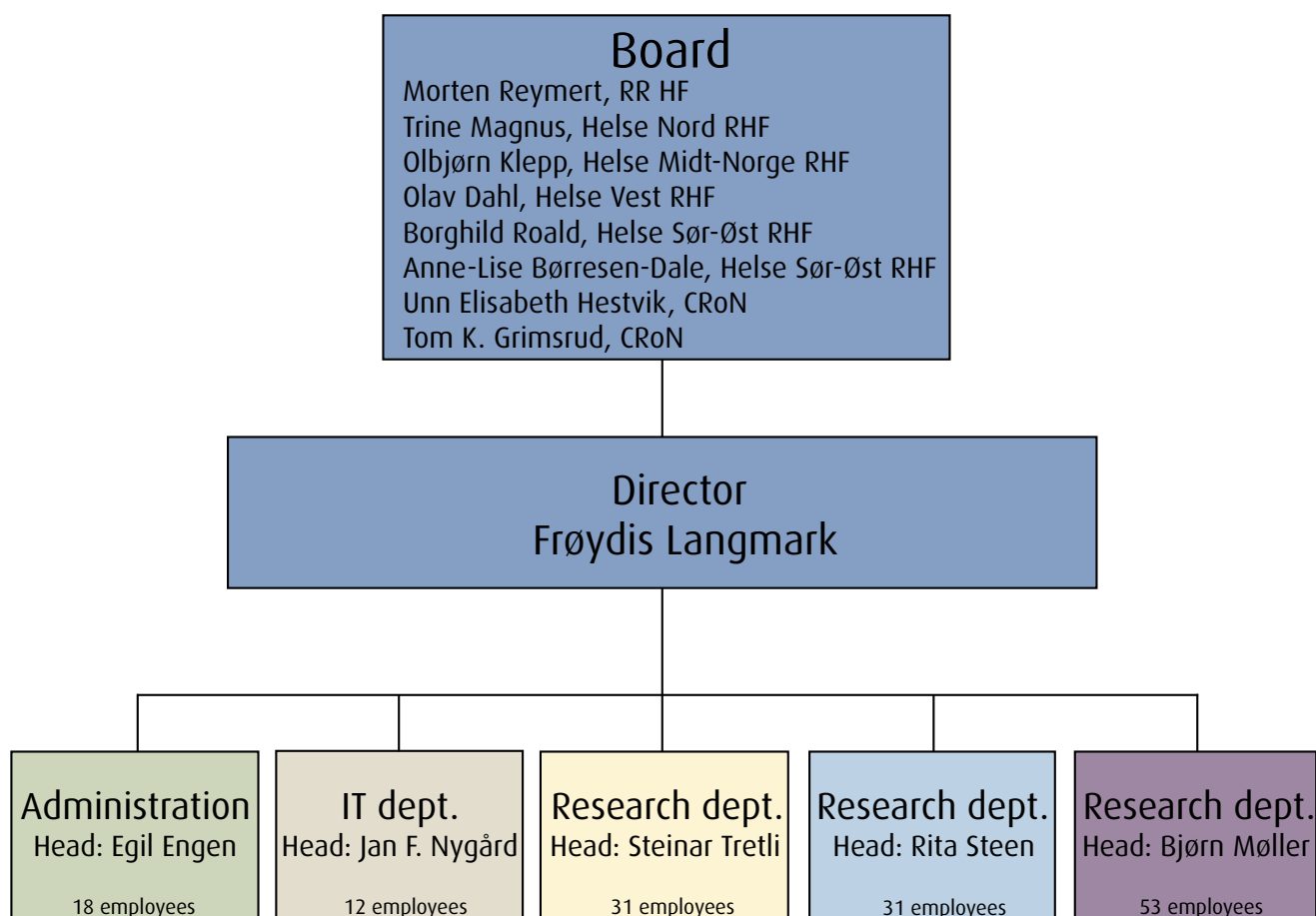
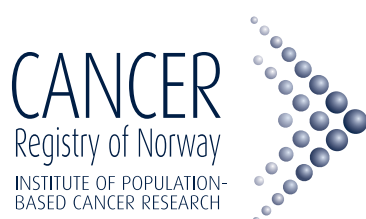
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Research activities at the Registry

Organisation and founding principles

The Cancer Registry of Norway is a national, population-based cancer research institute, which was founded and financed by the Cancer Society 1951-1979. Since then the institution has been governmental, with a board (except for the period 1994-2002) and a chapter in the National Budget plan. Since 2002 it has been allied to the Norwegian Radium Hospital and from 2005 to the merged Rikshospitalet-Radiumhospitalet Health Trust (RR HF). This organisational platform signals the importance attached to close links with cancer research milieus and cancer clinics. It also increases the possibilities for Norway as a nation to move towards the Comprehensive Cancer Centre organisational model. As early as 1951, reporting of cancer and some precancers has been mandatory from all milieus that diagnose and treat cancer. From 2002 however, new regulations have strongly enforced the legal premises, substantially improving the Registry's capacity to perform clinical population-based research and evaluate the quality control of health care. Comparative advantages are compulsory reporting without patients' consent and the uniquely identifying personal number. As a result of these advantages, organ-specific treatment quality registries are increasingly part of the Registry's duties, in close collaboration with the clinical milieus.

Structure of the Cancer Registry of Norway 2008



Department of Etiological Research

Head: Prof Steinar Tretli PhD

Department objectives

The principal goal of the Department of Etiological Research is to bring forth new knowledge on carcinogenesis and the causes of cancer. The focal points for research in recent years have been cancer risk and its relation to occupational and environmental factors, and to hormonal status and diet. In future studies, an increased emphasis will be put on testable biologically-founded hypotheses, using biological markers of exposures, and collaboration with researchers in the relevant fields. Specifically this will include utilisation of the JANUS serum bank. In addition, a focus on the development of bio-statistical methods in cancer epidemiology will be important. The tradition of collaboration with the different research milieus in the other Nordic countries, as well as international collaboration will be continued and expanded. The high quality population-based registries in the Nordic countries make such partnerships especially valuable.

Current research priorities

Research on long-term effects of exposures during fetal life, childhood, youth and adult life ("life course epidemiology") will have high priority in the department. Several of our studies have already investigated the impact of early life on adult cancer risk, specifically for hormone-related cancers such as breast, prostate, and testicular cancer. Studies on cancer development related to life style and environmental and societal factors will also be emphasized. This life course epidemiology will often include the study of molecular, genetic, and hereditary aspects of cancer development, in for instance the study of gene-environment interactions.

Research on cancers associated with occupational and environmental exposures has a long tradition in the Department, and the identification and quantification of such risks will still be important. Studies on working populations may often be the only method to obtain knowledge of possible population effects of low-dose exposures. Occupation is also an important classification variable concerning the knowledge on differences in cancer risk by social class.

The understanding of the carcinogenic process has traditionally been based on three sources of information: experimental, clinical, and epidemiological research. Through modelling and simulation we will assess the importance of different mechanisms in the disease process.

Long time follow-up of cancer patients is an important research field. This will include the study of medical, social and economic consequences of a cancer diagnosis.

Recent important results

In 2007, the research activity at the department led to 57 scientific publications in national and international journals. The publications focused on gene-environment interactions, on risk factors such as occupational exposures, diet/body mass index, viral and bacterial infections, in addition to publications on epidemiological methods and life conditions after cancer. Some of the results are from international collaboration studies. In addition, three doctoral dissertations were defended in 2007.

Theses published in 2007

Langseth H. Risk of cancer and non-malignant mortality among women in the Norwegian pulp and paper industry: a focus on ovarian cancer and exposure to asbestos and other dust. Faculty of Medicine, University of Oslo, 2007.

Lie JAS. Cancer risk among Norwegian nurses. Faculty of Medicine, University of Oslo, 2007.

Paulsen T. Epithelial ovarian cancer: clinical epidemiological approach on diagnosis and treatment. Oslo: The Cancer Registry of Norway, Radiumhospitalet. Faculty of Medicine, University of Oslo, 2007.

Department of Screening-based Research

Head: Rita Steen MD PhD

Department objectives

The Screening Department administers two programmes for early detection of cancer and premalignant disease, the Breast Cancer Screening Programme and the Cervical Cancer Screening Programme. Since 1995, the Cervical Cancer Screening Programme has recommended women aged 25-69 years to undergo a PAP smear every third year, whereas all women aged 50-69 years are offered mammography screening every two years. The Cervical Cancer Screening Programme mails a personal letter to women whom have not had a PAP test in the last three years, with a recommendation to take a test. Invitation to mammography screening is mailed to eligible women, together with a pre-specified date of examination.

The Screening Department monitors the programmes' effectiveness and efficacy by examining early quality indicators (e.g. coverage/attendance, detection rate, tumour stage for breast cancer, and stage of premalignant lesions of the cervix), as well as changes in rates of incidence and mortality of the cancers. The main objective of the Norwegian Breast Cancer Screening Programme is to reduce mortality by 30% among women invited to mammography screening. For the Cervical Cancer Screening Programme, the main objective is to achieve a reduction of 50% in the incidence and mortality rates of cervical cancer compared to the rates prior to the programme launch. The most important factor determining the success of these screening programmes is high coverage. In 2007, coverage was 76% in the Cervical Cancer Screening Programme, and the attendance rate was also 76% in the Breast Cancer Screening Programme, raising expectations that the programmes will accomplish these objectives.

Current Research Priorities

The current research priorities of the Cervical Cancer Screening Programme are:

- 1) Evaluation of the CIN (cervical intraepithelial neoplasia) register, a follow-up register with data on treatment, established in 1997.
- 2) Study of the impact of HPV-testing in triage after PAP smear screening on CIN 2+.
- 3) Studies of the efficacy and effectiveness of screening in women aged 25-69 years.
- 4) Study of the screening history of women diagnosed with cervical cancer before reaching the age of 25, including a re-examination of their PAP tests, pathological tissue and samples.
- 5) Study of the screening history of women aged over 70 years diagnosed with cervical cancer.
- 6) Investigate the need for a more individual-orientated approach to Cervical Cancer Screening Programme, dependent on vaccination status.
- 7) Investigate non-attendance in the cervical cancer screening program
- 8) Long-term follow-up after HPV vaccination of women participating in the vaccine trials. Study of HPV prevalence among women 18-45 years, both in the general population and in those with premalignant disease and cervical cancer.

The current research priorities of the Breast Cancer Screening Programme are:

- 1) Further investigations of early (process) indicators and tumor characteristics in screening.
- 2) Study of the effectiveness of the programme in relation to breast cancer survival and mortality.

3) Study of overdiagnosis associated with the Breast Cancer Screening Programme.

4) Study of attendance by socio-economic factors and of attendance pattern.

5) Study of breast cancer screening in Norway and the U.S. (Vermont).

6) Study of hormone therapy and risk of breast cancer

For the Breast Cancer Screening Programme, one PhD student is currently studying socio-demographic differences in attendance and mortality between attendees and non-attendees in the programme and investigating effects of mammography screening on breast cancer survival. Another PhD student is evaluating the Norwegian Breast Cancer Screening Program with regards to DCIS, overdiagnosis and implementation of new technology. Within the Cervical Cancer Screening Programme, one PhD student is undertaking a population-based follow-up study on women diagnosed with severe cervical dysplasia in Norway.

Registries at the Department of Screening-based Research

For administration of the screening programs several registries have been established. These registries are presented in the table below.

Name	Date of launch
Mammography Screening Registry	20.11.1995
Cervical Cytology Registry	01.11.1991
Cervical Intraepithelial Lesion Follow-up and Treatment Registry (CIN Registry)	01.01.1997
Cervical Histology Registry	01.01.2002
Human Papilloma Virus (HPV) Registry	01.07.2005

Department of Clinical- and Registry-based Research

Head: Dr Bjørn Møller PhD

Department objectives

The Clinical Research department has a broad remit. One of its fundamental responsibilities is the continued collection, storage and quality control of data on all cases of cancer in Norway, as defined by the Statutory Regulations. This information is collected from clinicians, pathologists, administrative patient discharge files, and the Cause of Death Registry.

The Department provides relevant information on cancer patterns and changes in cancer over time in Norway, via various dissemination routes including scientific publications and reports such as the Cancer in Norway series. The Department has put an emphasis

sis on activating and collaborating in good research projects at the national and international level, initiated in-house, or via external requests or invitations, and focusing on building strong ties with the clinical community in Norway.

The Department is organised into two sections, according to the key areas of ongoing activity:

1) Section for Registration. Management of the incidence register and development of the clinical registries. The section is divided into five broader organ groups, which manages all the cancer types within the group. The clinical registries offer novel opportunities for population-based research into cancer care (see below).

2) Section for Research. Research using the incidence register, focusing on areas of particular public health importance alongside the application of appropriate methodologies

In addition, the department has a medical advisory group, with the responsibility for documentation of quality control, the revision of in-house coding procedures and guidance in medical coding.

Clinical registries

The Statutory Regulations for the Cancer Registry of Norway include the registration of treatment and follow-up of Norwegian cancer patients. Clinical registries – comprehensive registration schemes dedicated to specific cancers – have been established to include

detailed information on diagnostic measures, therapy, and follow-up. By fostering strong collaborative links with the clinical community, the aims are to provide an empirical base for scientific studies concerning prognostic factors and treatment outcomes as well as evaluation of quality of cancer care.

The ongoing and expanding activities of these clinical registries is a major focus for the Registry, and several clinical registries are now established. Each clinical register is underpinned by a Reference Group, a panel of multi-disciplinary experts drawn from the clinical and research milieu in Norway, whose remit is to advise on the operations of the registry, and its strategic direction. These newly-established clinical registries will be integrated into the Registry's coding and registration activities. The table below indicates the status of these subregistries as of December 2008.

Theses published in 2007

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Larsen IK. Colorectal cancer screening by flexible sigmoidoscopy: acceptance of screening, risk factors for neoplasia, and impact of screening on future health behaviour. Faculty of Medicine, University of Oslo, 2007.

Status of the clinical registries, December 2008

National clinical registry for	Clinical reference group established	Established with extended data*	Electronical report form developed
Colorectal cancer	Yes	Yes	Yes
Breast cancer	Yes	2009	2009
Malignant melanoma	Yes	Yes	2009
Prostate cancer	Yes	Yes	2009/2010
Ovarian cancer	Yes	Yes**	2009/2010
Childhood cancer	Yes	Yes***	2009/2010
Lung cancer	Yes	Yes****	2009/2010
Polyposis family	Yes	Yes	2009/2010
Lymphoma	Yes	Yes	2009/2010
Leukaemia	Yes	2009/2010	2009/2010
Central nervous system	Yes	2009/2010	2009/2010
Gallbladder, pancreas and liver cancer	Yes	2009/2010	2009/2010
Oesophagus and stomach cancer	Yes	2009/2010	2009/2010

* Either by having a separate clinical report form and/or by having a database with extended information beyond the incidence registry. The timeline of the registries not yet established will depend on funding.

** Planned to be extended to all gynecological cancer patients.

*** Will be extended with treatment data when integrated with the incidence registry.

**** Established for surgically treated patients, planned to be extended to all lung cancer patients.

List of publications 2007

Registry staff and affiliated researchers collaborated on 103 research papers in 2007.

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Special Issue

Long-term cancer survival: patterns and trends in Norway 1965-2007

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Long-term cancer survival: patterns and trends in Norway 1965–2007

Introduction

Alongside statistics on cancer incidence and mortality, cancer survival provides a means to assess the effectiveness of early detection strategies and the quality of clinical care and management. The objective of this Special Issue is to provide descriptions of patterns of long-term cancer survival in Norway today, and illustrate the major trends in cancer survival over the last 40 years. The Cancer Registry of Norway is national and population-based, and therefore this report summarises the overall survival experience of cancer patients nationally, permitting valid comparisons of cancer survival in successive calendar periods.

The report includes detailed site-specific survival analyses of patients diagnosed with 23 common forms of cancer in Norway today. The combined incidence of these cancers represents over 85% of the approximately 26 000 new cancers diagnosed in 2007. The statistics used in this report were selected to reflect a number of diverse methodological developments during the last decade that either improve the validity of the survival estimates, or provide insight into aspects of clinical care and future prospects for cancer patients. For example, the data are analysed using the so-called *period approach*, a method that enables the most recently-diagnosed patients (including those diagnosed in 2007) to be included in the survival calculations. Further, we include methods that attempt to better quantify the lives of cancer patients beyond their initial diagnosis: *conditional survival* is used to estimate the prognosis of patients already surviving a given number of years after diagnosis. Analysis of the *proportion cured* and the *median survival time* of those *uncured* for each cancer is also undertaken, and should aid understanding of the reasons for increasing survival for certain cancers (better therapy, improving palliative care, or possibly, specific biases or artifacts in the data). A description of each method follows in the Data sources and methods section.

While the report is quite comprehensive in terms of methods and analysis, it is appropriately cautious with regards interpretation, and refrains from giving possible explanations for the site-specific survival analyses, pointing only to selected interesting (and possibly key) observations. The rationale is that many of the results are not self-explanatory and require multidisciplinary expertise to be deciphered adequately. This requirement and the inclusion of more sophisticated and informative model-based approaches provides an excellent

opportunity to bring together clinical and other specialists in mutual collaboration, with a view to providing informed conclusions instructive to public health policy and future planning. From 2009, the Registry will make a concerted effort to foster such collaborations among the health research community in Norway, with a view to generating peer-reviewed collaborative research articles focusing on the explanations and implications of these survival results for each of these 23 cancer sites.

This report does not attempt to assess the efficacy of specific therapeutic regimes against other prognostic factors, although many collaborative research studies have been conducted based on clinical registries for cancers of the rectum, ovary, prostate and CNS, and progress is being made towards establishing clinical registries for all common forms of cancer. The ongoing collection of detailed data on diagnostics, therapy, and follow-up of cancer patients in Norway will enable population-based survival research to go beyond its traditional limitations, towards an evaluation of the importance of specific diagnostic, treatment and management-related factors on cancer survival, both regionally and nationally.

We believe the statistics generated in this Special Issue provides key baseline cancer survival statistics in Norway, as well as important specific observations on the survival experience of Norwegian cancer patients that, in collaboration with the health and research community, will yield vital research and further our joint efforts towards the amelioration of cancer control in Norway.

Orientation in reading this report

Long-term cancer survival: patterns and trends in Norway 1965–2007 aims to provide a description of cancer survival in Norway for patients with one of 23 frequently diagnosed cancers today, as well as document the observed trends in the last four decades. The emphasis is on visual descriptions which provide both contemporary and historical perspectives of the survival of cancer patients in Norway. In the first section, Data sources and methods, the sources and quality control checks are documented, each survival method is explained, and an orientation to the layout of the main set of figures is given. The Results section provides a general description of survival variations by cancer site, sex and stage, and a site-by-site commentary of the patterns and trends that accompany the main body of this report, the Figures. A table of 1-, 5-, 10 and 15-year survival by site and sex, with 95% confidence intervals is also provided.

Data sources and methods

Data sources

The survival of cancer patients in clinical trials provides an indicator of the highest survival that may be achieved on the basis of the gold standard intervention. In contrast, population-based studies aim to examine cancer survival with a view to summarising the average survival and the collective impact of a wide range of cancer control activities. Geographical and temporal comparisons of population-based survival from cancer registries will then provide an indication of the average survival attainable in the population under study, as well as the relative success of diagnostic- and clinically-orientated aspects of cancer control over time.

Quality issues

Interpreting such survival estimates in unselected populations requires careful thought, given the variety of putative explanatory factors potentially involved^[1;2]. Black and colleagues^[1] have noted that survival is influenced by factors: 1) related to the health care system (including screening, diagnostic and treatment facilities, follow-up); 2) operating in relation to the host (e.g. age, sex, comorbidity, behaviour); 3) operating in relation to the tumour (e.g. topographic site, morphology, extent of disease), or 4) linked to the registry and its data quality (e.g. completeness of ascertainment and follow-up, accuracy of recorded data, extent of DCO proportion - death certificate only registrations).

Complete ascertainment of cancer cases, ensuring validity of items pertaining to diagnosis, and minimizing the DCO proportion are among the key aspects in ensuring that survival estimation is relatively free of bias and fit for comparisons^[2;3]. Artificial increases in survival can occur if, for example, there is incomplete registration, or if there is an over-reliance on the allocation of non-specific diagnostic categories. The reporting of neoplasms (and certain precancerous lesions) to the Cancer Registry of Norway has been compulsory following a directive from the Ministry of Health and Social Affairs in 1951, further strengthened by the Health Registry Act in 2002 that included statutory regulations and the requirement of appropriate institutions to report new cases to the Registry. This together with multiple source reporting and trace-back has long implied a high overall completeness at the Cancer Registry. This is now supported by the recent comprehensive review of data quality; completeness was estimated at almost 99% for the registration period 2001–5, although under-reporting was higher for haematological malignancies and cancers of the central nervous system^[4].

In terms of validity, the Registry's effective use of reports from pathology laboratories, clinical records and death certificates has been shown to provide reasonable and comparable accuracy, with only a small fraction of cancer registrations obtained solely from death certificate sources^[4]. A review of registrations 2001–5 showed that three-quarters of the main cancer sites had a DCO proportion of less than 1%, although for certain sites, including pancreatic and liver cancer, the percentages were higher, in the 3–4% range. For this report, the data were screened for certain anomalies including instances of negative survival duration, out-of-range dates of diagnosis and/or dates of death, and invalid vital status codes.

Survival data

Incidence data on all cancers recorded at the Registry for diagnoses 1965–2007 were obtained, together with follow-up on matching vital status with the Deaths Registry at Statistics Norway. The last follow-up date was set to 31 December 2007. A total of 23 common cancers were selected for analysis, and grouped according to their respective ICD-10 categories.

Figure S1: Inclusion and exclusion criteria

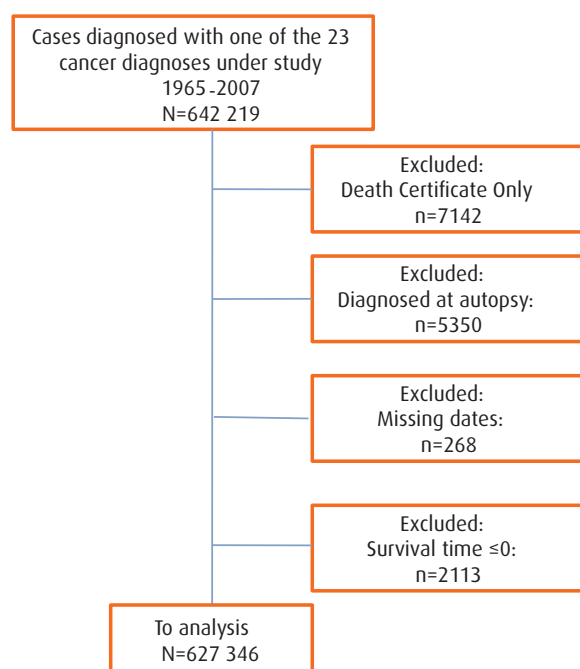


Figure S1 shows the inclusion and exclusion criteria applied for diagnosed cases over the whole study period 1965–2007. Beginning with a total of 642 219 registered diagnoses of the 23 cancers under investigation, we first excluded 7142 DCO cases (1.1%) and 5350 cases diagnosed at autopsy (0.8%). We then removed 268 cases for which a survival time could not be estimated as event dates were missing, and a further 2113 cases (0.3%) with either an erroneous

event date (survival time < 0) and or zero survival time (survival time = 0). Following these eliminations, 627 346 cases were included in the site-specific analyses described below, 97.7% of the number extracted prior to exclusions.

It has been shown that exclusion of patients with a prior cancer diagnosis (usually associated with inferior prognosis) may give higher estimates of survival^[5]. Patients with previous cancer diagnoses were therefore eligible for inclusion in site-specific analyses, thereby avoiding the potential reduction in precision on excluding such cases. Survival times were calculated from the recorded day of diagnosis and the recorded day of death, although it has been shown that less precise units of time (e.g. months) tend to only materially affect very short-term survival for certain sites e.g. within the first few months^[6], which is not a focus of this report.

Statistical methods

Relative survival

The survival time of a cancer patient may be defined as the time that elapsed between a cancer diagnosis and subsequent death. The most basic measure of survival is observed survival, with the 5-year observed survival representing the percentage of patients still alive 5 years after the date of diagnosis. Not all deaths among cancer patients will be due to the primary cancer under study, and deaths from other causes will lower the survival and invalidate comparisons between populations, where the probabilities of death in the general population vary. Relative survival is calculated to circumvent this problem by providing an estimate of *net survival*, and is defined as the observed survival proportion in a patient group divided by the expected survival of a comparable group in the general population with respect to age, sex and calendar period of investigation. At each time t since diagnosis, the relative survival from the cancer, $R(t)$, is defined as follows:

$$R(t) = So(t)/Se(t)$$

where $So(t)$ is the observed survival of cancer patients while the calculation of expected survival $Se(t)$ is based on matching the major demographic characteristics of the patients to the general population. This was achieved using the Norwegian population life tables, available from Statistics Norway by 1-year age group, sex, and 1-year calendar period. While these tables do not exclude patients diagnosed with the specific cancers under investigation in this report, it has been shown that the impact on the estimated survival proportions is, for practical purposes, negligible^[7].

The methods for estimating expected survival depend on the length at which an individual is considered at risk^[8]. The method of Hakulinen^[9] was used

whereby the survival time of the matched individual is censored at the same survival time that the cancer patient is censored. In instances where the cancer patient dies, the matched individual is assumed to be at risk until the closing date of the study. Expected survival proportions are therefore adjusted for potentially heterogeneous follow-up times among patients, are independent of their observed mortality, and are considered more appropriate for estimating longer-term (10 years or more) expected survival than the Ederer I and Ederer II methods^[8;10].

In summary, the major advantages of relative survival is that information on cause of death is not required and it provides a measure of the excess mortality experienced by patients diagnosed with cancer, irrespective of whether the excess mortality is directly or indirectly attributable to the cancer. This estimate of net survival is therefore used throughout this report.

Period analysis

The period approach to survival analysis is now well-established in its application to relative survival, in which it projects the survival obtained from cohorts of cancer patients diagnosed in different years. With traditional cohort-based analyses, the most up-to-date estimates of longer-term survival would have pertained to patients diagnosed in the distant past, with corresponding levels of prognosis. In contrast, period-based analyses consider the survival experience in recent years.

More technically, only person-time at risk and events (death or censoring) occurring during a specified calendar period are considered in the period approach. The estimates of survival proportions are obtained on left truncation of all observations at the beginning of the period and right censoring at the end of the period^[5;11;12].

Cohort estimates represent the survival experience of a defined and followed-up cohort of patients diagnosed during a specified calendar period, whereas period estimates do not represent the survival of a real cohort of patients. Rather, they represent the survival that would have been observed for a hypothetical cohort of patients who experienced the same interval-specific survival as the patients who were actually at risk during a specific calendar period. On the basis of empirical studies comparing the two methods using historical data, Brenner and Hakulinen have concluded that period analysis should be used for routine purposes so as to advance the detection of progress in long-term cancer patient survival^[12]. Both clinicians and patients are primarily interested in up-to-date estimates of survival, and the period method reflects the most recent developments in cancer care.

To allow for sufficient follow-up, traditional estimates of n -year survival have been calculated from patients diagnosed at least n years back in time (the *cohort* approach). For long-term (10- or 15-year) survival estimates, this approach results in outdated cumulative survival estimates where survival in recent intervals has been improving^[12]. Using data from a recent time period (the *period* approach), the cumulative survival can be estimated based on the most recently available data. Thus, for a one-year period window, information from the latest 0, 1, 2, . . . , n years are used in its estimation, as interval-specific survival probabilities are based on contributions from patients diagnosed 0, 1, 2, . . . , n years back in time.

If survival is constant over time, the period and cohort estimates will be equal, while if survival is increasing with time, the period estimates will be more up-to-date and higher than the cohort estimates achievable at the time of analysis. However, period estimates of 15-year survival will, for example, be lower than the equivalent cohort estimates were we to wait and observe the true survival.

In this report, we have used a three-year period window (2005–2007) for the 15-year relative survival analyses, thus accruing sufficient case numbers to ensure the estimates are reasonably up-to-date while retaining an acceptable degree of precision. For the trend analyses, a three-year moving window was used from 1965 to 2007.

Long-term survival

Long-term survival estimates and long-term trends are included in this report, achievable given the lengthy time span of the cancer series at the Registry. Brenner and Hakulinen have provided a convincing rationale for the inclusion of long-term estimates as part of routine cancer survival analyses^[12]. Firstly, 15-year survival will reflect the positive advances seen in cancer care including earlier diagnosis and more effective therapy. Secondly, as rates of other major causes of death have been on the decline, remaining life expectancy at the average age of cancer onset has risen, making long-term survival estimates more meaningful than previously. Finally, the introduction of the period approach to survival analysis, as described above, has opened new perspectives on deriving up-to-date, long-term survival estimates.

Estimating the cure fraction

The point of *statistical cure* is reached when the group of patients have the same mortality as the group of individuals without cancer (for a given age and sex), and the cured proportion is approximated where the cumulative relative survival curve reaches a plateau. In

contrast, *clinical cure* is determined on basis of lack of specific symptoms of the individual, for example, an individual patient may be considered medically cured if all cancerous cells are considered to be eradicated. Specialised survival analysis models have been developed, known as cure models, to predict this cure fraction^[13;14]. In this report the commonly-applied *mixture* model was fitted under the assumption that there exists a cured and an uncured group defined at the time of diagnosis. Estimates of the *proportion cured* and the *median survival time for those uncured*, adjusted for the background (population) mortality were obtained. These mixture cure fraction models are of the form:

$$S(t) = S^*(t)(\pi + (1 - \pi)Su(t))$$

where $S^*(t)$ is the expected survival, π is the proportion cured (*the cure fraction*), $(1 - \pi)$ is the proportion 'uncured' (or those 'bound to die' fatal cases) and $Su(t)$ is the survival function for the uncured individuals. $Su(t)$ is usually the Weibull parametric survival curve function that may vary by age group and period of diagnosis.

The cure model was fitted in this report by applying two different approaches. To estimate trends 1965–2007 in the proportion of cured patients, and the median survival of fatal cases, the *complete* approach was used, whereby all diagnosed cases over the period irrespective of the length of their follow-up were used in the estimations. The main focus here was on estimating changes in trends for patients diagnosed at different five-year time periods, hence period of diagnosis was modeled as a covariate. To provide an up-to-date estimate of the proportion of cured patients and the median survival of uncured cases, the model was fitted using the period method for the window 2005–7.

It was not possible to fit the cure fraction for eight of the 23 cancer sites. For a number of cancer forms, it was reasonable to assume that *statistical cure* could not be estimated as *medical cure* is not established in patients even several decades after diagnosis (melanoma of the skin, female breast cancer, prostate cancer). For the remaining five sites (cervical, endometrial, testicular and thyroid cancer, as well as Hodgkin lymphoma), it is possible that the underlying Weibull distribution may not be sufficiently flexible to capture the shape of the long-term survival curves. Another explanation could relate to the use of general lifetables that insufficiently represent the demographics of the patient groups.

Where estimates could be derived, particular caution must be applied in their interpretation. The existence of a cured and an uncured group of patients is a necessary but strong assumption underlying the mixture model. The absolute estimates of the cured frac-

tions are speculative, particularly for those sites where statistical cure is not clearly indicated e.g. where long-term relative survival fails to reach a plateau.

Conditional survival

The majority of cancer survivors wish to obtain information on their current prognosis, once they have survived a certain period of time after diagnosis. Conditional survival analysis is a key indicator in this respect, estimating survival proportions on the pre-condition that patients have already survived a certain duration of time^[15;16]. Prerequisites for its estimation are long-term and complete follow-up. Analogous to statistical cure, the point at which conditional 5-year relative survival reaches 100% is the point where there is no excess mortality among the cancer patients, and prognosis is equivalent to that experienced in the general population. As with the 15-year relative survival analyses, we have used a three-year period window (2005–2007) for the 10-year conditional survival analyses.

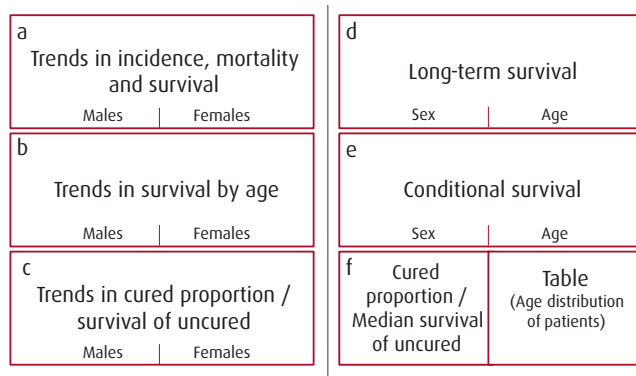
Statistical software

All computations were conducted using the statistical software Stata^[17]. The *strs* (version 1.2.8) command was used for life table estimation of relative survival^[18]. The *strsmix* command (version 1.0.2) was used to fit the mixture cure fraction models^[14].

Survival of cancer patients: a visual description

One of the aims of this report is to provide a comprehensive visual description of contemporary survival and trends for each of 23 frequent cancers in Norway today. Long-term survival and survival trends are conveyed as a series of figures according to the double-page layout in Figure S2 below. Further details of each plot are also provided.

Figure S2: Layout of figures



a Trends in incidence, mortality and survival

Ideally, the evaluation of the complex processes underlying progress in cancer control, trends in incidence, mortality and survival should be examined simultaneously, and we have plotted these in the *top left panel*. All estimates were age-adjusted; incidence and mortality rates were standardised according to the World standard population, while the relative survival probabilities are age-adjusted according to the proposed standard populations of Corazziari *et al*^[19]. The latter consists of three sets of weights that capture the age-incidence patterns for different cancers: (1) those increasing with age (the vast majority of cancers); (2) those broadly constant with age and (3) those mainly affecting young adults. The weights for the age 15–44 were extended in this analysis to include the age group 0–44. Trends were plotted unadjusted for five neoplasms (cancers of the pancreas, lung, testis, central nervous system and Hodgkin lymphoma) as age-specific numbers were sparse in certain years and the standardised estimates could not be calculated. All plotted curves were smoothed using five-year moving averages in an attempt to remove some of the inherent random variation in the estimates.

b Trends in survival by age

The *middle left panel* plots the sex-specific trends in relative survival (three-year period window) 1965–2007 according to five age groups, defined *a priori*, on the basis of clinically relevant groupings. In an attempt to partially account for some of the inherent random variation, the plotted curves were smoothed by applying the *lowess method* (with a bandwidth of 0.8), a locally-weighted regression smoother with useful locality properties and a (desirable) tendency to follow the data, as described in Cleveland^[20].

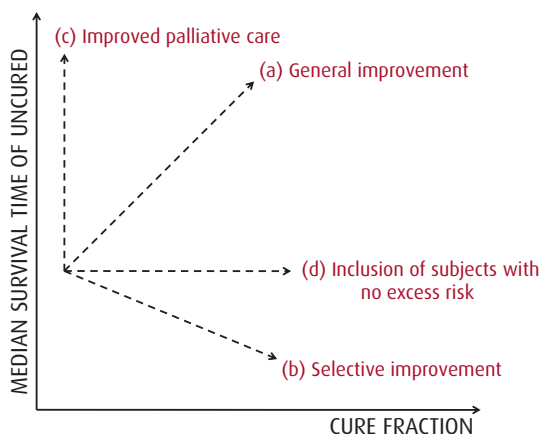
c Trends in the cured proportion and survival of uncured

The *bottom left panel* shows trends in the estimates of proportion of cured patients, as well as the estimated median survival of those who remained uncured (and eventually die of their cancer). The plotted estimates were calculated from successive five-year periods 1965–2007.

The reasons for changes over time in the proportion of cured patients and median time of fatal cases are complex^[13;21;22]. Possible scenarios in terms of trends in the two model-based quantities are depicted in Figure S3, after Verdecchia *et al*^[13]. According to Lambert *et al*^[21], Scenario (a) represents a general improvement, whereby an increasing proportion of patients are cured and those patients we are unable to cure have a longer median survival time. Scenario (b)

suggests selective improvement in that treatment effectiveness is selective, enabling cure of those patients who previously would have had a longer survival time (among the uncured). Scenario (c) might occur following improved palliative care but, alternatively, could arise if new diagnostic techniques were brought into the health care system, advancing the time of diagnosis without affecting the time of death (lead time bias). Lambert *et al*^[21] have noted an appealing property of cure models; the cured fraction cannot be affected by this bias, so other factors must account for observed increases in the proportion cured. Finally, scenario (d) might occur where the introduction of a specific diagnostic procedure resulted in the inclusion of a subset of patients at no excess risk relative to the general population.

Figure S3: Scenarios for trends in proportion cured and median survival of the uncured



d Long-term survival

The *top right panel* plots long-term relative survival for males and females up to 15 years after diagnosis, using the period approach described above. Relative survival curves were not plotted for the oldest age group beyond five years.

e Conditional survival

The *middle right panel* shows survival curves conditional on being alive up to 10 years after diagnosis by sex (left) and age (right). Conditional survival was not plotted where it was considered there were too few cancer survivors. In addition, the estimates were not plotted for the oldest age group, although the 5-year relative survival was denoted by a closed circle. Conditional survival estimates above 100% were not plotted.

f Cured proportion and median survival of uncured

For the majority of cancers, one assumes that a certain fraction of the patients will be cured (in the sense that their mortality will be the same as observed in the general population), while a certain proportion will not

be cured and eventually die of their cancer. In the *bottom right panel* we illustrate this situation for both sexes combined, given a follow-up of fifteen years. The survival of the cured group reaches a plateau (the curve is almost touching a line representing the proportion cured) while the curve for the uncured patients continues its decline to zero indicating, that all these uncured patients died. The oldest age group was excluded from these analyses. For some cancer sites, a clear plateau in the long-term survival estimates is never reached so the proportion cured could not be estimated.

Table (orientation)

A table provides the age and sex distribution of patients diagnosed 2003–7.

Results

We begin with a brief description of certain variations in recent survival by cancer site, sex and stage, followed by a site-by-site commentary outlining the observed patterns and trends in the corresponding figures for each of the 23 sites.

Cancer-specific variations in relative survival

There is substantial variability in short- and long-term patient survival dependant on the form of cancer diagnosed. Figure S4a–c shows the respective distribution of sex-specific survival estimates 1, 5 and 15 year(s) after diagnosis of each of the 23 cancers examined. There is an 80 percentage point survival difference between cancers associated with very poor and very good prognosis (e.g. pancreatic cancer and thyroid cancer, respectively). The survival proportion associated with the latter neoplasm — as well as Hodgkin lymphoma and melanoma of the skin — exceeds 70% both in the short term (one year after diagnosis) and in the long term (15 years after diagnosis). Indeed, one-year survival is above 70%, and five-year survival above 50% for 16 of the 23 cancer types among recently-diagnosed male and female patients in Norway, with five-year survival decreasing to below 50% for cancers of the oral cavity, kidney (in men) and leukemia 15 years after diagnosis.

There is evidently a group of cancers for which survival is comparatively poor, namely cancers of the stomach, gallbladder, lung, liver, oesophagus and pancreas. For cancers affecting either males or females, on the other hand, there is good short- and long-term prognosis, although the high survival one year after a diagnosis of ovarian cancer (about 75%) decreases quite markedly after five years to around 45%.

Cancer-specific variations in conditional survival

A more positive profile with respect to cancer survival in Norway is captured on examining the conditional survival. Figure S5a–c shows the respective distribution of sex-specific five-year relative survival proportions on the pre-condition that patients have already survived one, five and 10 years. The probability of surviving five years for patients alive one year after diagnosis is over 60% for 16 of the 23 sites, and for the remaining sites, with the exception of pancreatic and oesophageal cancer, is around 30% or over. For those surviving five years after diagnosis, 5-year relative survival is almost uniformly above 75% irrespective of cancer site, although caution must be applied in interpreting longer-term conditional survival figures for cancers where few survive five years after diagnosis — those associated with poor prognosis — due to the potential loss of precision in the estimates.

There tends to be little or no excess mortality for cancer patients (compared to the general population) when the conditional 5-year relative survival reaches 90–100%. This phenomenon is already observed after one year for patients diagnosed with thyroid cancer (both sexes), Hodgkin lymphoma (in men), testicular or endometrial cancer. For five-year survivors, there is little excess mortality among female breast and cervix cancer patients. Patients surviving 10 years after diagnosis have high 5-year survival probabilities in general, reaching above 90% for the vast majority of the 23 sites, including patients with previous colorectal or ovarian cancer diagnoses.

Sex-specific variations in relative survival

Figure S6a–c shows the absolute differences in 1-, 5- and 15-year survival for those cancers affecting both sexes. It is evident that there are large differences with respect to short- and long-term survival in men and women following the diagnoses of many cancer forms. Females appear to have consistently higher short-term and long-term survival for cancers of the central nervous system and melanoma of the skin, as well as for colon and lung cancer. Men tend to have comparatively higher survival figures than women one, five and 15 years after diagnoses of bladder and gallbladder cancers. There are also some inconsistent but intriguing differences in long versus short-term sex-specific survival. Male patients, for instance, tend to have a higher survival probability than female patients one year after a diagnosis of rectal cancer, although the observed estimates are higher in women than men five and 15 years after diagnosis.

Cancer-specific variations in the proportion cured and the median survival of those uncured

For the 15 cancer sites for which estimates from the fitted cure models could be attained, the cure fraction and the survival time of the uncured are shown with their corresponding 95% confidence limits (Figure S7). There is considerable variability in the cured proportions according to the cancer diagnosed, from the 5–10% range for pancreas and liver cancer through to cured proportions above 50% for cancers of the bladder, central nervous system, large bowel and leukaemia. There is less variability across cancer diagnoses in the median survival of those who eventually die, and the quantity does not appear highly correlated with the estimates of the proportion cured. Several patterns can however be ascertained. Uncured patients diagnosed with cancers associated with poor prognosis have estimated median survival times in the six to 12 month range, while better prognosis cancers tend to give estimates of median survival time of between 1.5 and 2.5 years. Non-Hodgkin lymphoma patients who eventually die had the longest estimated median survival time of greater than five years, although the associated confidence interval was very wide.

Survival by stage

Figure S8a–f show the stage-specific trends in 5-year relative survival (including unknown stage) alongside relative survival zero to 15 years since diagnosis according to stage for cancers of the colon, female breast and prostate for the diagnostic period 1965–2007. The five-year survival of colon cancer patients diagnosed at localised and regional stages has increased by over 35 percentage points over four decades, with 15-year survival close to 90% for localised disease patients and 65% for patients diagnosed with regional spread. Patients diagnosed with distant metastases have had consistently poor prognosis over time (approximately 5%), although a moderate increase in five-year survival to 10% is observed recently, since around 1995. Survival tends to level off in the long-term regardless of stage. Some caution in the interpretation of trends is advised given the rapidly increasing survival seen among stage-unknown patients.

For breast cancer, the survival of patients diagnosed with stage I–III cancers has generally increased, most evidently in stage II cancers from the mid-1970s. There is a tendency for the survival of breast cancer patients to continue to decline many years after diagnosis, irrespective of the recorded stage at diagnosis. Stage I and II cancers are however associated with good survival one and five years after diagnosis, close to 95% and 85% respectively, although stage II cancers have a

relatively poorer longer-term prognosis. Patients diagnosed with stage III cancers have survival probabilities of around 65% and 40% five and 15 years after diagnosis, respectively. Stage IV trends are rather unchanged over time, but show signs of stabilising or possibly declining after the mid-1990s, with five-year survival around 15%. There are few breast cancers unstaged and therefore they were not included in the trend analyses.

The five-year relative survival patients diagnosed with prostate cancers with either localised disease or regional spread has increased markedly from the early-1990s, partly attributable to the availability and increasing use of the prostate specific antigen (PSA) test as a screening tool since around 1990. In contrast, the trends in distant stage are rather stable between 1990 and 2000, but have increased by a few percentage points for metastatic patients diagnosed up to 2007. Trends are somewhat speculative without knowledge of the stage distribution of the unknown category, for which five-year survival has increased in a manner similar to regional stage cancers. As with breast cancer, prostate cancer survival shows steady declines with each year after diagnosis, regardless of the stage recorded. Patients diagnosed at localised and regional stages had similar survival one year after diagnosis, but thereafter, the localised cancer patients tended to have a 15–20 percentage point survival advantage over those diagnosed with tumours with regional spread. Survival of patients diagnosed with metastatic cancer is 30% after five years, but long-term survival further diminishes to an estimated 5%, 15 years after diagnosis.

Site-by-site description

In Figures S9–S31, trends, long-term survival and cure fraction results are presented together, for each of the 23 cancers. Below is a very brief site-by-site description, which serves to highlight some of the main results.

Mouth and pharynx (Figure S9a–f)

Both incidence rates and survival probabilities have been rather stable over the study period. Five-year relative survival is somewhat superior for females, although current estimates of 15-year survival are quite similar between the sexes at around 40%, with survival highest among patients diagnosed at ages under 50. Patients alive five years after diagnosis have a high relative survival, reaching 90% for males and 80% for females 15 years after diagnosis. The mean proportion of patients cured is estimated to be around 40% and the median survival of those who die around 1.5 years.

Oesophagus (Figure S10a–f)

Minor increases in both incidence and mortality have been observed during the last 20 years, while five-year

relative survival probabilities are poor and unchanging over time for both men and women. For the minority of patients surviving the disease, five-year survival increases to 80% five years after diagnosis. The proportion cured and the median survival of those who die are around 9% and 6 months, respectively.

Stomach (Figure S11a–f)

Incidence and mortality trends have been decreasing for a number of decades in Norway, with 5-year survival increasing in the 1960s and 1970s but more or less stable in the last two decades, at around 20%. The median survival for those uncured of about 6 months (for both sexes) does not appear to have increased measurably in the last 40 years. The estimated proportion cured has, however, doubled over time, from 10% to 20% for both sexes. Male patients surviving 7–8 years have no excess mortality compared to the general population. There are also interesting but unexplained sex-specific differences in longer-term cumulative and conditional survival.

Colon (Figure S12a–f)

Incidence has been increasing quite rapidly over the entire 40-year period, as has 5-year relative survival, for both sexes. Mortality has increased slightly and more notably among men during the mid-1970s through to the 1990s, while five-year relative survival has been steadily increasing for both sexes, reaching 65% for the youngest age group (aged under 50 at diagnosis). The proportion cured has uniformly increased to reach 50%, while the median survival time of those who die has also increased from around one to two years. Those patients surviving eight years after diagnosis have a similar mortality profile to the general population. Long-term differences in relative and conditional survival, with respect to age at diagnosis and sex appear rather minor.

Rectum (Figure S13a–f)

In contrast to the rather stable trends in incidence, mortality rates have steadily declined since 1995. Survival has been increasing from 1965–2007 irrespective of sex and age, from 25% to over 60%. The proportion cured has increased correspondingly, reaching above 50% by 2007 from below 30% circa 1965. The estimated median survival of the uncured has also increased, but mainly from the 1970s through to the mid-1980s. Patients surviving six to eight years after diagnosis have a five-year relative survival probability of over 90%, irrespective of age or sex. The survival of rectal cancer patients is some five percentage points higher in women than men, consistently at 5, 10 and 15 years after diagnosis.

Liver (Figure S14a-f)

Neither incidence nor mortality have changed demonstrably during the study period, and the five-year survival is also stable and quite poor (about 10%) for both sexes. Survival trends by age tend to reflect these patterns, although there is an increasing survival proportion observed among younger women, and indeed, five-year survival is evidently much higher among young patients relative to older patients. The proportion cured among all liver cancer patients has remained low through time, at about 9%.

Gallbladder (Figure S15a-f)

Time trends in gallbladder cancer incidence, mortality and survival are rather stable, with 5-year relative survival around 10–15% and meaningful patterns in the age-specific survival curves are difficult to detect. Neither the proportion cured nor the median survival of those who will eventually die have increased during the period in either sex, with the former estimated at around 13%. In contrast to rectal cancer, the survival of gallbladder cancer patients tends to be higher among men irrespective of year since diagnosis.

Pancreas (Figure S16a-f)

Pancreatic cancer incidence and mortality rates have changed little in 40 years, and their very close proximity reflects the very poor survival of around 5%, with survival slightly higher among men at five and 10 years after diagnosis. As might be anticipated, the estimated proportion cured and the median survival of those who will die are both low and rather stable with time. There is however some suggestion of improving prognosis among patients aged under 50 at diagnosis, with survival reaching above 10% in the last decade.

Lung, trachea (Figure S17a-f)

Incidence and mortality trends closely follow each other and reflect the different phases of the smoking epidemic in men and women currently and over time. Five-year relative survival has not changed substantively during the observation period however, although some increases may be observed among patients younger than 50 year at diagnosis, with their contemporary 5-year relative survival estimated at over 20%. The proportion cured is low at around 10%, while the median survival for those who die is estimated at six months for both sexes. Patients who survive the first five years after diagnosis have a probability of 70% of surviving an additional five years, irrespective of sex. There are some differences apparent in both long-term survival and conditional survival with respect to age.

Melanoma of the skin (Figure S18a-f)

Steady increases in incidence and mortality 1965–1990 have given way to a recent stabilisation of trends in both sexes. While incidence rates are higher in females than males, relative survival — {irrespective of years since diagnosis — {is consistently 15 percentage points higher in women. Five-year relative survival has increased for all age groups and both sexes, although it shows some signs of flattening in the last 20 years. For patients surviving five years after diagnosis, 5-year relative survival is very high, estimated at over 95%. Long-term cumulative survival appears to continue to decrease irrespective of years since diagnosis however, and estimation of the proportion of cured patients was therefore unattainable.

Female breast (Figure S19a-f)

Incidence and survival have been increasing throughout the study period but has increased more rapidly during the 1990s, partially the result of the introduction of mass screening in Norway. Mortality has continually declined since 1990. Relative survival is highest for women aged 45–59 at diagnosis and lowest for the youngest (aged under 30 at diagnosis) and oldest (over 75) age groups. The 15-year survival is slightly over 70% but it is markedly lower for patients aged over 75 at diagnosis. Patients diagnosis have a relative survival of about 85% at diagnosis, and this increases to over 90% given they survive a further five years. As with melanoma, long-term cumulative survival continues to decline many years after diagnosis, and the proportion of cured patients could not be estimated.

Uterine cervix (Figure S20a-f)

There has been a marked decline in both mortality and incidence, especially after 1985, although caution must be applied in interpreting the former as there is a large proportion of unspecified cancers that should have been allocated to cervix or corpus uteri (ICD-10 C55). Survival has increased markedly after 1995 to reach almost 80% one decade later. There are large differences in contemporary 5-year relative survival with respect to age. For women surviving 5 years after diagnosis, expected survival is not very different from the general population; 5-year relative survival reaches 95% within 3–4 years. The proportion of cured patients has increased since 1990 to 70% by 2000, while median survival of those who will eventually die of their cancer has remained rather stable at approximately 18 months.

Uterine corpus (Figure S21a-f)

There has been a slight increase in both incidence and survival, while mortality has remained stable over the study period, though the mortality rates suffer from the

same artefact mentioned above for the cervix trends. Five-year relative survival has increased mainly among patients aged 60 or older at diagnosis. Long-term survival is quite high, about 75% 15 years after diagnosis, although there are large differences between age groups. The 5-year relative survival for women alive five years after diagnosis is over 90%. However, survival 10–15 years after diagnosis continues to decline, and thus the proportion of cured patients was inestimable.

Ovary (Figure S22a–f)

Incidence has declined and survival has increased slightly in the last 20 years, while mortality has modestly declined. The increases in five-year survival appear to be restricted to patients aged under 60 years of age at diagnosis. The estimated proportion of cured patients has not changed much over time (around 30%), however the median survival time of those who will die of this cancer appears to have increased to about two years by 2000. There are very large differences in longer-term survival with respect to age groups, the youngest patients having a 10-year relative survival of over 60% compared with the oldest patients (70–79 years at diagnosis) of less than 20%. However, for patients surviving five years after diagnosis, the expected survival is not that different from the general population.

Prostate (Figure S23a–f)

There has been a marked increase in both incidence and survival from 1990, most likely a result of the commercial availability of the PSA test and an upsurge in its use as a screening test since then (as seen by stage in Figure 8). Mortality has declined slightly since the mid-1990s. Five-year survival has increased for all age groups since 1990, reaching 80–90% for patients diagnosed in 2007 and aged under 80. Survival of patients continues to decrease for every year after diagnosis, reaching about 55% after 15 years, and hence the proportion cured could not be estimated. There are large differences in long-term survival with respect to age at diagnosis. The conditional survival has declined slightly from about 85% at diagnosis, to around 80% for patients surviving 10 years. Although this seems counter-intuitive, it could be explained by the combined effects of rapid increases in prostate cancer survival by year of diagnosis (during the PSA era), and the application of the period approach to conditional survival. To illustrate, given a background of rapid growth in survival, the group of 10-year survivors diagnosed one decade previously will have a lower five-year relative survival than one-year survivors, who were diagnosed recently.

Testis (Figure S24a–f)

There have been rapid increases in incidence and concomitant declines in mortality since the mid- to late-1970s in Norway, while incidence has increased constantly over the last 40 years. Five-year relative survival is very high, except for those older than 70 years at diagnosis. Patients treated in 2005 have a five-year survival of over 90%. Longer-term survival is very high, reaching almost 100% for patients younger than 50 years at diagnosis and about 90% for patients aged above 50 at diagnosis. Patients surviving five years after diagnosis therefore appear to have little or no excess mortality compared to the general population.

Kidney (Figure S25a–f)

Incidence has slightly increased and mortality has slightly decreased since the 1980s, with five-year relative survival most notably increasing in the last decade. Survival has also increased for both sexes across age groups, where there are very wide variations in prognosis. Both the short- and long-term relative survival are higher for females compared to males. The estimated proportion of cured patients has increased after 1985 for both sexes and is now about 47% for both sexes combined; median survival for those uncured has, however, not changed materially over the 40-year period. Five-year relative survival has increased to over 80% for patients alive three years after diagnosis.

Bladder (Figure S26a–f)

Both incidence and survival have increased since 1965 for both sexes, although trends are more stable during the last decade; mortality has been slowly declining for 20 years or so. Five-year survival has increased for all age groups and both sexes, with the youngest patient group having a 30 percentage point advantage in relative survival compared to the oldest group. Long-term relative survival is consistently higher among males relative to females. The estimated proportion of cured patients has increased since 1975 for both sexes, to about 65% in 2000. Five-year relative survival probabilities for those who are alive some time after diagnosis is favourable, and reaches 90% for five-year survivors. Despite the notable differences in long-term survival in men and women, there is little variation in sex-specific conditional survival.

CNS (Figure S27a–f)

Both incidence and mortality rates have generally increased since 1965, while corresponding five-year survival estimates have risen quite rapidly and uniformly in both sexes, and in all age groups over time. Female survival is superior; there is a constant 20% percentage point difference in 5- to 15-year relative (cont. page S15)

Figure S4a: 1-year relative survival by cancer and sex, sorted in descending order of male survival

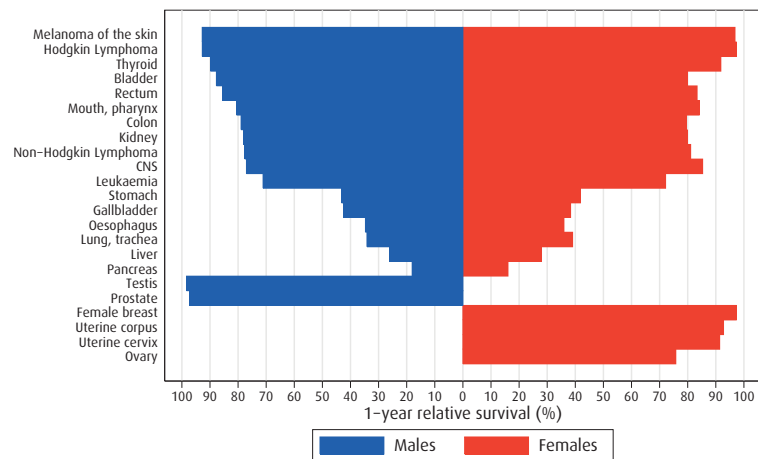


Figure S4b: 5-year relative survival by cancer and sex, sorted in descending order of male survival

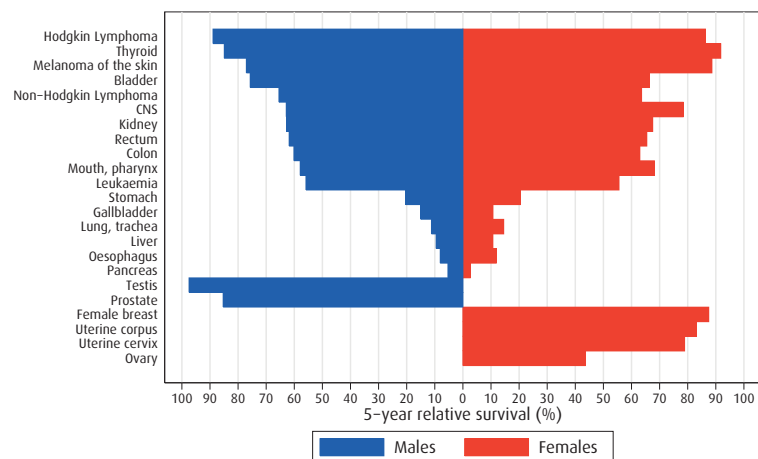


Figure S4c: 15-year relative survival by cancer and sex, sorted in descending order of male survival

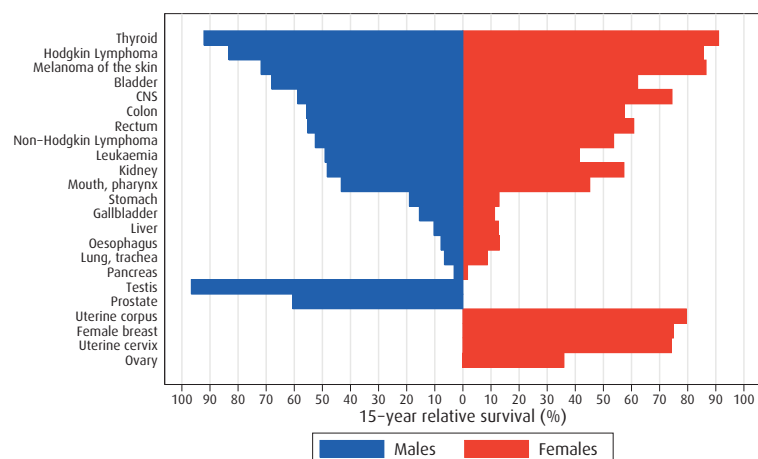


Figure S5a: 5-year relative survival conditional on surviving 1 year by cancer and sex, sorted in descending order of male survival

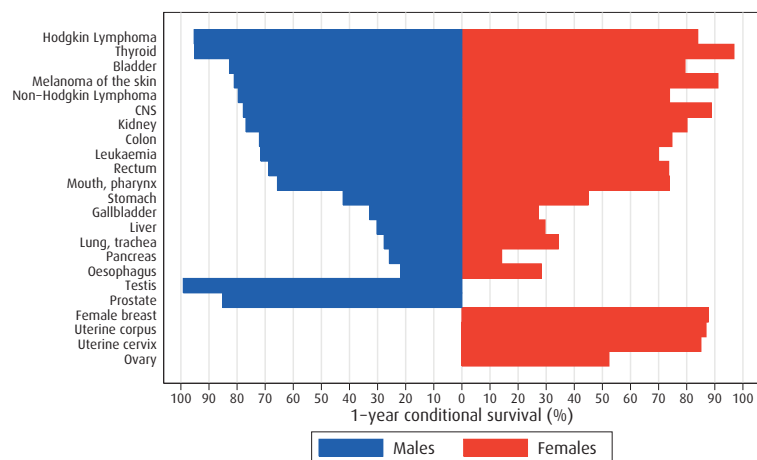


Figure S5b: 5-year relative survival conditional on surviving 5 year by cancer and sex, sorted in descending order of male survival

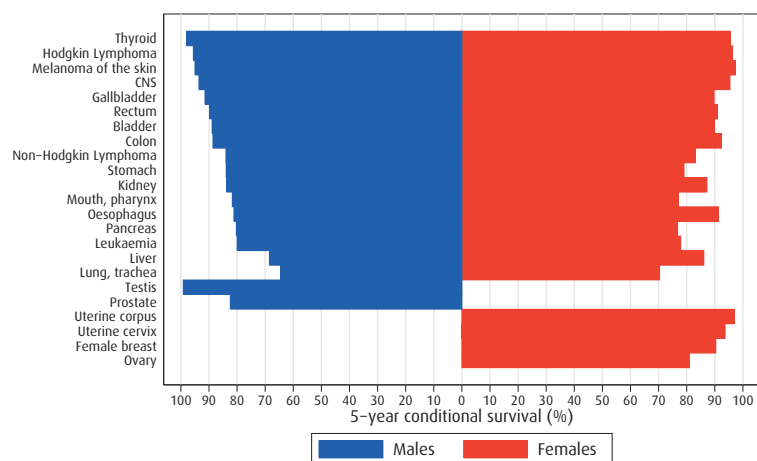


Figure S5c: 5-year relative survival conditional on surviving 10 year by cancer and sex, sorted in descending order of male survival

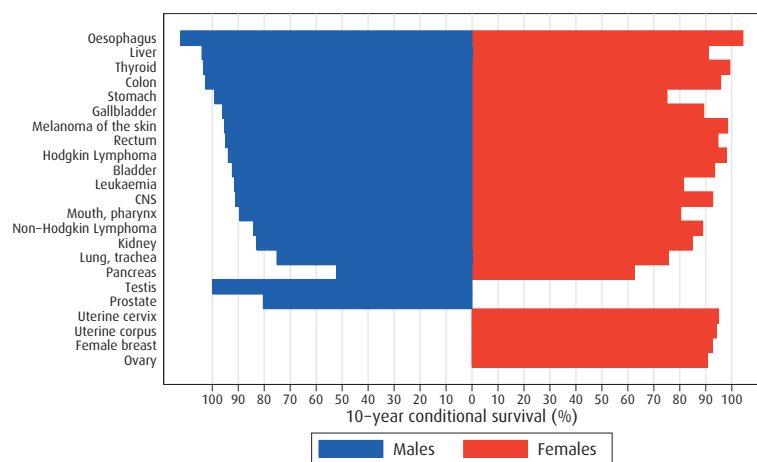


Figure S6a: Sex-specific differences (percentage points) in 1-year relative survival by cancer, sorted according to direction and magnitude of difference

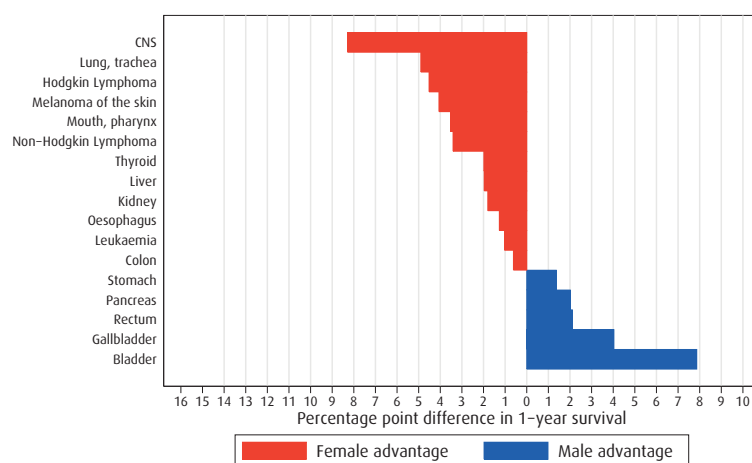


Figure S6b: Sex-specific differences (percentage points) in 5-year relative survival by cancer, sorted according to direction and magnitude of difference

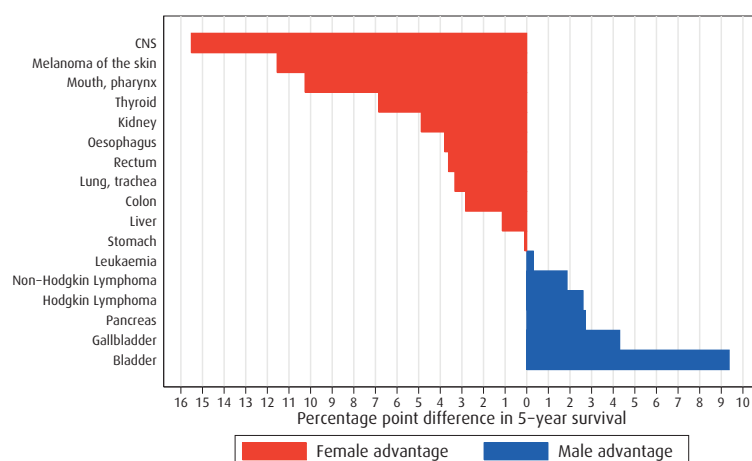
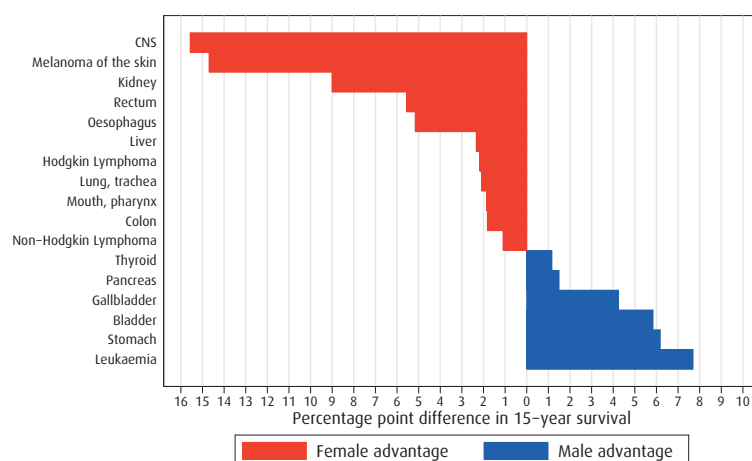


Figure S6c: Sex-specific differences (percentage points) in 15-year relative survival by cancer, sorted according to direction and magnitude of difference



(cont. from page S11) survival estimates between the sexes. The estimated proportion of cured patients appears to have increased markedly since 1980 to over 65%, whereas the median survival of those uncured has remained the same. Estimates of five-year relative survival reach 90% for both sexes in patients alive three years after diagnosis.

Thyroid (Figure S28a-f)

There are suggestions that five-year survival has moderately increased with time, in keeping with the incidence trends, while declining trends in mortality rates are observed during the last two decades. Five-year survival is high in males and female patients, although there are large differences in survival levels and trends with respect to age. Relative survival is highest for patients younger than 60 years at diagnosis, while the greatest increases in five-year survival occur among the oldest patients, irrespective of sex. Five-year relative survival is close to that of the general population in patients who are alive one year after diagnosis. Given the lack of a clear plateau in the long-term survival estimates, the proportion cured could not be estimated for either sex.

Hodgkin Lymphoma (Figure S29a-f)

There have been minor increases in incidence rates during the last two decades in both men and women, accompanied by a larger fall in mortality, particularly from the mid-1970s. Five-year survival has continued to increase over the whole period to over 80% and is higher for young to middle-aged patients (under 60 at diagnosis). Five-year relative survival continues to increase for surviving patients, with those alive three

years or more having little excess mortality relative to the general population. The estimated proportion cured could not be established given the observation of continual declines in long-term survival.

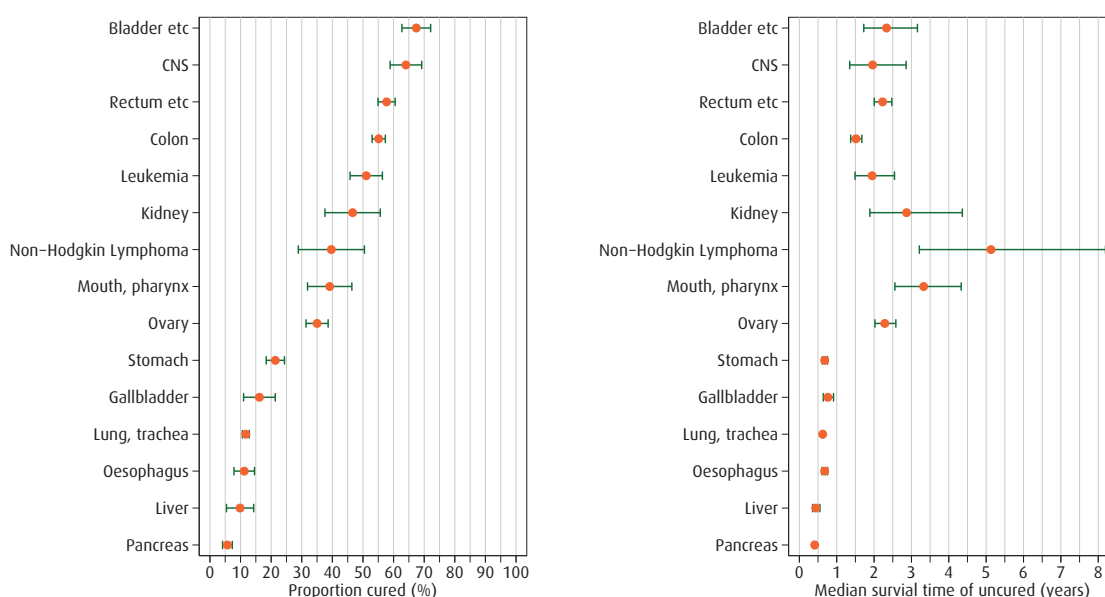
Non-Hodgkin Lymphoma (Figure S30a-f)

Both incidence and survival have been increasing in the last few decades in both sexes, while mortality appears has recently plateaued and declined. Five-year survival is high and has been increasing for all age groups, most notably for patients aged under 30 at diagnosis. The estimated proportion of cured patients has increased after 1985 in both sexes to around 45% by 2000. 15-year survival is estimated at 45% overall, but there is substantive variability in these estimates according to age at diagnosis. For patients surviving the first five years after diagnosis, relative survival reaches 80%.

Leukemia (Figure S31a-f)

Incidence has been stable or slightly increasing over time, while mortality has been declining since at least 1970, mirroring the observation of steady increases in five-year survival for both sexes. These increases are most apparent in patients diagnosed at ages under 30, for which current five-year survival is estimated at about 75%. The estimated proportion of cured patients has increased for both sexes accordingly, reaching over 40% by 2000. There were only slight changes in median survival for those who eventually die of their disease. Five-year relative survival for patients surviving two years reached 75% overall, and for men, continued to increase with each successive year of survival, reaching 90% in male patients alive 10 years after diagnosis.

Figure 7 The estimated proportion cured and median survival of the uncured by cancer, sorted in descending order of proportion cured



Colon cancer by stage

Figure S7a: Trends in 5-year relative survival by stage

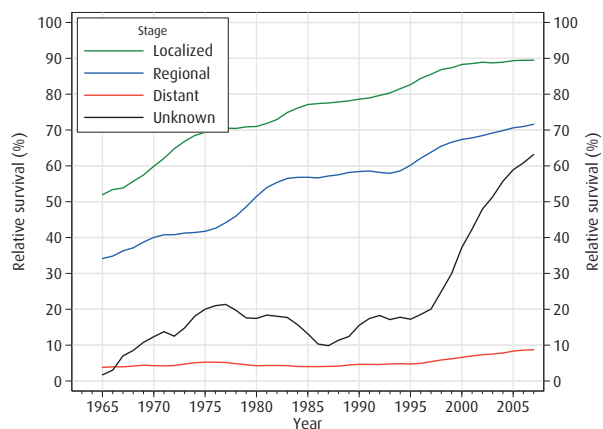
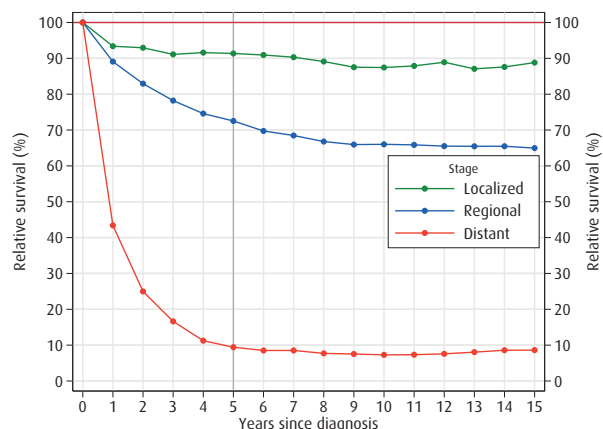


Figure S7b: Long-term relative survival by stage



Breast cancer by stage

Figure S7c: Trends in 5-year relative survival by stage

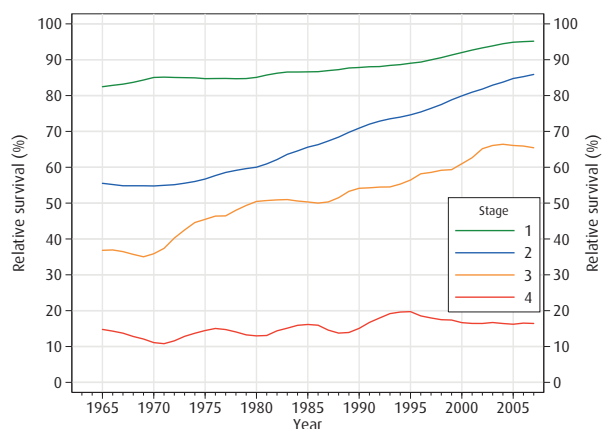
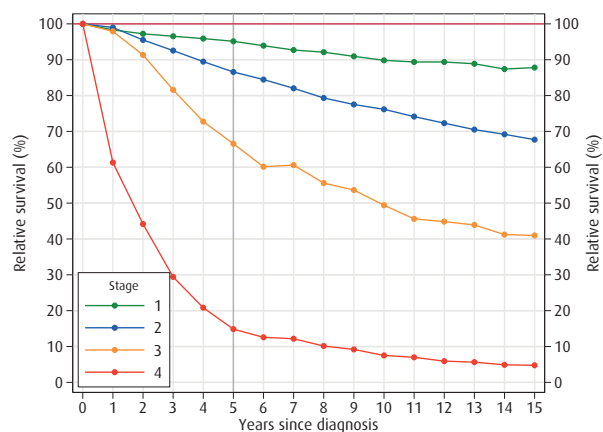


Figure S7d: Long-term relative survival by stage



Prostate cancer by stage

Figure S7e: Trends in 5-year relative survival by stage

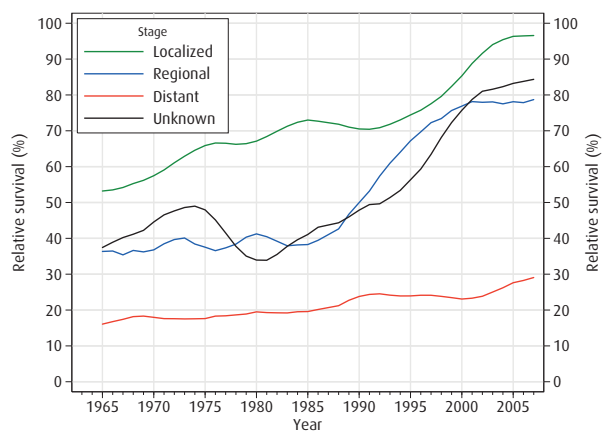


Figure S7f: Long-term relative survival by stage

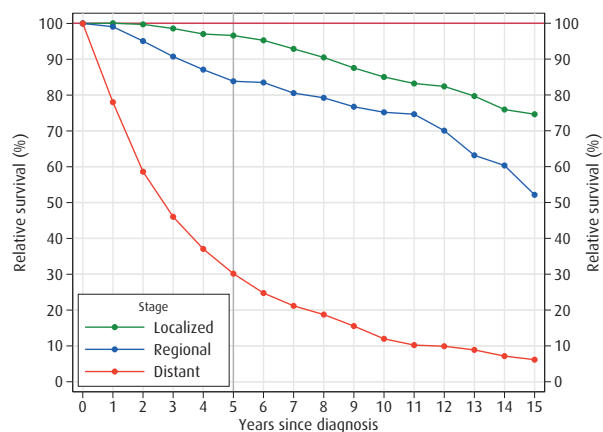


Table S1: 1-, 5-, 10-, and 15-year relative survival by cancer site and sex

Cancer site	Sex	1-year	5-year	10-year	15-year
Mouth, pharynx	Males	80.5 (77.8, 83.1)	57.9 (54.2, 61.4)	47.8 (43.6, 51.9)	43.3 (38.4, 48.4)
	Females	84.1 (80.8, 86.9)	68.1 (63.1, 72.9)	54.2 (48.0, 60.4)	45.2 (38.1, 52.5)
Oesophagus	Males	34.7 (30.6, 38.8)	8.1 (5.7, 11.0)	7.2 (4.6, 10.7)	7.8 (4.5, 12.4)
	Females	35.9 (29.8, 42.2)	11.9 (7.4, 17.6)	10.8 (5.9, 17.8)	13.0 (6.4, 23.0)
Stomach	Males	43.2 (40.5, 45.9)	20.3 (17.8, 22.9)	18.3 (15.6, 21.4)	19.1 (15.6, 23.0)
	Females	41.8 (38.6, 45.0)	20.4 (17.6, 23.4)	17.0 (14.0, 20.2)	12.9 (9.9, 16.4)
Colon	Males	78.9 (77.6, 80.3)	60.1 (58.1, 62.2)	54.0 (51.3, 56.7)	55.6 (51.8, 59.5)
	Females	79.5 (78.3, 80.8)	63.0 (61.1, 64.8)	59.1 (56.7, 61.5)	57.4 (54.2, 60.7)
Rectum etc	Males	85.4 (83.9, 86.9)	61.8 (59.3, 64.3)	56.7 (53.5, 60.0)	55.3 (50.8, 59.8)
	Females	83.3 (81.6, 85.0)	65.4 (62.8, 68.0)	61.7 (58.4, 65.1)	60.8 (56.4, 65.2)
Liver	Males	26.0 (21.4, 30.8)	9.5 (5.8, 14.4)	7.5 (3.7, 13.3)	10.3 (5.1, 18.3)
	Females	28.0 (22.0, 34.3)	10.7 (6.6, 15.9)	11.2 (6.3, 17.9)	12.6 (6.6, 21.4)
Gallbladder	Males	42.3 (36.3, 48.3)	15.0 (10.3, 20.6)	15.8 (10.1, 23.2)	15.5 (7.8, 26.8)
	Females	38.3 (32.6, 44.0)	10.7 (6.8, 15.7)	10.9 (6.5, 16.9)	11.3 (6.0, 18.9)
Pancreas	Males	18.0 (16.1, 20.1)	5.3 (3.9, 7.0)	4.9 (3.3, 7.1)	3.1 (1.0, 7.7)
	Females	16.0 (14.3, 17.9)	2.6 (1.8, 3.6)	2.2 (1.4, 3.4)	1.7 (0.8, 3.0)
Lung, trachea	Males	34.1 (32.9, 35.4)	11.2 (10.3, 12.2)	7.9 (7.0, 9.0)	6.6 (5.5, 7.9)
	Females	39.0 (37.5, 40.5)	14.5 (13.3, 15.8)	10.8 (9.5, 12.2)	8.7 (7.2, 10.3)
Melanoma of the skin	Males	92.8 (91.4, 94.0)	77.1 (74.6, 79.4)	74.2 (71.2, 77.2)	71.8 (68.1, 75.5)
	Females	96.8 (95.8, 97.7)	88.6 (86.7, 90.4)	87.0 (84.5, 89.4)	86.5 (83.5, 89.5)
Female breast	Females	97.3 (96.8, 97.6)	87.5 (86.6, 88.3)	79.8 (78.6, 81.0)	74.9 (73.2, 76.6)
Uterine cervix	Females	91.4 (89.5, 92.9)	78.9 (76.1, 81.4)	75.7 (72.5, 78.7)	74.2 (70.6, 77.7)
Uterine corpus	Females	92.7 (91.5, 93.8)	83.0 (81.0, 84.9)	82.2 (79.4, 84.8)	79.5 (75.8, 83.1)
Ovary	Females	75.8 (73.7, 77.7)	43.5 (41.0, 46.0)	37.3 (34.6, 40.1)	36.0 (32.9, 39.1)
Prostate	Males	97.2 (96.8, 97.6)	85.3 (84.2, 86.4)	72.5 (70.7, 74.3)	60.6 (57.3, 64.0)
Testis	Males	98.4 (97.3, 99.0)	97.4 (96.0, 98.5)	96.7 (94.9, 98.1)	96.6 (94.5, 98.4)
Kidney	Males	78.0 (75.6, 80.2)	62.7 (59.4, 65.8)	54.8 (50.3, 59.3)	48.3 (42.4, 54.4)
	Females	79.8 (76.8, 82.5)	67.5 (63.2, 71.6)	62.7 (57.0, 68.3)	57.3 (49.9, 64.8)
Bladder etc	Males	87.7 (86.4, 88.9)	75.7 (73.5, 77.8)	69.9 (66.7, 73.0)	68.0 (63.8, 72.3)
	Females	79.9 (77.4, 82.1)	66.3 (62.8, 69.7)	62.7 (58.1, 67.4)	62.2 (56.1, 68.4)
CNS	Males	77.0 (74.8, 79.1)	62.9 (60.1, 65.5)	61.2 (57.9, 64.5)	58.8 (54.6, 63.0)
	Females	85.3 (83.7, 86.8)	78.4 (76.2, 80.5)	77.1 (74.2, 79.9)	74.4 (70.4, 78.3)
Thyroid gland	Males	89.8 (84.9, 93.3)	84.9 (78.1, 90.4)	85.2 (76.4, 92.7)	92.2 (81.4, 101.5)
	Females	91.8 (89.2, 93.9)	91.8 (88.4, 94.5)	89.6 (85.0, 93.6)	91.0 (85.4, 96.0)
Hodgkin Lymphoma	Males	92.7 (88.9, 95.4)	88.9 (84.0, 92.7)	86.4 (80.4, 91.3)	83.3 (75.9, 89.6)
	Females	97.3 (93.2, 99.1)	86.3 (79.4, 91.6)	84.9 (77.1, 91.1)	85.5 (76.7, 92.7)
Non-Hodgkin Lymphoma	Males	77.6 (75.5, 79.6)	65.5 (62.5, 68.3)	58.4 (54.5, 62.3)	52.5 (47.7, 57.5)
	Females	81.0 (78.8, 83.1)	63.6 (60.4, 66.7)	56.1 (52.1, 60.0)	53.6 (48.8, 58.6)
Leukemia	Males	71.1 (68.3, 73.7)	55.8 (52.3, 59.3)	47.9 (43.6, 52.3)	49.1 (43.7, 54.6)
	Females	72.1 (69.0, 75.0)	55.5 (51.6, 59.4)	46.0 (41.3, 50.7)	41.4 (35.9, 47.2)

Figure S9a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

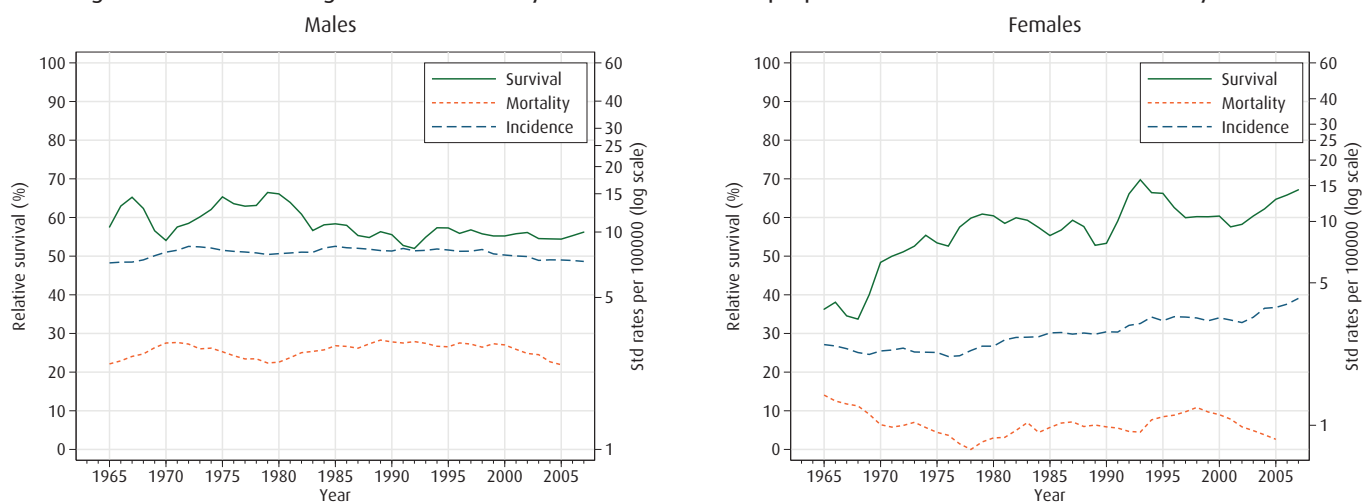


Figure S9b: Trends in 5-year relative survival by age

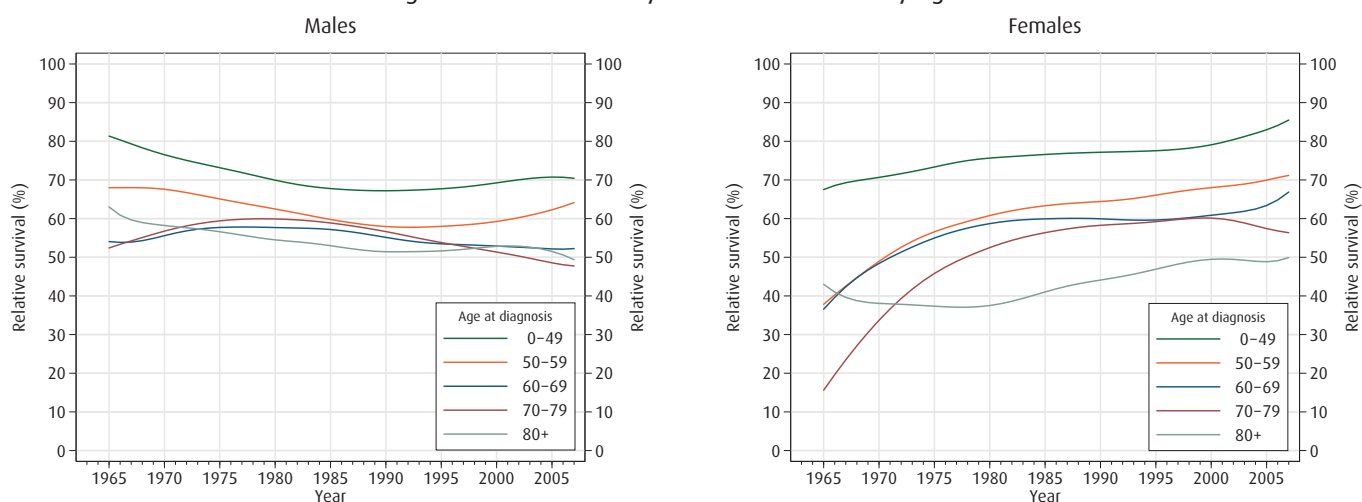


Figure S9c: Estimates of trends in the proportion cured and the median survival time for the uncured

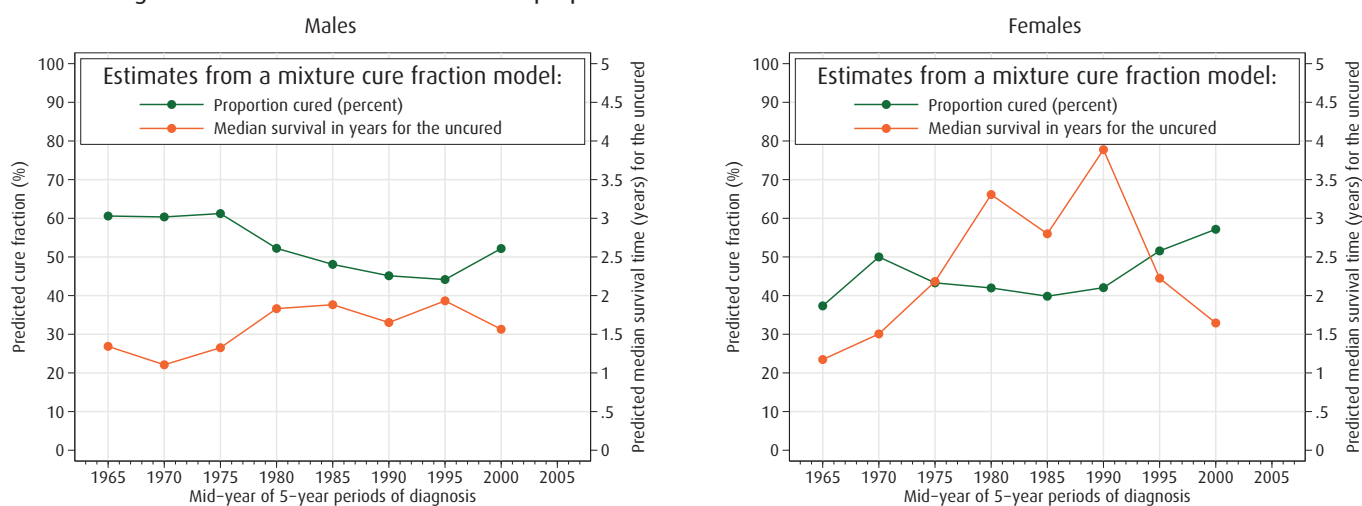


Figure S9d: Relative survival up to 15 years after diagnosis by sex and age

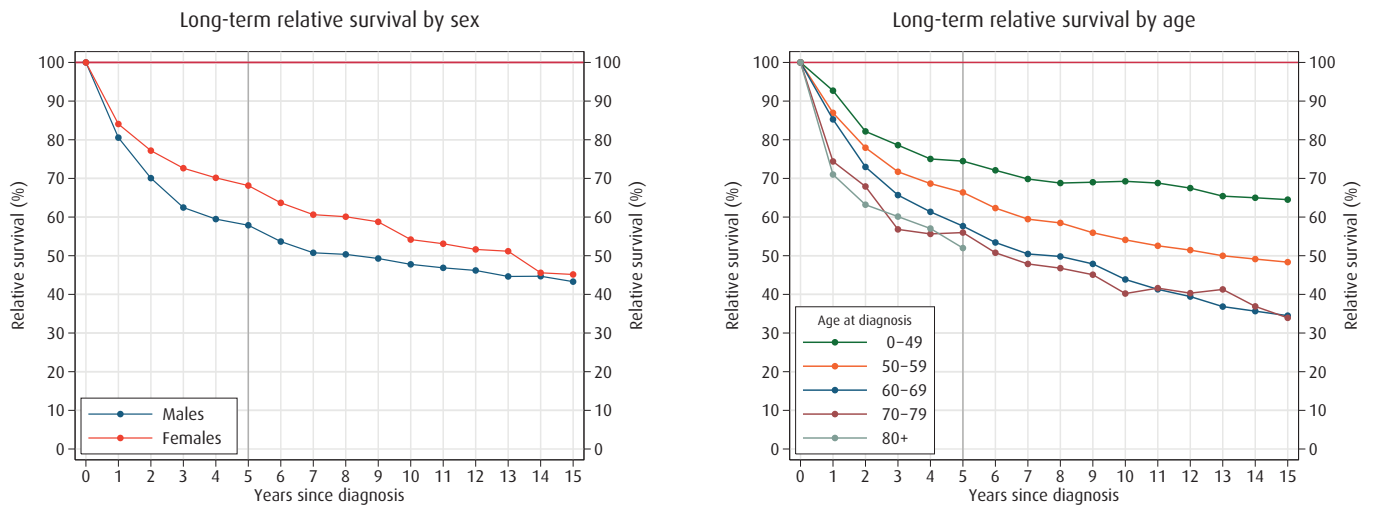


Figure S9e: Conditional 5-year relative survival for every additional year after diagnosis

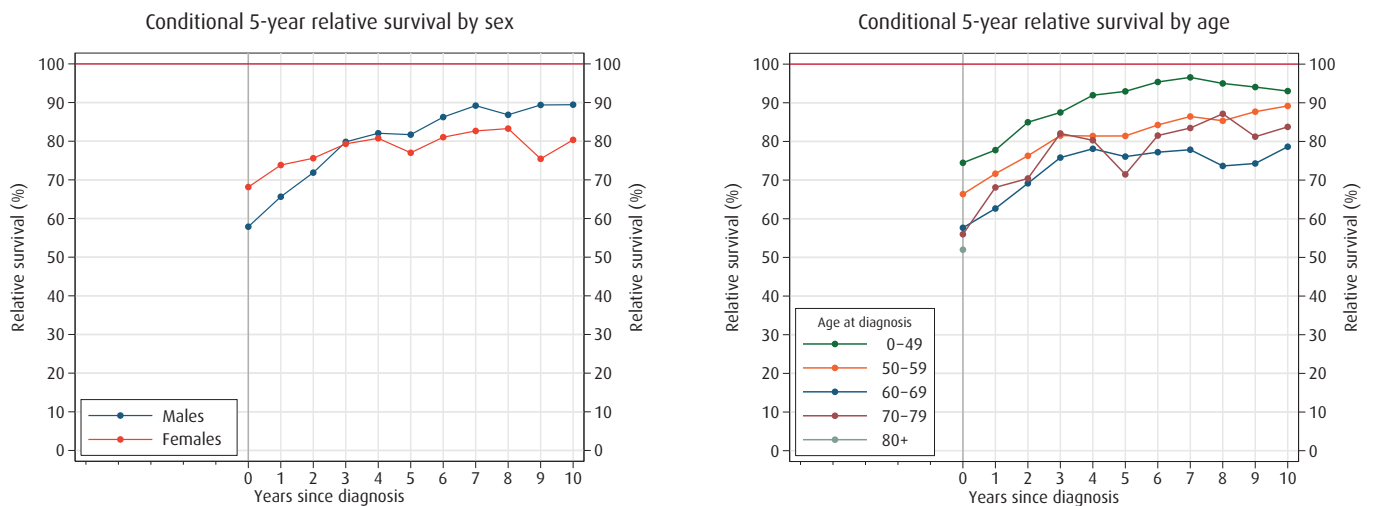
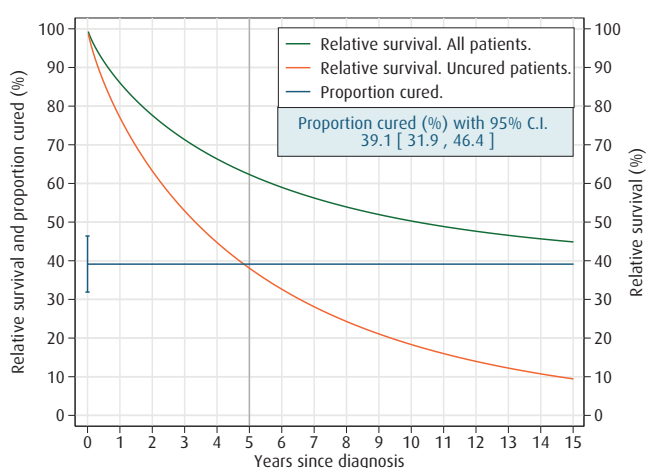


Figure S9f: Relative survival and proportion cured

Estimates from a mixture cure fraction model



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-49	80	146	226	11.1
50-59	149	313	462	22.8
60-69	184	390	574	28.3
70-79	175	252	427	21.1
80+	187	151	338	16.7
Total	775	1252	2027	100.0

Figure S10a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

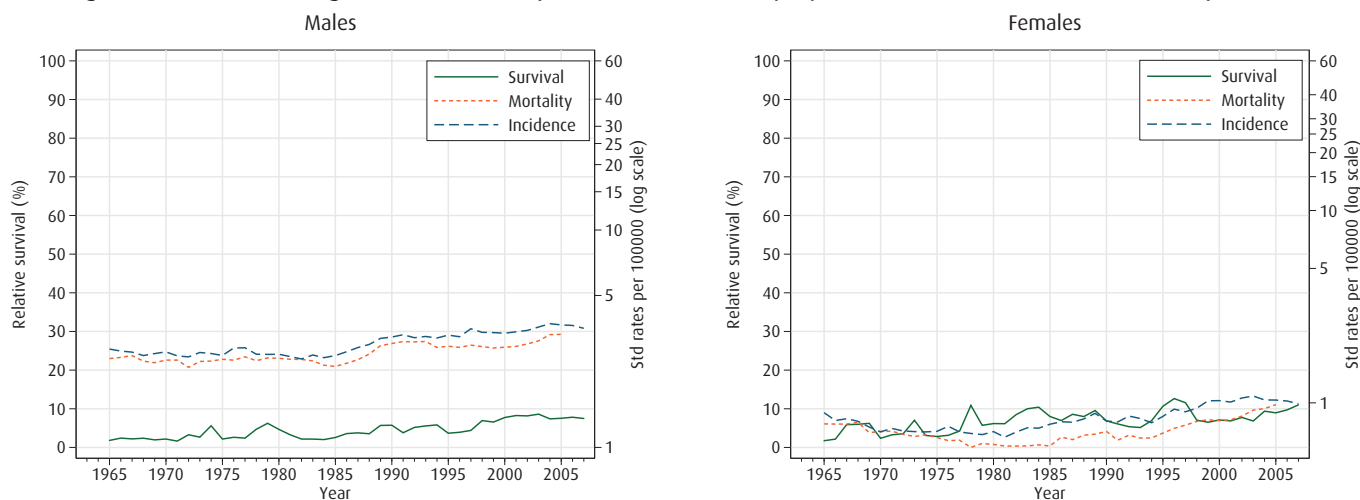


Figure S10b: Trends in 5-year relative survival by age

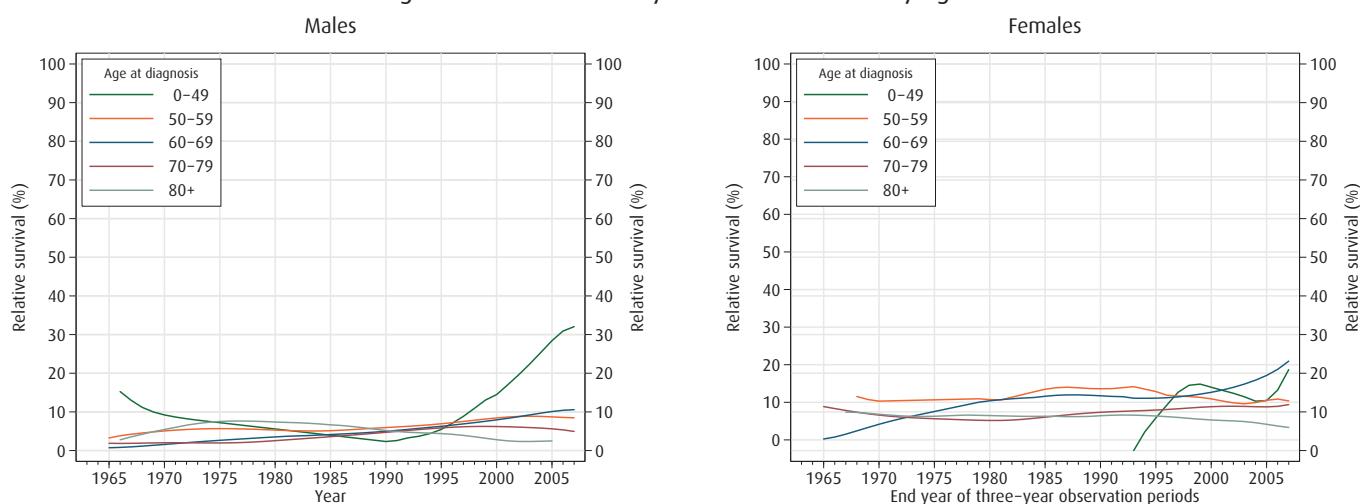


Figure S10c: Estimates of trends in the proportion cured and the median survival time for the uncured

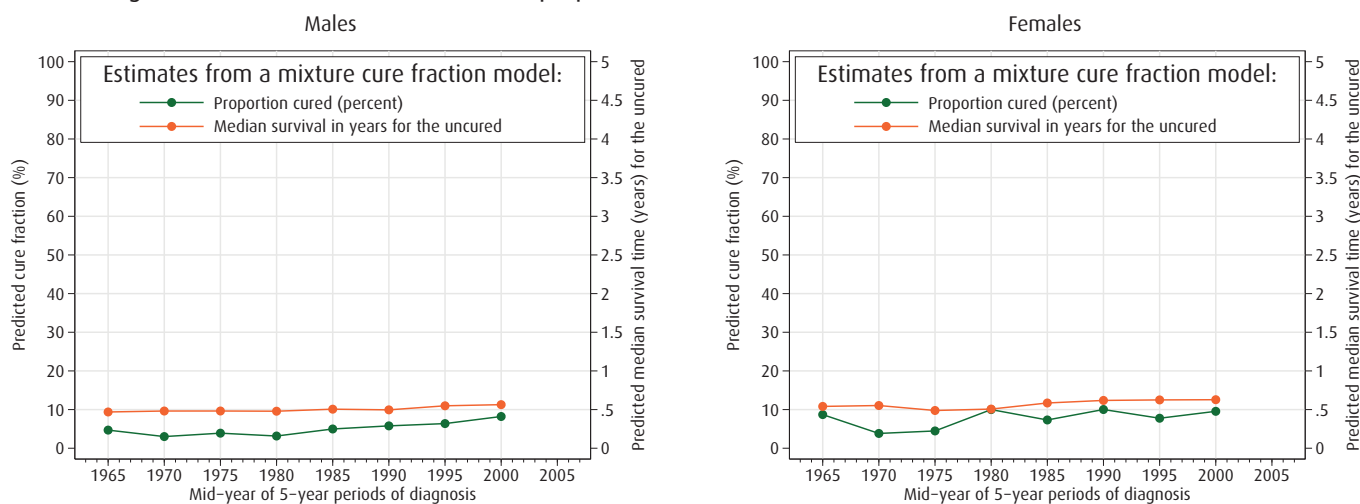


Figure S10d: Relative survival up to 15 years after diagnosis by sex and age

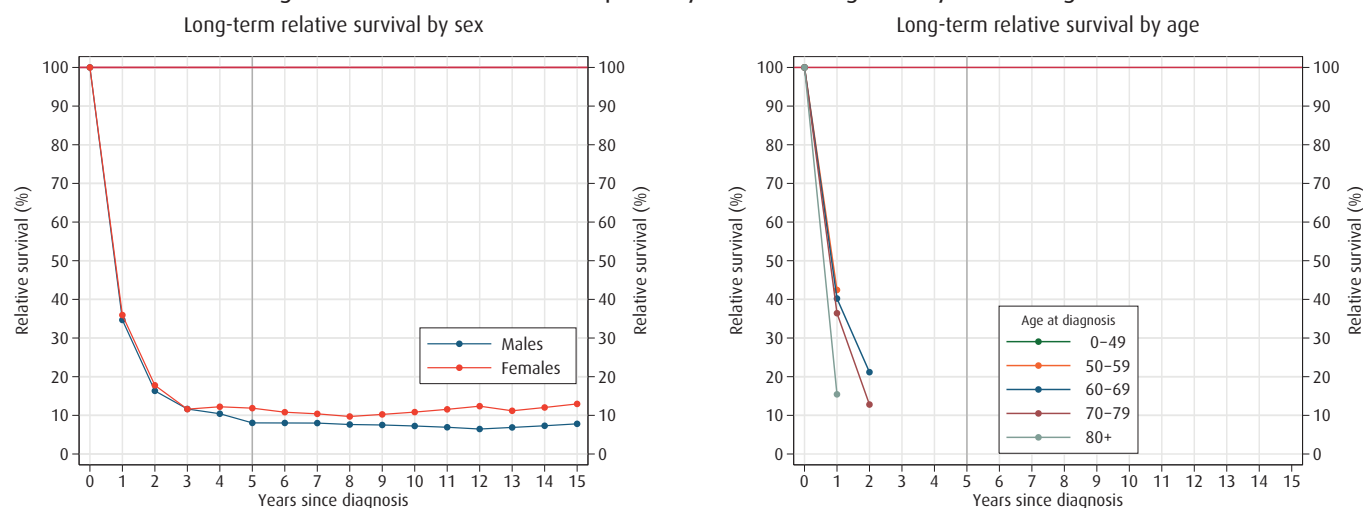


Figure S10e: Conditional 5-year relative survival for every additional year after diagnosis

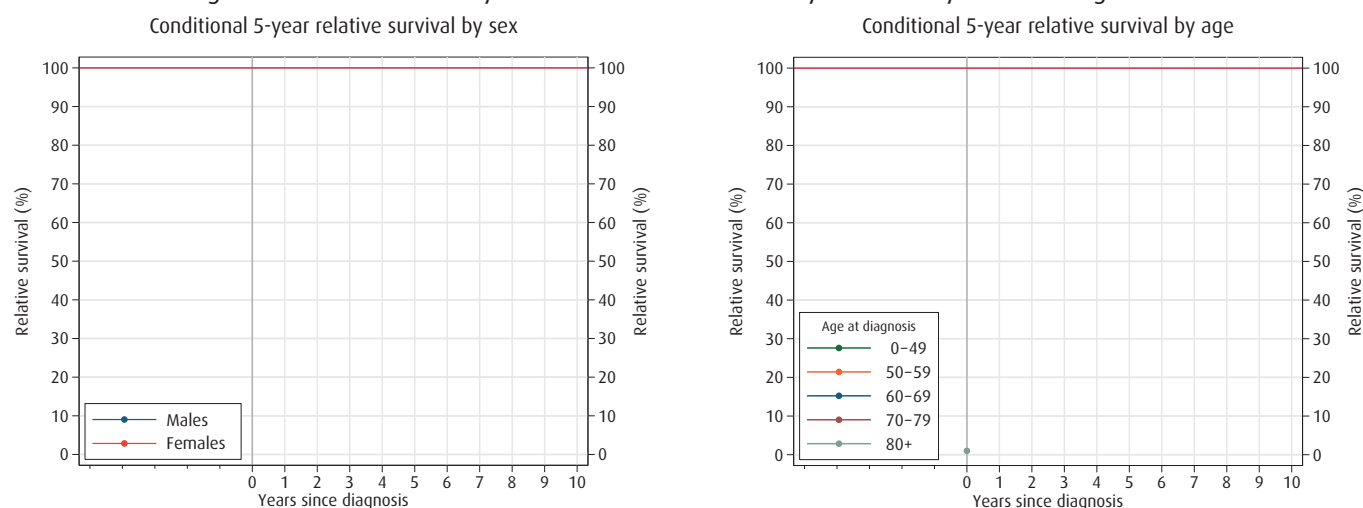
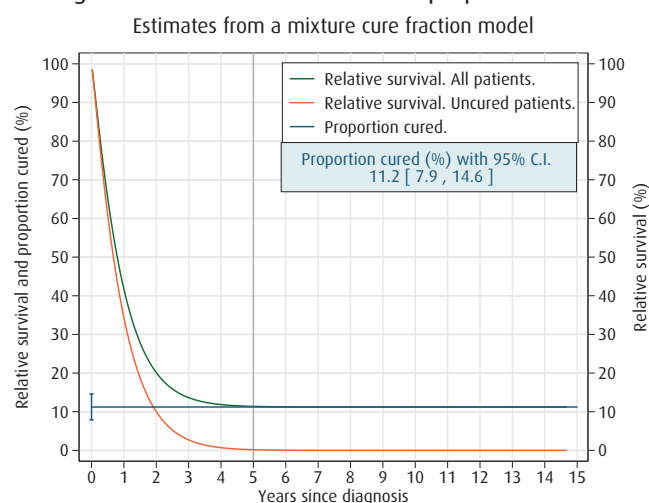


Figure S10f: Relative survival and proportion cured



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-49	10	42	52	5.5
50-59	30	110	140	14.9
60-69	55	197	252	26.8
70-79	75	204	279	29.6
80+	95	124	219	23.2
Total	265	677	942	100.0

Figure S11a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

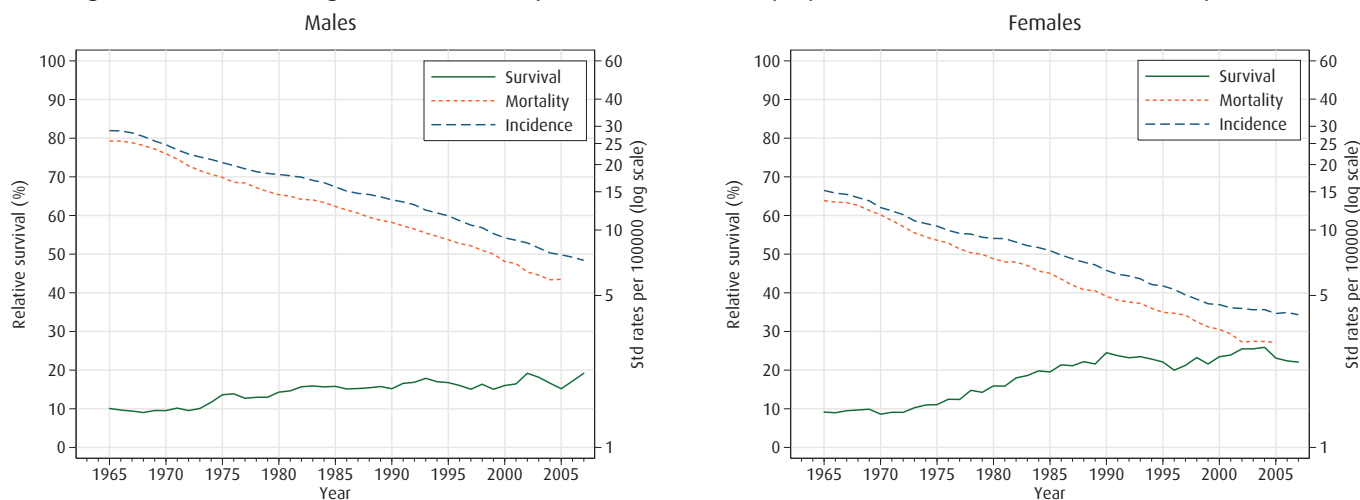


Figure S11b: Trends in 5-year relative survival by age

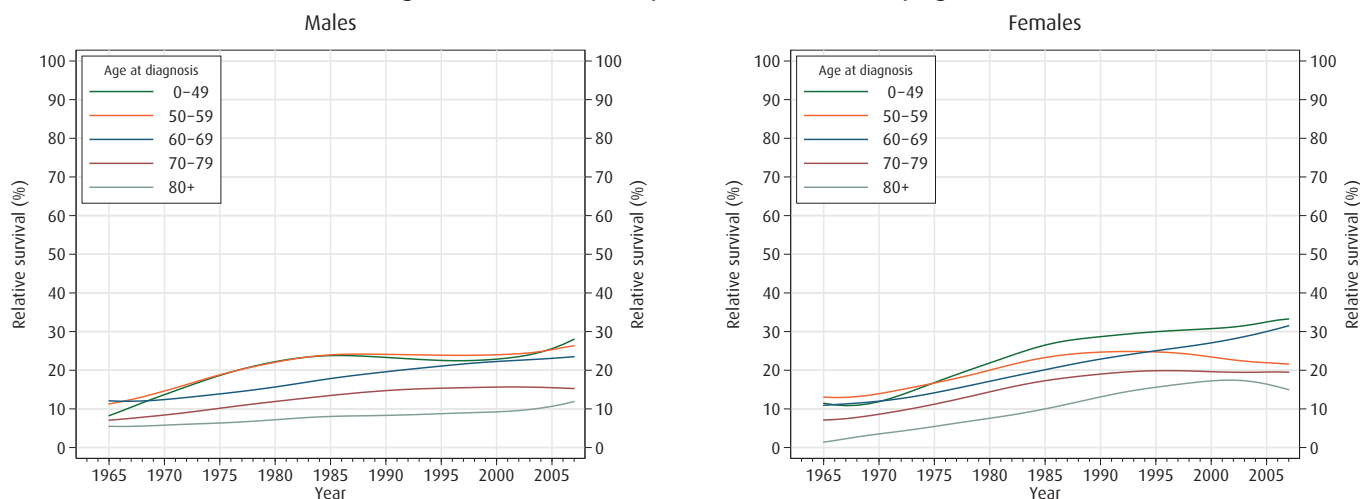


Figure S11c: Estimates of trends in the proportion cured and the median survival time for the uncured

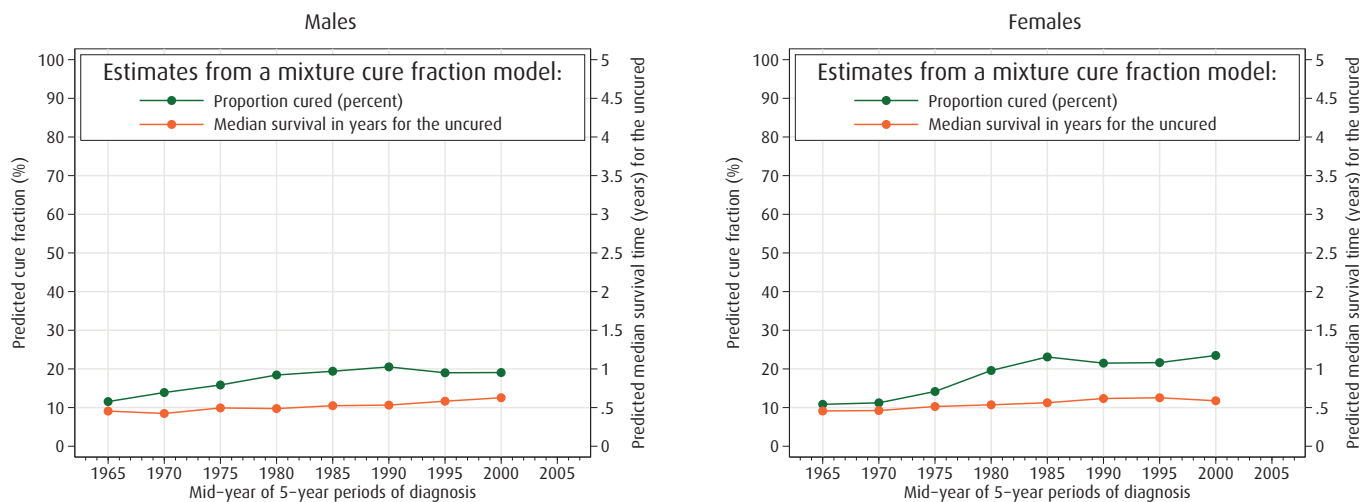


Figure S11d: Relative survival up to 15 years after diagnosis by sex and age

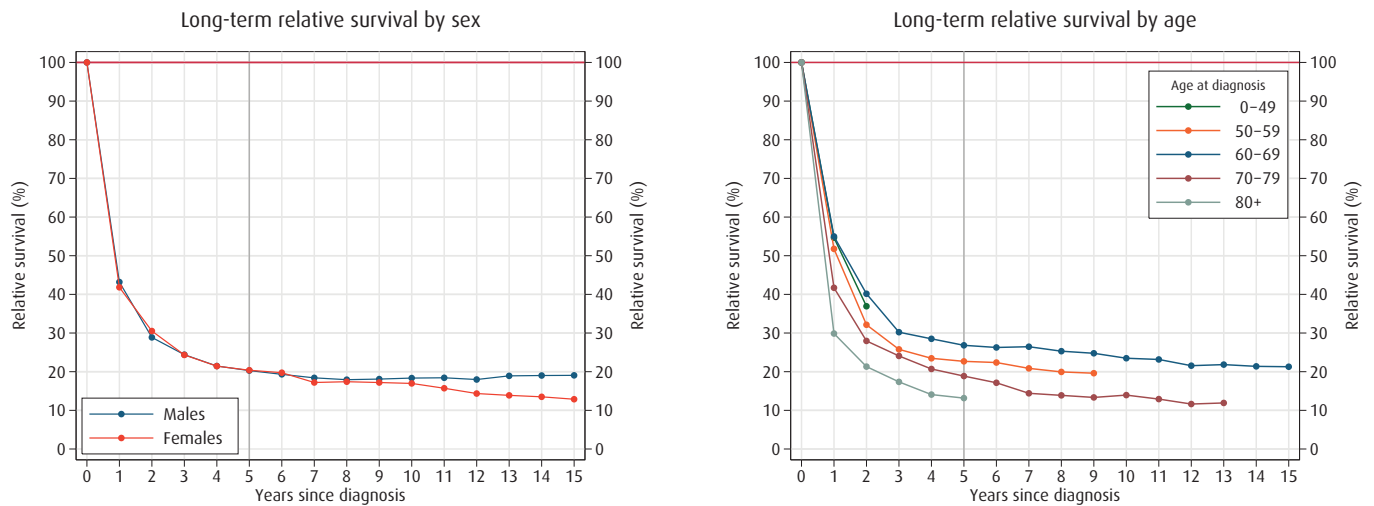


Figure S11e: Conditional 5-year relative survival for every additional year after diagnosis

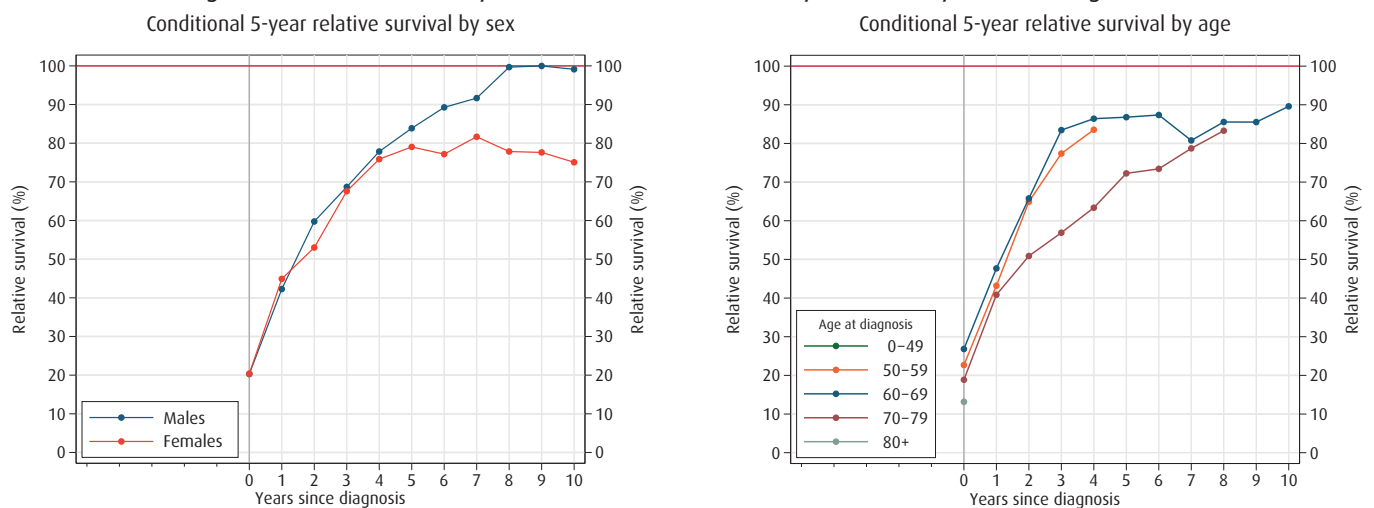
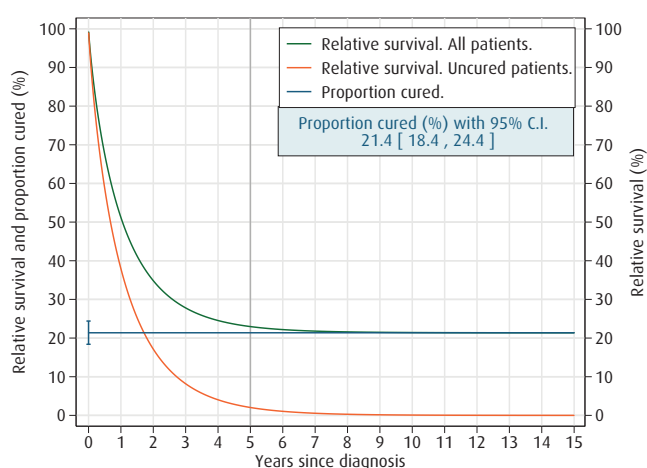


Figure S11f: Relative survival and proportion cured

Estimates from a mixture cure fraction model



Age distribution of patients (2003–2007)

Age	Males	Females	All	%
0-49	72	73	145	5.5
50-59	114	188	302	11.4
60-69	180	329	509	19.1
70-79	281	542	823	30.9
80+	408	473	881	33.1
Total	1055	1605	2660	100.0

Figure S12a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

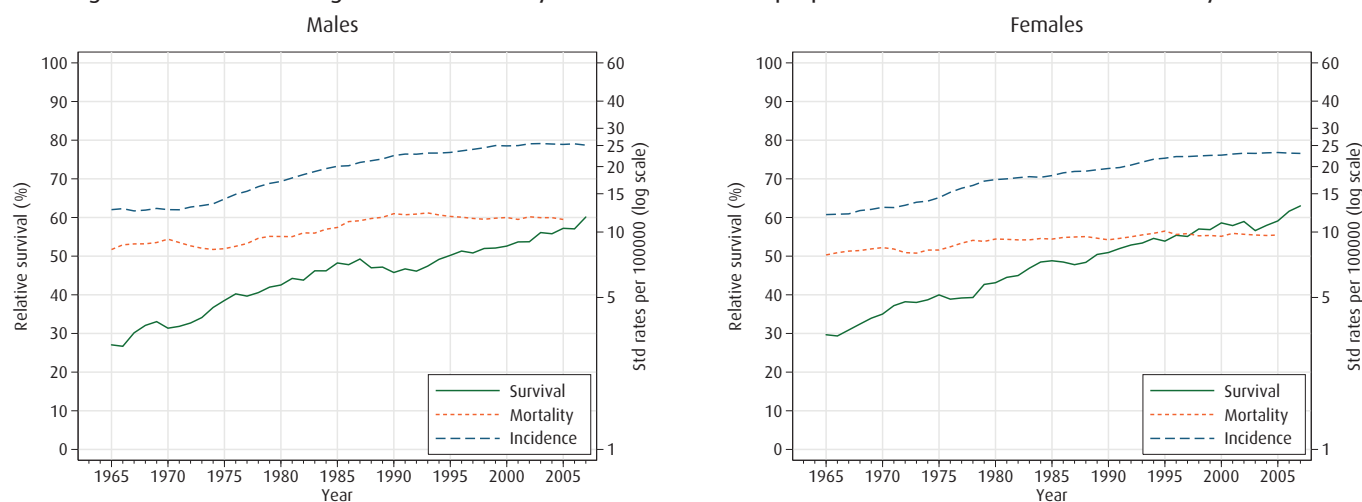


Figure S12b: Trends in 5-year relative survival by age

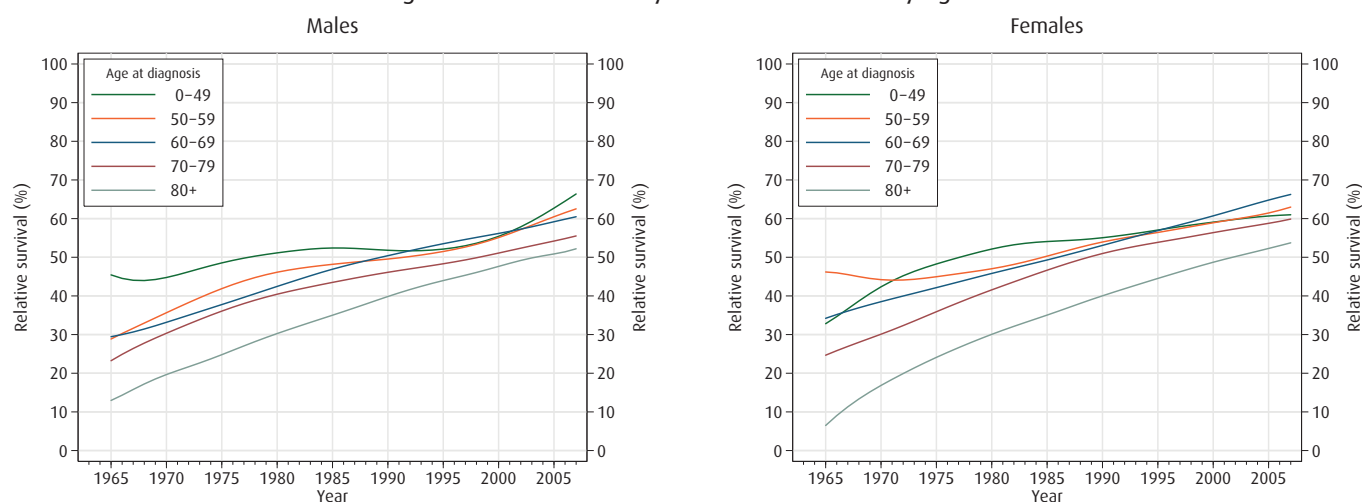


Figure S12c: Estimates of trends in the proportion cured and the median survival time for the uncured

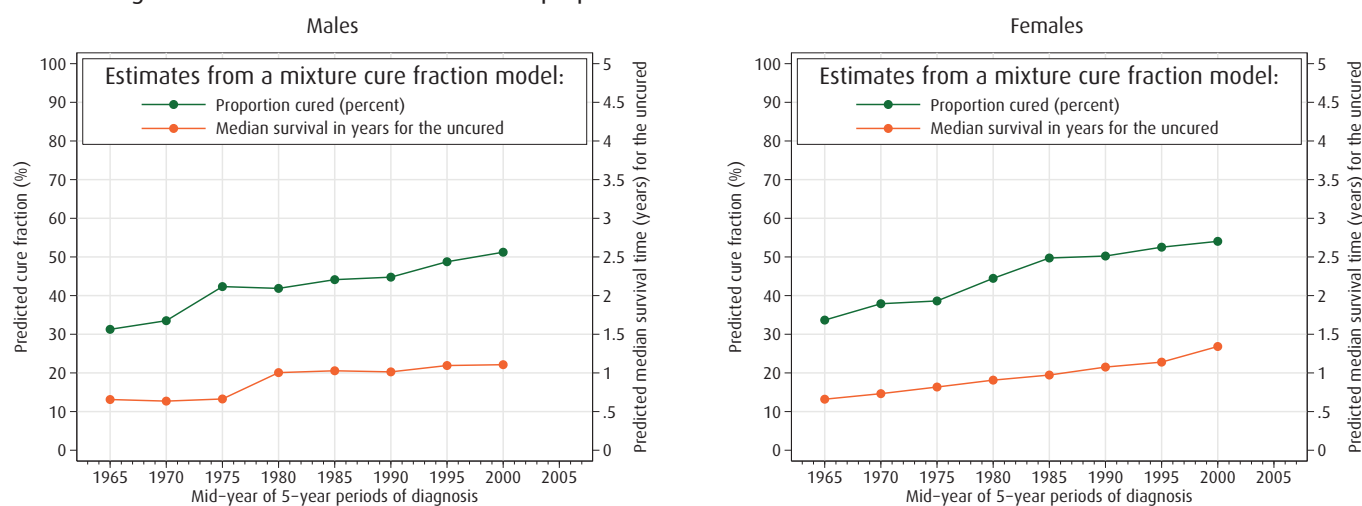


Figure S12d: Relative survival up to 15 years after diagnosis by sex and age

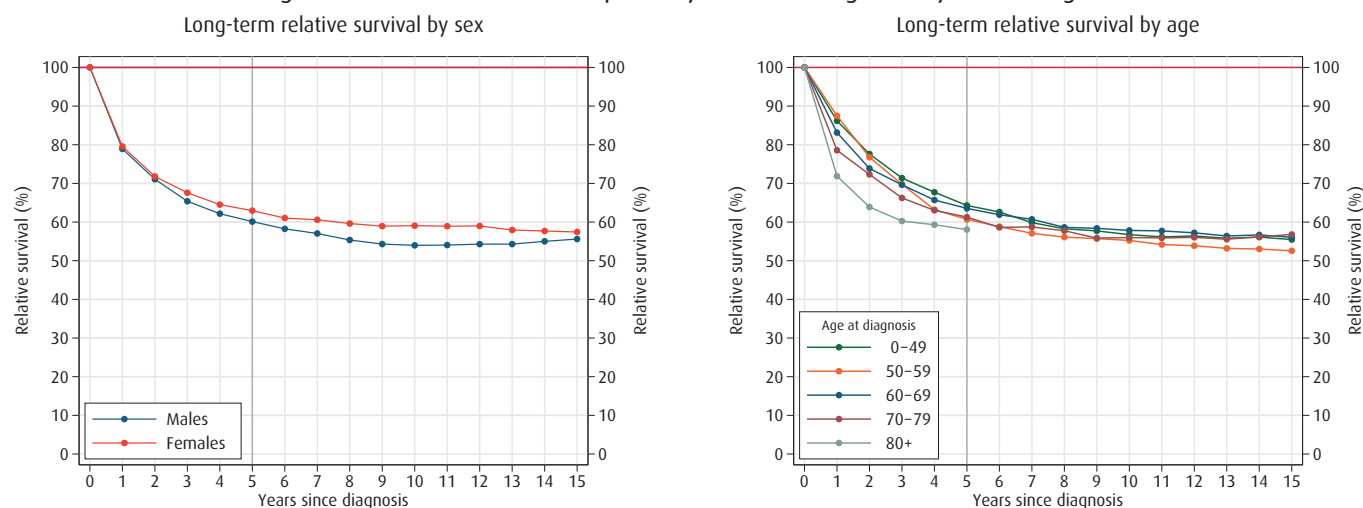


Figure S12e: Conditional 5-year relative survival for every additional year after diagnosis

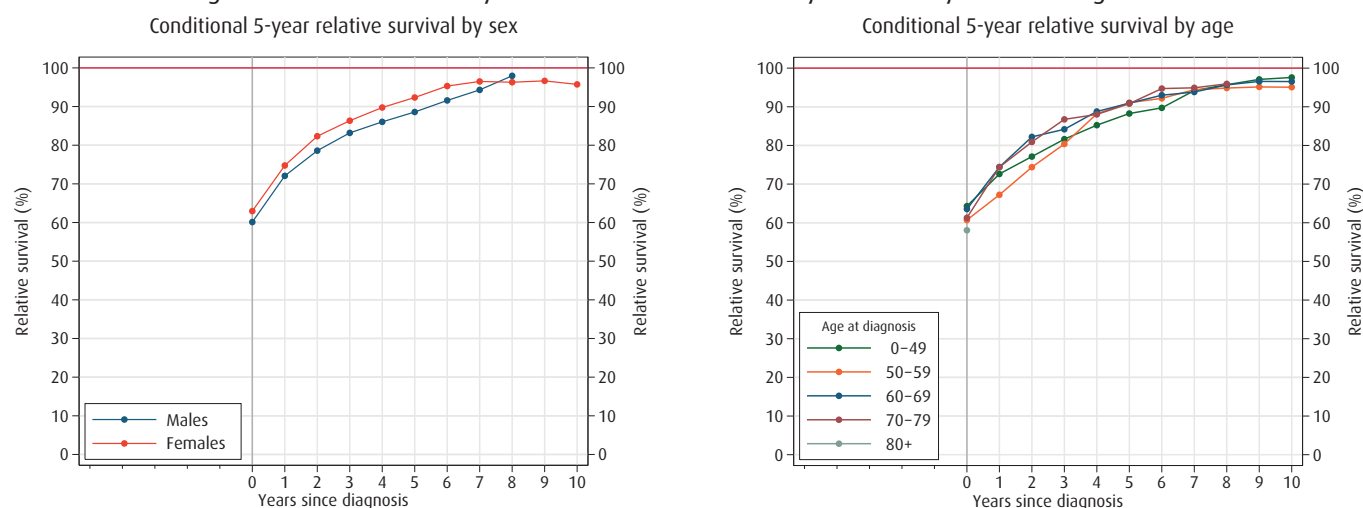
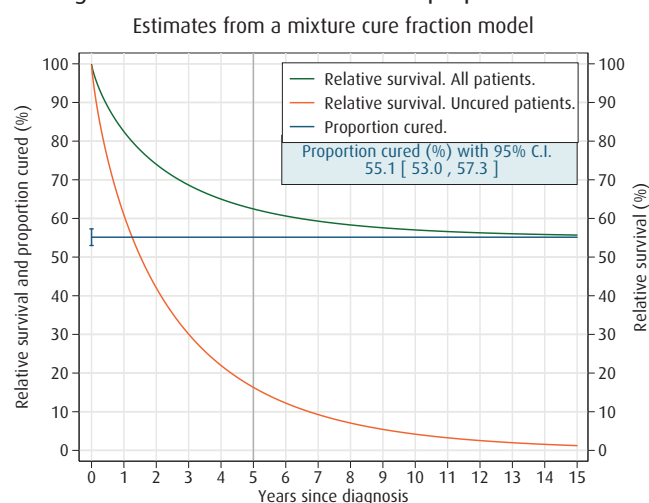


Figure S12f: Relative survival and proportion cured



Age distribution of patients (2003–2007)

Age	Males	Females	All	%
0-49	290	270	560	5.1
50-59	602	607	1209	11.1
60-69	1155	1146	2301	21.0
70-79	1778	1749	3527	32.2
80+	2042	1299	3341	30.5
Total	5867	5071	10938	100.0

Figure S13a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

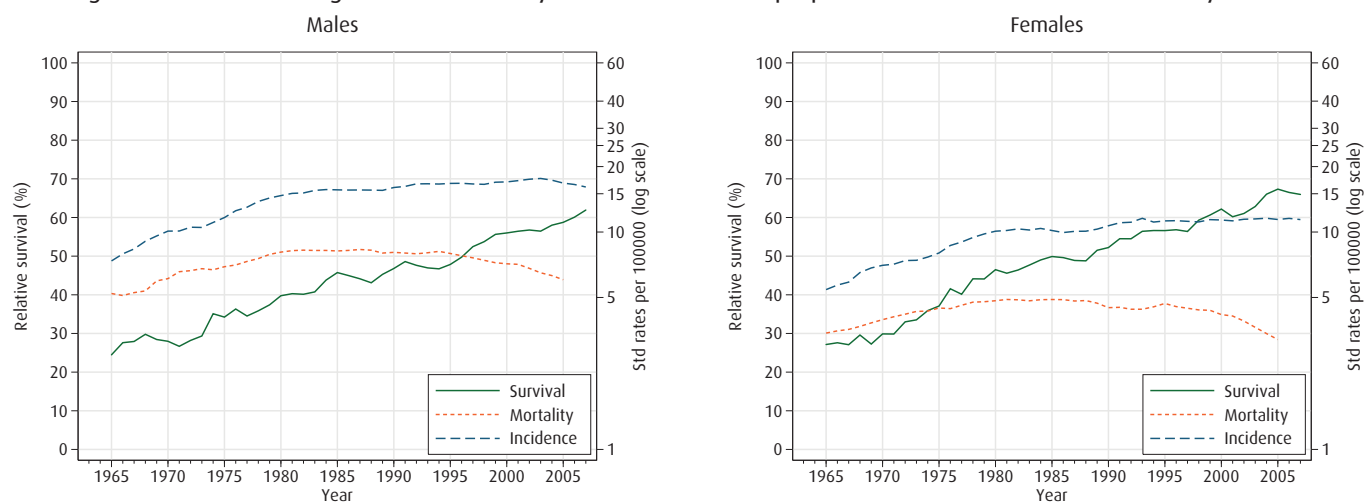


Figure S13b: Trends in 5-year relative survival by age

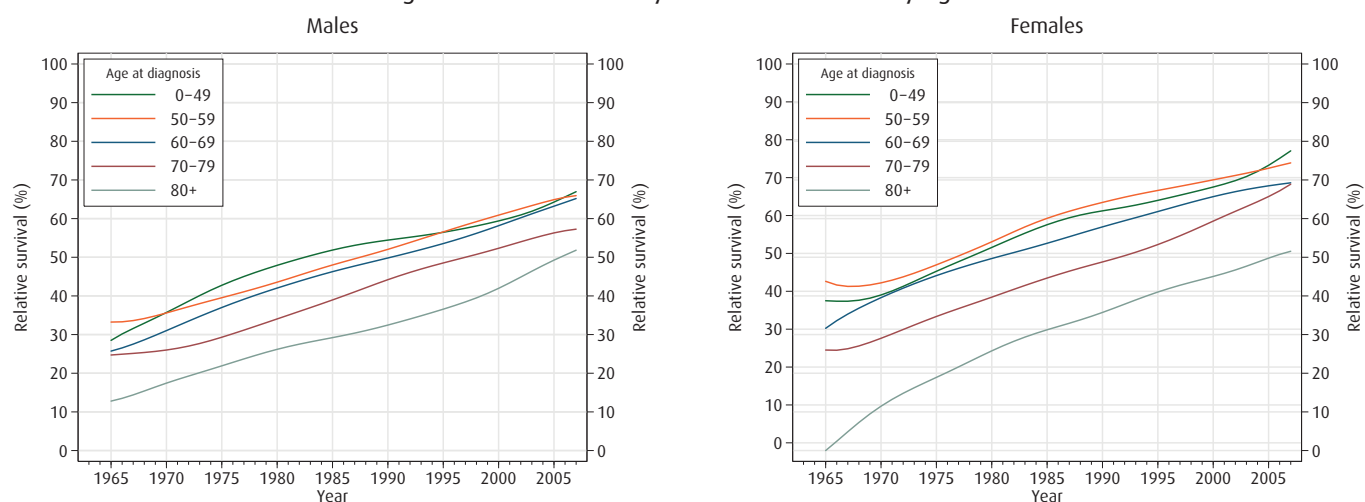


Figure S13c: Estimates of trends in the proportion cured and the median survival time for the uncured

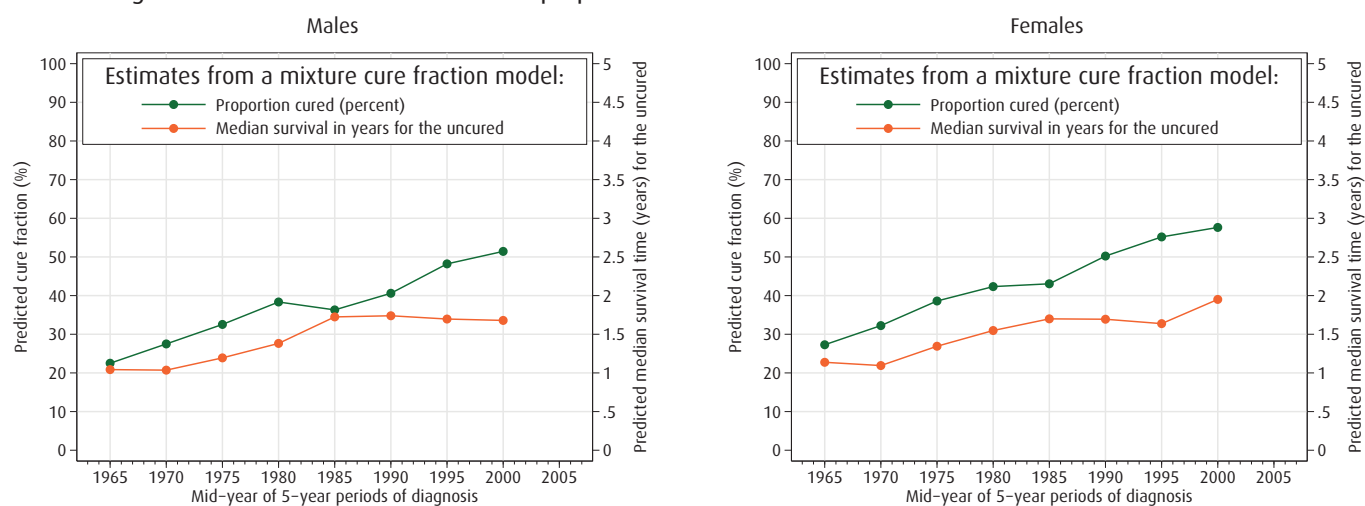


Figure S13d: Relative survival up to 15 years after diagnosis by sex and age

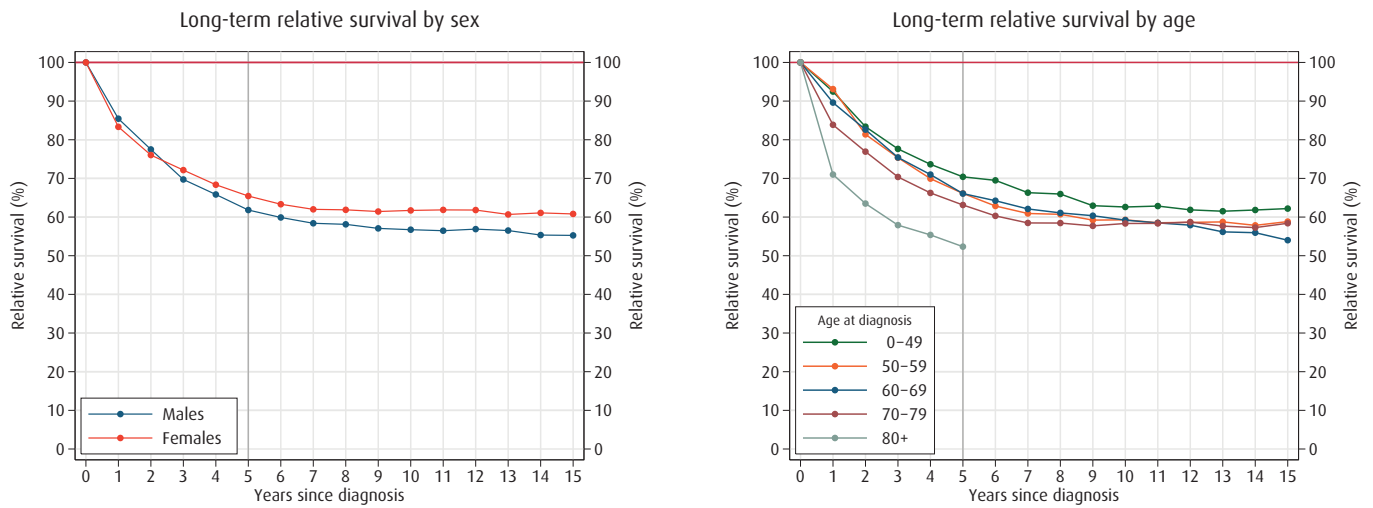


Figure S13e: Conditional 5-year relative survival for every additional year after diagnosis

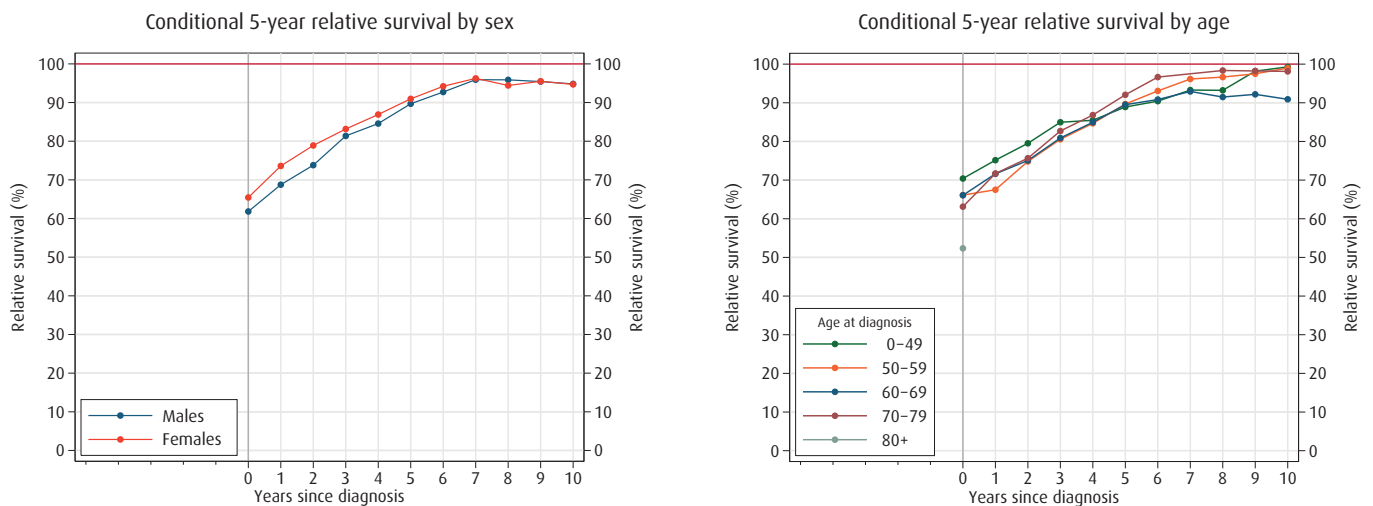
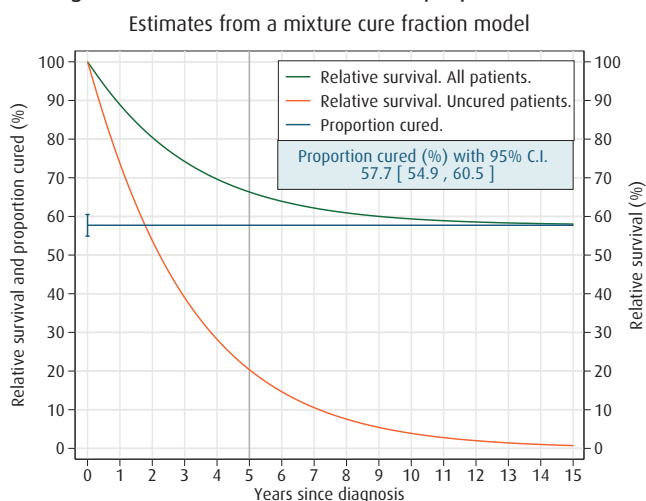


Figure S13f: Relative survival and proportion cured



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-49	188	181	369	6.3
50-59	374	520	894	15.2
60-69	596	869	1465	24.9
70-79	705	976	1681	28.6
80+	767	697	1464	24.9
Total	2630	3243	5873	100.0

Figure S14a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

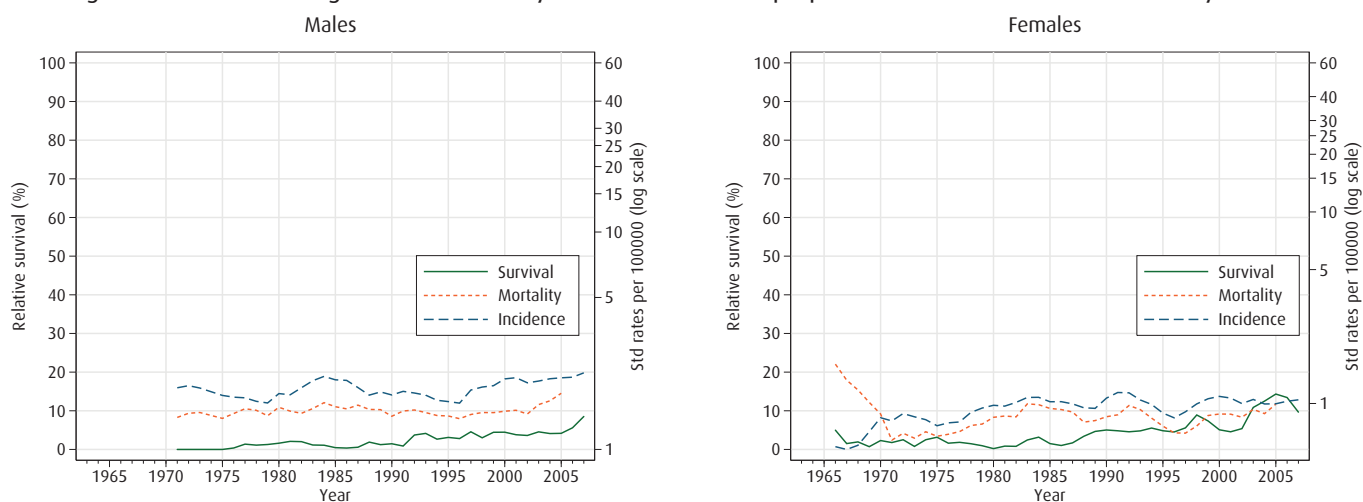


Figure S14b: Trends in 5-year relative survival by age

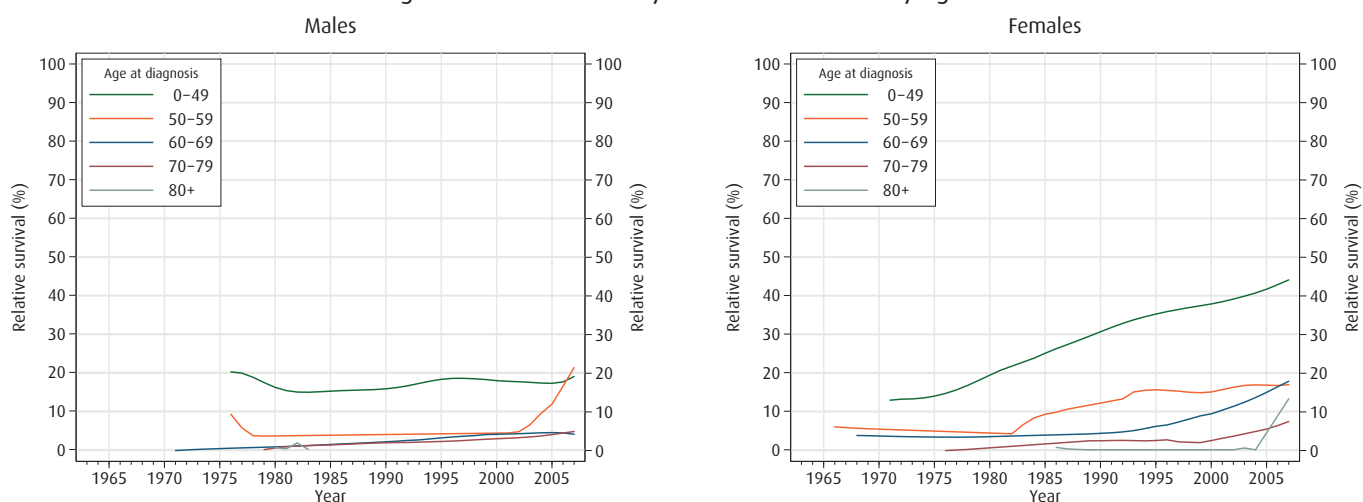


Figure S14c: Estimates of trends in the proportion cured and the median survival time for the uncured

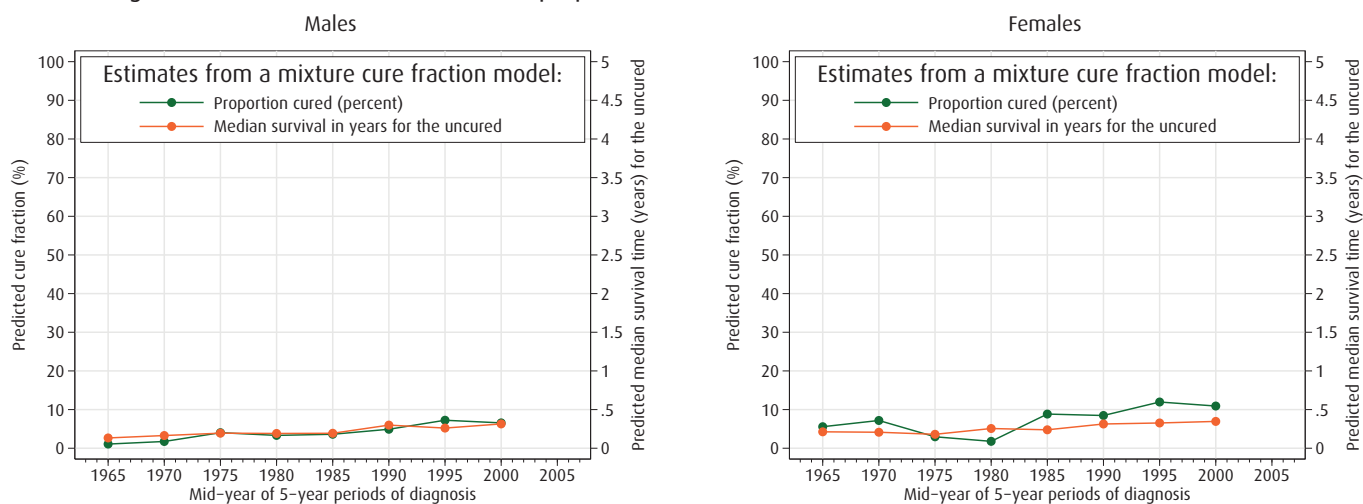


Figure S14d: Relative survival up to 15 years after diagnosis by sex and age

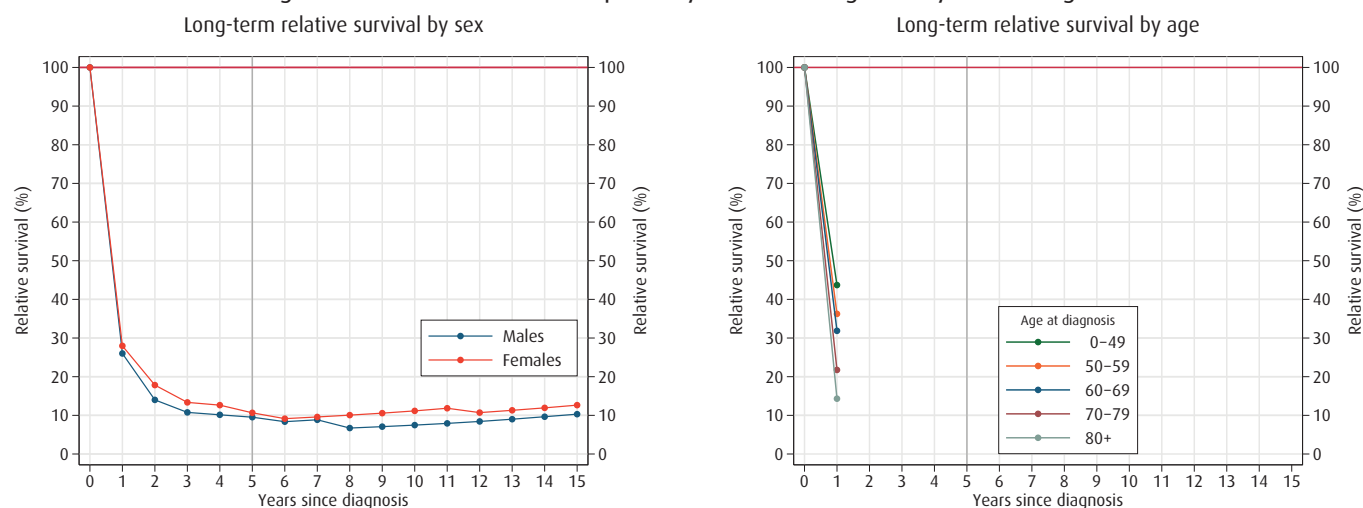


Figure S14e: Conditional 5-year relative survival for every additional year after diagnosis

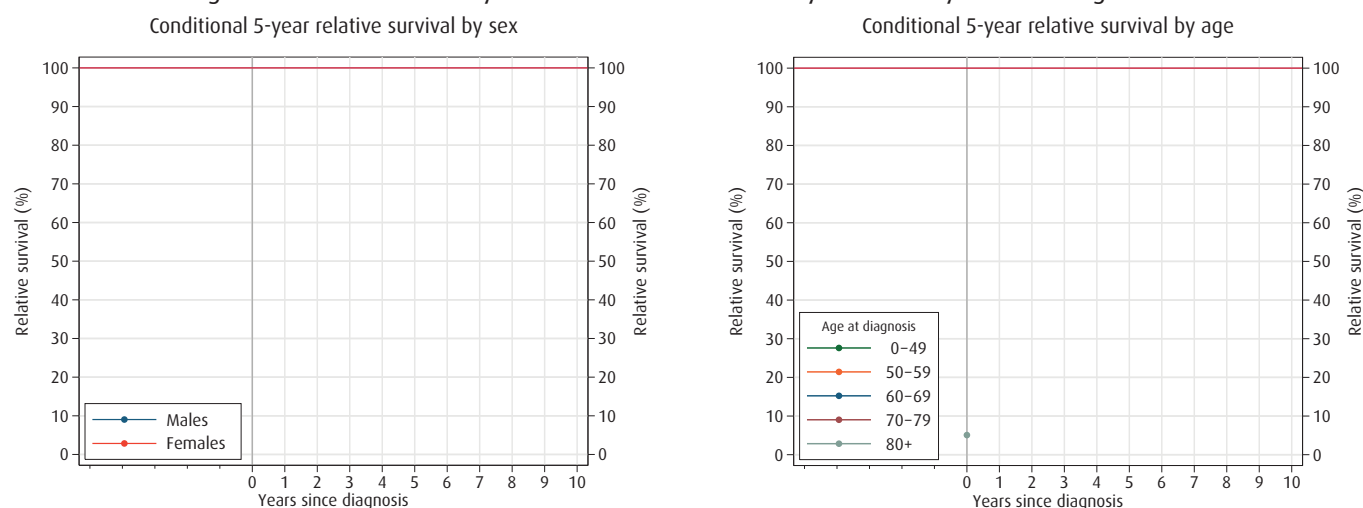
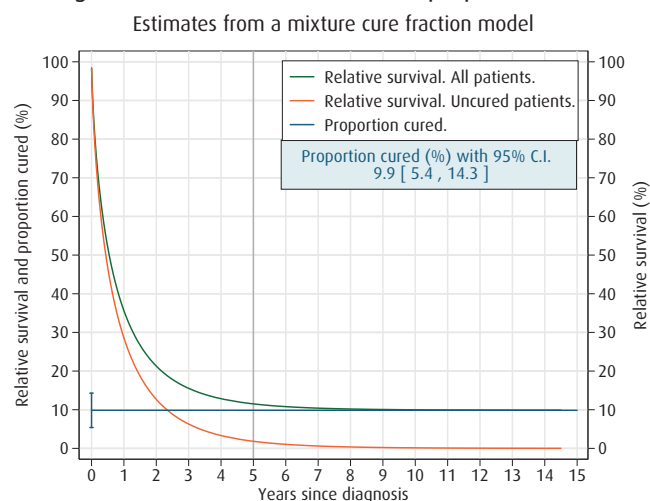


Figure S14f: Relative survival and proportion cured



Age distribution of patients (2003–2007)

Age	Males	Females	All	%
0-49	22	48	70	12.5
50-59	16	59	75	13.3
60-69	41	74	115	20.5
70-79	67	94	161	28.6
80+	63	78	141	25.1
Total	209	353	562	100.0

Figure S15a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

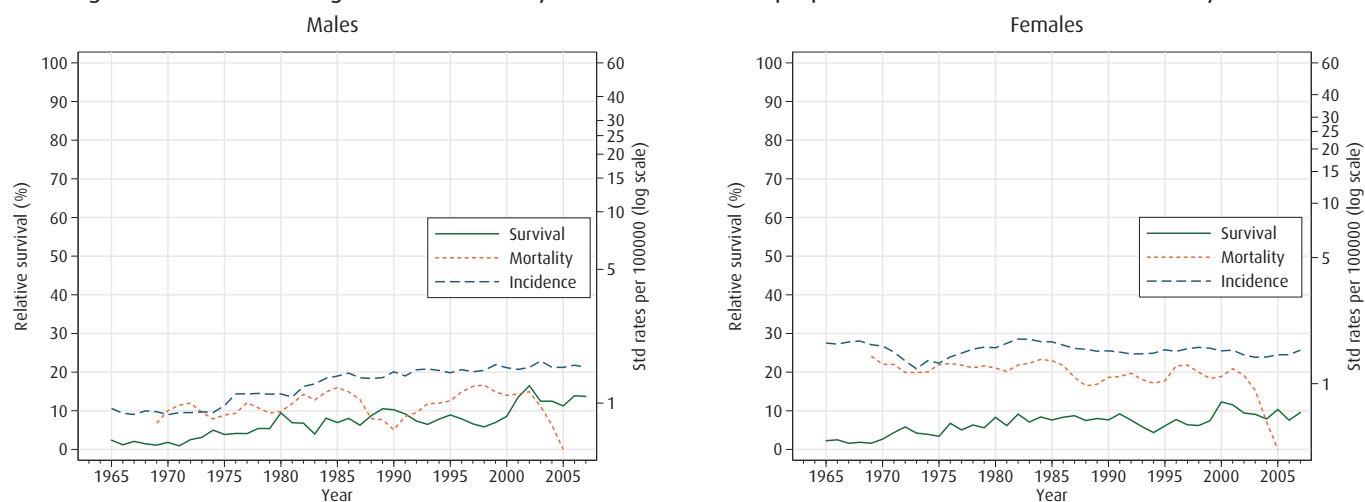


Figure S15b: Trends in 5-year relative survival by age

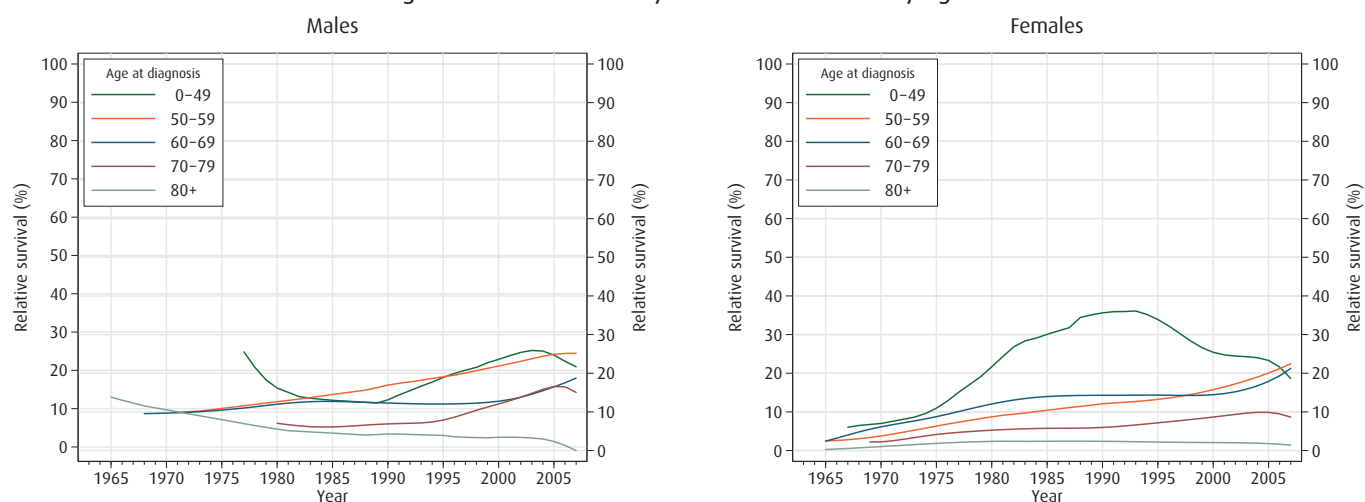


Figure S15c: Estimates of trends in the proportion cured and the median survival time for the uncured

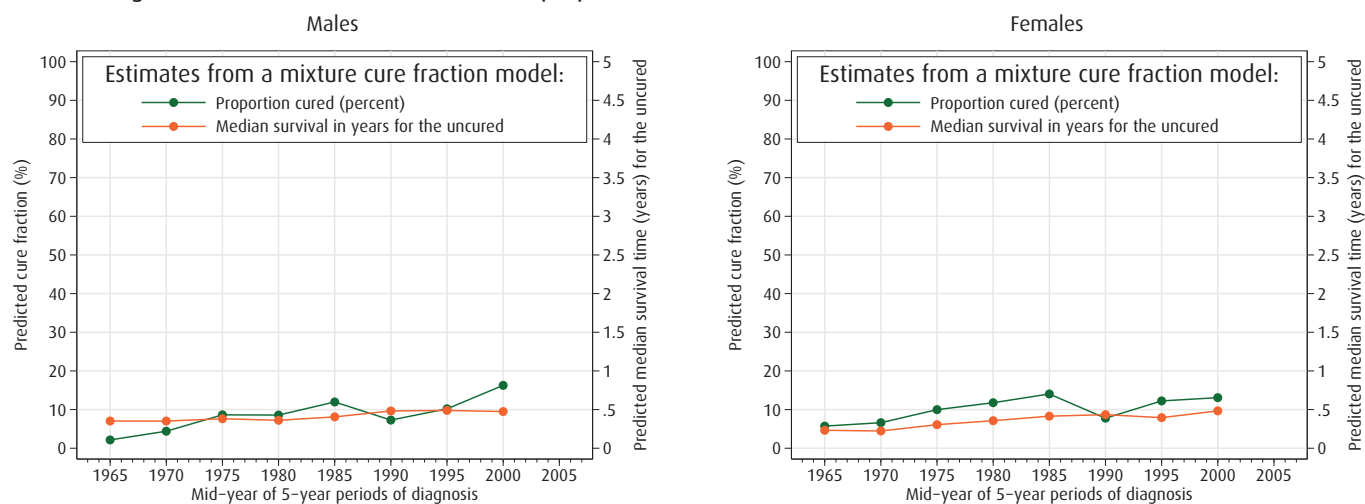


Figure S15d: Relative survival up to 15 years after diagnosis by sex and age

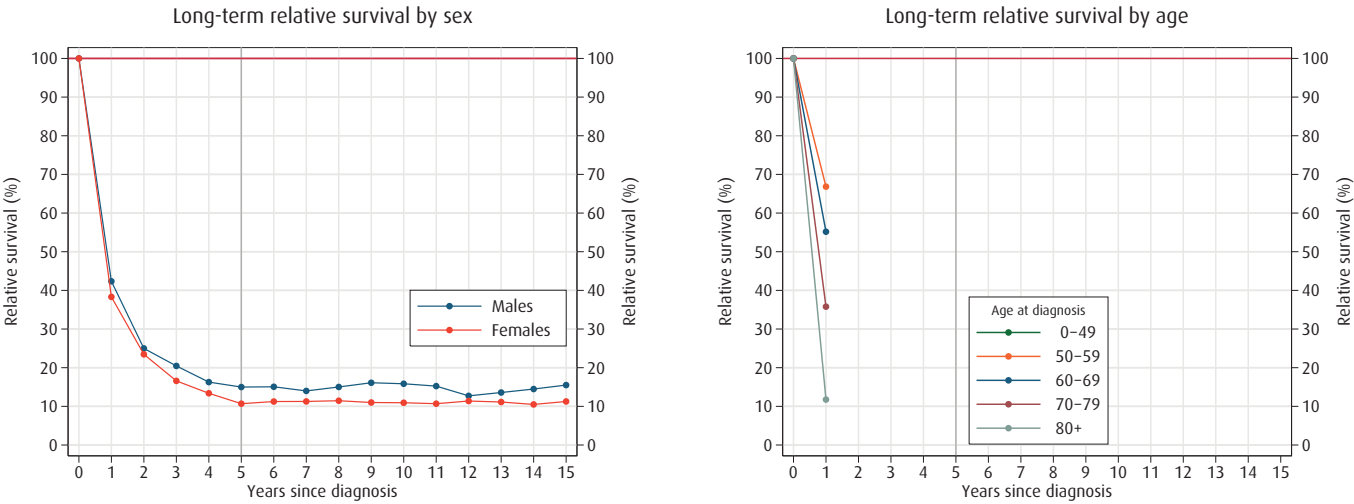


Figure S15e: Conditional 5-year relative survival for every additional year after diagnosis

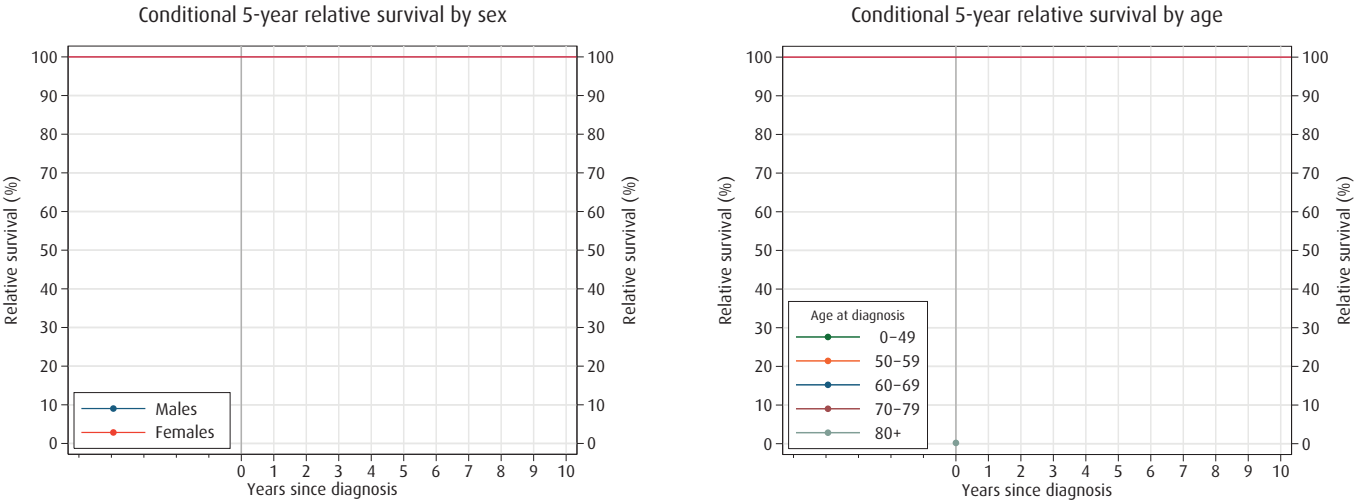
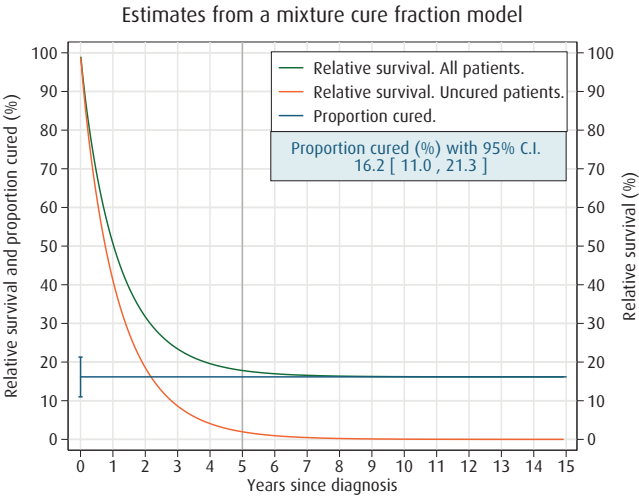


Figure S15f: Relative survival and proportion cured



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-49	24	22	46	7.1
50-59	44	50	94	14.6
60-69	66	64	130	20.2
70-79	107	89	196	30.4
80+	116	63	179	27.8
Total	357	288	645	100.0

Figure S16a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

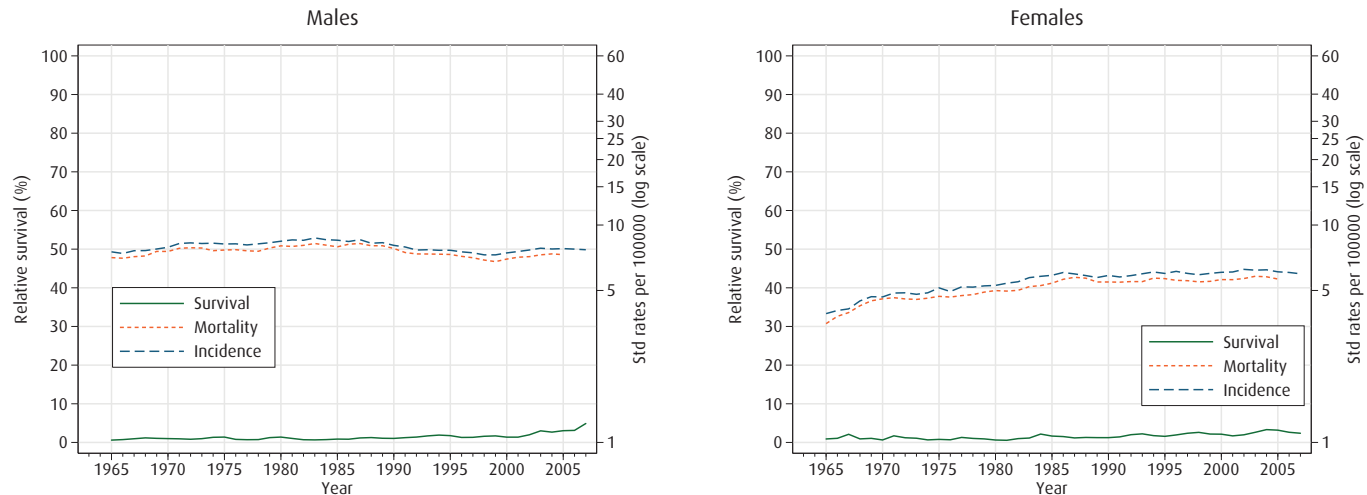


Figure S16b: Trends in 5-year relative survival by age

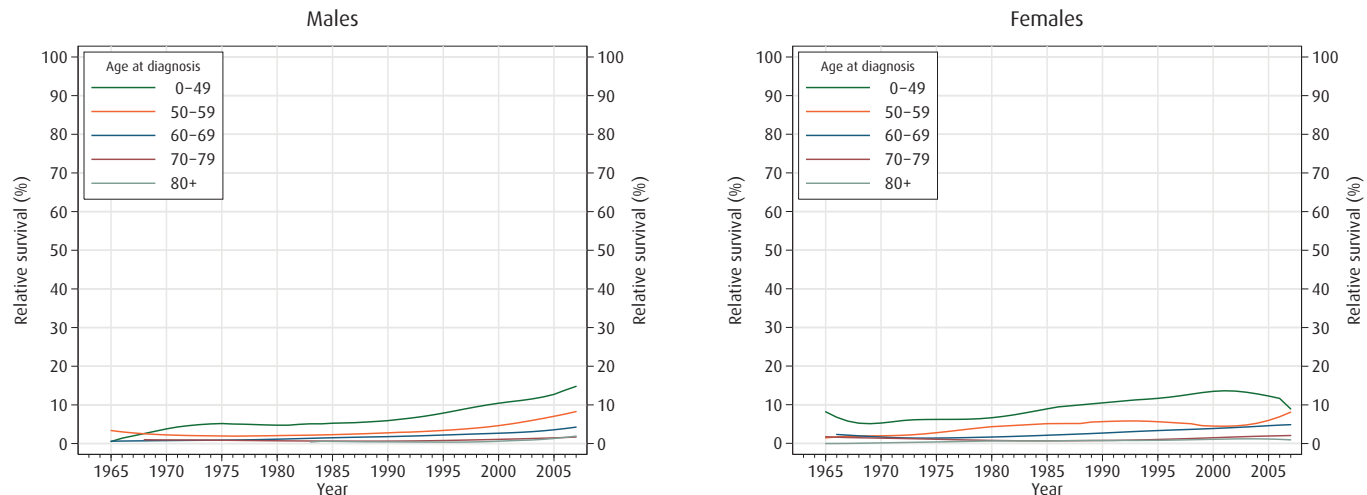


Figure S16c: Estimates of trends in the proportion cured and the median survival time for the uncured

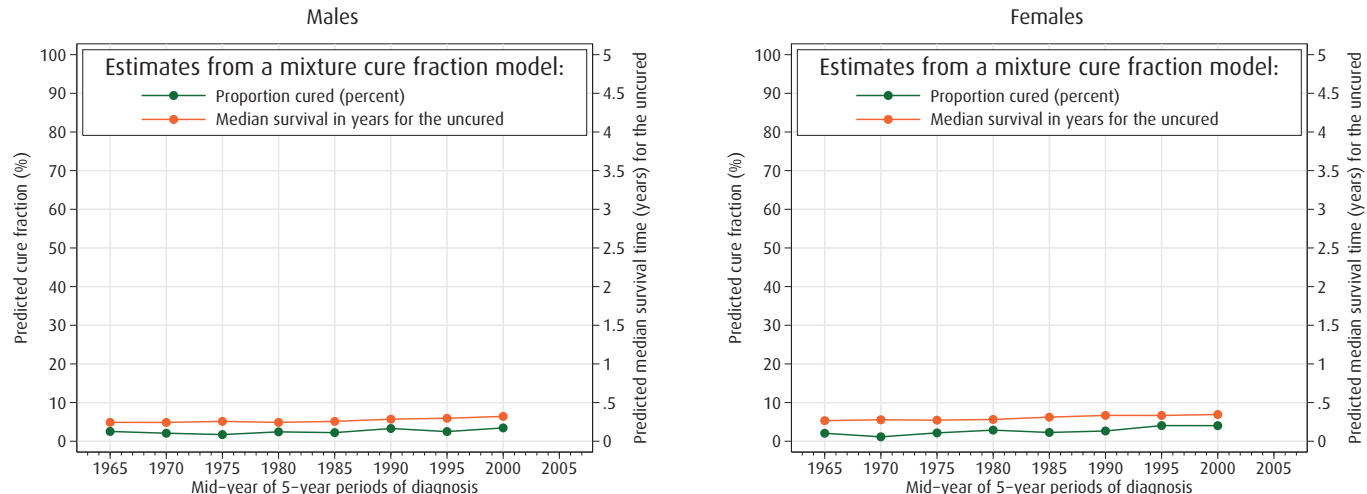


Figure S16d: Relative survival up to 15 years after diagnosis by sex and age

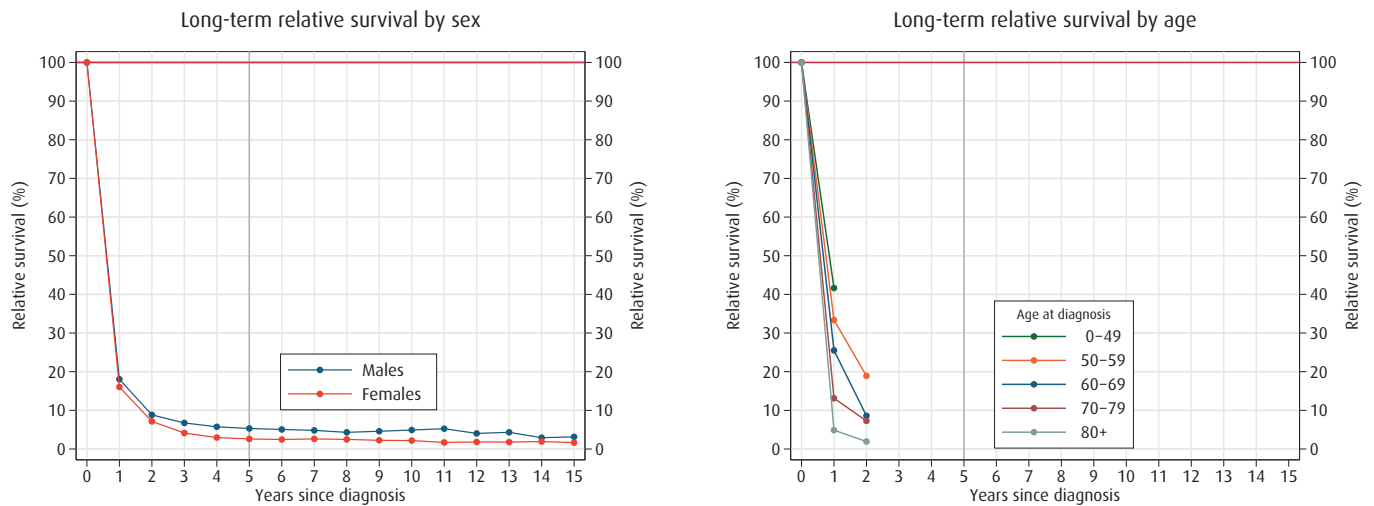


Figure S16e: Conditional 5-year relative survival for every additional year after diagnosis

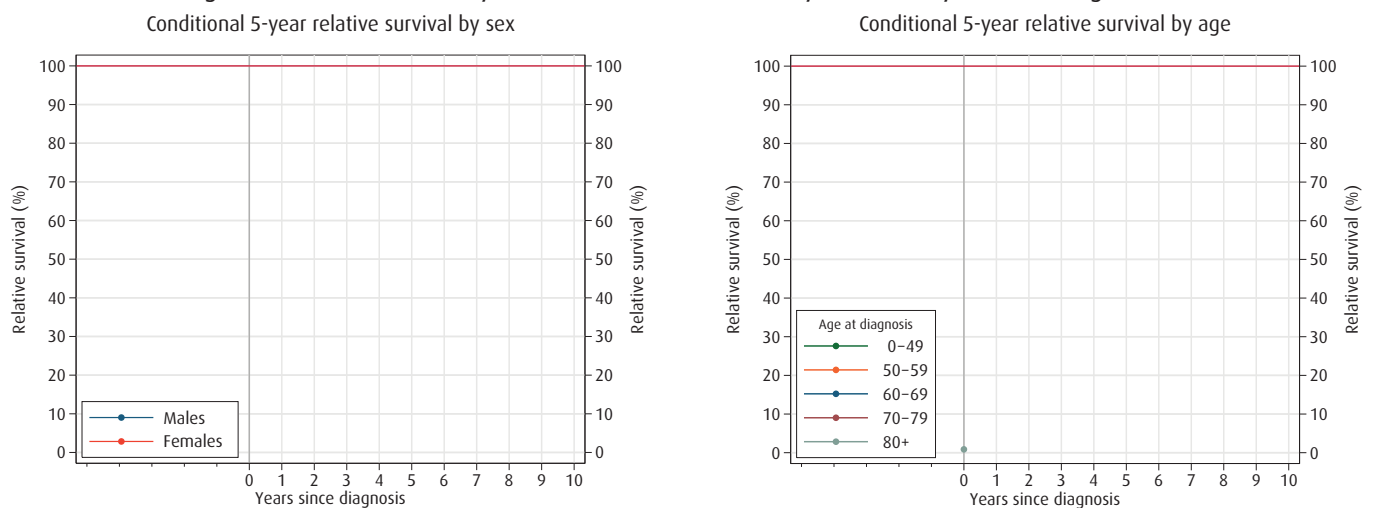
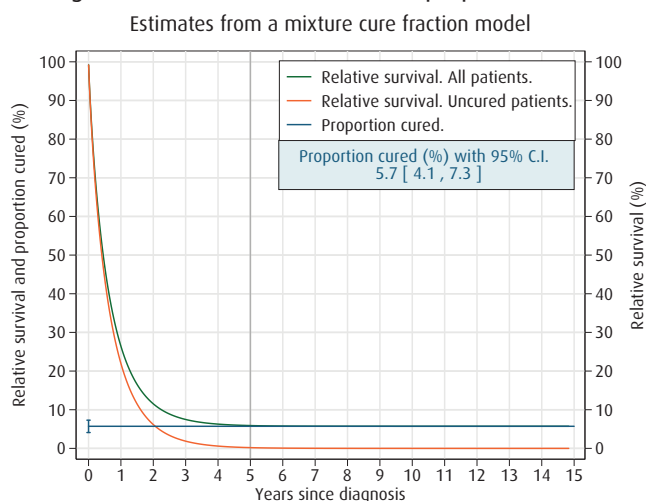


Figure S16f: Relative survival and proportion cured



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-49	67	69	136	4.7
50-59	158	216	374	12.8
60-69	315	412	727	25.0
70-79	420	437	857	29.4
80+	518	301	819	28.1
Total	1478	1435	2913	100.0

Figure S17a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

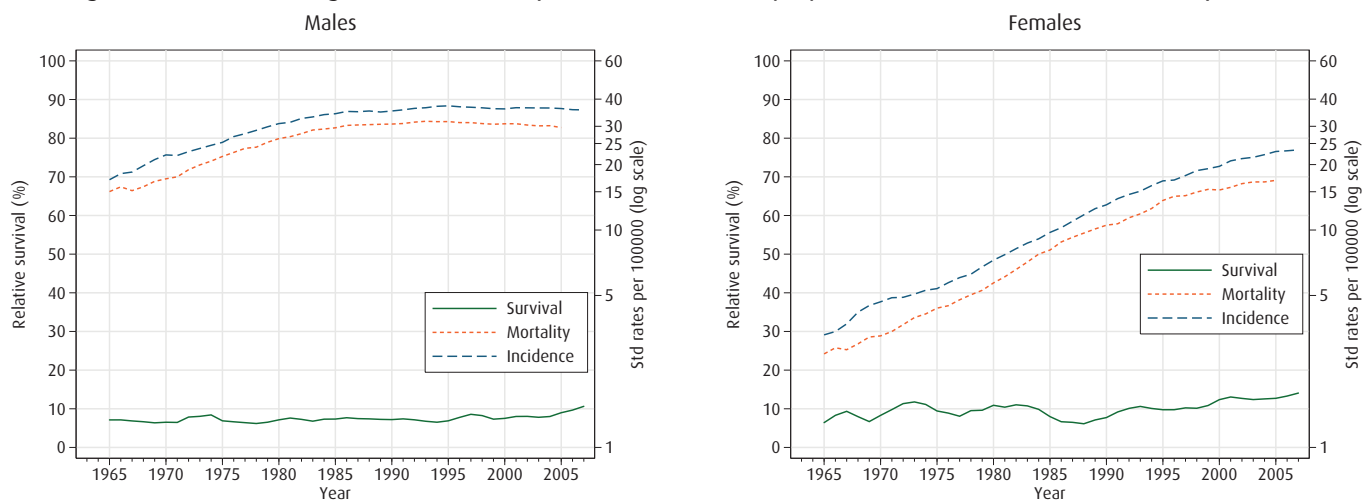


Figure S17b: Trends in 5-year relative survival by age

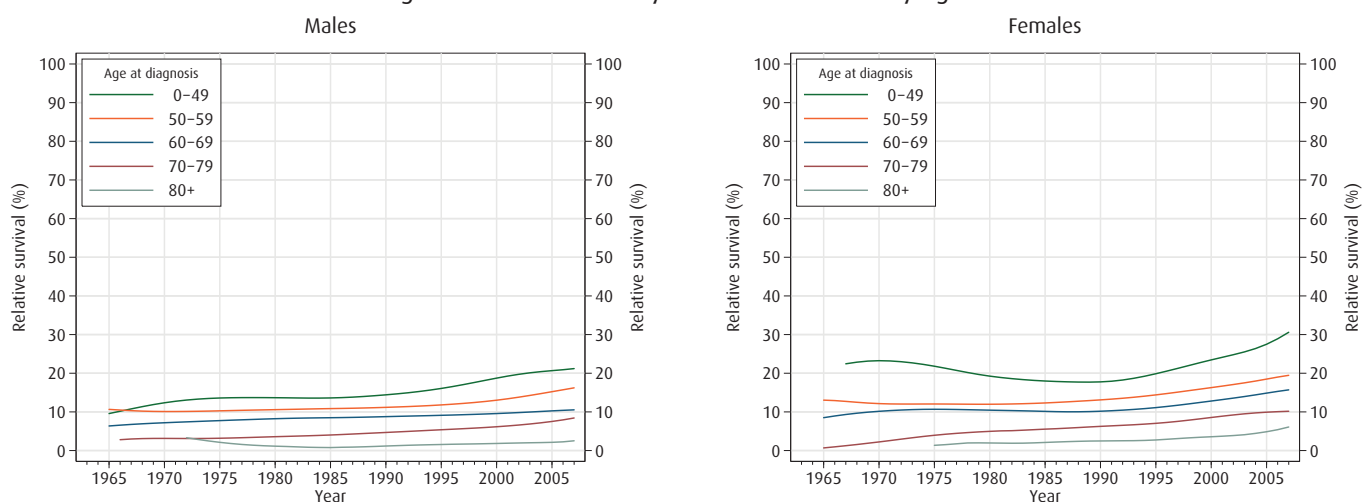


Figure S17c: Estimates of trends in the proportion cured and the median survival time for the uncured

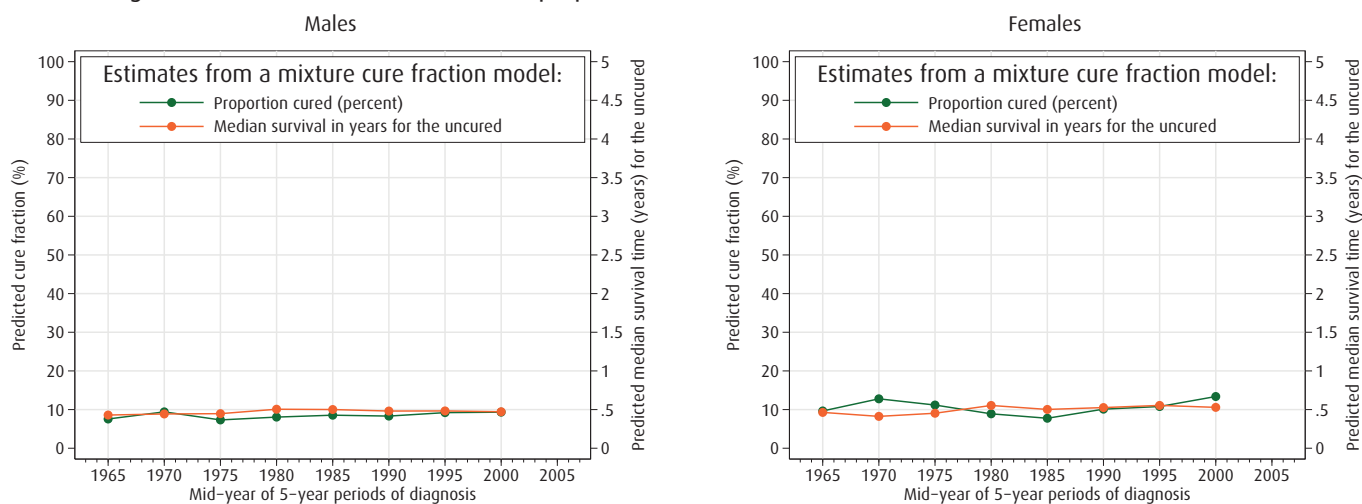


Figure S17d: Relative survival up to 15 years after diagnosis by sex and age

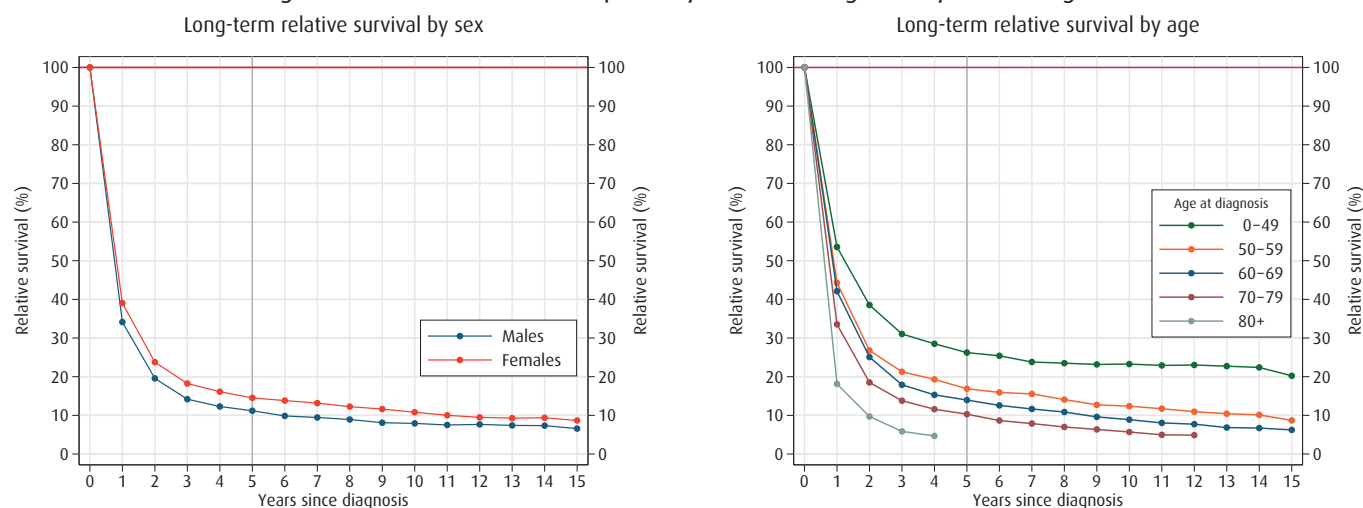


Figure S17e: Conditional 5-year relative survival for every additional year after diagnosis

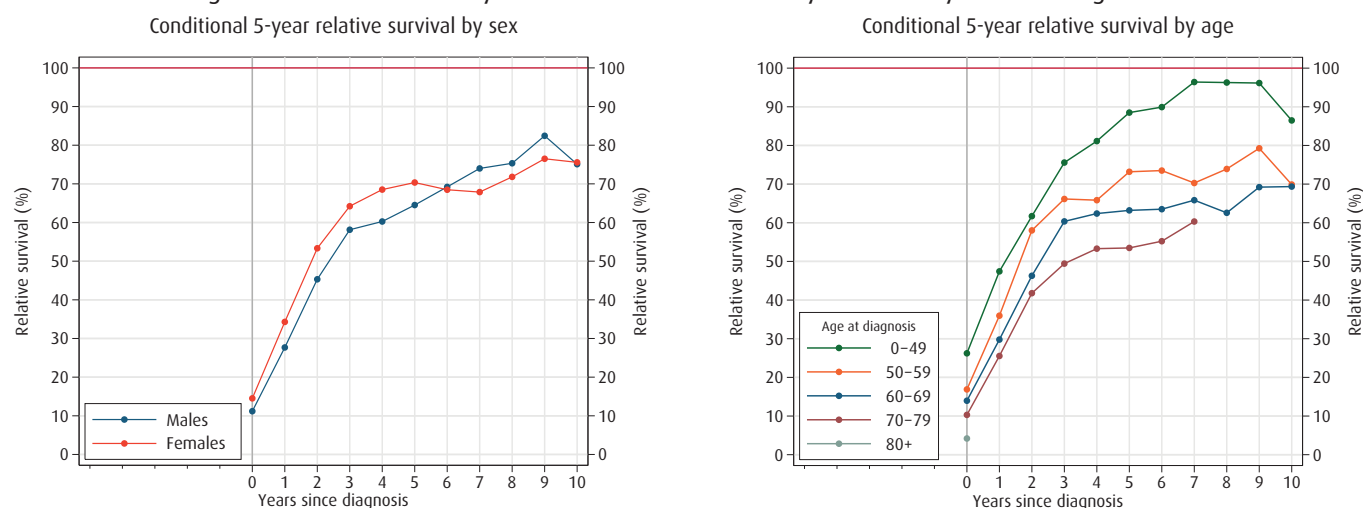
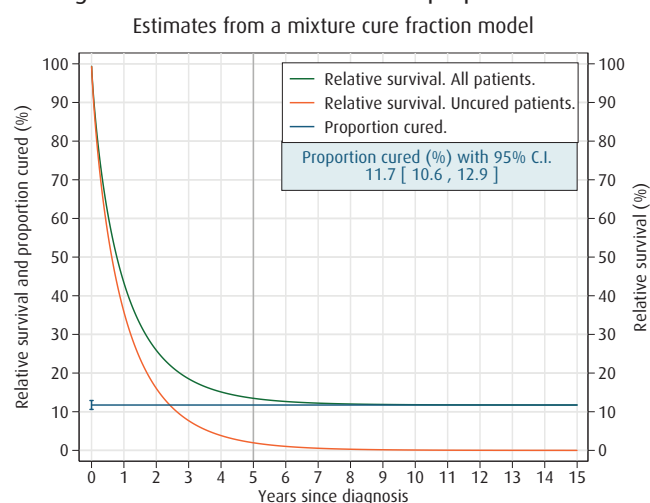


Figure S17f: Relative survival and proportion cured



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-49	228	232	460	4.0
50-59	832	1003	1835	16.1
60-69	1334	1950	3284	28.8
70-79	1533	2399	3932	34.5
80+	674	1210	1884	16.5
Total	4601	6794	11395	100.0

Figure S18a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

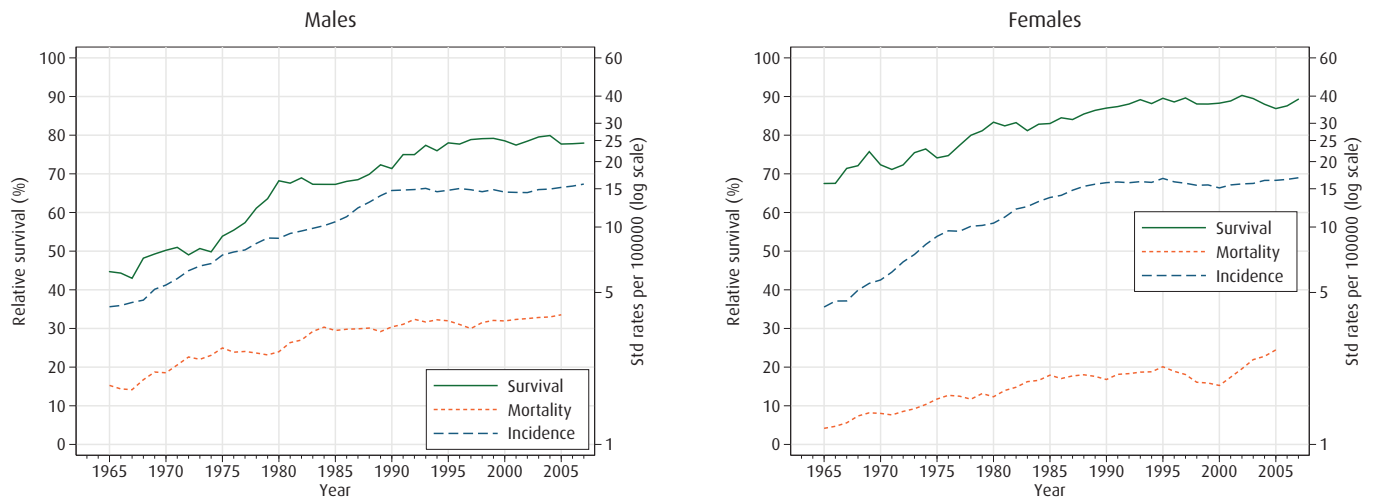


Figure S18b: Trends in 5-year relative survival by age

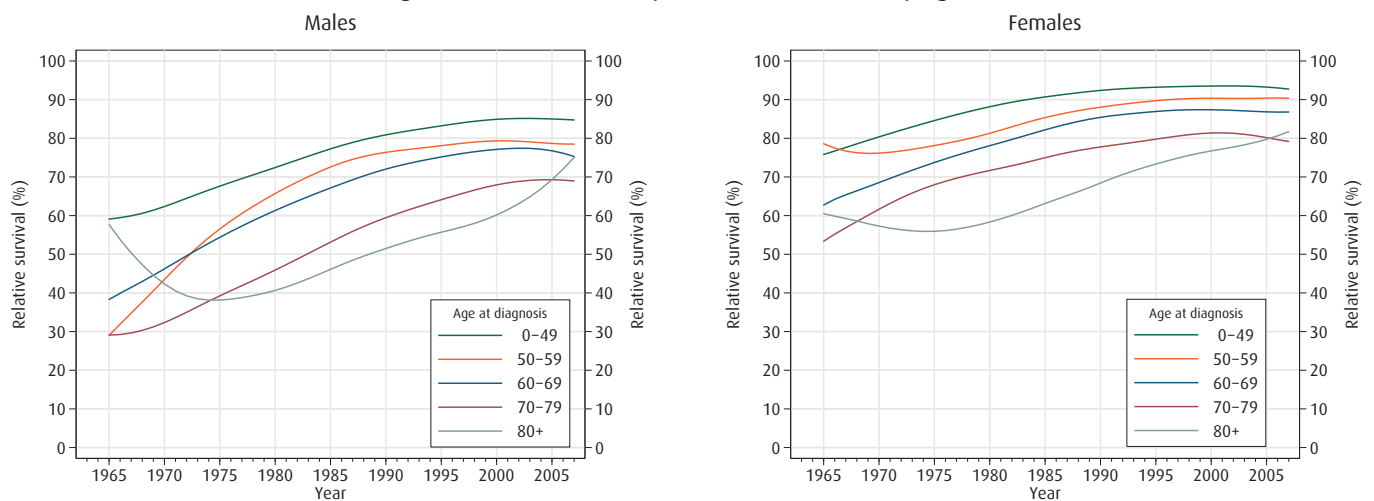


Figure S18c: Estimates of trends in the proportion cured and the median survival time for the uncured

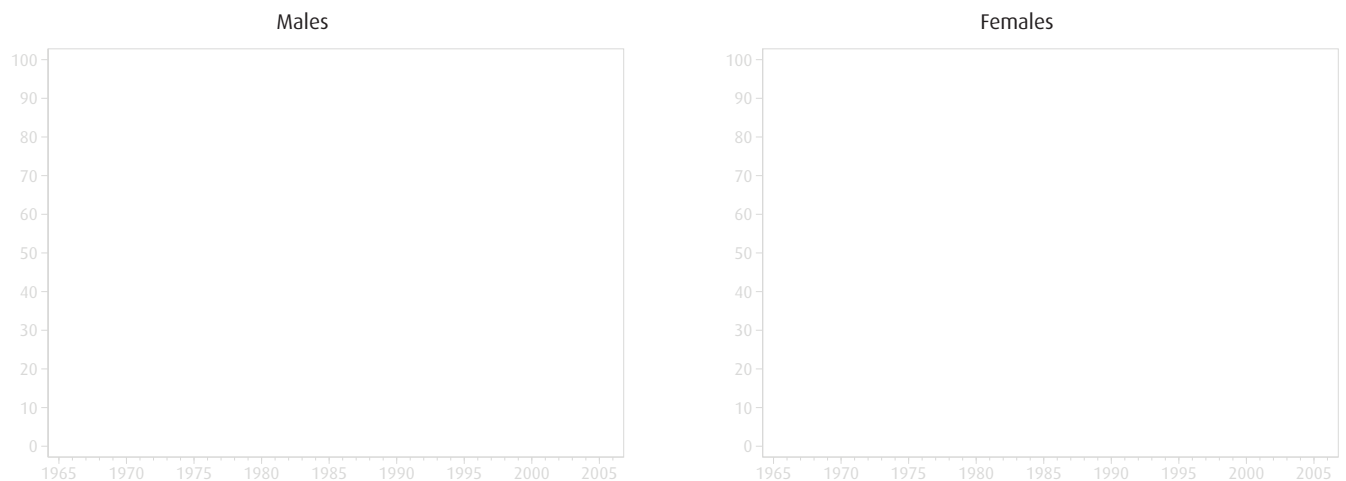


Figure S18d: Relative survival up to 15 years after diagnosis by sex and age

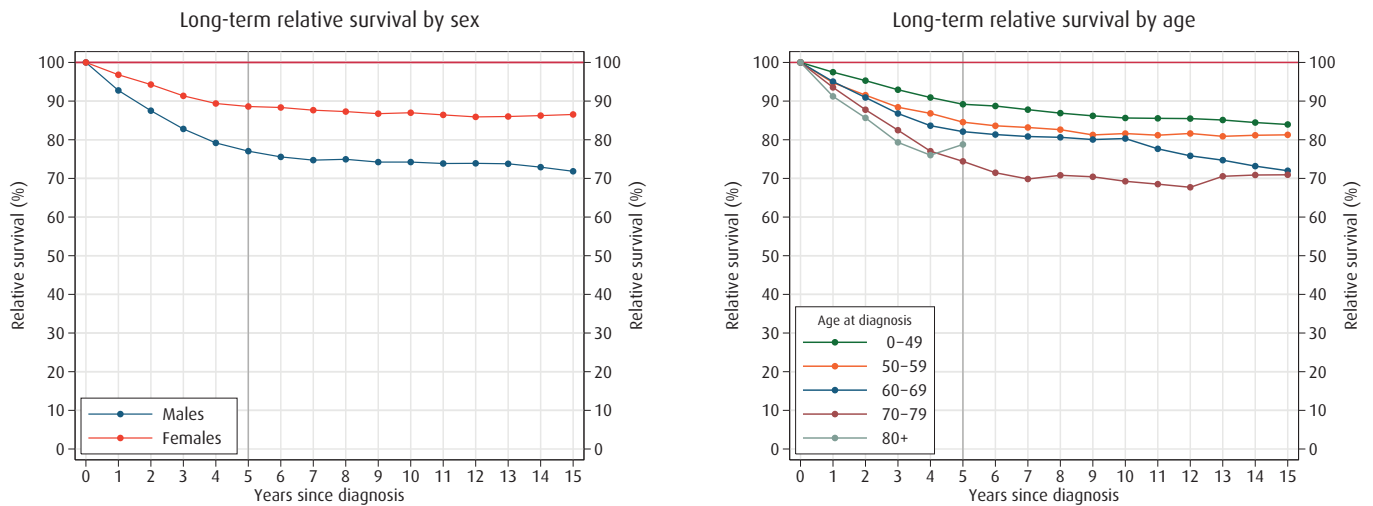


Figure S18e: Conditional 5-year relative survival for every additional year after diagnosis

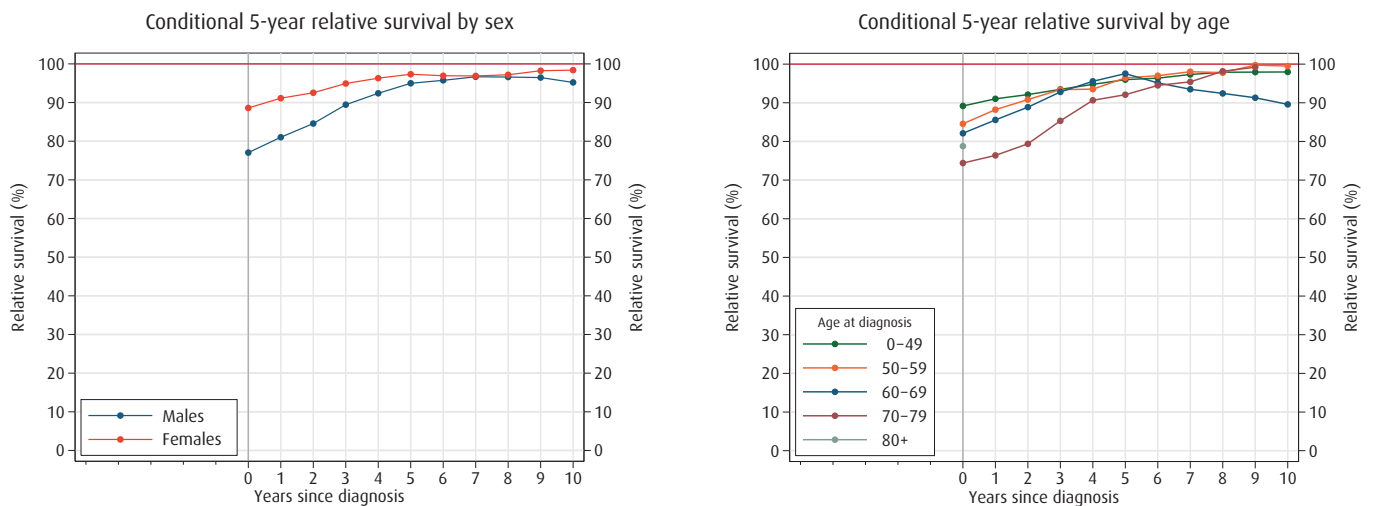
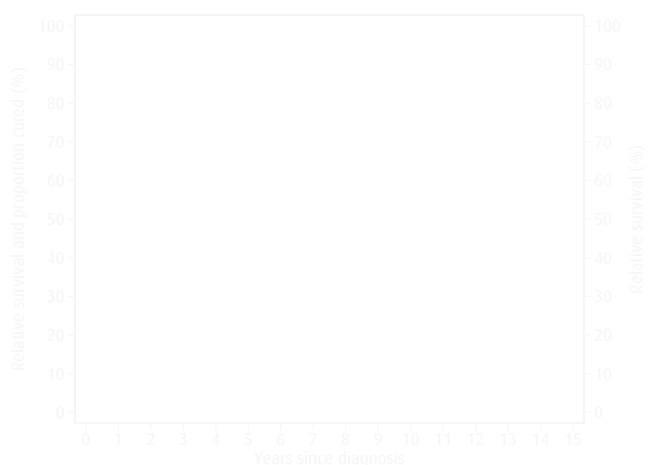


Figure S18f: Relative survival and proportion cured

Estimates from a mixture cure fraction model



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-49	900	529	1429	25.6
50-59	554	545	1099	19.7
60-69	526	620	1146	20.5
70-79	498	588	1086	19.5
80+	447	370	817	14.6
Total	2925	2652	5577	100.0

Figure S19a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

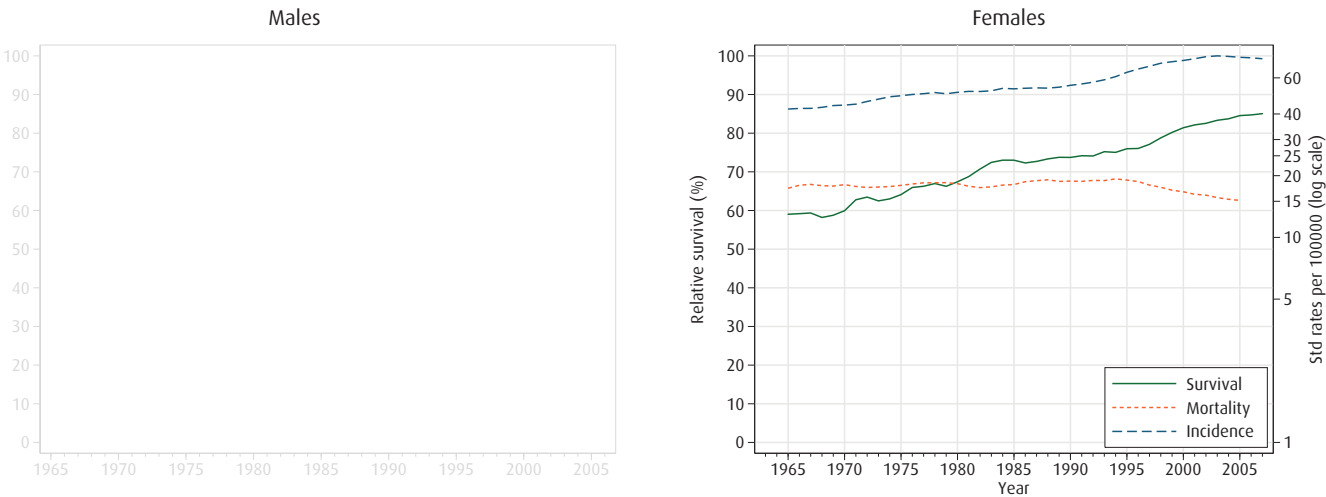


Figure S19b: Trends in 5-year relative survival by age

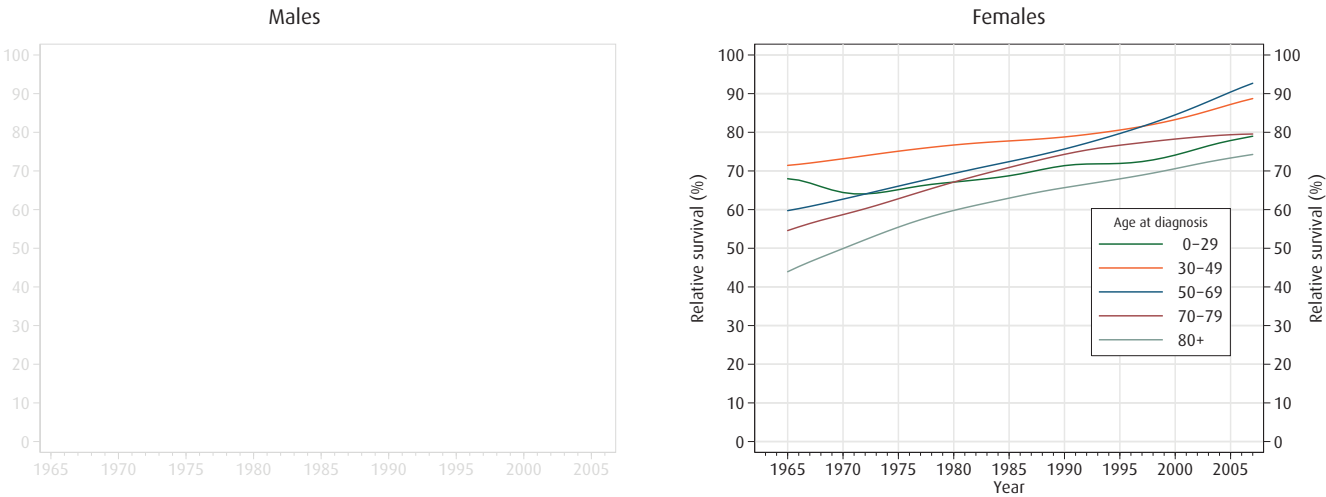


Figure S19c: Estimates of trends in the proportion cured and the median survival time for the uncured

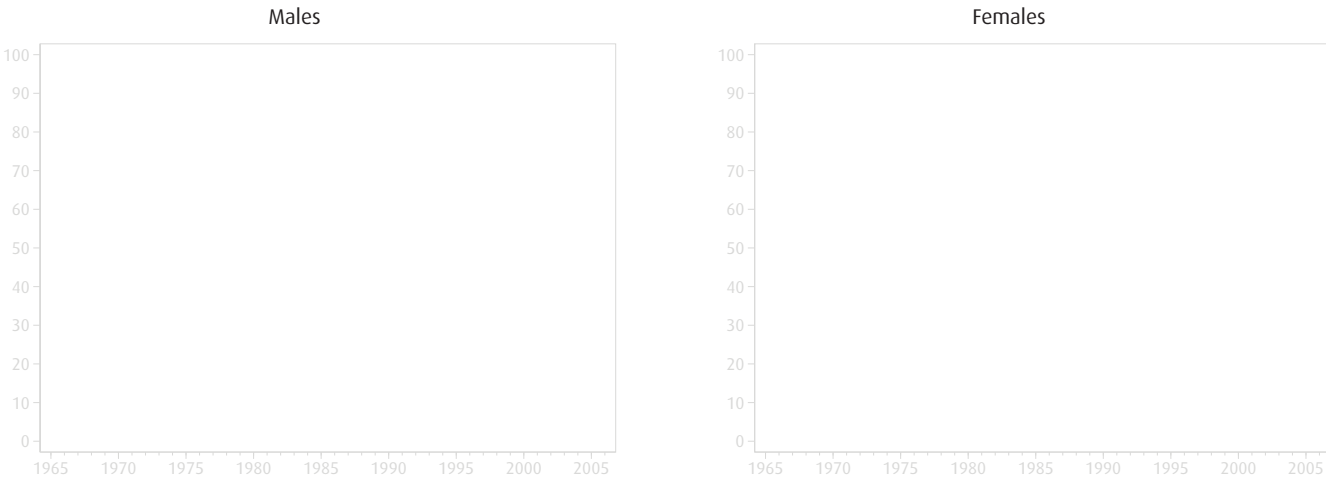


Figure S19d: Relative survival up to 15 years after diagnosis by sex and age

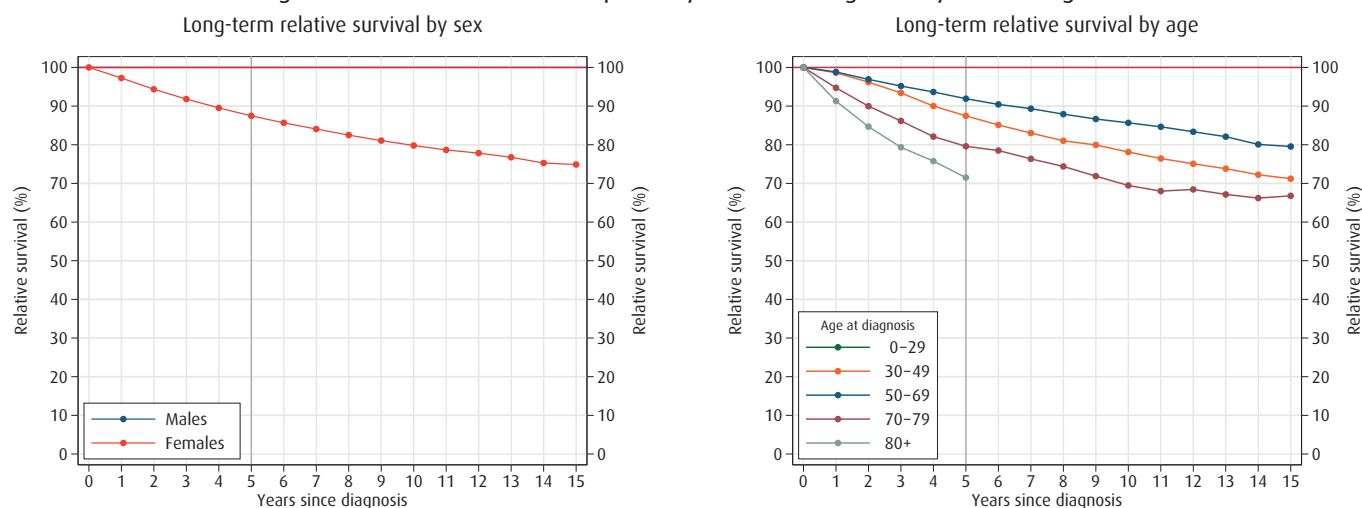


Figure S19e: Conditional 5-year relative survival for every additional year after diagnosis

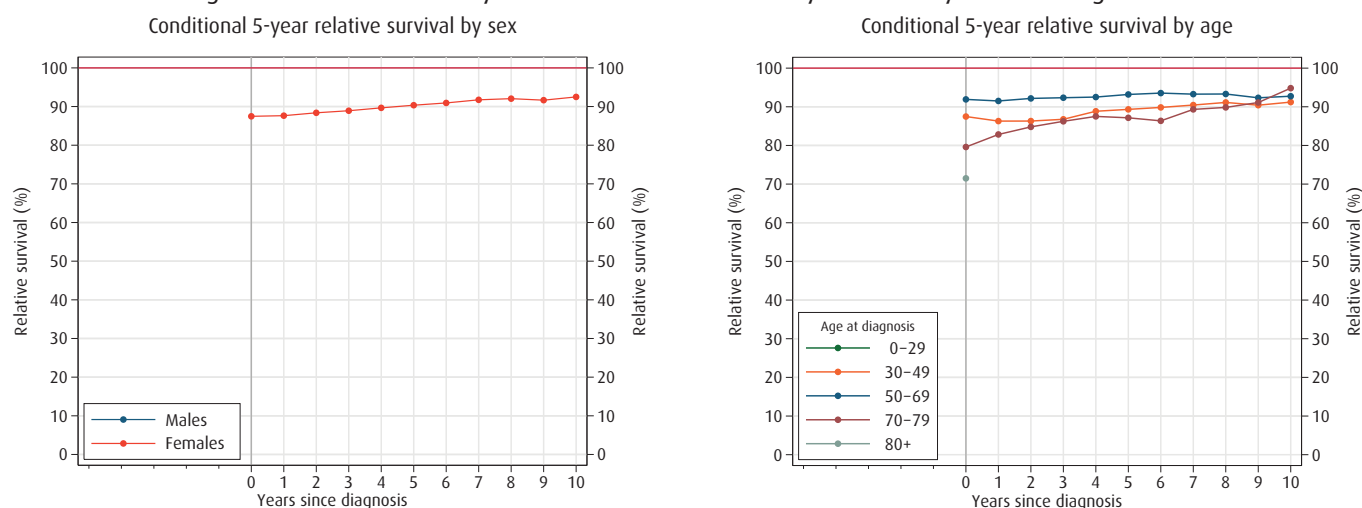
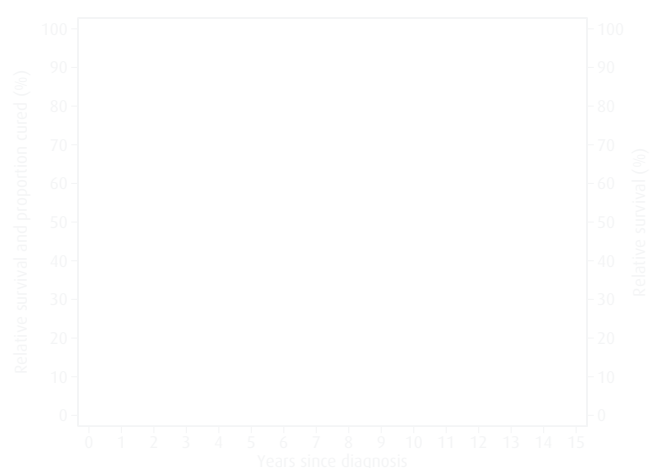


Figure S19f: Relative survival and proportion cured

Estimates from a mixture cure fraction model



Age distribution of patients (2003–2007)

Age	Males	Females	All	%
0-29		57	57	0.4
30-49		2747	2747	20.1
50-69		7024	7024	51.4
70-79		1836	1836	13.4
80+		1989	1989	14.6
Total		13653	13653	100.0

Figure S20a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

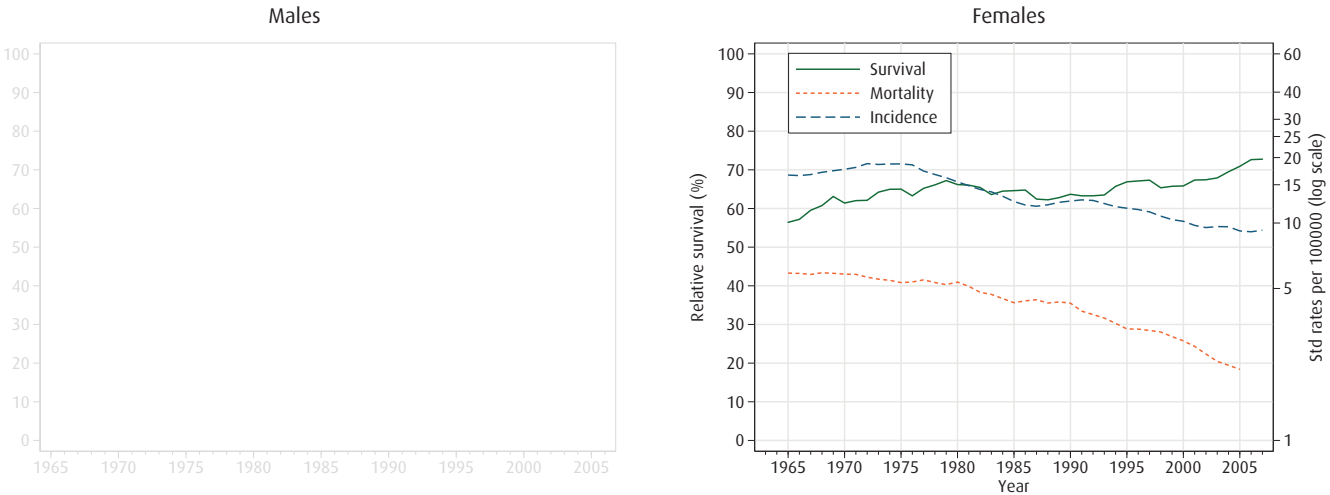


Figure S20b: Trends in 5-year relative survival by age

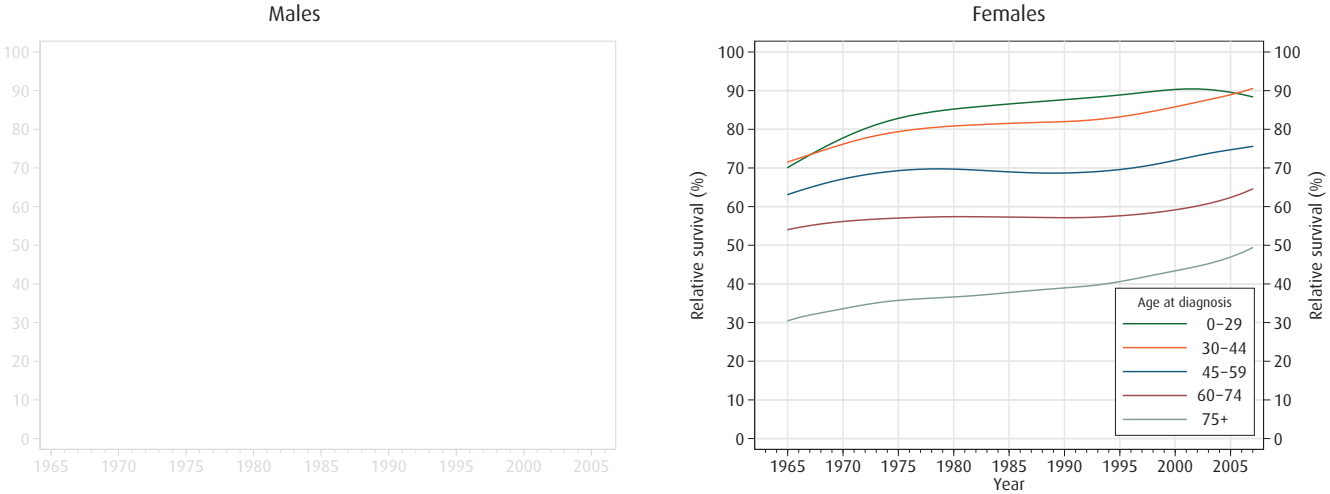


Figure S20c: Estimates of trends in the proportion cured and the median survival time for the uncured

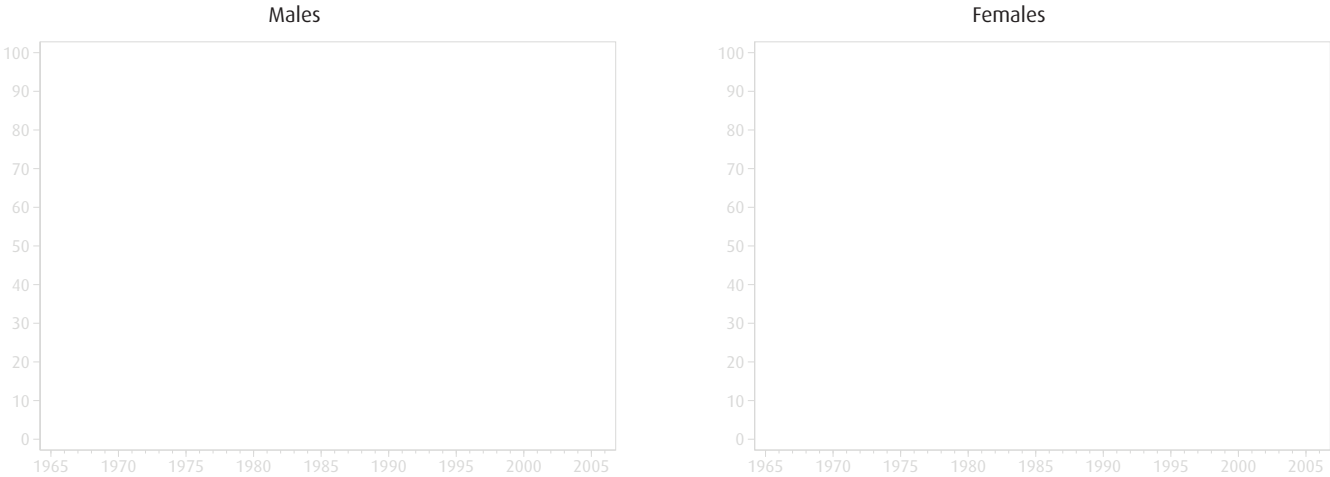


Figure S20d: Relative survival up to 15 years after diagnosis by sex and age

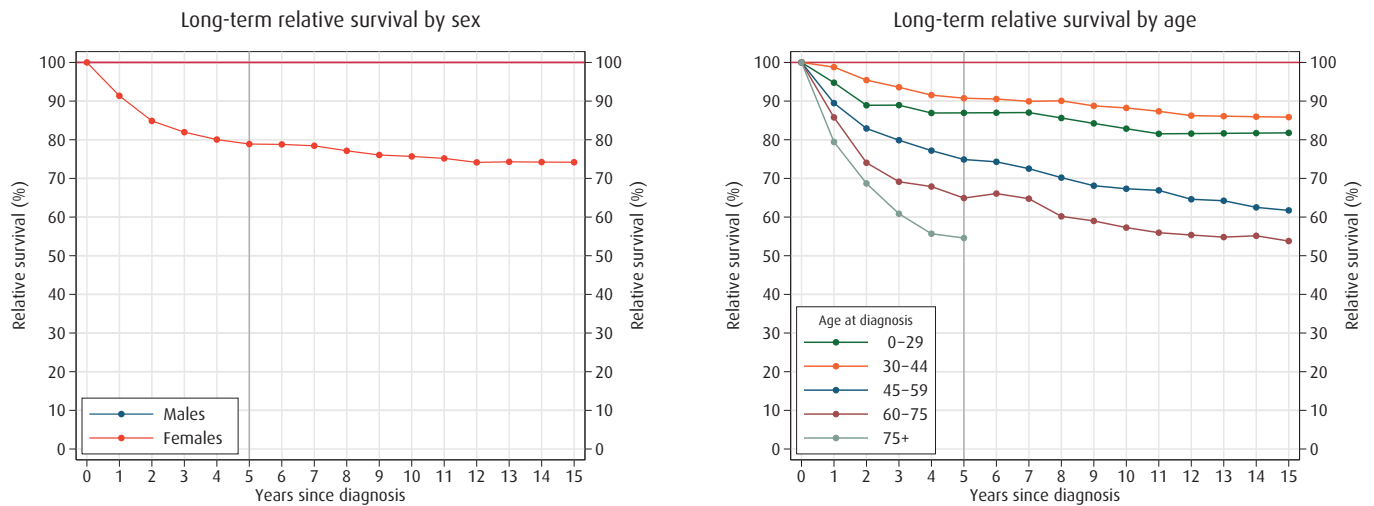


Figure S20e: Conditional 5-year relative survival for every additional year after diagnosis

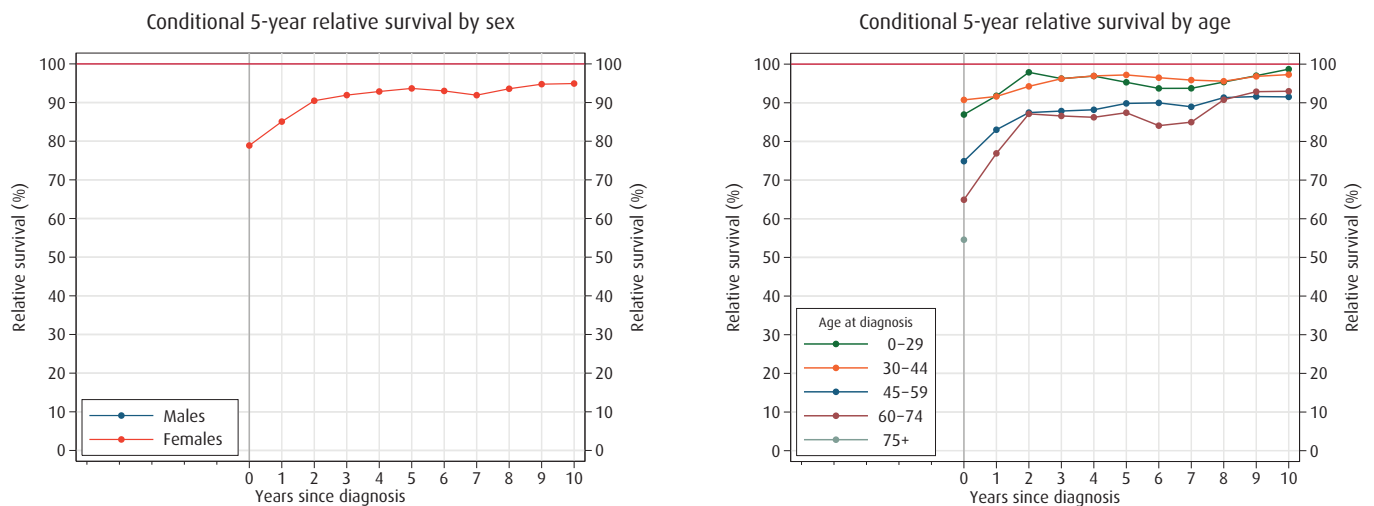
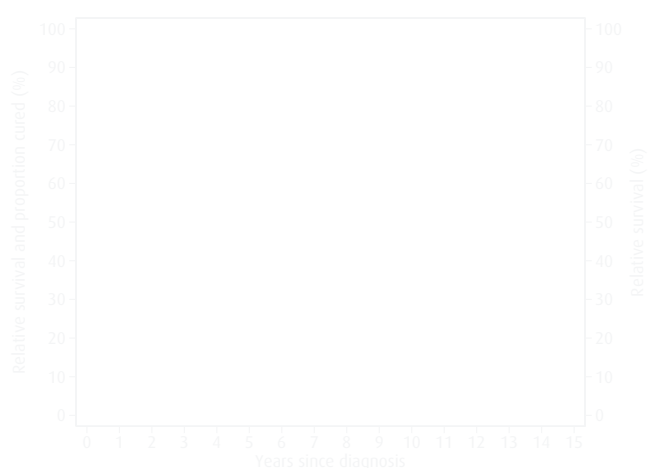


Figure S20f: Relative survival and proportion cured

Estimates from a mixture cure fraction model



Age distribution of patients (2003–2007)

Age	Males	Females	All	%
0-29		86	86	6.0
30-44		513	513	35.8
45-59		401	401	28.0
60-74		244	244	17.0
75+		188	188	13.1
Total		1432	1432	100.0

Figure S21a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

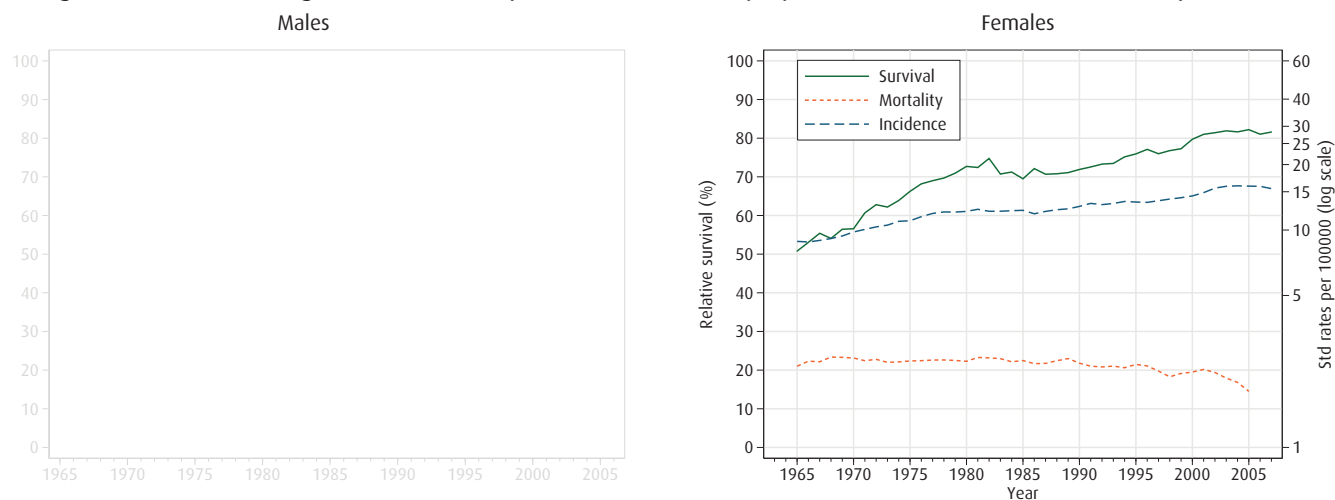


Figure S21b: Trends in 5-year relative survival by age

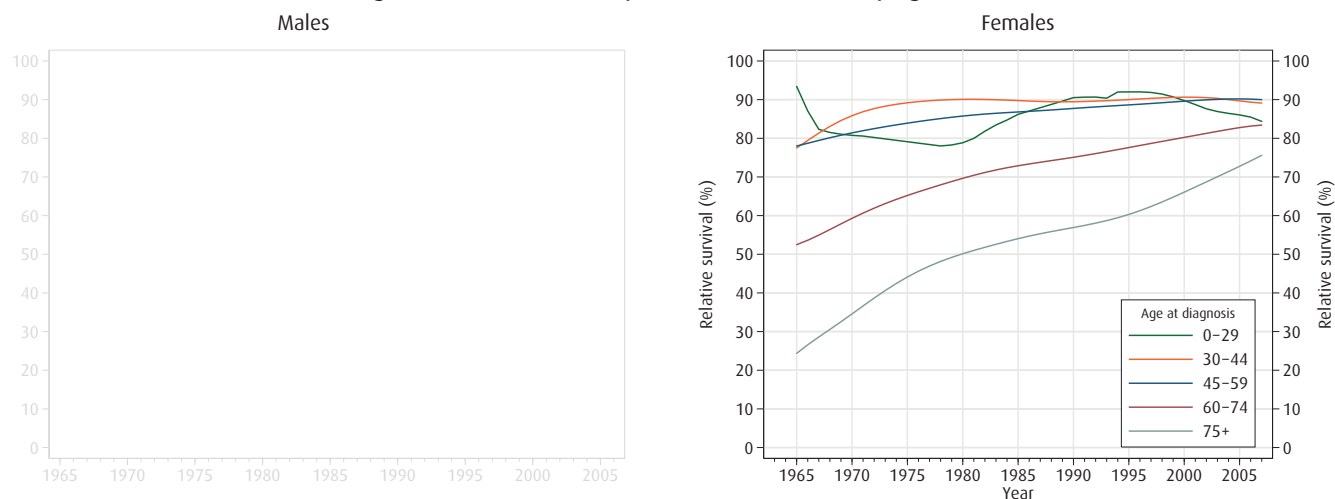


Figure S21c: Estimates of trends in the proportion cured and the median survival time for the uncured

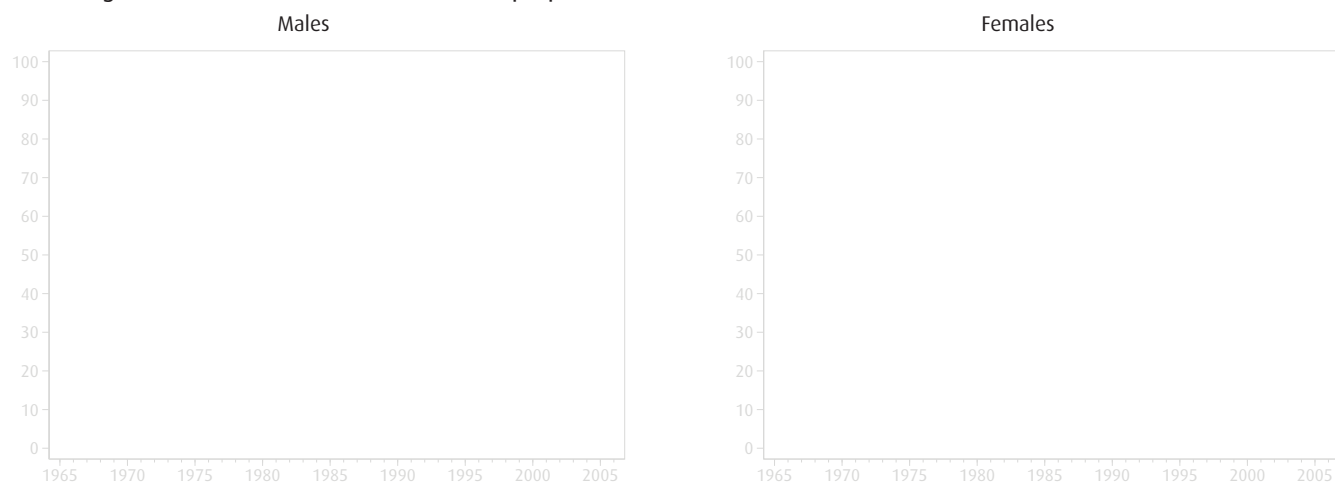


Figure S21d: Relative survival up to 15 years after diagnosis by sex and age

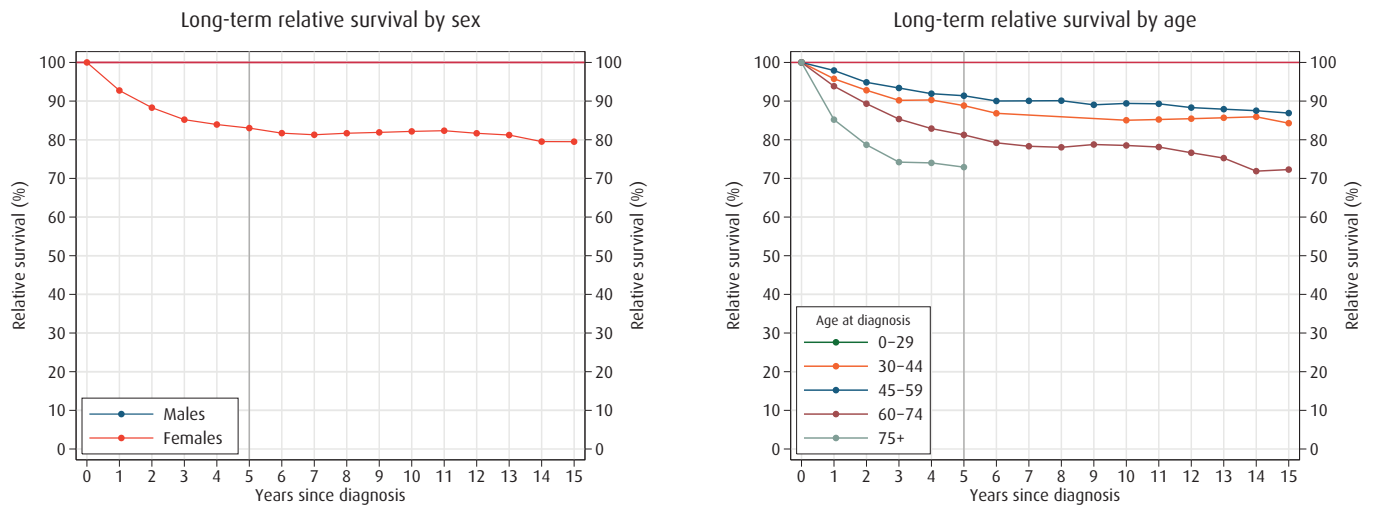


Figure S21e: Conditional 5-year relative survival for every additional year after diagnosis

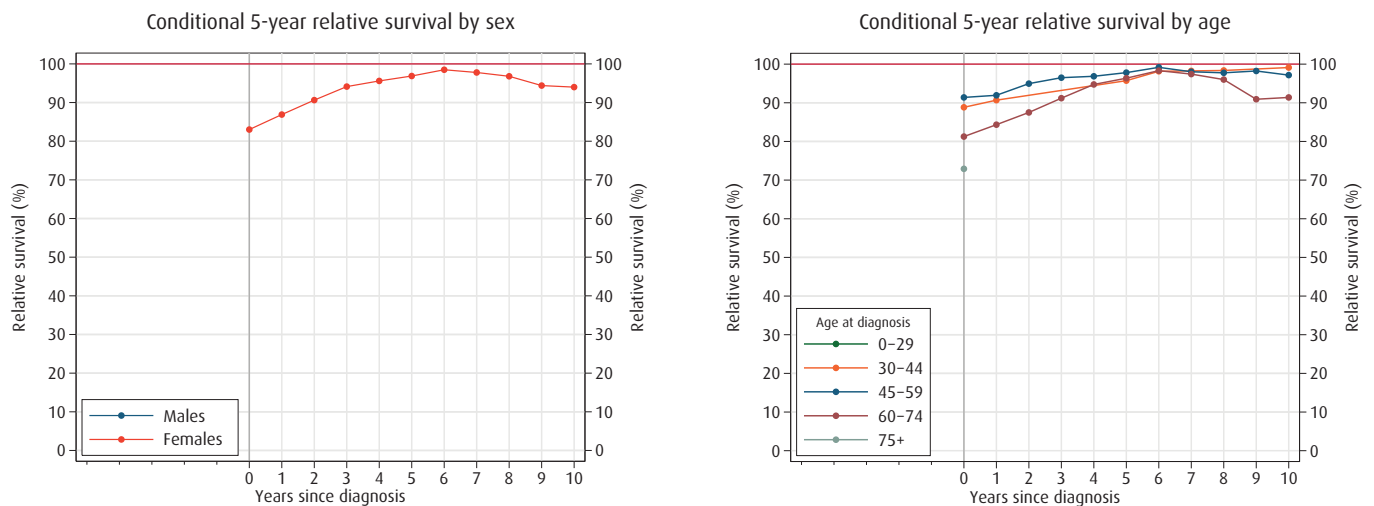
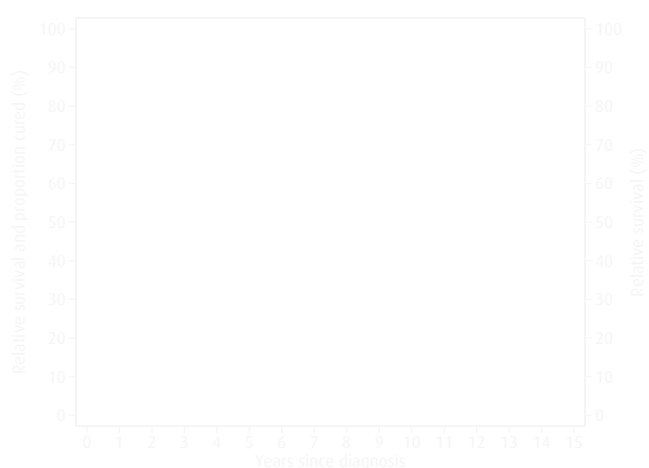


Figure S21f: Relative survival and proportion cured

Estimates from a mixture cure fraction model



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-29		4	4	0.1
30-44		109	109	3.4
45-59		909	909	28.4
60-74		1257	1257	39.2
75+		924	924	28.9
Total		3203	3203	100.0

Figure S22a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

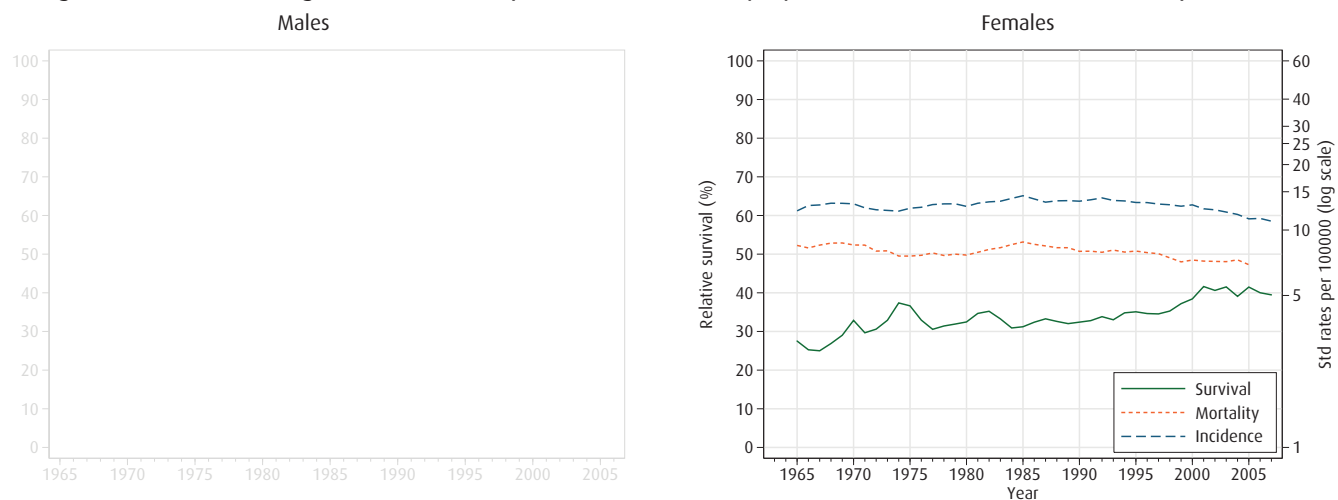


Figure S22b: Trends in 5-year relative survival by age

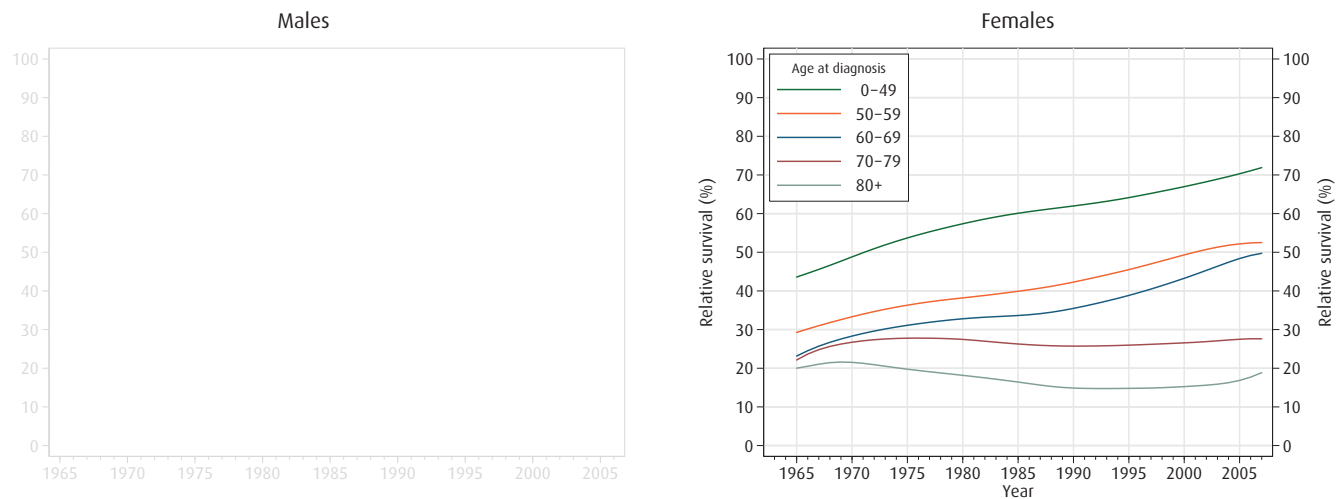


Figure S22c: Estimates of trends in the proportion cured and the median survival time for the uncured

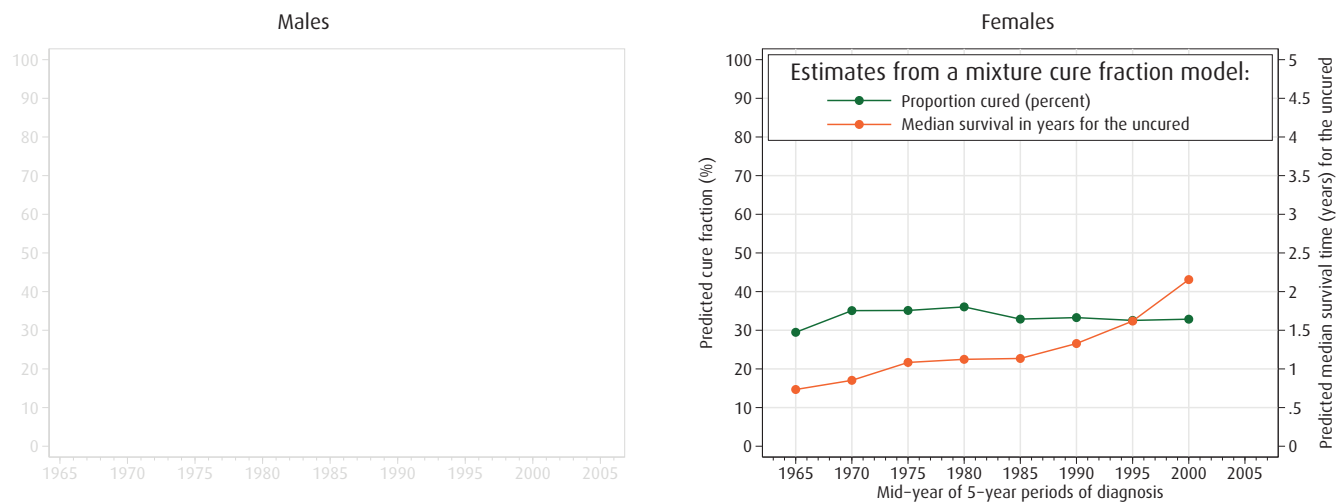


Figure S22d: Relative survival up to 15 years after diagnosis by sex and age

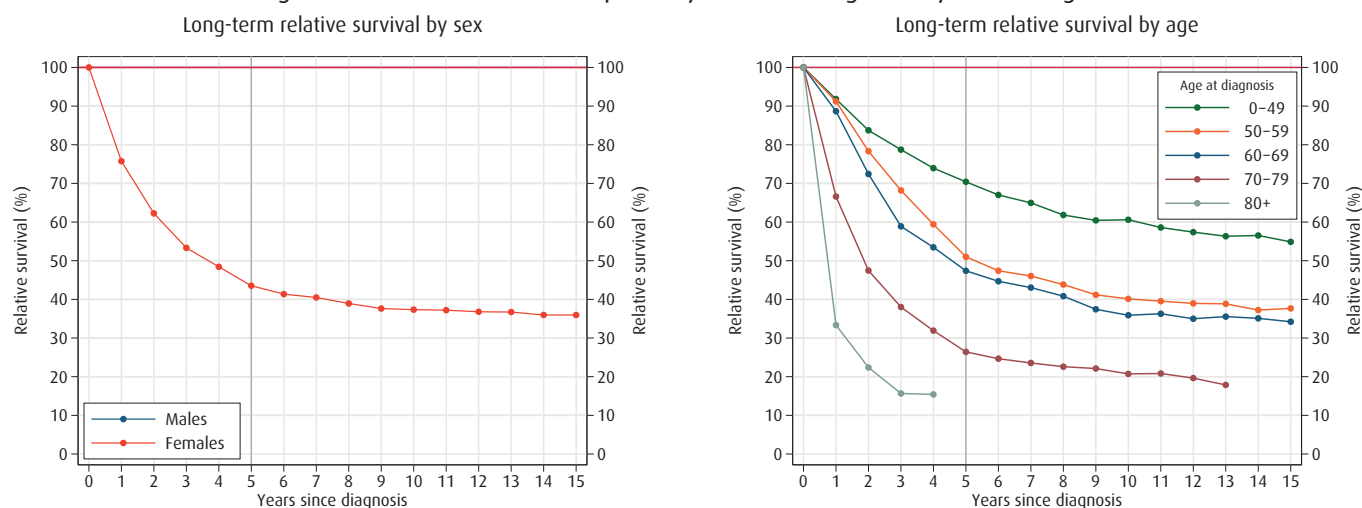


Figure S22e: Conditional 5-year relative survival for every additional year after diagnosis

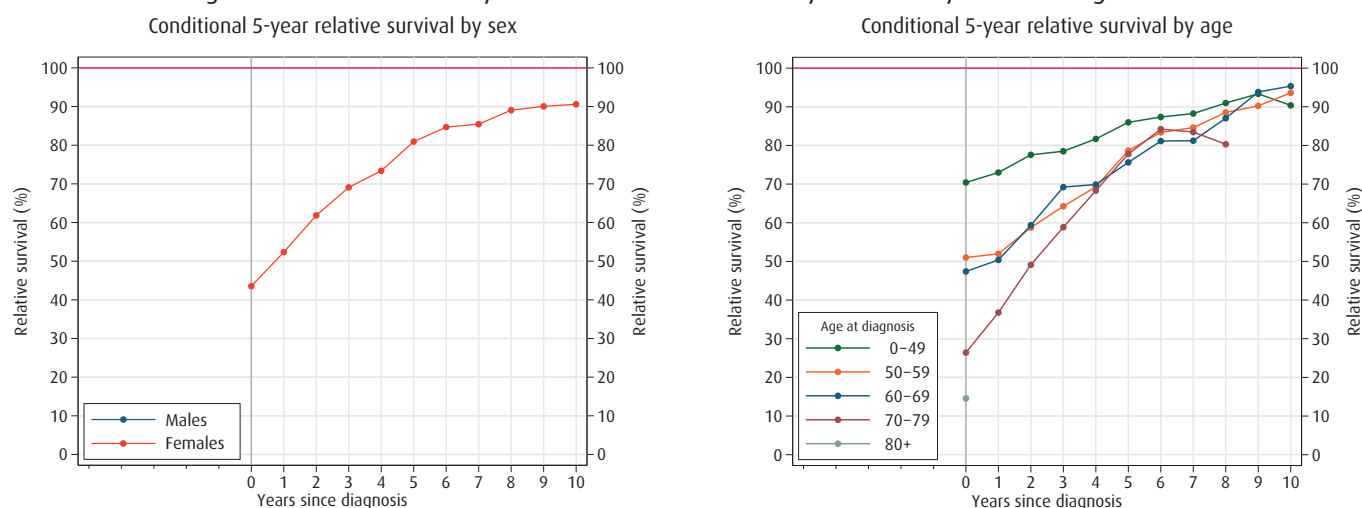
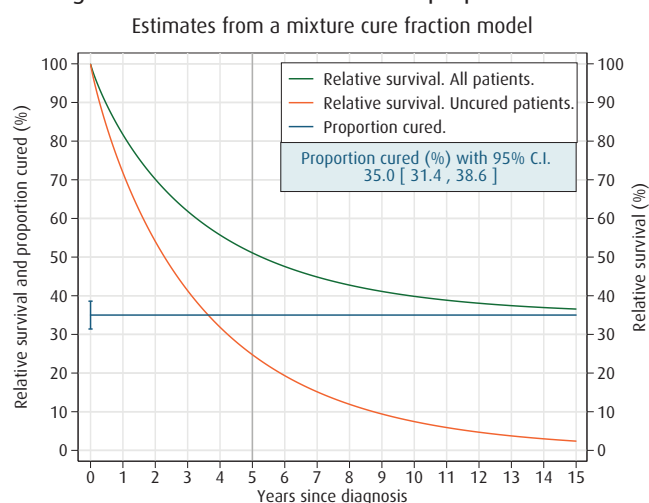


Figure S22f: Relative survival and proportion cured



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-49		334	334	15.5
50-59		473	473	22.0
60-69		499	499	23.2
70-79		455	455	21.1
80+		392	392	18.2
Total		2153	2153	100.0

Figure S23a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

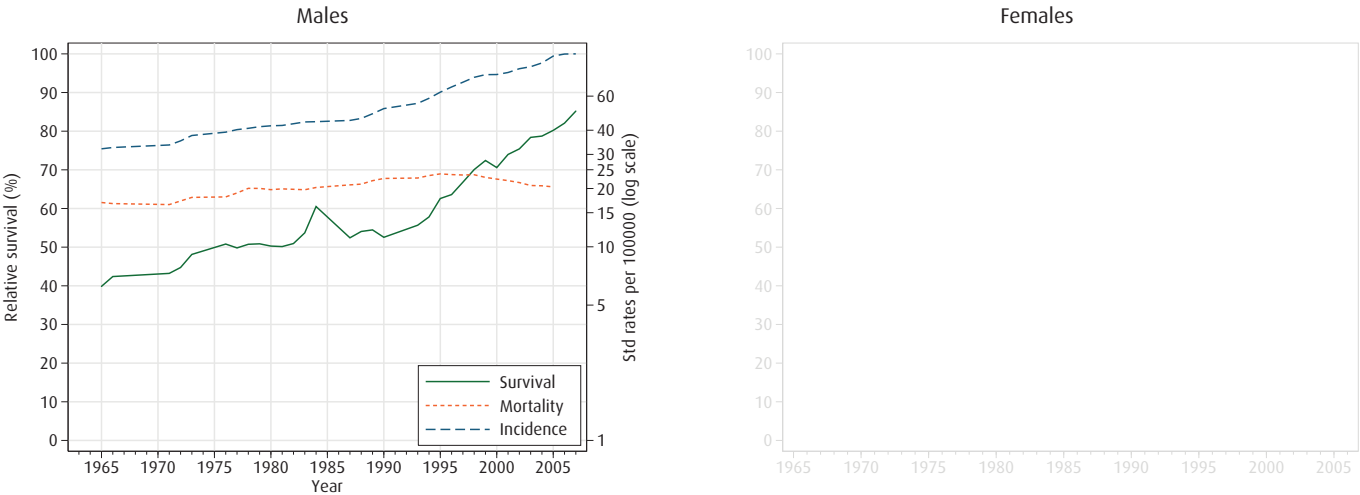


Figure S23b: Trends in 5-year relative survival by age

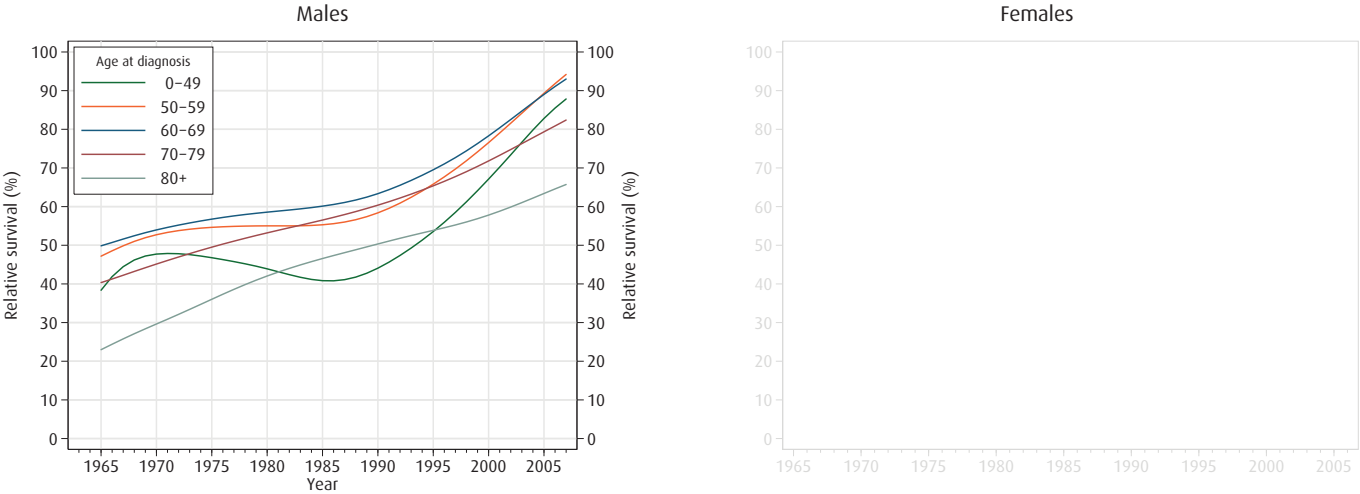


Figure S23c: Estimates of trends in the proportion cured and the median survival time for the uncured

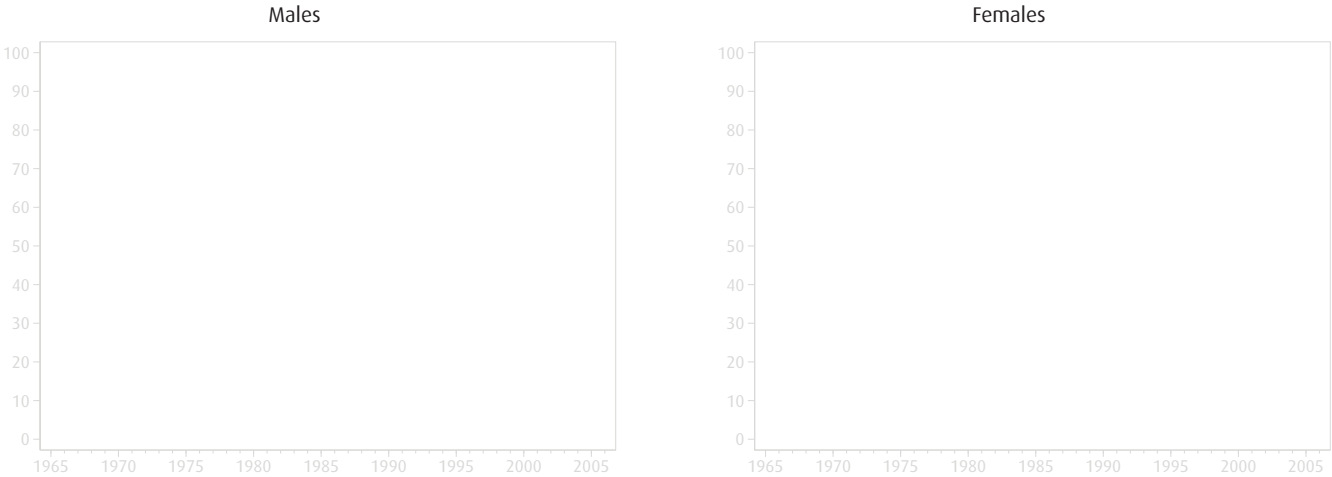


Figure S23d: Relative survival up to 15 years after diagnosis by sex and age

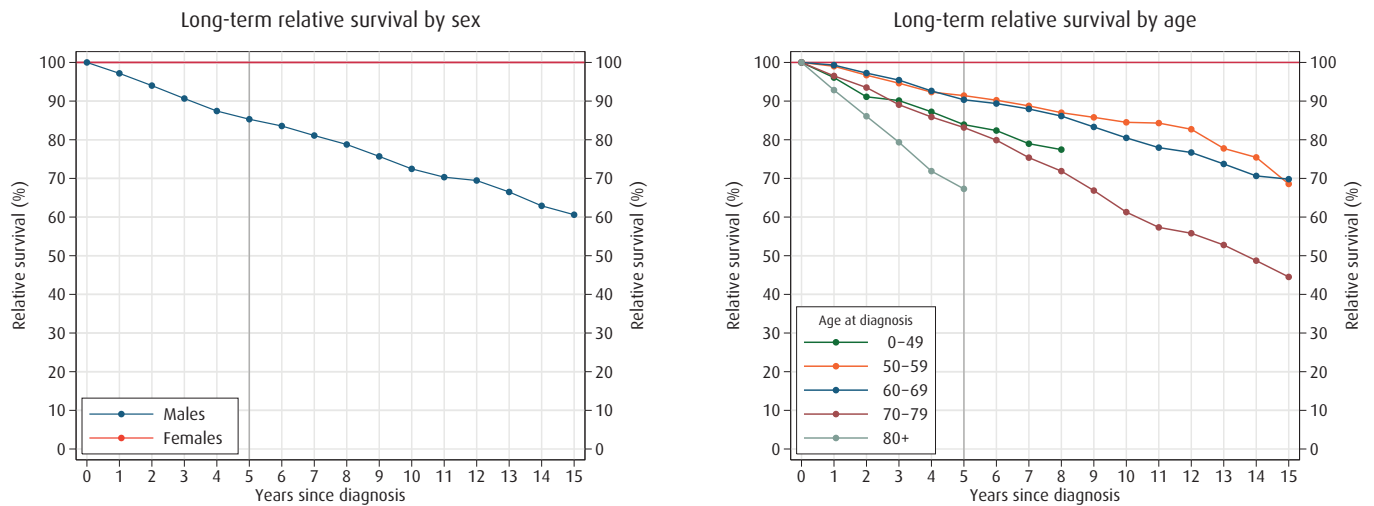


Figure S23e: Conditional 5-year relative survival for every additional year after diagnosis

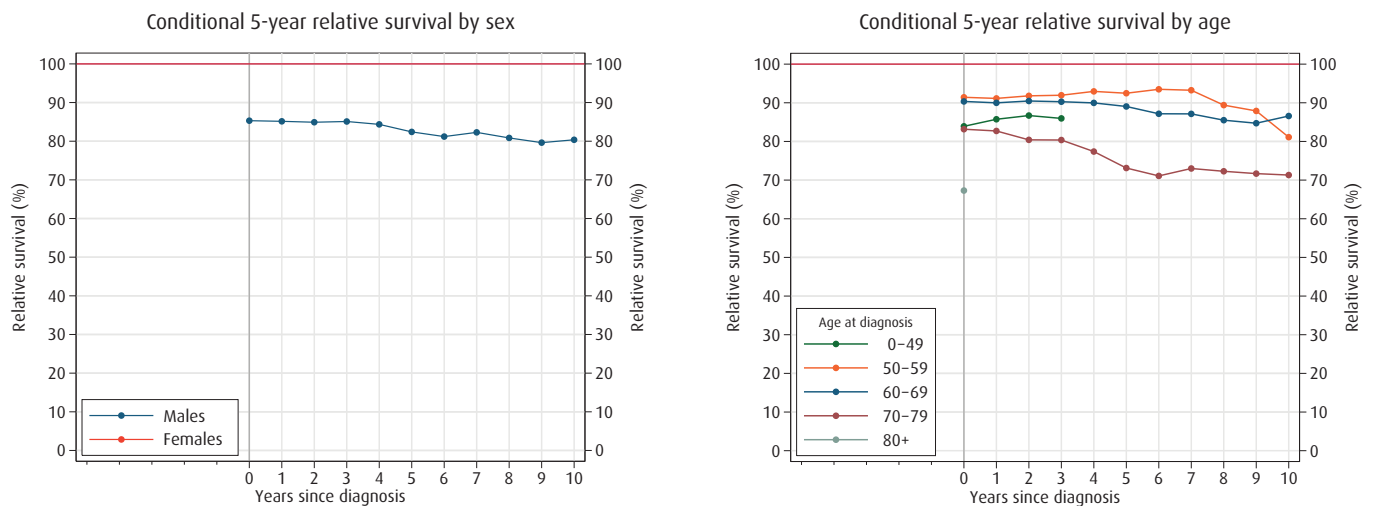
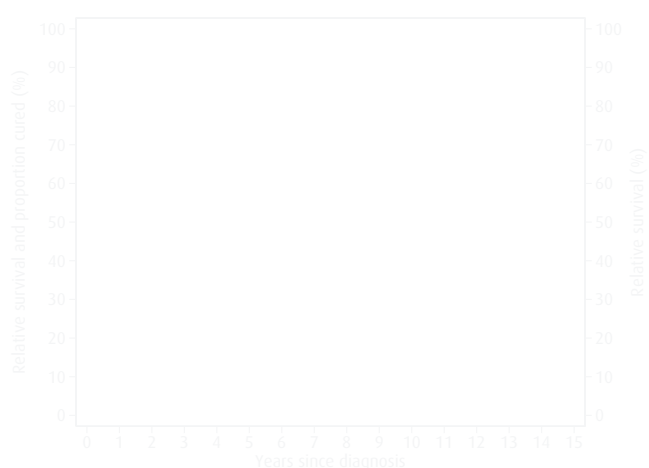


Figure S23f: Relative survival and proportion cured

Estimates from a mixture cure fraction model



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-49	151		151	0.8
50-59	2219		2219	11.9
60-69	6218		6218	33.3
70-79	6346		6346	34.0
80+	3734		3734	20.0
Total	18668		18668	100.0

Figure S24a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

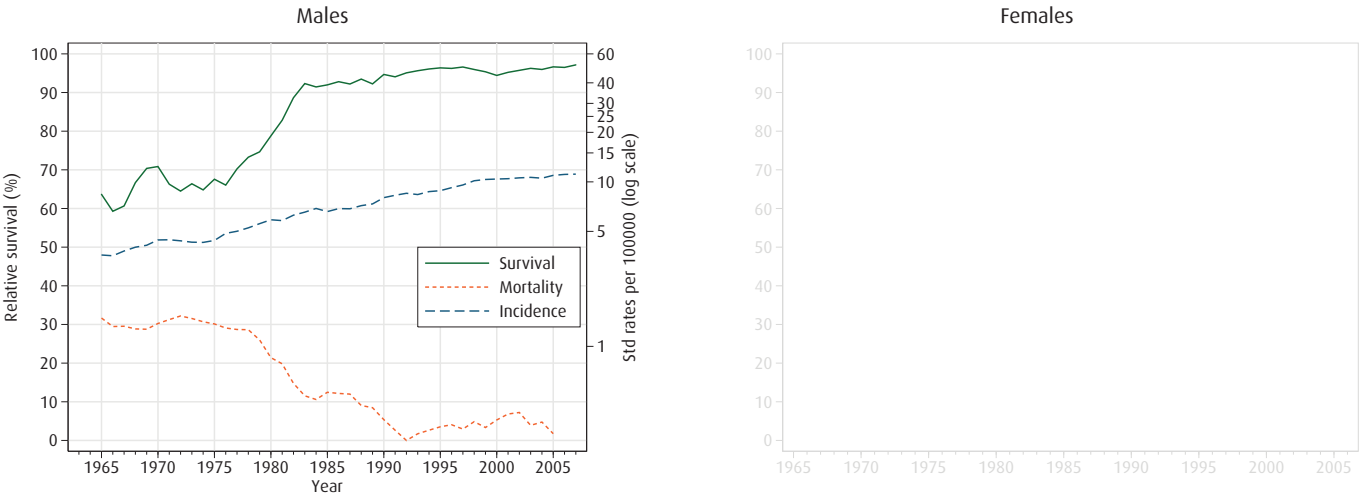


Figure S24b: Trends in 5-year relative survival by age

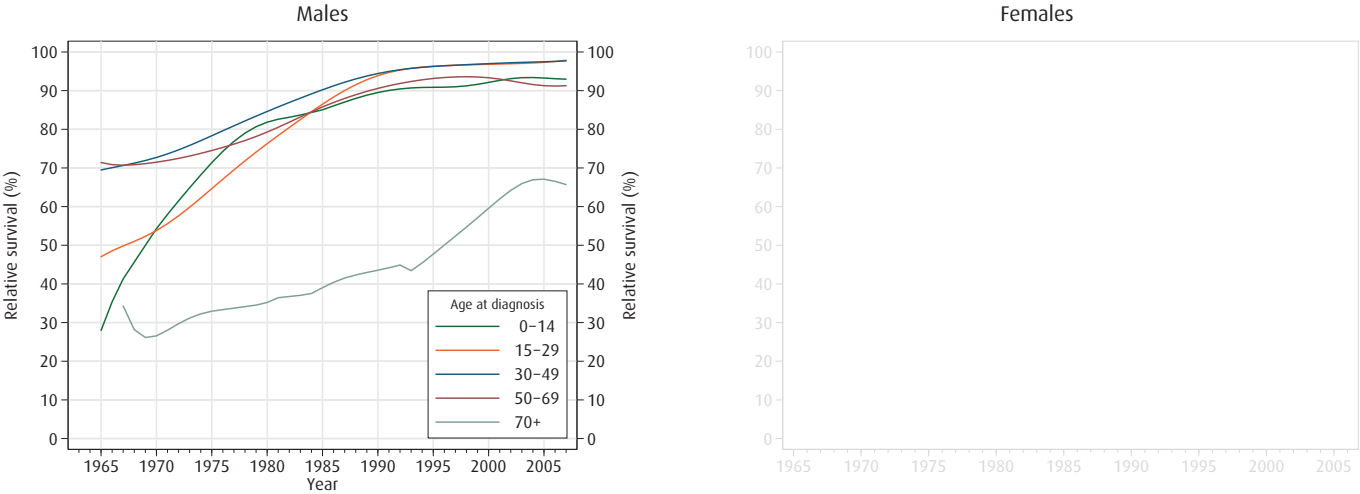


Figure S24c: Estimates of trends in the proportion cured and the median survival time for the uncured

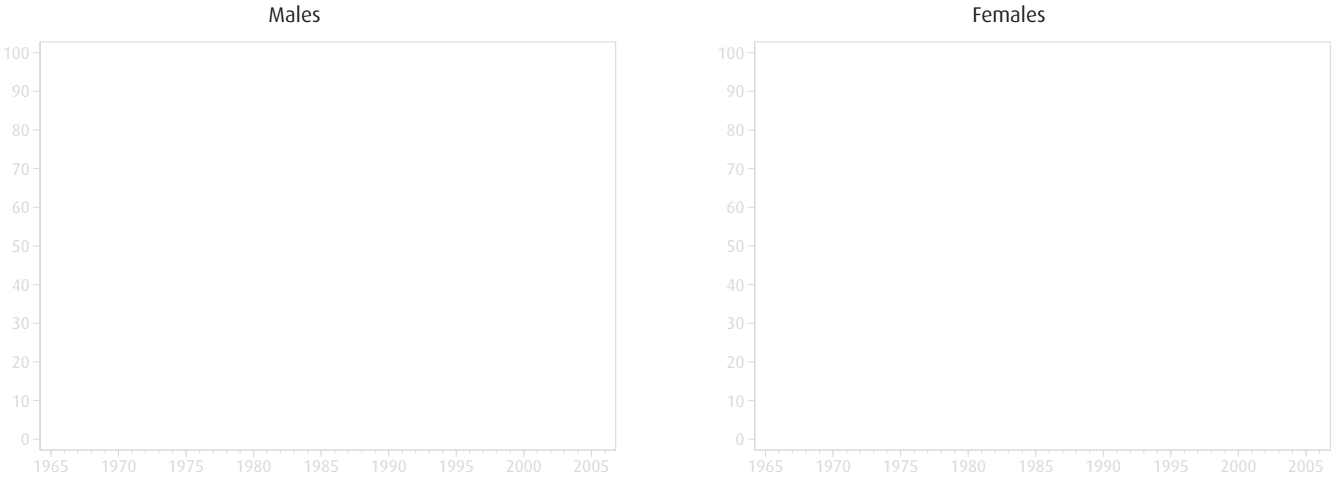


Figure S24d: Relative survival up to 15 years after diagnosis by sex and age

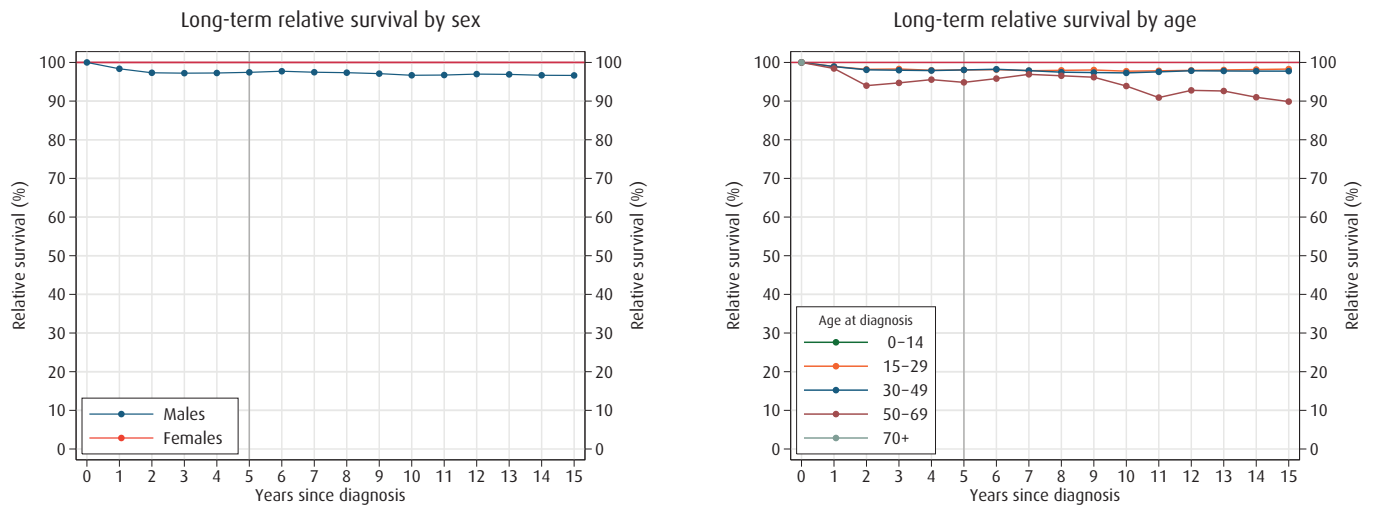


Figure S24e: Conditional 5-year relative survival for every additional year after diagnosis

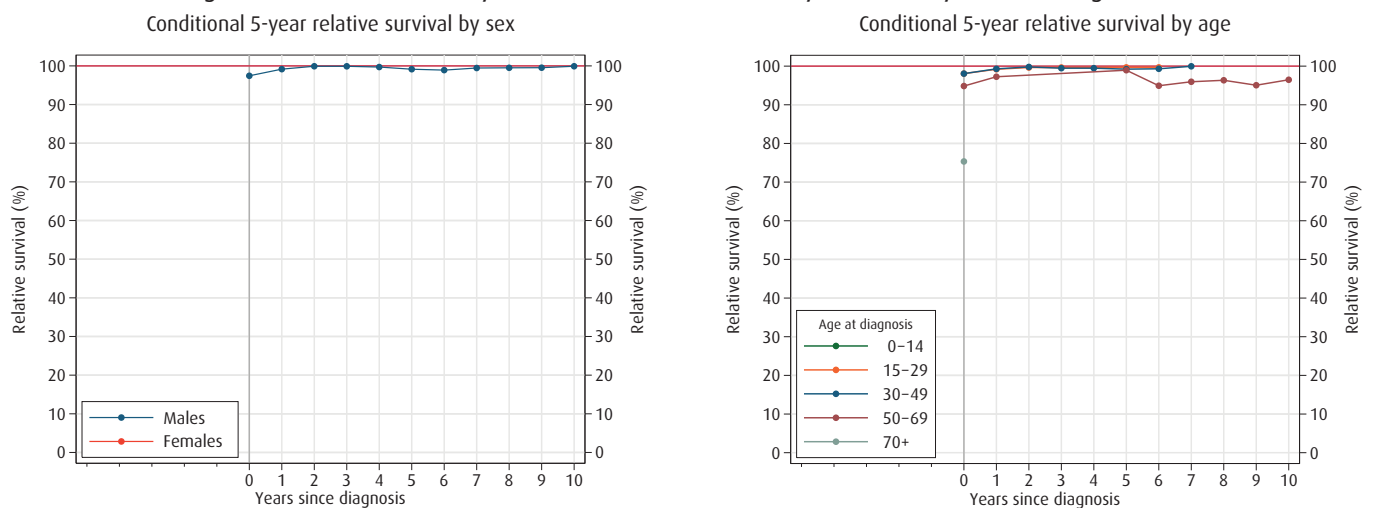
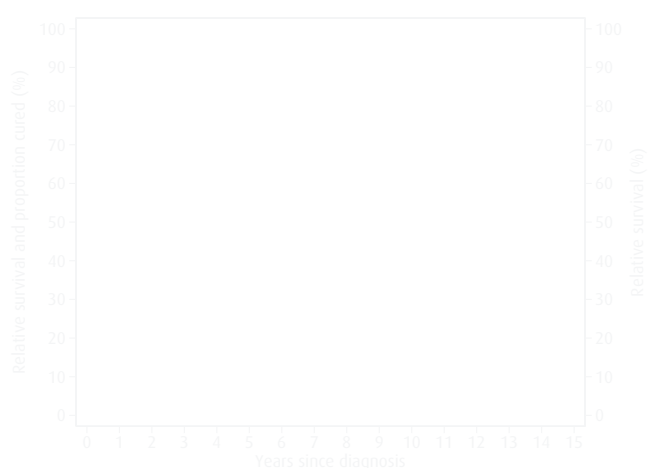


Figure S24f: Relative survival and proportion cured

Estimates from a mixture cure fraction model



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-14	16		16	1.2
15-29	423		423	32.1
30-49	711		711	54.0
50-69	145		145	11.0
70+	22		22	1.7
Total	1317		1317	100.0

Figure S25a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

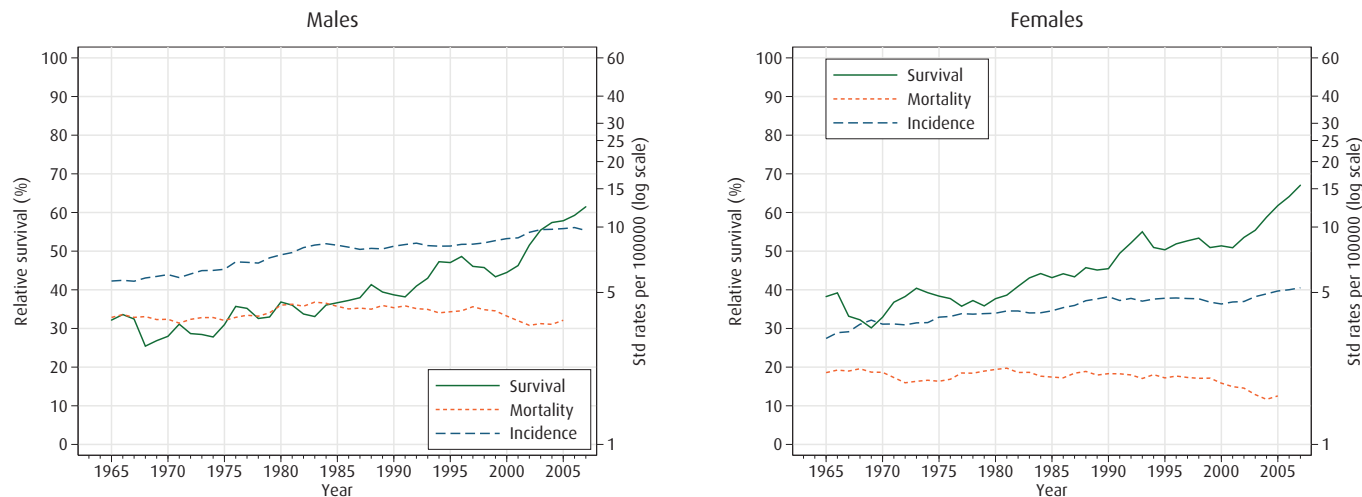


Figure S25b: Trends in 5-year relative survival by age

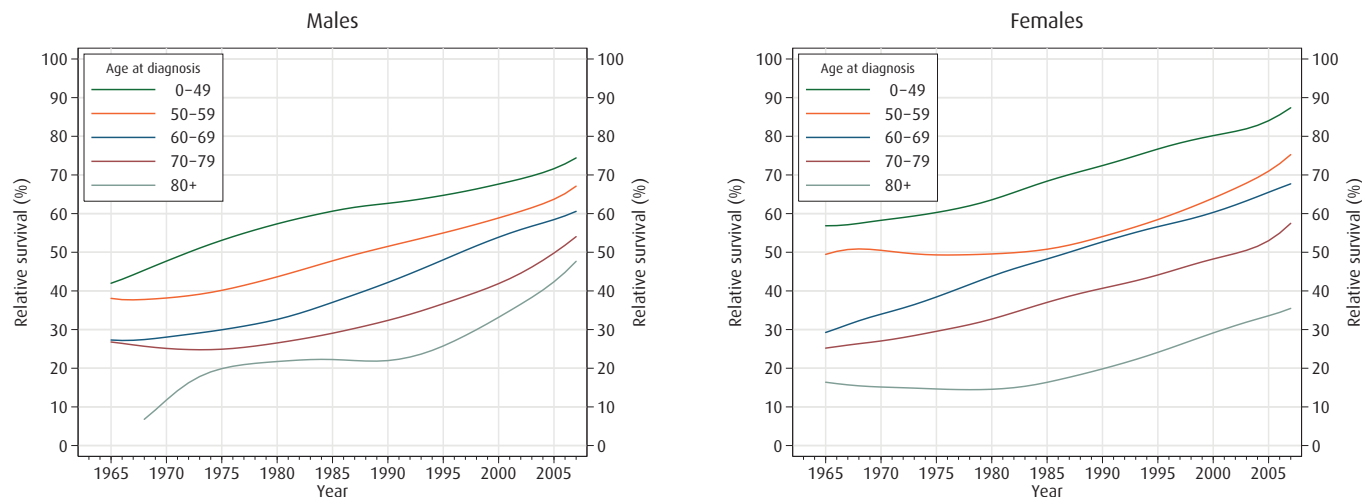


Figure S25c: Estimates of trends in the proportion cured and the median survival time for the uncured

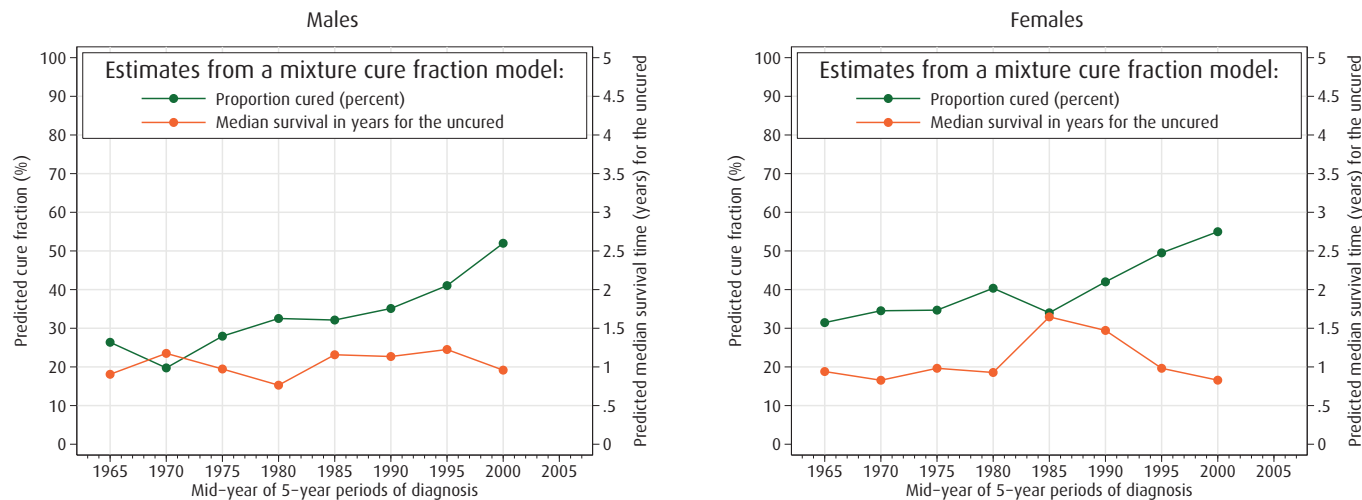


Figure S25d: Relative survival up to 15 years after diagnosis by sex and age

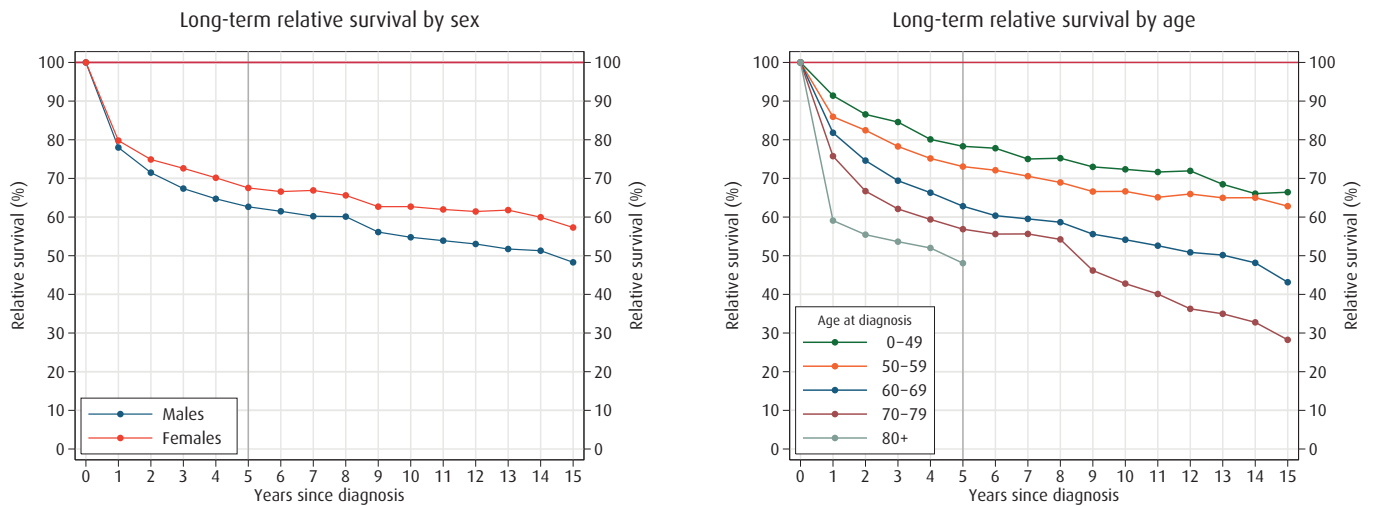


Figure S25e: Conditional 5-year relative survival for every additional year after diagnosis

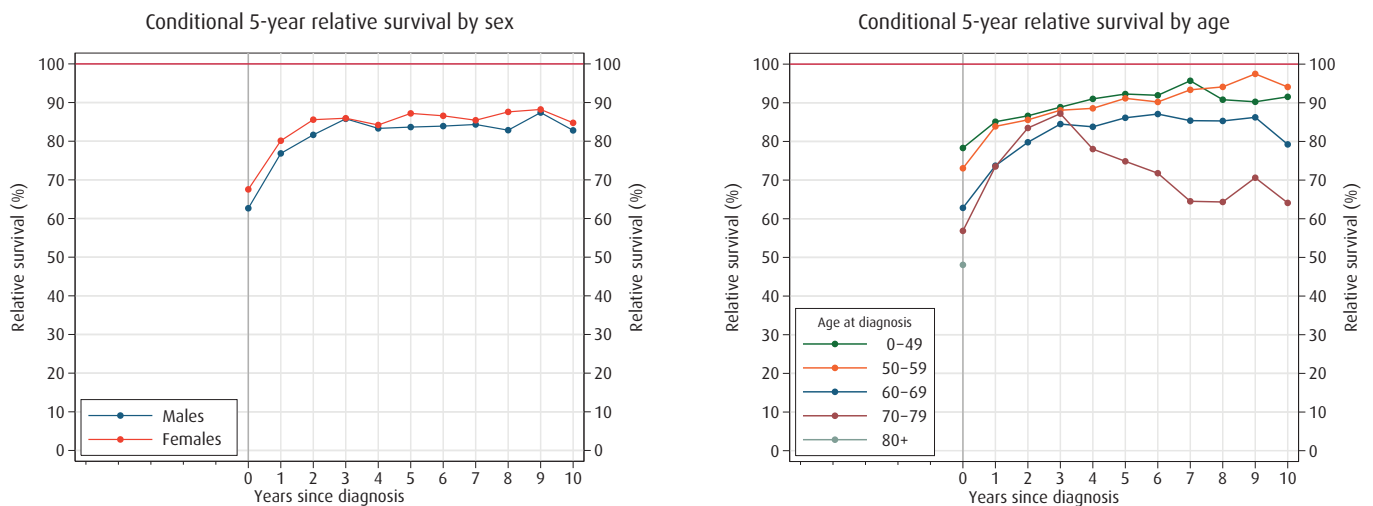
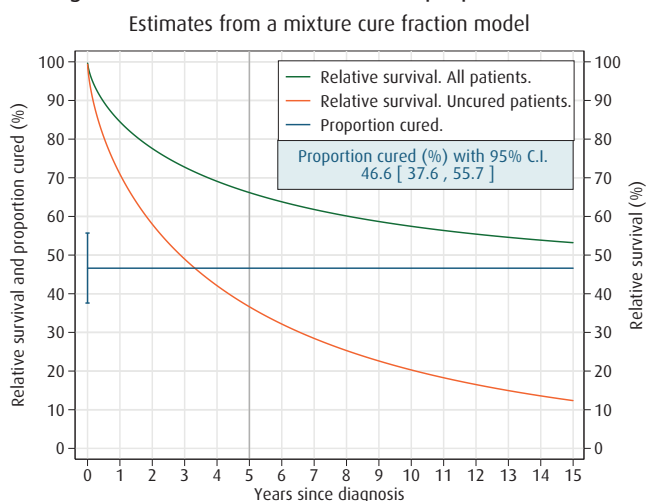


Figure S25f: Relative survival and proportion cured



Age distribution of patients (2003–2007)

Age	Males	Females	All	%
0-49	115	181	296	10.9
50-59	140	356	496	18.3
60-69	243	441	684	25.3
70-79	323	460	783	28.9
80+	200	246	446	16.5
Total	1021	1684	2705	100.0

Figure S26a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

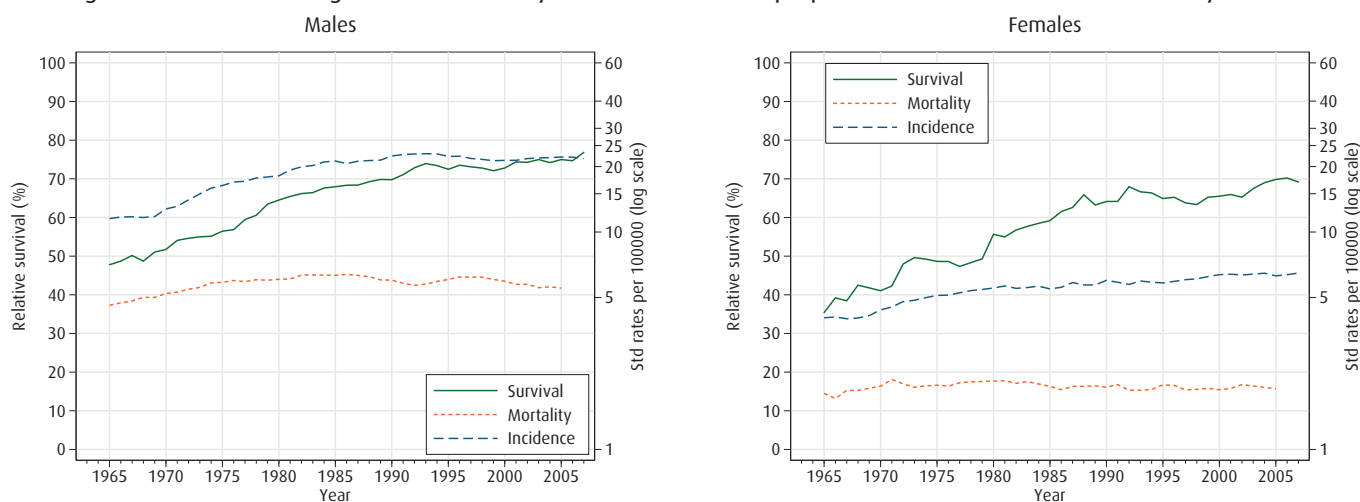


Figure S26b: Trends in 5-year relative survival by age

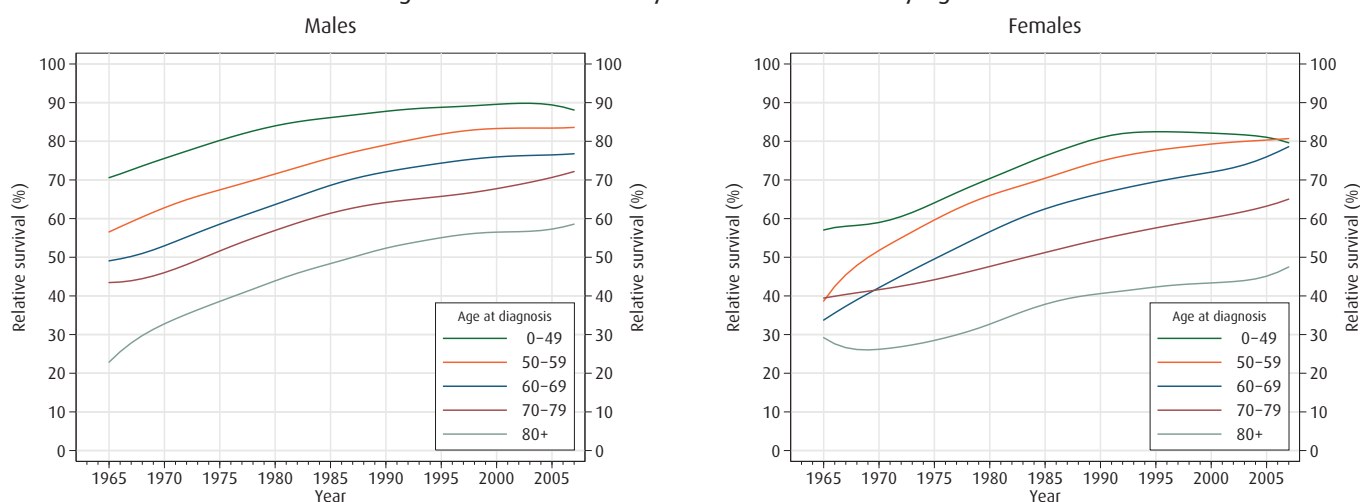


Figure S26c: Estimates of trends in the proportion cured and the median survival time for the uncured

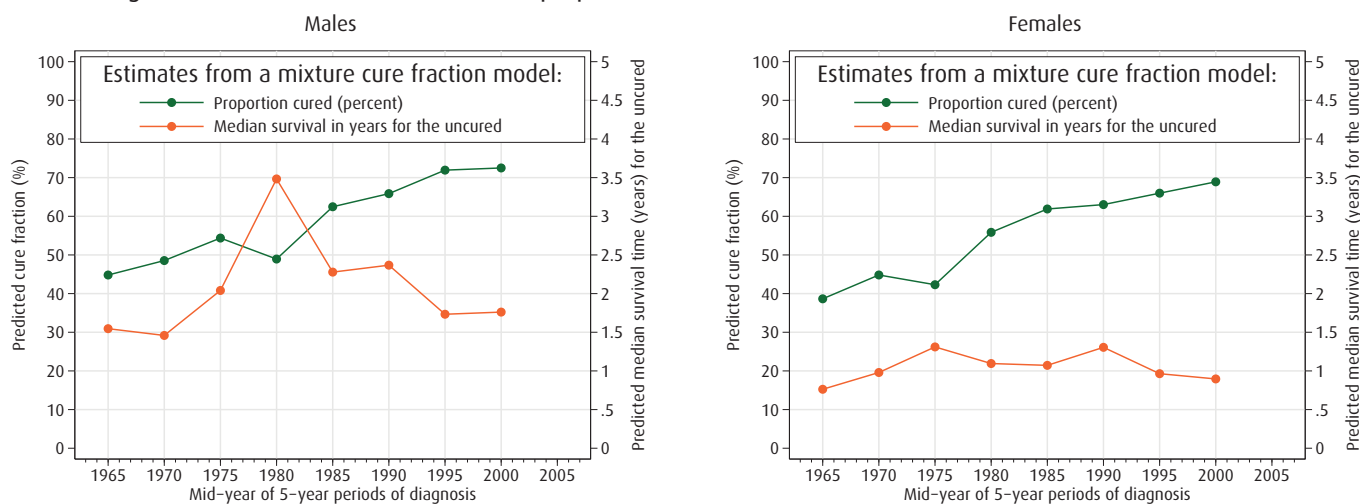


Figure S26d: Relative survival up to 15 years after diagnosis by sex and age

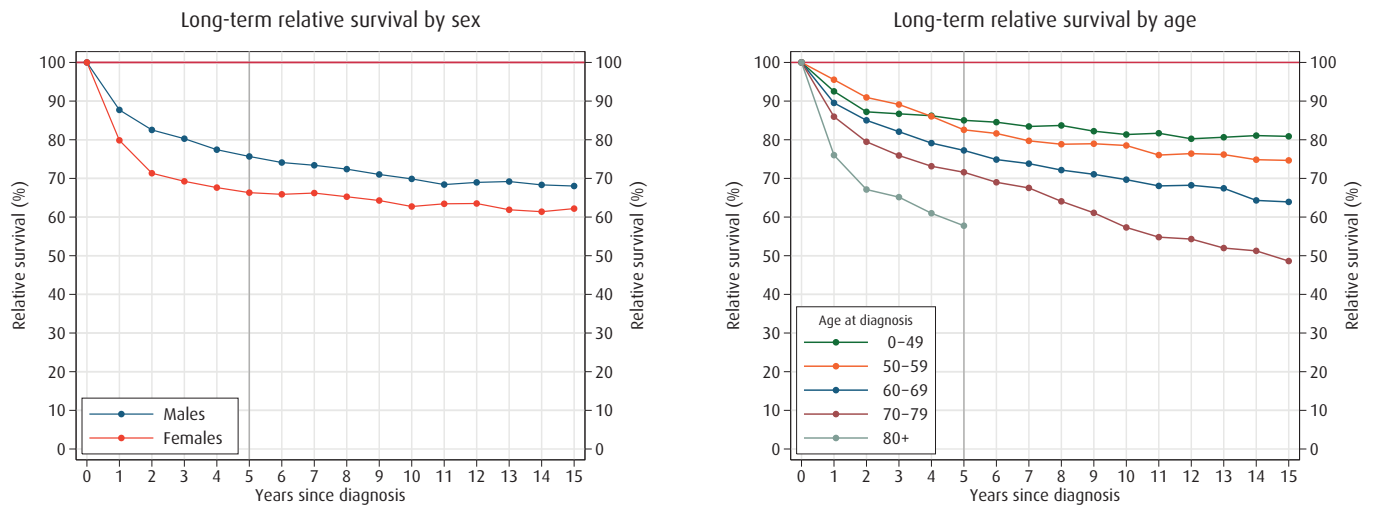


Figure S26e: Conditional 5-year relative survival for every additional year after diagnosis

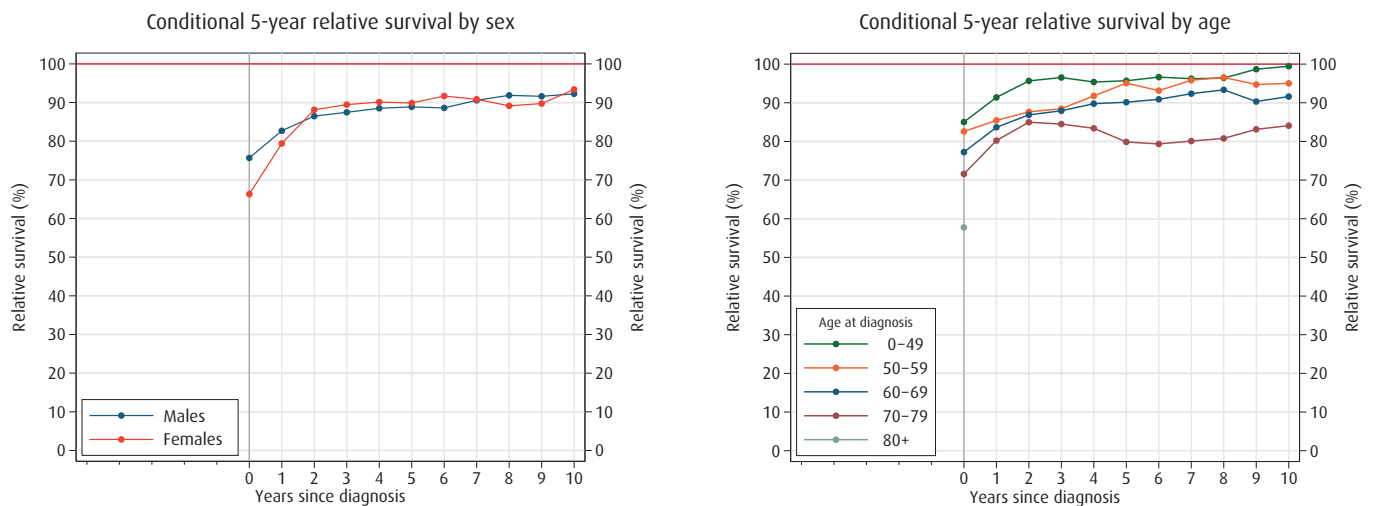
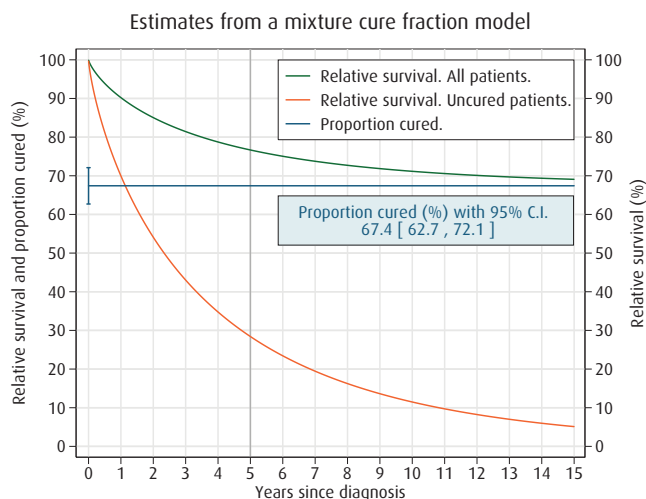


Figure S26f: Relative survival and proportion cured



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-49	60	172	232	3.9
50-59	155	494	649	10.8
60-69	322	993	1315	21.8
70-79	492	1593	2085	34.6
80+	553	1187	1740	28.9
Total	1582	4439	6021	100.0

Figure S27a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

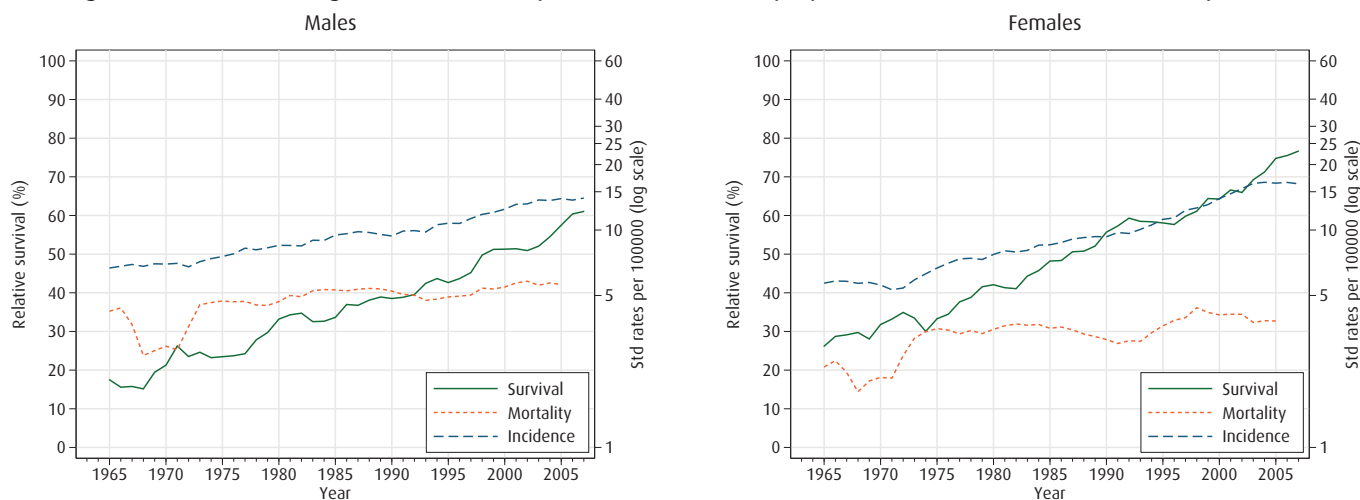


Figure S27b: Trends in 5-year relative survival by age

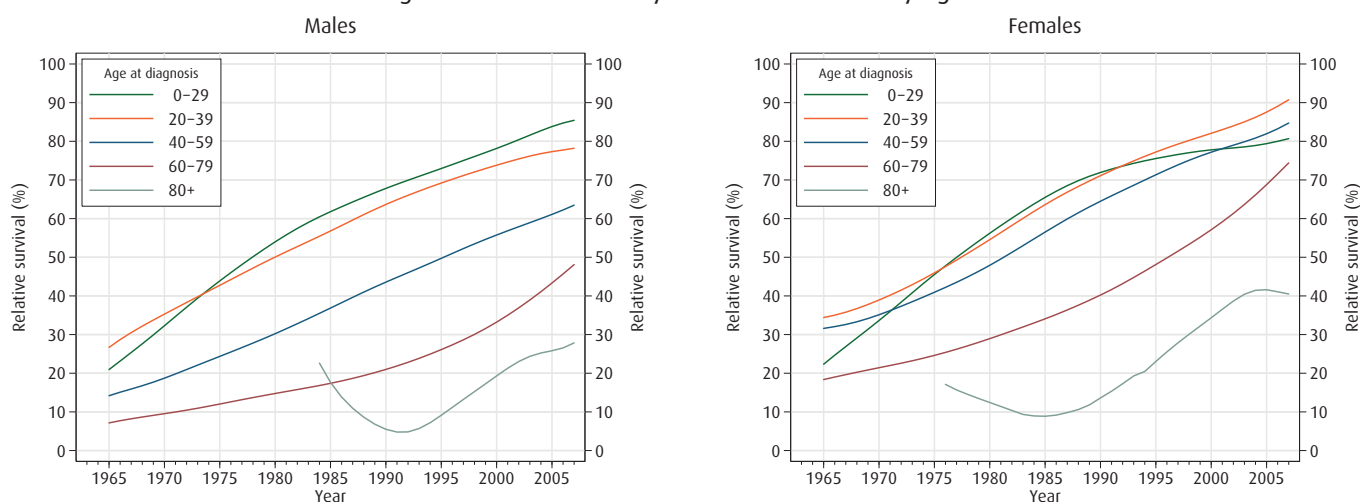


Figure S27c: Estimates of trends in the proportion cured and the median survival time for the uncured

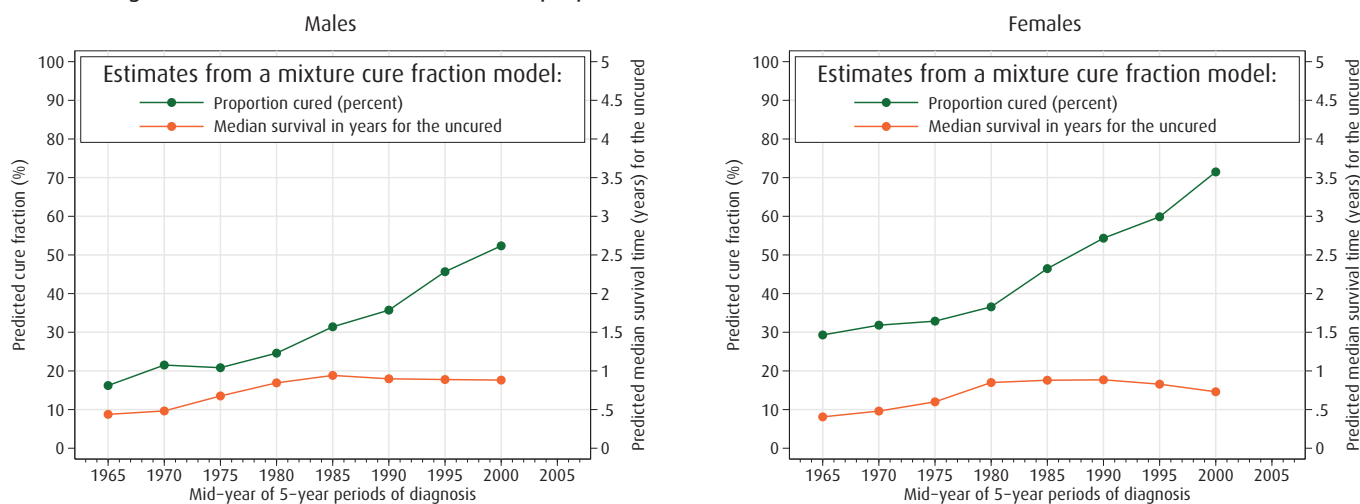


Figure S27d: Relative survival up to 15 years after diagnosis by sex and age

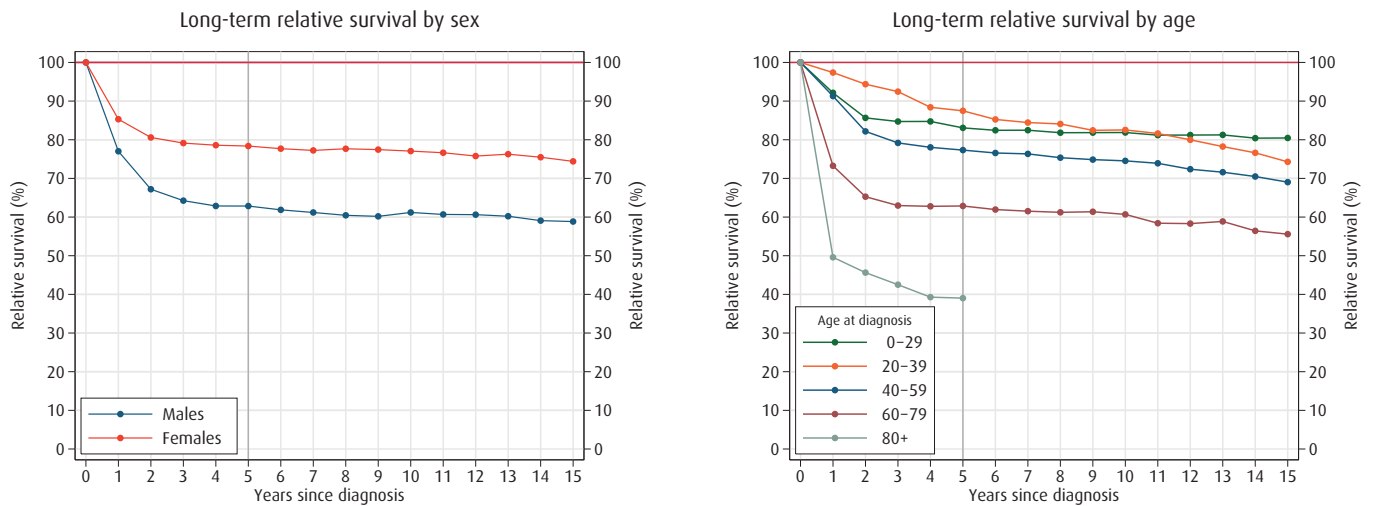


Figure S27e: Conditional 5-year relative survival for every additional year after diagnosis

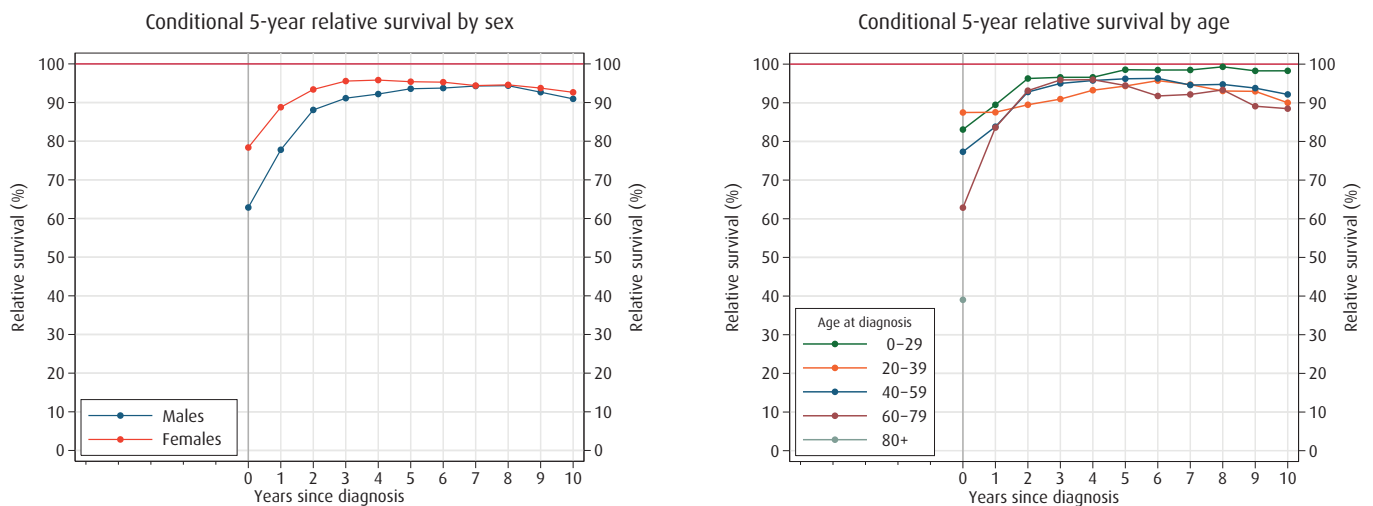
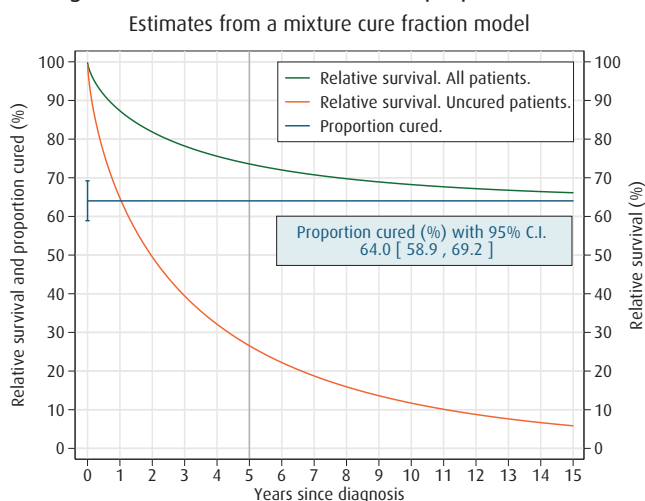


Figure S27f: Relative survival and proportion cured



Age distribution of patients (2003–2007)

Age	Males	Females	All	%
0-29	148	165	313	6.7
20-39	306	310	616	13.2
40-59	860	671	1531	32.8
60-79	1021	677	1698	36.4
80+	321	184	505	10.8
Total	2656	2007	4663	100.0

Figure S28a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

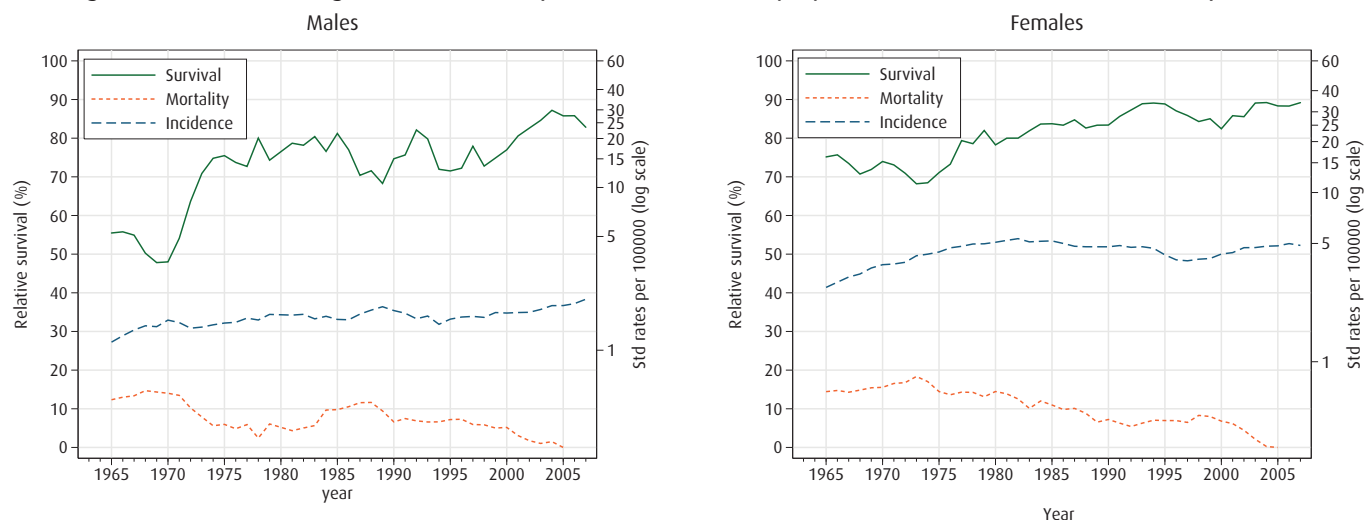


Figure S28b: Trends in 5-year relative survival by age

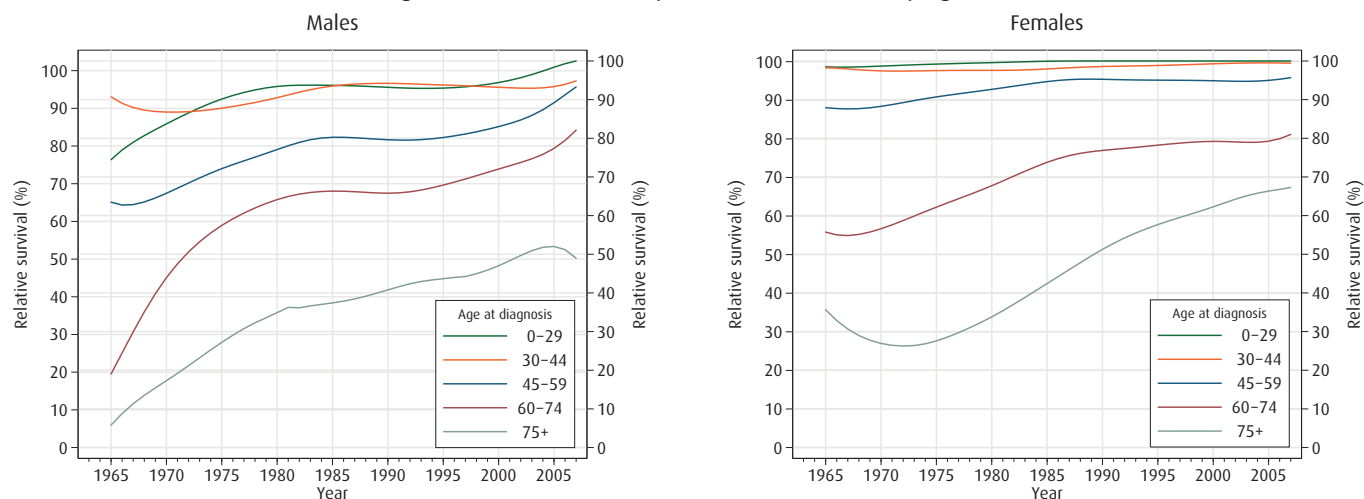


Figure S28c: Estimates of trends in the proportion cured and the median survival time for the uncured

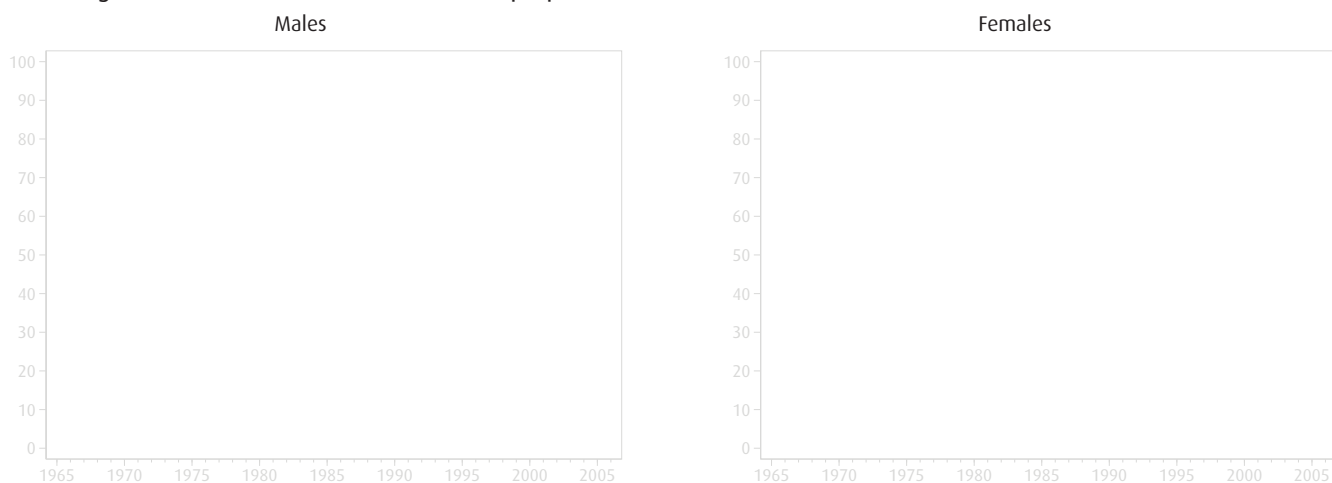


Figure S28d: Relative survival up to 15 years after diagnosis by sex and age

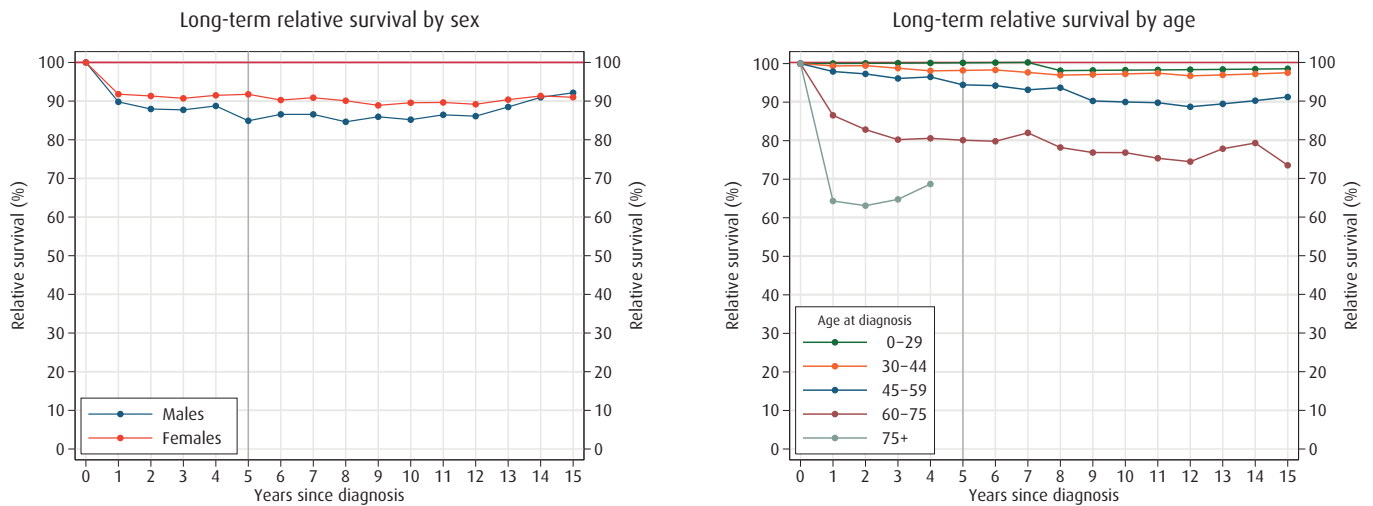


Figure S28e: Conditional 5-year relative survival for every additional year after diagnosis

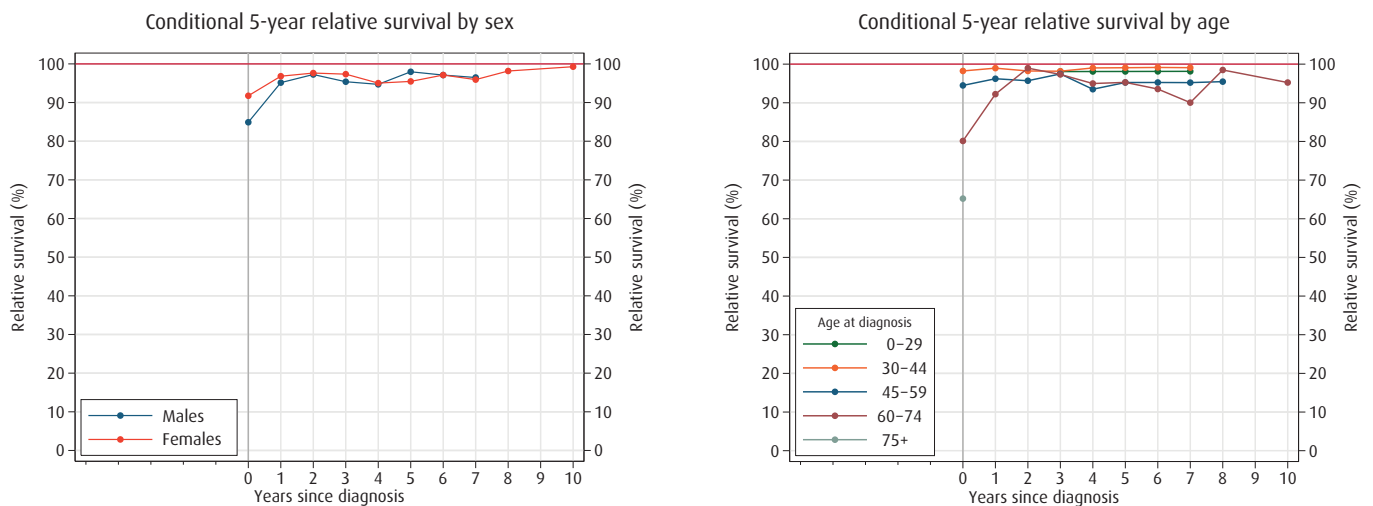
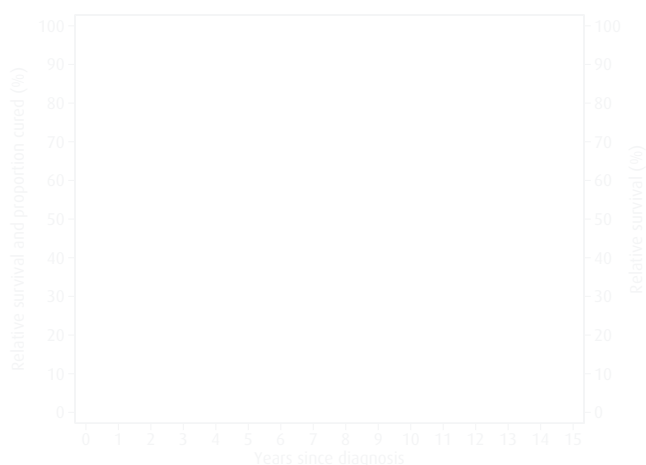


Figure S28f: Relative survival and proportion cured

Estimates from a mixture cure fraction model



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-29	73	9	82	8.0
30-44	177	53	230	22.5
45-59	220	111	331	32.4
60-74	137	74	211	20.6
75+	122	47	169	16.5
Total	729	294	1023	100.0

Figure S29a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

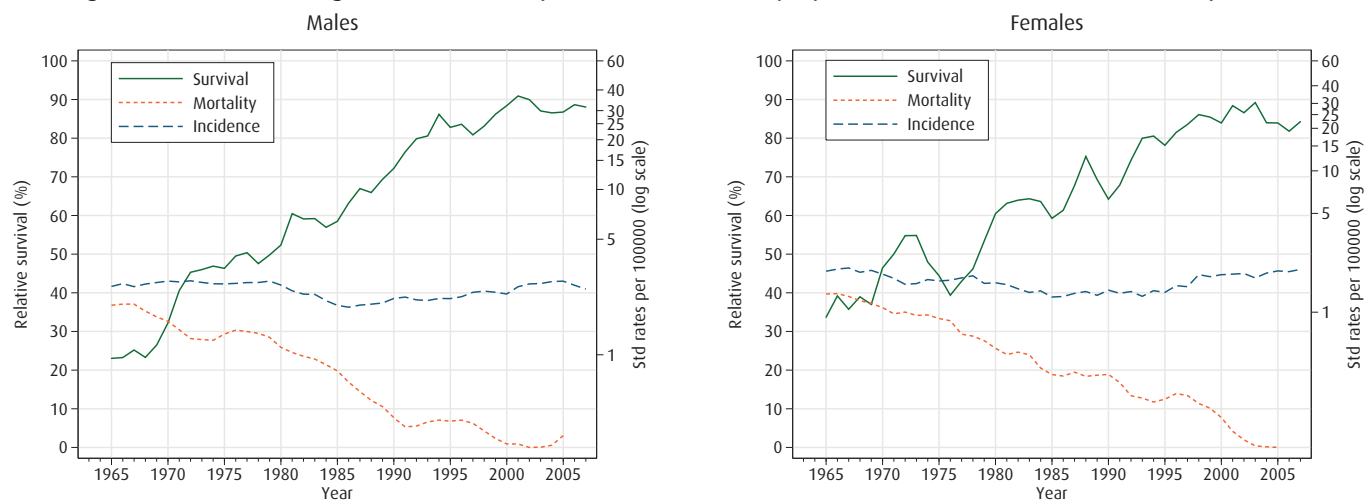


Figure S29b: Trends in 5-year relative survival by age

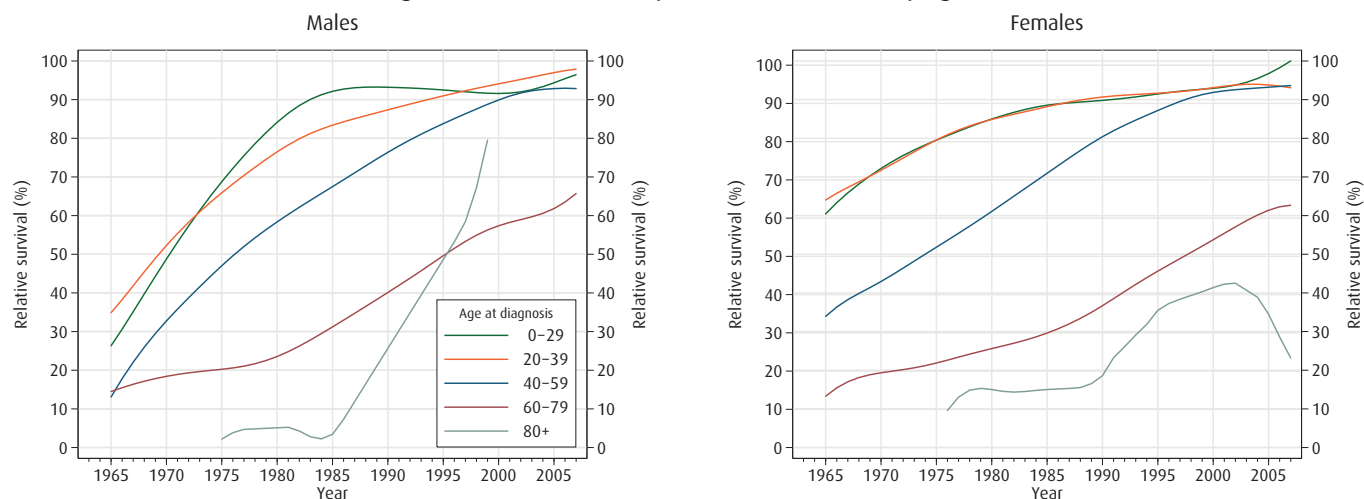


Figure S29c: Estimates of trends in the proportion cured and the median survival time for the uncured

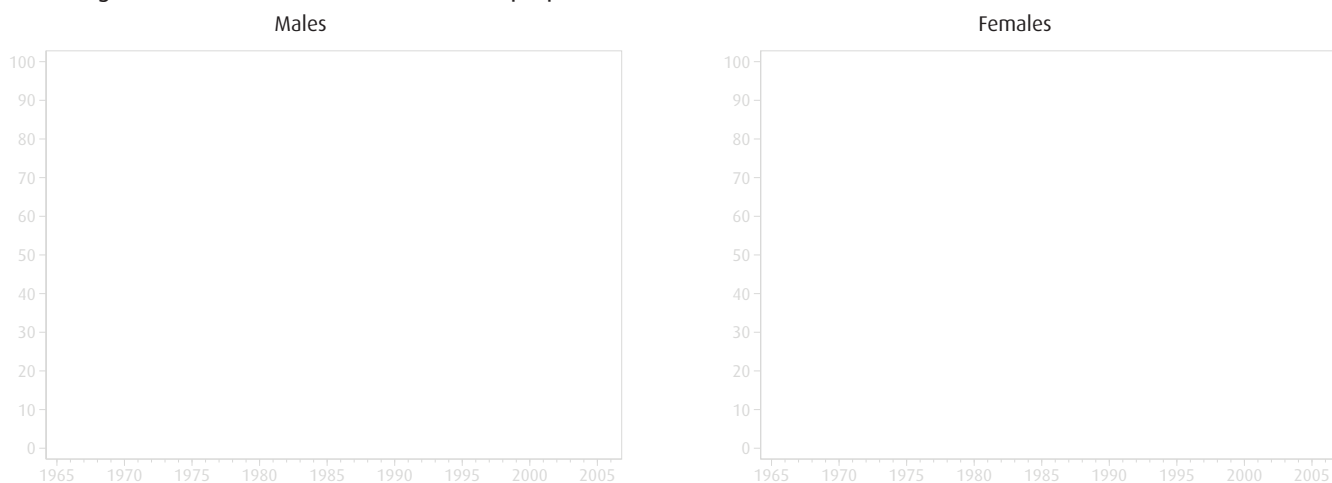


Figure S29d: Relative survival up to 15 years after diagnosis by sex and age

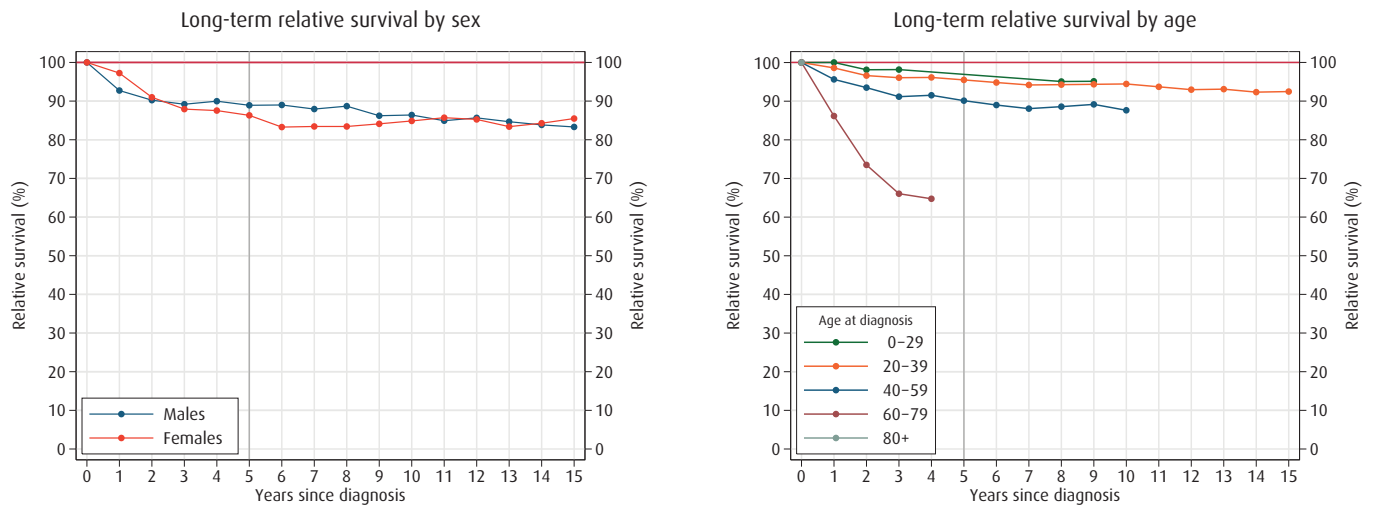


Figure S29e: Conditional 5-year relative survival for every additional year after diagnosis

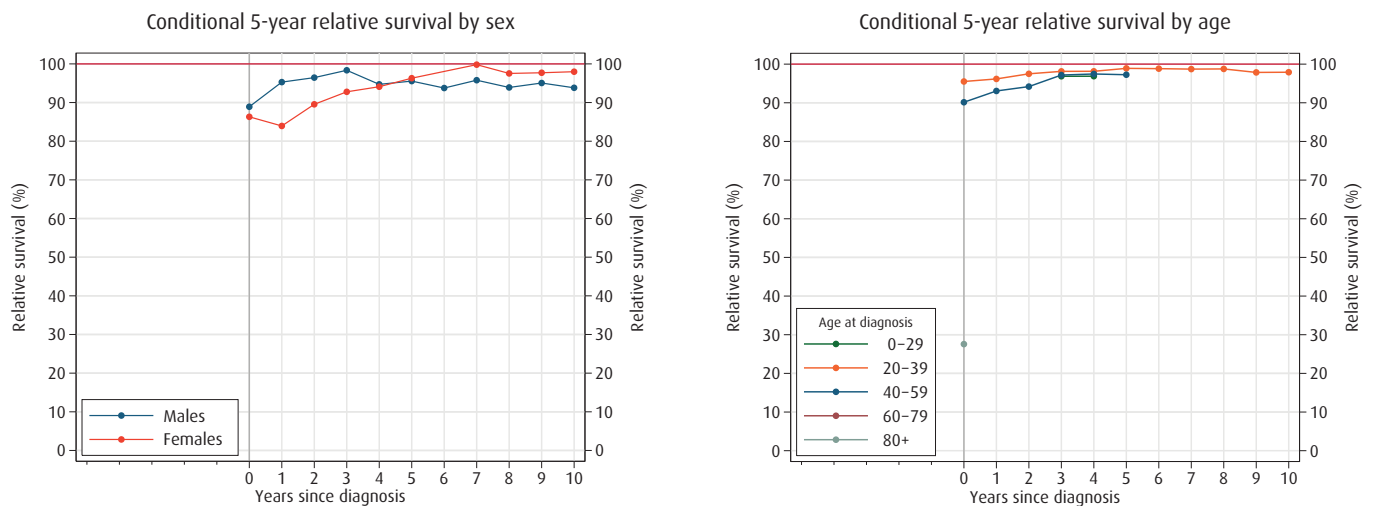
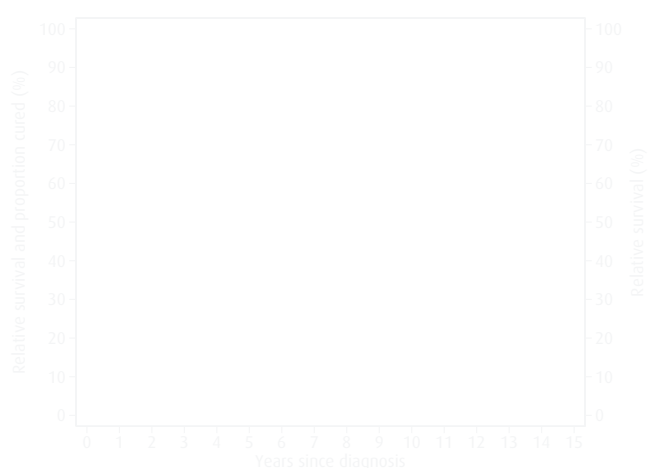


Figure S29f: Relative survival and proportion cured

Estimates from a mixture cure fraction model



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-29	35	45	80	13.4
20-39	102	139	241	40.5
40-59	49	86	135	22.7
60-79	40	72	112	18.8
80+	17	10	27	4.5
Total	243	352	595	100.0

Figure S30a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

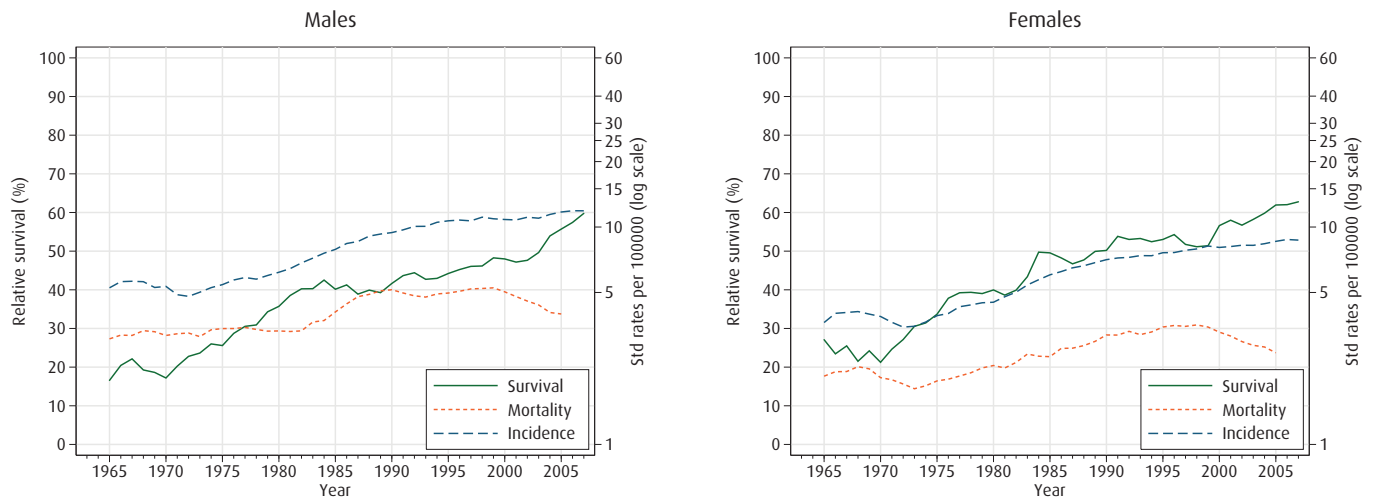


Figure S30b: Trends in 5-year relative survival by age

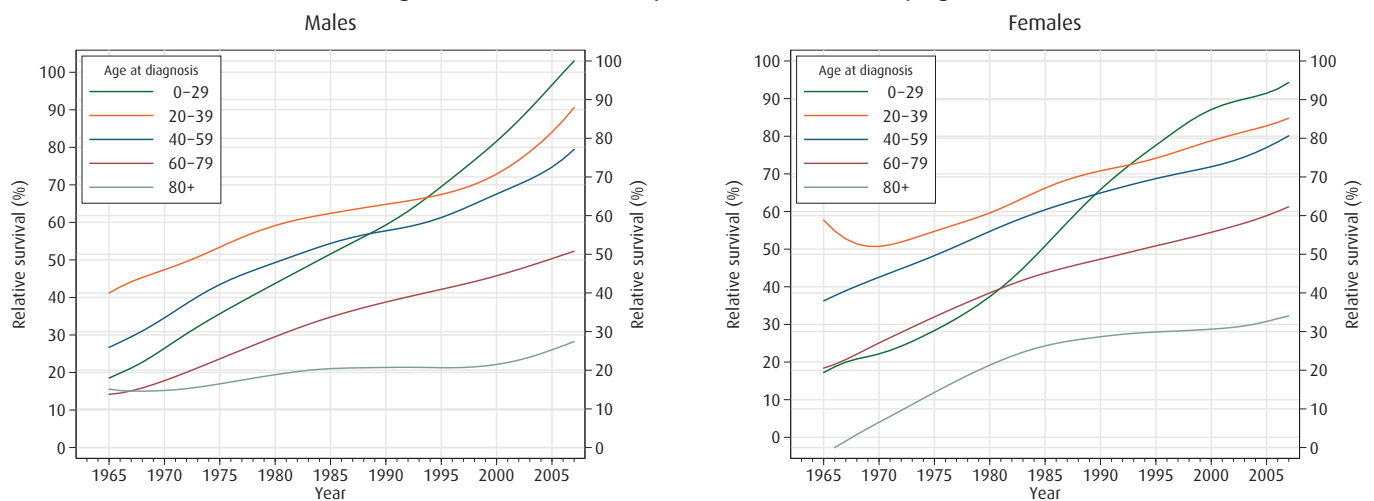


Figure S30c: Estimates of trends in the proportion cured and the median survival time for the uncured

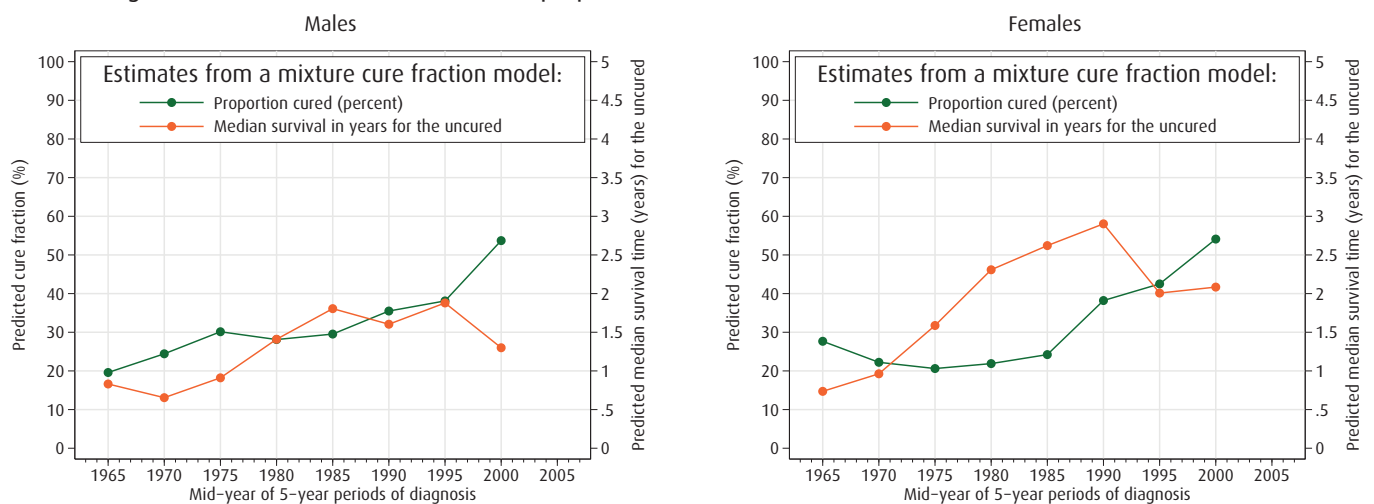


Figure S30d: Relative survival up to 15 years after diagnosis by sex and age

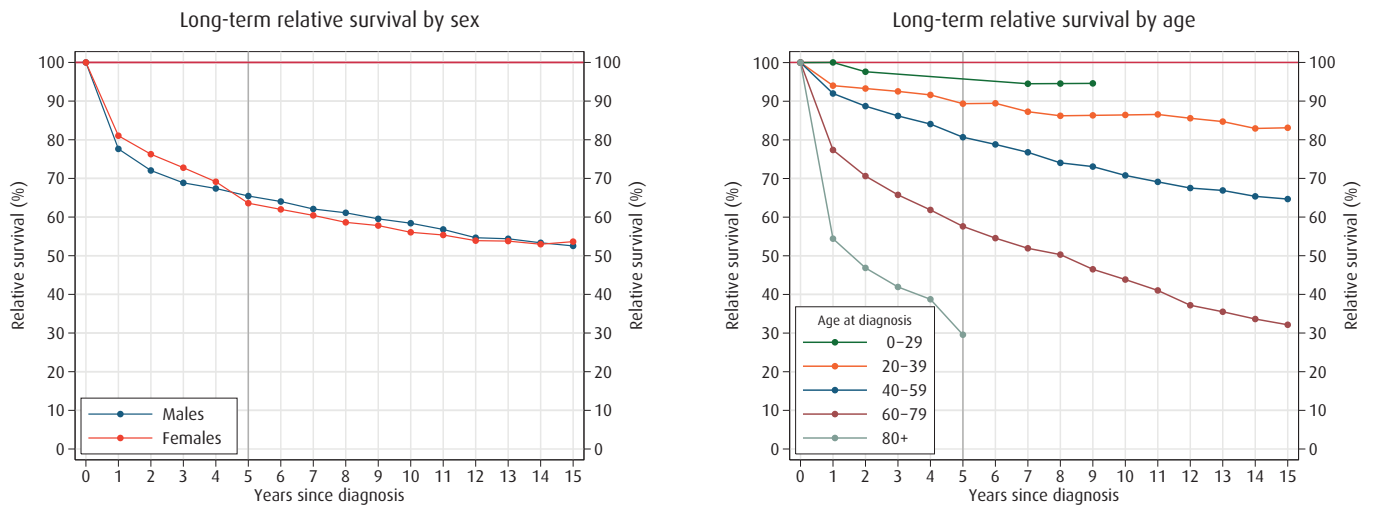


Figure S30e: Conditional 5-year relative survival for every additional year after diagnosis

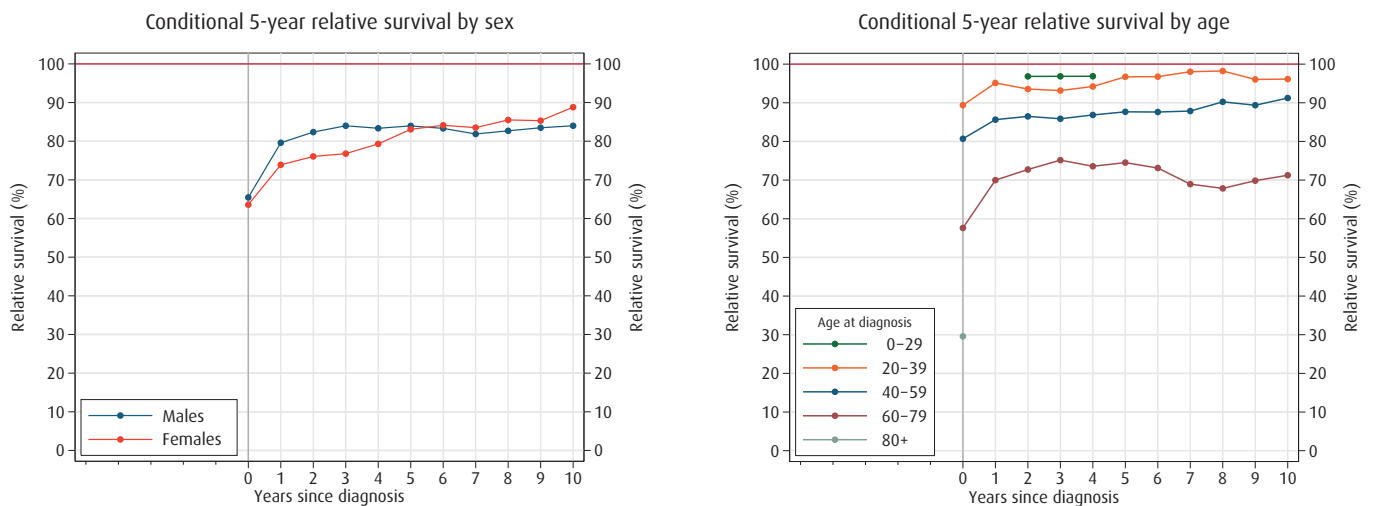
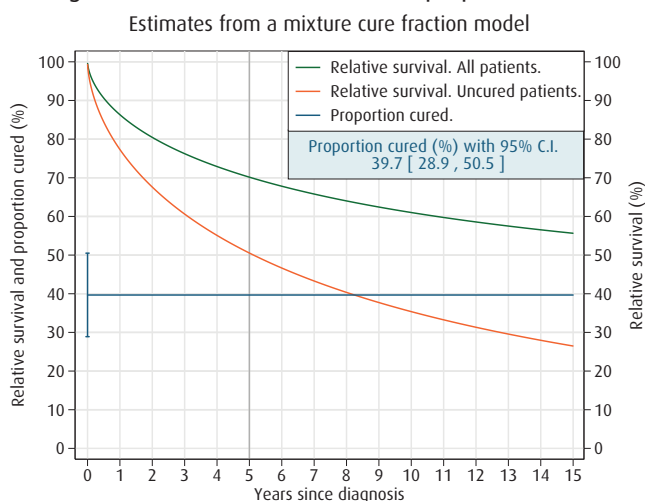


Figure S30f: Relative survival and proportion cured



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-29	24	42	66	1.7
20-39	87	121	208	5.4
40-59	419	597	1016	26.5
60-79	827	999	1826	47.7
80+	405	308	713	18.6
Total	1762	2067	3829	100.0

Figure S31a: Trends in age-standardised 5-year relative survival proportions and incidence and mortality rates

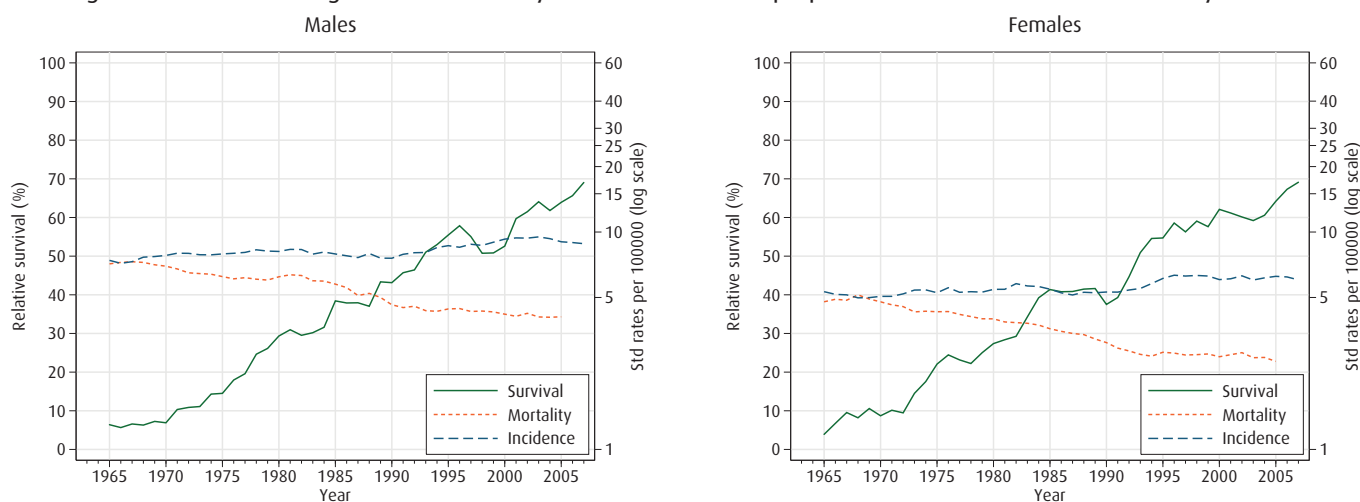


Figure S31b: Trends in 5-year relative survival by age

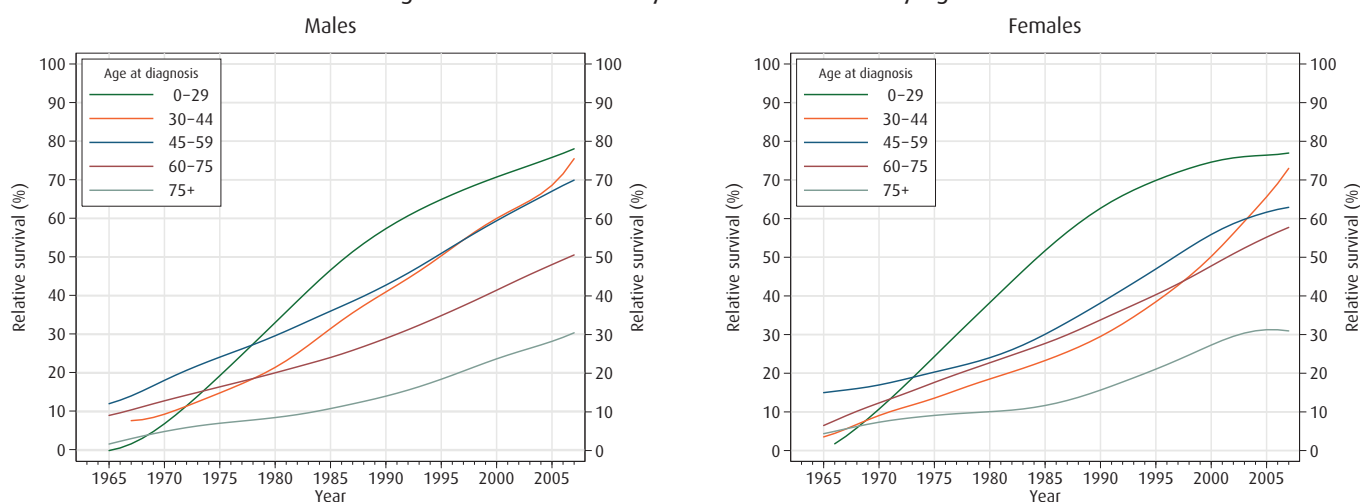


Figure S31c: Estimates of trends in the proportion cured and the median survival time for the uncured

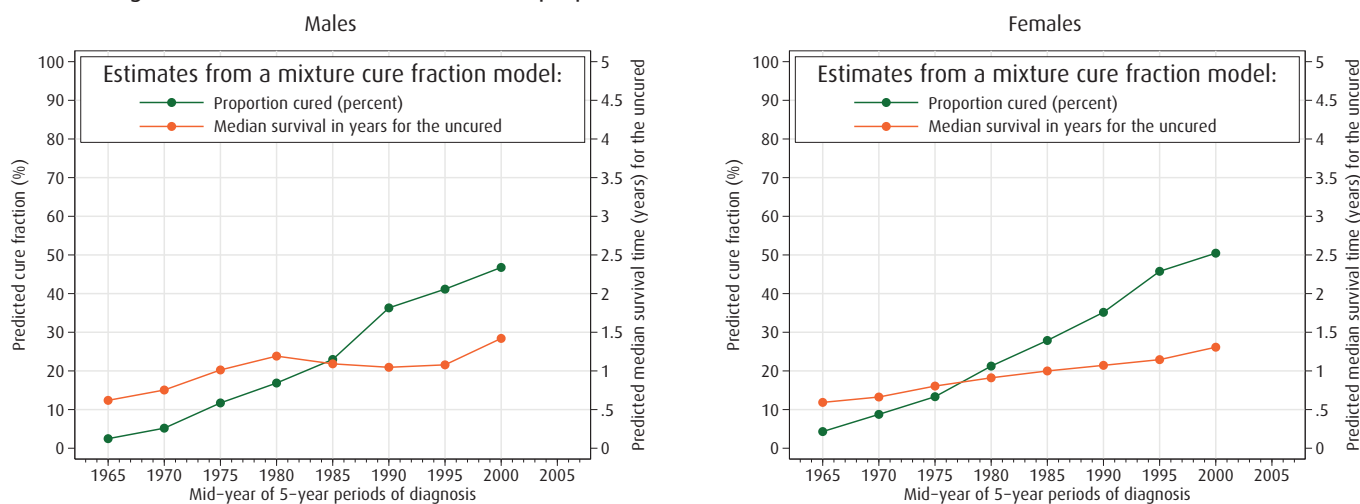


Figure S31d: Relative survival up to 15 years after diagnosis by sex and age

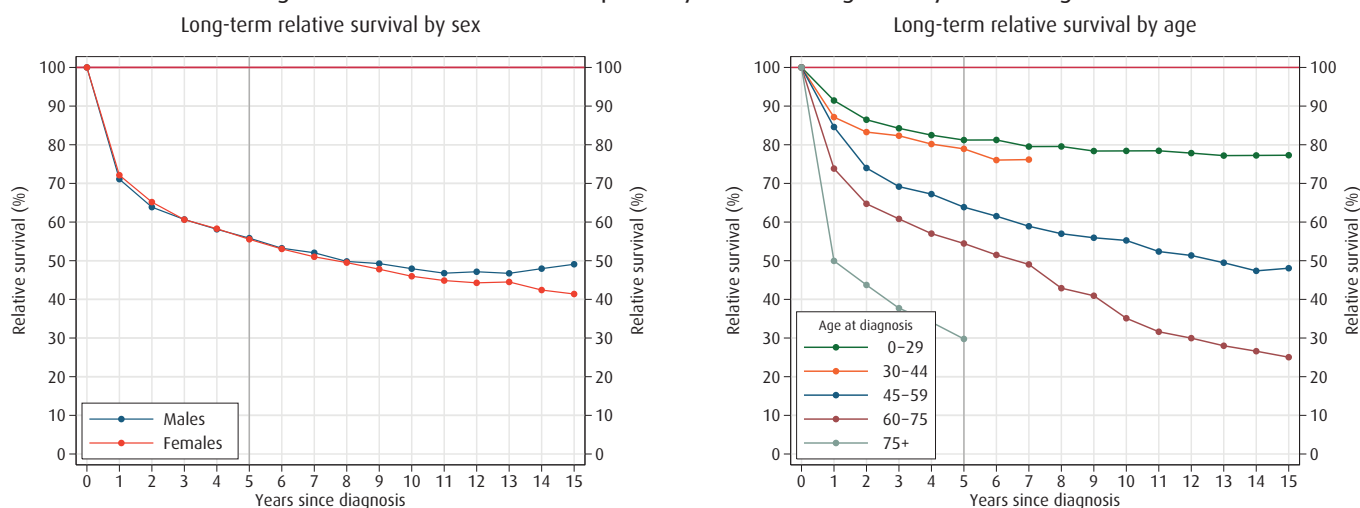


Figure S31e: Conditional 5-year relative survival for every additional year after diagnosis

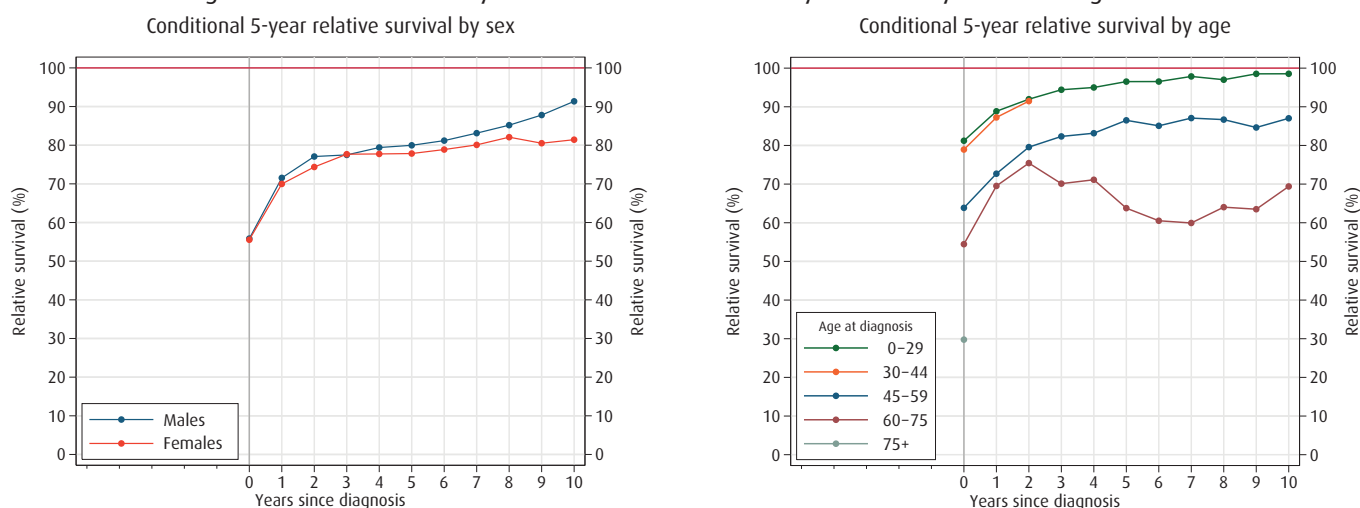
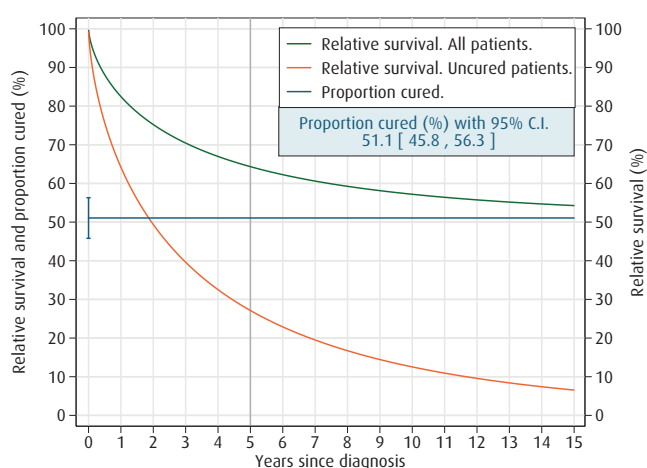


Figure S31f: Relative survival and proportion cured

Estimates from a mixture cure fraction model



Age distribution of patients (2003-2007)

Age	Males	Females	All	%
0-29	139	157	296	11.7
30-44	69	101	170	6.7
45-59	157	258	415	16.5
60-75	326	465	791	31.4
75+	398	450	848	33.7
Total	1089	1431	2520	100.0

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