

Cancer in Norway 2011

Cancer incidence, mortality,
survival and prevalence in Norway

Special issue:

NORDCAN

Cancer data from the Nordic countries



Cancer in Norway 2011

Editor-in-chief: Inger Kristin Larsen

Analysis: Bjørge Sæther, Bjarte Aagnes

Layout and design: Gunther Zerener

Correspondence to: Inger Kristin Larsen - inger.kristin.larsen@kreftregisteret.no

Editorial team: Inger Kristin Larsen, Siri Larønningen, Tom Børge Johannesen, Aage Johansen, Bjørn Møller, Hilde Langseth, Tom Kristian Grimsrud, Jan Ivar Martinsen, Svein Erling Tysvær, Christine Mellem, Bjørge Sæther, Gunther Zerener, Bjarte Aagnes, Giske Ursin.

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Editor: Siri Larønningen

Writing group: Siri Larønningen, Inger Kristin Larsen, Bjørn Møller, Gerda Engholm¹, Hans H. Storm¹ and Tom Børge Johannesen.

Layout and design: Gunther Zerener

Correspondence to: Siri Larønningen – siri.laronningen@kreftregisteret.no

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¹ NORDCAN Secretariat

Department of Cancer Prevention and Documentation

Danish Cancer Society

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

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Foreword

Norway represents one of the unique Nordic cancer registries with essentially complete data on cancer occurrences in a defined population for a period of over six decades. Ensuring that the data on each cancer patient are as correct and complete as possible involves combining data from several different sources. Specially trained cancer registrars code these data. In the 21st century, this process ought to be completed immediately after a cancer case has been diagnosed. However this would require complete electronic reporting directly from the pathology laboratories and clinicians to the Cancer Registry. This is our goal, but most of the roughly 30 000 cancer cases are still reported to us on paper. Although some pathology reports are now shipped on DVDs or submitted electronically using the Norwegian Health Network, the majority of hospitals simply print out and ship their pathology reports by mail to the Cancer Registry. At the registry these are scanned and encrypted, and the paper versions destroyed. Any missing reports from clinicians or pathology laboratories are then requested before a case is considered complete and coding finalized. The work done by our cancer registrars is complex and tedious, which is why it takes 18 months before the cancer numbers are released.

The number of cancers one year can fluctuate randomly as compared to the previous year. We therefore examine long term trends before we conclude that a cancer is rising or declining. When comparing the trends for the current five-year period 2007-2011 with the preceding period from 2002-2006, some changes are particularly noteworthy. There are increases in lung cancer in women, malignant melanoma in both men and women, and prostate cancer in men. The increase in lung cancer among women is smoking related, and will hopefully soon level off. The malignant melanoma increase is particularly visible in men and women above 50 and is due to increased sun exposure. Both of these have been long term trends. However, the new increase in prostate cancer was greater than expected. The increase appears to be predominantly in the 50-69 year olds, but is also visible in men above 70. About 30% of all cancers in men in 2011 were prostate cancers. Prostate cancer rates are highly affected by screening with the prostate specific antigen (PSA) test. There is no monitoring of PSA testing in Norway, thus we can only speculate that the trends we see in prostate cancer rates for 2011 are a result of published studies/focused media attention that resulted in an increase in PSA testing.

Two other areas with no clear new long term trends, but which we follow closely, are those of breast and colon cancer. Breast cancer rates declined for a number of years, but increased from 2009 to 2010 in women under 50, and from 2010 to 2011 in women above 50. These increases could be due to greater attention regarding breast cancer and mammographic screening, or due to a more sensitive imaging tool being introduced in screening. If the latter, we need to better understand the benefits and harms of this new mammographic detection technique. When it comes to colon cancer the incidence and mortality rates seem to have stabilised, but we remain concerned. This is the most common cancer in women above 70. Our colon cancer incidence rates among both men and women remain highest among the Nordic countries, as they have for the past 20 years. In terms of mortality, the Danes have had higher mortality rates than us, but mortality rates in Denmark have decreased markedly over time, substantially more than in Norway. We hope the ongoing pilot project on colorectal cancer screening will help us decide whether a national screening programme should be implemented, and if so, how.

To understand these and other Norwegian cancer rates, a useful tool has been the comparisons with rates in the other Nordic countries through the NORDCAN collaboration. The special issue of this year's *Cancer in Norway* describes NORDCAN. This database with information on cancer incidence, mortality, prevalence and survival statistics in the Nordic countries, covers a population of 25 million, with trends the past 50-60 years. The resource is particularly useful in determining whether an increase in one country reflects a general trend or a country-specific challenge. The colon cancer comparison above is an example of a country-specific problem. Variations in incidence can reflect true underlying risk factors or screening patterns, while mortality should decline with successful treatment and screening programmes.

This report is the final product of much hard work by many people, both in the hospitals, and at the Cancer Registry. We thank the physicians and health care personnel who have diagnosed, treated and reported on close to 30,000 cancer cases in 2011, as well as our staff who coded cancer cases, interpreted trends or in other ways contributed to this report.

Oslo, August 2013

Giske Ursin, MD, PhD
Director

Cancer in Norway 2011

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Summary

In this annual report the Cancer Registry of Norway provides incidence data on different cancers and the latest survival data.

Incidence/Cumulative risk

A total of 29 907 new cancer cases were reported in 2011: 54.1 per cent were among men and 45.9 per cent among women. The five most common cancer types, in descending order, were in men: prostate, lung, colon, bladder, skin (non-melanoma), and in women: breast, colon, lung, malignant melanoma of the skin and, skin (non-melanoma). The relative impact of cancers, however, varies considerably by age. Among children (0-14 years of age) cancer in the central nervous system and leukemia were the most common. These represent 57 per cent and 62 per cent of all cancer cases in boys and girls, respectively. In males aged 15-49 years testicular cancer was the most common cancer, but prostate cancer was most common in middle aged and older men. In females, cancer in the central nervous system was the most common cancer type among 15-24 years old. Among 25-69 years old breast cancer was most common, and among the oldest women (70+) colon cancer was the most common cancer.

Cancer trends should be interpreted by examining rates over the past several years. This is because there is some random variation in incidence rates from one year to the next. Further, the numbers for the preceding year will always be slightly higher than in the last year's report due to delayed notification of cancer cases.

The incidence rate for all sites combined has increased by 7 per cent in men and 2 per cent in women from the past five-year period (2002-2006) to the current one (2007-2011).

For the most common cancers in men, the largest incidence increase was observed for malignant melanoma (22 per cent) and cancer of the prostate (19 per cent). On the positive side, the rates for lung, bladder and rectal cancer show a small reduction.

In women the strongest increase occurred in incidence of skin cancer (both for malignant melanoma (13 per cent), non-melanoma (14 per cent) and lung cancer (13 per cent). For breast cancer the incidence rate for 2011 increased further from 2010, and this year's

increase was in women above 50 years of age. This contrasted to the decrease in breast cancer rates that occurred from 2005 to 2009. Only slight changes were observed for colon and rectal cancer.

The probability of developing cancer before the age of 75 is 35 per cent in men and 28 per cent in women.

Mortality

There were 10 970 deaths from cancer in Norway in 2011. Cancer of the lung, colon, rectum and female breast account for half of the mortality.

Survival

This year's statistics confirm the trend we have seen over a number of years: Survival continues to increase. There is improved survival for almost all cancers, including breast, prostate, lung, colon and rectal cancer.

This long term increase is partially due to improved treatment over time, but for breast and prostate cancer it is also due to screening. Increased attention to cancer in the population as well as among health care providers may also play a role.

Relative survival is the probability of a cancer patient's survival if other causes of death are excluded.

From the period 2002-2006 to 2007-2011 the estimated relative survival increased from:

- 86 to 89 per cent for breast cancer in women
- 82 to 90 per cent for prostate cancer
- 13 to 17 per cent for lung cancer in women
- 9 to 12 per cent for lung cancer in men
- 65 to 68 per cent for rectal cancer in women
- 59 to 65 per cent for rectal cancer in men
- 58 to 62 per cent for colon cancer in women
- 56 to 61 per cent for colon cancer in men

Prevalence

At the end of 2011 about 215 000 Norwegians were alive after having had at least one cancer diagnosis at one point in time.

Table 0. Summary of cancer statistics for the most common cancers

ICD10	Site	Sex	Age-standardised incidence rates 2007-11 (Table 12)	Percent change in age-standardised incidence from the previous five-year period (2002-06)	Number of new cases 2011 (Table 4)	Percent diagnosed with localized disease 2007-11 (Table 15)	Age-standardised mortality rates 2011 (Figur 8)	Five-year relative survival (%) 2002-06 (Table 18)	Five-year relative survival (%) 2007-11 (Table 18)
C00-96	All sites	M F	367.6 296.3	7.0 2.0	16 189 13 718		...	61.0 65.4	67.8 69.1
C18	Colon	M F	26.5 23.7	3.7 1.8	1 220 1 386	17.1 17.2	10.5 9.0	56.4 58.3	60.6 62.1
C19-21	Rectum, rectosigmoid, anus	M F	17.0 11.5	-2.4 -1.0	700 555	25.5 29.1	4.9 2.4	59.4 64.6	64.8 67.9
C33-34	Lung, trachea	M F	35.5 25.3	-3.2 13.4	1 618 1 224	18.4 21.8	26.5 17.9	9.2	12.1 16.8
C43	Melanoma of the skin	M F	18.3 18.7	21.7 13.1	854 864	68.0 71.6	4.4 2.5	78.1 87.9	76.5 89.2
C50	Breast	F	73.8	-3.5	3 094	41.4*	12.1	86.3	88.8
C53	Cervix uteri	F	9.5	-1.3	303	59.1*	1.9	77.4	77.6
C54	Corpus uteri	F	16.7	3.6	736	74.4	1.5	82.5	84.3
C56	Ovary	F	10.9	-8.8	485	20.1	6.4	44.0	44.3
C61	Prostate	M	106.6	19.2	4 978	56.7	17.3	81.8	89.5
C62	Testis	M	11.7	9.8	290	71.1	0.4	96.5	97.5
C66-68	Bladder, ureter, urethra	M F	21.5 6.4	-1.9 -0.1	980 367	72.6 69.8	4.5 1.6	72.6 65.6	74.3 66.7
C70-72, D32-33	Central nervous system	M F	14.2 16.4	0.7 -5.1	464 511	49.2** 69.7**	...	58.9 75.3	61.5 77.7
C82-85, C96	Non-Hodgkin lymphoma	M F	12.3 9.1	8.6 8.5	496 441	...	3.1 2.2	61.4 61.2	69.3 72.7
C91-95, D45-47	Leukaemia	M F	13.6 9.7	4.8 12.0	596 457	...	3.3 2.2	55.6 55.3	61.4 63.6

* Stage I

** Non-malignant

Definitions*

Incidence

The number of new cases (of disease) 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. Person-years is a measurement that combines persons and time (in years) as the denominator in rates.

Crude rate

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 & al, 1966; Segi, 1960) is used in this report.

Prevalence

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

In this report we use lifetime cancer prevalence which can be defined as the number of living individuals having ever been diagnosed with cancer.

Relative survival

The observed survival in a patient group divided by the expected survival of a comparable group in the general population with respect to key factors affecting survival such as age, sex and calendar year of investigation. Relative survival is thus a measure of the excess mortality experienced by the patients regardless of whether the excess mortality may be directly or indirectly attributable to the disease under investigation. A key advantage is that it does not require cause of death information.

Conditional relative survival

The probability of surviving an additional number of years given that the person has already survived X years. As the duration from diagnosis lengthens, the statistic becomes more informative to survivors than the conventional relative survival estimate. A five-year conditional relative survival that reaches close to 100% some number of years after diagnosis indicates that from thereon, there is little or no excess mortality in the patient group.

* Based on Last, 2001

List of the ICD-10 codes showing included or excluded morphologies

The list below gives a detailed description of specific morphologies that are excluded or included in all cancer statistics presented in the present report.

Table 1. Description of the ICD-10 codes

ICD-10	Site	Comments
C00 - 96	All sites	Includes the following D-diagnoses; D32-D33, D35.2-35.4, D42-D43, D44.3-D44.5 and D45-47
C38	Mediastinum, pleura	Excludes mesotheliomas (which are included in C45)
C44	Skin, non-melanoma	Excludes basal cell carcinoma
C56	Ovary	Excludes borderline tumours
C64	Kidney except renal pelvis	Excludes non-invasive papillary tumours
C65	Renal pelvis	Includes non-invasive papillary tumours
C66	Ureter	Includes non-invasive papillary tumours
C67	Bladder	Includes non-invasive papillary tumours
C68	Other and unspecified urinary organs	Includes non-invasive papillary tumours
C70	Meninges	Includes benign tumours (ICD10; D32-33, D42-43)
C71	Brain	Includes benign tumours (ICD10; D32-33, D35.2-35.4, D42-43, D44.3-44.5)
C72	Spinal cord, cranial nerves and other parts of central nervous system	Includes benign tumours (ICD10; D32-33, D42-43)
C75	Other endocrine glands and related structures	Includes benign tumours (ICD10; D44.3-44.5)
C92	Myeloid leukaemia	Includes myelodysplastic syndrome (ICD10; D46)
C95	Leukaemia of unspecified cell type	Includes polycythemia vera (ICD10; D45) and other unspecified tumours in lymphatic or hematopoietic tissue (ICD10; D47)

Data sources and Methods

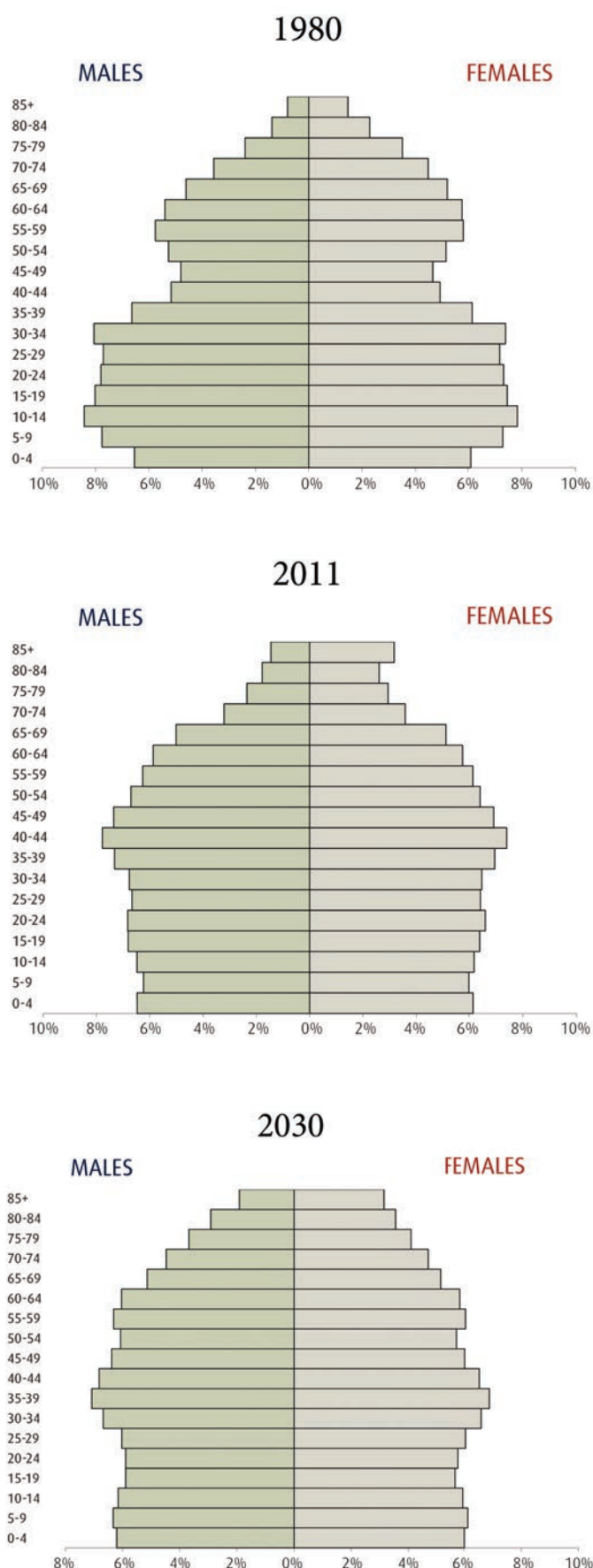
The population of Norway

The Norwegian population was nearly 5 million in January 2013. It is mainly Caucasian (>90%), with an immigrant population¹ comprising 14.1% of the total population. Most immigrants (6%) come from western countries (EU/EEA countries, US, Canada, Australia and New Zealand). A total of 4.6% of the immigrants come from Asia, whereas 1.8% comes from Africa. Table 2 shows the age structure by sex for the Norwegian population in December 2011, while Figure 1 illustrates the changing age structure over time, comparing population distributions from 1980 and 2011 with projections for 2030 (Source: Statistics Norway). The population of Norway has increased since recording began, and this growth is expected to continue the next few decades. The total number of inhabitants in Norway has increased by 19% from 1980 to 2011, largely as a result of rising life expectancy and, more recently due to increases in net immigration. By 2030, the size of the population is expected to increase a further 24% to about 6 million². The elderly will represent an increasingly large proportion of the population of Norway in the next quarter century. It is projected that by 2030 over one million inhabitants or one-sixth of the population will be aged 65 or above. (Source: Statistics Norway).

Table 2. Norwegian population 01.01.2012, five-year age group and sex

Age group	Males	Females
00-04	159 663	151 104
05-09	153 725	147 344
10-14	159 706	152 033
15-19	167 828	157 162
20-24	168 352	162 243
25-29	164 358	157 834
30-34	166 836	159 003
35-39	180 495	170 840
40-44	191 792	181 858
45-49	181 291	170 066
50-54	165 360	157 553
55-59	154 425	150 838
60-64	144 685	141 462
65-69	123 568	125 538
70-74	79 090	88 034
75-79	58 027	72 174
80-84	43 877	64 041
85+	35 793	77 872
TOTAL	2 498 871	2 486 999

Figure 1. Age structure of the Norwegian population, 1980, 2011 and 2030



Forecast, Statistics Norway 2012.
Considered the scenario of medium national growth

¹ Includes persons born in Norway with both parents from abroad

² Considered the scenario of medium national growth

Data sources and registration routines

The Cancer Registry of Norway (CRN) has, since 1952, systematically collected notifications on cancer occurrence for the Norwegian population. The registration has from 1953 been considered to be close to complete, and a comprehensive study on data quality estimates the completeness to be 98.8% for the registration period 2001-05 (Larsen & al, 2009). The reporting of neoplasms has been compulsory since the implementation of a directive from the Ministry of Health and Social Affairs in January 1952. The CRN Regulations came into force in 2002 (Regulations for the collection and processing of data in the CRN). The main objectives of the CRN can be summarised as follows:

- Collect data on cancer occurrence and describe the distribution of cancer and changes over time.
- Provide a basis for research on the etiology, diagnostic procedures, the natural course of the disease, and the effects of treatment in order to determine appropriate preventive measures and to improve the quality of medical care.
- Provide advice and information to public authorities and the general public about preventive measures.
- Perform epidemiological research activities with high international standards.

Data items registered in the Cancer Registry of Norway

The following must be reported to the CRN:

- All malignant neoplasms and precancerous disorders.
- All benign tumours of the central nervous system and meninges.

Registries

The incidence registry

The incidence registry contains the basic data items collected from clinicians and pathologists, as well as data from administrative patient discharge records and mortality sources. As of July 2013, the incidence registry contained information from 1953 on 1 574 054 cancer cases and premalignant conditions in 1 260 429 persons.

A total of 3 885 775 notifications have been registered since 1969³. The incidence registry is updated continuously with information on both new cases, as well as cases diagnosed in previous years.

The present report is based on data from the incidence registry.

Clinical registries

The CRN also registers treatment and follow-up of Norwegian cancer patients. Clinical registries, i.e. comprehensive registration schemes dedicated to specific cancers, have been established to provide more detailed information about diagnostic procedures, pathology-examinations, therapy and follow-up. The aims are to provide data for monitoring patient outcome and survival and an empirical base for scientific studies concerning prognostic factors and treatment outcomes, as well as evaluation of the quality of cancer care.

The ongoing and expanding activities of these clinical registries are a major focus for the Registry, and several clinical registries are now established. Each clinical registry has a Reference Group- a panel of multi-disciplinary experts drawn from the clinical and research milieu in Norway. These experts advise on the operations of each clinical registry, and its strategic direction. Registries are integrated in the CRN's coding and registration activities. The overview on the next page shows the status of these clinical registries as of August 2013.

³ Earlier notifications have not been registered individually

Table 3. Status of the clinical registries, August 2013

Clinical registry for	Clinical reference/ project group	Established with extended data*	Clinical parameters for electronical report specified	Electronical report form in use	National status
Colorectal cancer	Yes	Yes	Yes	Yes	Yes
Malignant melanoma	Yes	Yes	Yes	Yes	Yes
Breast cancer	Yes	Yes	Yes	Yes	Yes
Prostate cancer	Yes	Yes	Yes	Yes	Yes
Lymphoma	Yes	Yes	Yes	Yes	Yes
Lung cancer	Yes	Yes**	Yes	No	Yes
Childhood cancer	Yes	Yes***	Yes	Yes	Yes
Gynecological cancer****	Yes	Yes	Yes	Yes	Yes
Hematological cancer	Yes	No	Yes	No	No
Central nervous system	Yes	No	Yes	No	No
Oesophagus and stomach cancer	Yes	No	Yes	No	No
Testicular cancer	Yes	No	Yes	No	No
Sarcoma	Yes	No	No	No	No

* Either by having a separate clinical report form and/or by having a database with extended information beyond the incidence registry.

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

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

**** Established for ovarian cancer, will be extended to include all gynecological cancers.

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 CRN to collect, code and store data on cancer patients in Norway. Information from clinical notifications, pathological reports and death certificates are the main sources. These are processed and registered in both the clinical registries and the incidence registry. Information from the Norwegian Patient Registry is an important additional source for identifying patients.

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 to the CRN within two months. The cases should be reported irrespective of whether the patient is treated, admitted, or seen only as an outpatient. There are two general paper forms (clinical notifications) for reporting of solid or non-solid tumours. These forms allow information on primary site, symptoms, stage of disease, the basis for the diagnosis and primary treatment given to the patient to be provided. Cancers in the clinical registries are reported on separate

forms with extended information (see clinical registries). Pathological reports from hospitals and independent laboratories provide histological, cytological or autopsy information. The information is identified and linked by the personal identification number system which was established in Norway in 1964.

Death certificates

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

Death certificates also represent a complementary source of information on new cancer cases, which have not been reported previously, or where the diagnosis differ. Cancer cases first identified from death certificates are traced back to the hospital or physician. At the CRN it needs to be ascertained whether the patient had been diagnosed when alive or at post mortem. This reminder is sent to the physician or institution responsible for the treatment of the patient.

The Norwegian Patient Registry

Since 2002, the CRN has received data files from the Patient Administrative Data (PAD) used in all Norwegian hospitals. These files contain information about patients who have been treated for premalignant and malignant conditions since 1998, and therefore PAD has been a key source in finding information on unreported cases. Since 2010, the CRN has received this information from the Norwegian Patient Registry (NPR). The CRN receives all C-diagnoses and some D-diagnoses (ICD-10) from NPR and these can then be matched with current information in the CRN database. Reminders are sent to clinicians for those cases where no information about the diagnosis exists in the CRN (Figure 2).

Dispatching of reminders to clinicians

It is mandatory to report clinical information on new cases of cancer no later than two months after the diagnosis has been determined. Thus, except for some few cases (e.g. cases diagnosed at autopsy), at least one clinical notification should be registered for each cancer case. The CRN receives information on cancer cases from several sources (clinical notifications, pathology notifications, autopsies, death

certificates, radiation therapy and NPR). In those cases where the clinical notification is missing for the cancer case notified from one of the other sources, a reminder is sent to the hospital/ward/physician responsible for the treatment. About 40 000 reminders are sent annually, including, in some instances, repeat requests for information. The procedure for cancer registration and the dispatching of reminders are illustrated in Figure 2.

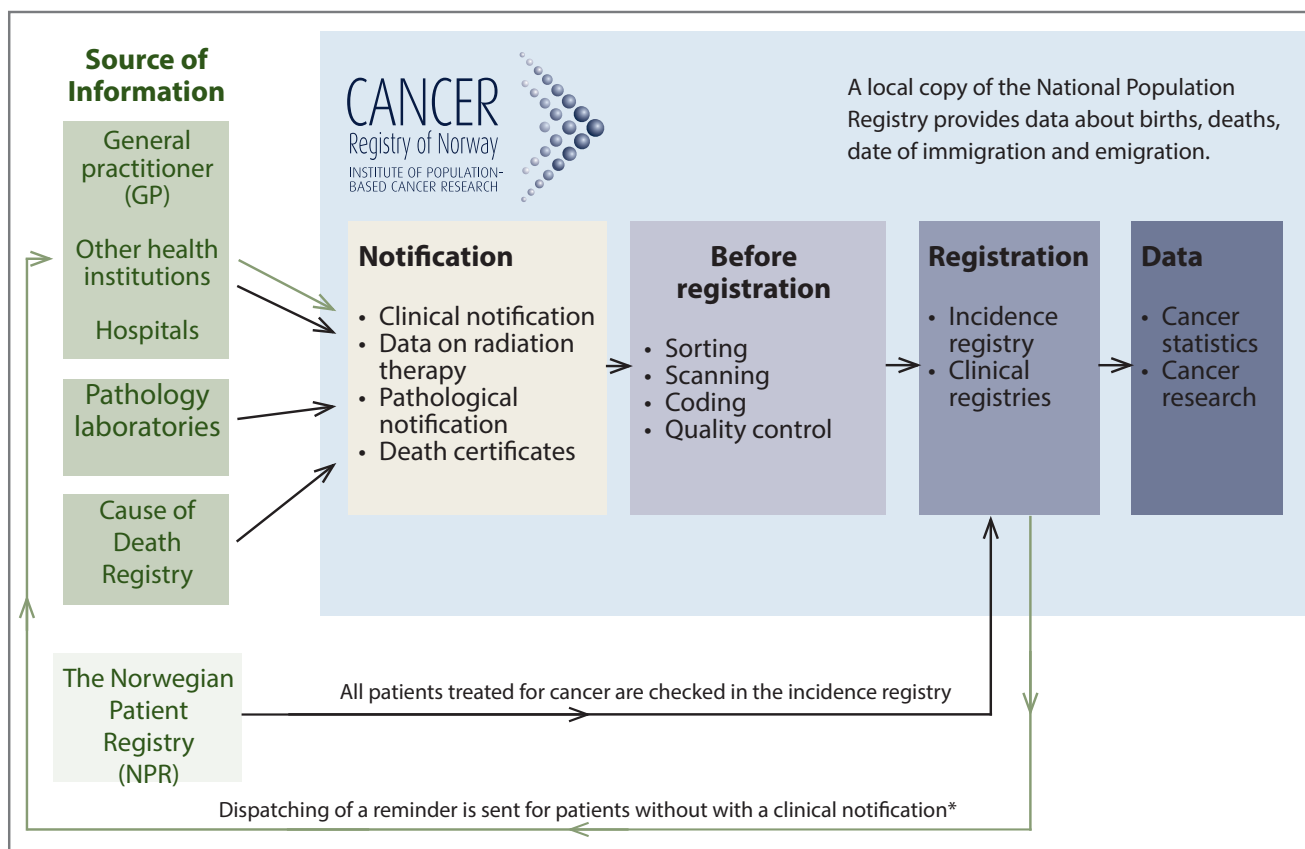
Incidence and mortality data

The incidence data presented in the first part of this report are based on an extraction from the incidence registry on 3rd of July 2013. The tables and figures in general represent either the latest year of complete incidence (2011) or the latest five-year period (2007-11), the latter grouping being used when the stratified numbers are too small to warrant presentation for a single year.

In the lower urinary tract atypical epithelial lesions are included in the data as well as invasive cancers. Further, in the central nervous system both benign and malignant neoplasms are included. Ovarian borderline tumours and basal cell carcinomas of the skin are excluded.

Registered codes from ICD-7, ICD-O-2 and ICD-O-3 are converted to ICD-10 using a combination of topography

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



* Dispatching of reminders for clinical notifications are sent for cases only notified from the NPR or cases only notified by a pathology notification/death certificate on radiation therapy data.

and morphology. Population data, stratified by year, sex and age, are provided by Statistics Norway. The main cancer types are tabulated according to their ICD-10 three digit categories. The “all sites” figure comprises all malignant neoplasms (ICD-10 C00-96) plus benign and precancerous conditions mentioned above.

A list of the inclusion and exclusion criteria applied to several sites with respect to morphology is shown in Table 1. Corresponding mortality data coded in ICD-10 were obtained from Statistics Norway and are presented in the same ICD-10 categories as for the rest of this report.

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.

Incidence and mortality

Incidence and mortality refer to new cases and number of deaths occurring, respectively. Both measures can be expressed as the absolute number, or as the rate, taking into account the size of the population at risk. Rates are essential for the comparisons of groups, and within groups over time. The denominator is the underlying person-time at risk in which the new cases or deaths in the numerator arose. Cancer incidence and mortality are presented in this report as both numbers and rates. Several different types of rates are also used in this report.

Age-specific rates

There are compelling reasons for adjusting for the effect of age when comparing cancer risk in populations. Age is a 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 this measure is useful as an indicator of the total cancer burden, its utility in comparing cancer risk between groups is severely limited when the age distribution differs between groups, or where demographic changes have impacted 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 provided separately for males and females, because of the different patterns by sex. Age and sex-specific incidence and mortality rates are the basis of epidemiological analysis of cancer frequency data.

Age-standardised rates

To facilitate comparisons, a summary rate is required that takes into account 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 (Doll & al, 1966; Segi, 1960). Although the weights of the world standard fail to resemble those of the Norwegian population in 2011 (Figure 3), this observation is of relatively little importance, since it is the ratio of ASRs, an estimate of the age-standardised 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 & al, 2002).

For weights w_i in the i th age class of the world standard and for A age classes with $i = 1, 2, \dots, A$, as before, r_i 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, 1992). 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 risk of developing cancer. If before the age of 75 the cumulative risk is less than 10%, as is the case for most cancer forms, it is reasonably approximated by the cumulative rate.

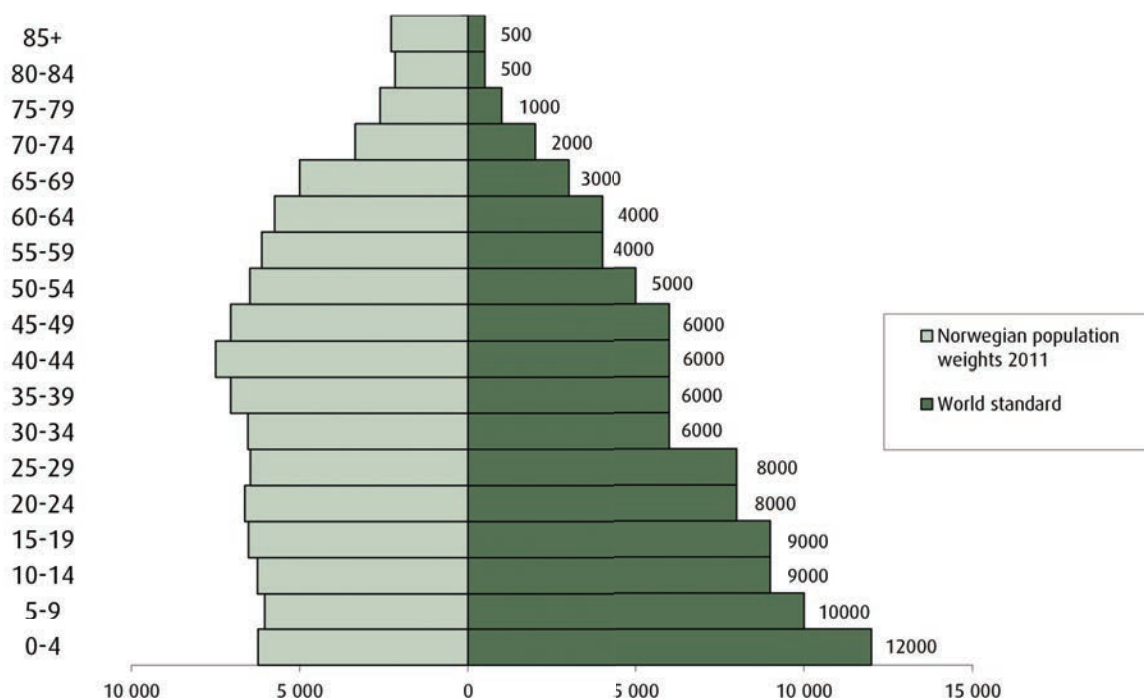
The cumulative rate is the summation of the age-specific rates over each year of age from birth to a defined upper age limit. As age-specific incidence rates are computed according to five-year age groups, the cumulative rate is five times the sum of the age-specific rates calculated over the five-year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

$$5 \sum r_i$$

The cumulative rate has several advantages compared to 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



Prevalence

Prevalence is the number or proportion of a population that has the disease at a given point in time. It is a complex measure of cancer incidence, mortality, and other factors affecting individuals after diagnosis and treatment.

Prevalence is a useful measure of the number of persons requiring care for chronic illnesses such as hypertension and diabetes. For cancer, on the other hand, many patients diagnosed in the past may now be considered cured, that is to say they no longer have a greater risk of death. However, some residual disability may be present subsequent to, for example, a specific treatment intervention, thus it is likely that the number of prevalent cancer cases also represents a useful measure.

Lifetime cancer prevalence can be defined as the number of persons alive having ever been diagnosed with cancer. Such a measure can easily be derived from the CRN's data, given the registration of cases and complete follow up over many years. We provide additional estimates that may be useful for quantifying care burdens. Therefore this report shows the numbers of persons alive on 31 December 2011 who were previously diagnosed with cancer within one year, one to four years, five to nine years, and 10 or more years.

Survival

The survival time of a cancer patient is defined as the time that has elapsed between a cancer diagnosis and subsequent death or end of follow-up.

Follow-up data

To estimate long-term survival patterns and trends, vital statistics of patients diagnosed with cancer during 1960-2011 were obtained from the National Population Registry and Statistics Norway through 31 December 2011.

The 23 most common cancer sites were selected for analysis, and grouped according to their respective ICD-10 categories. About 3.7% of the cases were excluded as they were either registered as DCO cases (Death Certificate Only), diagnosed at autopsy, emigrated before diagnosis, or had zero survival time. It has been shown that exclusion of patients with a prior cancer diagnosis, which often is associated

with a poorer prognosis, may give rise to artificially elevated estimates of survival (Brenner & Hakulinen, 2007). Therefore patients with previous cancer diagnoses were included in each site-specific analysis.

On the other hand, to provide an estimate of "all sites" survival, analysis was restricted to first primary cancers. While the inclusion of multiple primaries has been recommended for comparative purposes, the corresponding reduction in the overall survival estimates has been shown to be negligible; the effect of their inclusion has been shown to reduce five-year survival in Norway (for diagnoses 1995-2009) by less than a percentage point (Rosso & al, 2009).

Results should be interpreted with caution. Survival of the most frequent cancers in men and women, prostate and breast cancer, have been affected by the impact of PSA testing and mammographic screening, respectively.

Relative Survival

The most basic measure of survival is five-year survival, which represents the percentage of patients still alive 5 years after the date of diagnosis.

Not all deaths among cancer patients are due to the primary cancer under study. Deaths resulting from other causes will lower the survival and may possibly invalidate comparisons between populations. 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 year of investigation. At each time t (year) 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 requires the Norwegian population life tables from Statistics Norway by 1-year age group, sex, and 1-year calendar period. The method of Hakulinen (Hakulinen, 1982) was used for estimating expected survival.

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 profiles of prognosis. In contrast, period-based analyses consider the survival experience in recent years, and the survival that would have been observed in 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. Brenner and Hakulinen (Brenner & Hakulinen, 2002) 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. Both clinicians and patients are primarily interested in up-to-date estimates of survival, and its incorporation into Cancer in Norway aims to reflect the most recent developments in cancer care.

In this report, we have used a three-year period window (2009-2011) to estimate relative survival up to 15 years, thus patients diagnosed in 2008-2011 contribute with (part of) their survival experience the first year of follow up (part of the first year if they were diagnosed in 2008-2011), patients diagnosed in 2007-2010 contribute to the second year of follow up, patients diagnosed in 2006-2009 contribute to the third year of follow up etc. Thus, the period approach consists of the pieces of survival experience in 2009-2011 for all patients who have been diagnosed 15 years ago or less. The same approach is used to analyse time trends, using a three-year moving period window from 1965 to 2011. To increase stability in the estimates, stage-specific survival is presented using a five-year period window.

A more thorough review of, and rationale for, the utilisation of these survival methods was provided in the Special Issue of Cancer in Norway 2007.

Conditional relative 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 is a key indicator in this respect, estimating survival proportions given that patients have already survived a certain duration of time (Hankey & Steinhorn, 1982; Janssen-Heijnen & al, 2007). The point at which conditional five-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, a three-year period window (2009-2011) is used in this report, and we present estimates of sex-specific five-year relative survival conditional on being alive 1 to 10 years after diagnosis. Estimates were not plotted when there were too few cancer survivors ($n < 20$).

Data quality, completeness and timeliness

Data quality

A comprehensive assessment of the data quality in the CRN was conducted in 2007 (Larsen & al, 2009). Larsen & al. reported that the coding and classification systems, in general, follow international standards. 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. Practical aspects and techniques for addressing the data quality at a cancer registry, including the documentation of comparability, validity and timeliness has recently been reviewed (Bray & Parkin, 2009). Methods for the evaluation of registry completeness have also been assessed recently (Parkin & Bray, 2009).

Two indicators of accuracy are shown in Table 4, namely the percentage of cases histologically verified (HV%), and the percentage of death certificate only registrations (DCO%). See Larsen & al, 2009 for further details. The CRN has implemented the rules for registration and reporting of multiple neoplasms as defined jointly by the International Association of Cancer Registries (IACR) and the International Agency for Research on Cancer (IARC) (International Association of Cancer Registries, 2004).

Completeness and timeliness of incidence

Table 5 shows the number of cancer cases diagnosed in 2010 as extracted on 11th September 2012 (for CiN 2010), and 3rd July 2013. The number of cancer cases diagnosed in 2010 reported and appearing in this issue (CiN 2011) are 206 (0.7%) more than those registered 10 months ago (in CiN 2010).

Common cancers such as lung, prostate and breast cancers, however, appear to have been almost complete when CiN 2010 was published.

The largest differences were shown for rare cancers such as eye C69 (48.8%) and other uterus C55 (-40.0%) where small changes lead to a relatively large change of the percentage.

Table 4. Percentage distribution of histologically verified (HV) and death certificate only (DCO) by primary site, 2007-2011

ICD10	Site	Cases	HV %	DCO %
C00-96	All sites	141190	88.9	2.0
C00-14	Mouth, pharynx	2485	97.5	0.4
C00	Lip	614	99.5	0.2
C01-02	Tongue	485	97.7	0.2
C03-06	Mouth, other	451	98.9	0.4
C07-08	Salivary glands	227	89.9	1.3
C09-14	Pharynx	708	97.2	0.6
C15-26	Digestive organs	28960	89.0	3.0
C15	Oesophagus	1108	95.5	1.7
C16	Stomach	2539	95.0	1.5
C17	Small intestine	672	95.4	1.2
C18	Colon	12508	95.0	1.6
C19-21	Rectum, rectosigmoid, anus	6380	97.3	0.7
C22	Liver	883	67.4	9.1
C23-24	Gallbladder, bile ducts	782	65.9	7.7
C25	Pancreas	3503	59.1	9.7
C26	Other digestive organs	585	68.4	14.7
C30-34, C38	Respiratory organs	14475	77.2	2.9
C30-31	Nose, sinuses	214	98.6	0.5
C32	Larynx, epiglottis	578	98.3	0.7
C33-34	Lung, trachea	13596	76.1	3.0
C38	Mediastinum, pleura (non-mesothelioma)	87	60.9	9.2
C40-41	Bone	258	94.6	1.9
C43	Melanoma of the skin	7208	99.6	0.1
C44	Skin, non-melanoma	7743	98.7	0.1
C45	Mesothelioma	393	90.1	0.0
C46	Kaposi's sarcoma	39	97.4	0.0
C47	Autonomic nervous system	59	98.3	0.0
C48-49	Soft tissues	743	95.3	0.9
C50	Breast	14308	98.4	0.4
C51-58	Female genital organs	8094	95.1	1.3
C53	Cervix uteri	1500	98.4	0.4
C54	Corpus uteri	3603	98.9	0.4
C55	Uterus, other	35	51.4	11.4
C56	Ovary	2265	87.6	2.8
C51-52, C57	Other female genital	679	95.0	2.2
C58	Placenta	12	75.0	0.0
C60-63	Male genital organs	24183	96.1	1.4
C61	Prostate	22455	95.9	1.5
C62	Testis	1499	99.4	0.2
C60, C63	Other male genital	229	97.8	0.0
C64-68	Urinary organs	10516	94.0	1.6
C64	Kidney excl. renal pelvis	3511	88.9	2.9
C65	Renal pelvis	412	93.9	0.5
C66-68	Bladder, ureter, urethra	6593	96.7	1.0
C69	Eye	310	48.7	0.6
C70-72, D32-33	Central nervous system	5185	61.4	2.1
C73	Thyroid gland	1301	95.5	0.3
C37, C74-75	Other endocrine glands	1196	56.9	1.7
C39, C76, C80	Other or unspecified	1855	49.9	15.8
C81-96	Lymphoid and haematopoietic tissue	11879	74.7	2.7
C81	Hodgkin lymphoma	623	99.2	0.2
C82-85, C96	Non-Hodgkin lymphoma	4419	96.8	0.4
C88	Malignant immunoproliferative diseases	243	79.0	1.6
C90	Multiple myeloma	1865	56.6	5.7
C91-95, D45-47	Leukaemia	4729	57.7	4.0

Table 5 Registered cancer cases in Norway, 2010 as obtained from the incidence registry extracted 11th September 2012 and 3rd July 2013

ICD10	Site	Cases diagnosed 2010 as of			
		11.09.2012	03.07.2013	Difference	%
C00-96	All sites	28271	28477	206	0.7
C00-14	Mouth, pharynx	510	515	5	1.0
C00	Lip	126	128	2	1.6
C01-02	Tongue	91	92	1	1.1
C03-06	Mouth, other	95	95	0	0.0
C07-08	Salivary glands	61	59	-2	-3.3
C09-14	Pharynx	137	141	4	2.9
C15-26	Digestive organs	5914	5985	71	1.2
C15	Oesophagus	253	255	2	0.8
C16	Stomach	482	475	-7	-1.5
C17	Small intestine	129	129	0	0.0
C18	Colon	2543	2576	33	1.3
C19-21	Rectum, rectosigmoid, anus	1329	1356	27	2.0
C22	Liver	199	200	1	0.5
C23-24	Gallbladder, bile ducts	185	195	10	5.4
C25	Pancreas	650	659	9	1.4
C26	Other digestive organs	144	140	-4	-2.8
C30-34, C38	Respiratory organs	3003	3012	9	0.3
C30-31	Nose, sinuses	40	39	-1	-2.5
C32	Larynx, epiglottis	120	123	3	2.5
C33-34	Lung, trachea	2826	2834	8	0.3
C38	Mediastinum, pleura (non-mesothelioma)	17	16	-1	-5.9
C40-41	Bone	52	51	-1	-1.9
C43	Melanoma of the skin	1518	1532	14	0.9
C44	Skin, non-melanoma	1536	1548	12	0.8
C45	Mesothelioma	91	91	0	0.0
C46	Kaposi's sarcoma	11	10	-1	-9.1
C47	Autonomic nervous system	10	11	1	10.0
C48-49	Soft tissues	140	142	2	1.4
C50	Breast	2852	2863	11	0.4
C51-58	Female genital organs	1689	1681	-8	-0.5
C53	Cervix uteri	322	321	-1	-0.3
C54	Corpus uteri	752	761	9	1.2
C55	Uterus, other	10	6	-4	-40.0
C56	Ovary	456	446	-10	-2.2
C51-52, C57	Other female genital	146	144	-2	-1.4
C58	Placenta	3	3	0	0.0
C60-63	Male genital organs	4531	4557	26	0.6
C61	Prostate	4210	4234	24	0.6
C62	Testis	271	274	3	1.1
C60, C63	Other male genital	50	49	-1	-2.0
C64-68	Urinary organs	2102	2103	1	0.0
C64	Kidney excl. renal pelvis	727	735	8	1.1
C65	Renal pelvis	89	90	1	1.1
C66-68	Bladder, ureter, urethra	1286	1278	-8	-0.6
C69	Eye	43	64	21	48.8
C70-72, D32-33	Central nervous system	991	1012	21	2.1
C73	Thyroid gland	280	287	7	2.5
C37, C74-75	Other endocrine glands	191	197	6	3.1
C39, C76, C80	Other or unspecified	350	338	-12	-3.4
C81-96	Lymphoid and haematopoietic tissue	2457	2478	21	0.9
C81	Hodgkin lymphoma	130	130	0	0.0
C82-85, C96	Non-Hodgkin lymphoma	964	964	0	0.0
C88	Malignant immunoproliferative diseases	45	48	3	6.7
C90	Multiple myeloma	377	383	6	1.6
C91-95, D45-47	Leukaemia	941	953	12	1.3

Cancer incidence, mortality, survival and prevalence in Norway 2011

Incidence

In 2011, 29 907 new cases of cancer were recorded in Norway, of which 16 189 occurred among men and 13 718 among women (Table 6). Cancers of the prostate, female breast, lung and colon are the most common cancers and account for 45% of the total cancer burden.

In men, prostate cancer continues to be the most frequent cancer (4 978 cases), followed by lung (1 618 cases) and colon cancer (1 220 cases).

Breast cancer remains the most frequent neoplasm in women, with 3 094 new cases in 2011, followed by colon and lung cancer, with 1 386 and 1 224 incident cases, respectively.

The vast majority of cancers in Norway, over 90% in men and 85% in women, are diagnosed in persons over the age of 50 (Figure 4). About half are diagnosed at ages 70 or older, while 40% of all new cases occur between the ages 50 and 69, in men and

women alike. A larger proportion of cancers are diagnosed in women than men at the ages of 25 to 49, while similar proportions, constituting slightly over 1% of the cancer burden, occur in children and young adults.

The relative impact of cancer at different ages varies considerably by cancer site. Figure 5 identifies the cancer types that are the main contributors to the disease burden at different ages. Cancers of the central nervous system are most frequent in children and young female adults, while testicular cancer is by far the most common cancer diagnosed in young men. Prostate cancer is the most frequent cancer in men aged over 50, while breast cancer is the most common cancer diagnosis in women from the ages 25 through to 69. Colon cancer was the most common cancer in women above 70.

Figure 4. Percentage distribution of cancer incidence by age, 2007-2011

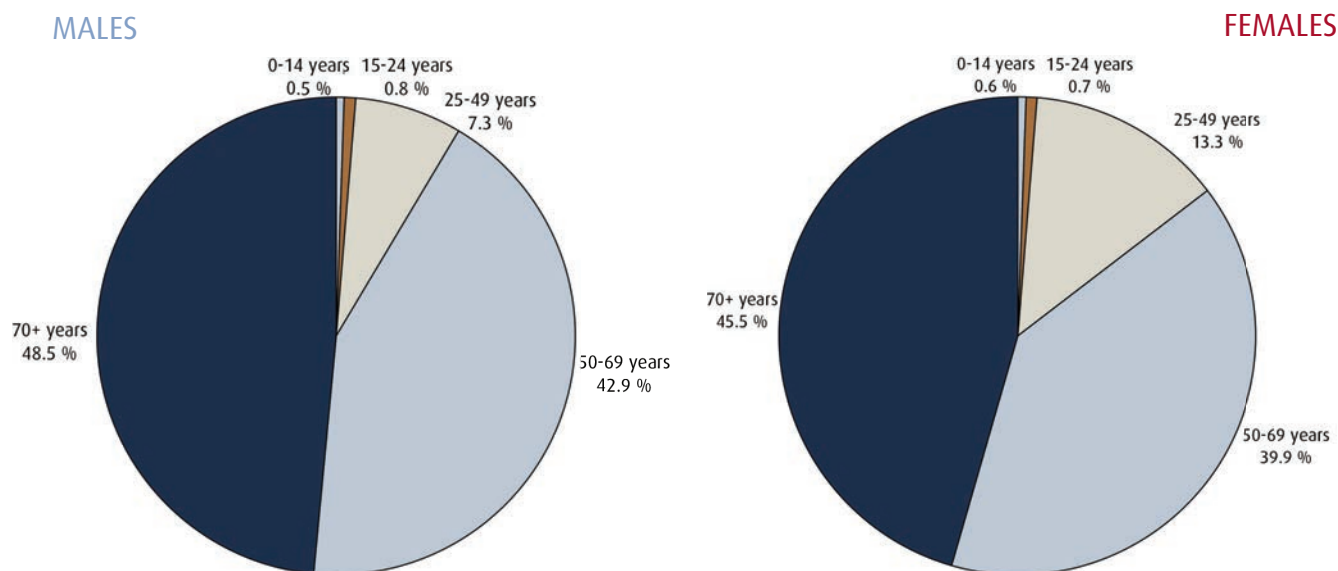


Table 6. Number of new cases by primary site and sex, 2011

ICD10	Site	Males	Females	Total
C00-96	All sites	16189	13718	29907
C00-14	Mouth, pharynx	330	201	531
C00	Lip	82	46	128
C01-02	Tongue	71	38	109
C03-06	Mouth, other	37	43	80
C07-08	Salivary glands	18	29	47
C09-14	Pharynx	122	45	167
C15-26	Digestive organs	3072	2865	5937
C15	Oesophagus	179	61	240
C16	Stomach	317	199	516
C17	Small intestine	85	64	149
C18	Colon	1220	1386	2606
C19-21	Rectum, rectosigmoid, anus	700	555	1255
C22	Liver	128	74	202
C23-24	Gallbladder, bile ducts	53	84	137
C25	Pancreas	323	374	697
C26	Other digestive organs	67	68	135
C30-34, C38	Respiratory organs	1746	1263	3009
C30-31	Nose, sinuses	21	18	39
C32	Larynx, epiglottis	98	16	114
C33-34	Lung, trachea	1618	1224	2842
C38	Mediastinum, pleura (non-mesothelioma)	9	5	14
C40-41	Bone	29	24	53
C43	Melanoma of the skin	854	864	1718
C44	Skin, non-melanoma	871	803	1674
C45	Mesothelioma	63	13	76
C46	Kaposi's sarcoma	3	1	4
C47	Autonomic nervous system	5	1	6
C48-49	Soft tissues	64	80	144
C50	Breast	28	3094	3122
C51-58	Female genital organs		1678	1678
C53	Cervix uteri		303	303
C54	Corpus uteri		736	736
C55	Uterus, other		8	8
C56	Ovary		485	485
C51-52, C57	Other female genital		141	141
C58	Placenta		5	5
C60-63	Male genital organs	5307		5307
C61	Prostate	4978		4978
C62	Testis	290		290
C60, C63	Other male genital	39		39
C64-68	Urinary organs	1545	660	2205
C64	Kidney excl. renal pelvis	529	256	785
C65	Renal pelvis	36	37	73
C66-68	Bladder, ureter, urethra	980	367	1347
C69	Eye	22	32	54
C70-72, D32-33	Central nervous system	464	511	975
C73	Thyroid gland	79	216	295
C37, C74-75	Other endocrine glands	107	104	211
C39, C76, C80	Other or unspecified	175	182	357
C81-96	Lymphoid and haematopoietic tissue	1425	1126	2551
C81	Hodgkin lymphoma	65	69	134
C82-85, C96	Non-Hodgkin lymphoma	496	441	937
C88	Malignant immunoproliferative diseases	30	18	48
C90	Multiple myeloma	238	141	379
C91-95, D45-47	Leukaemia	596	457	1053

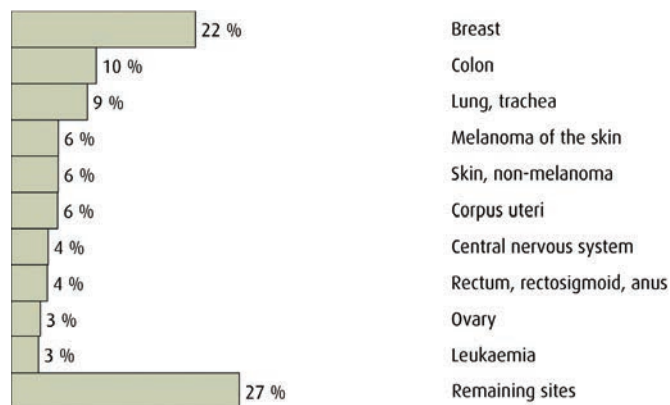
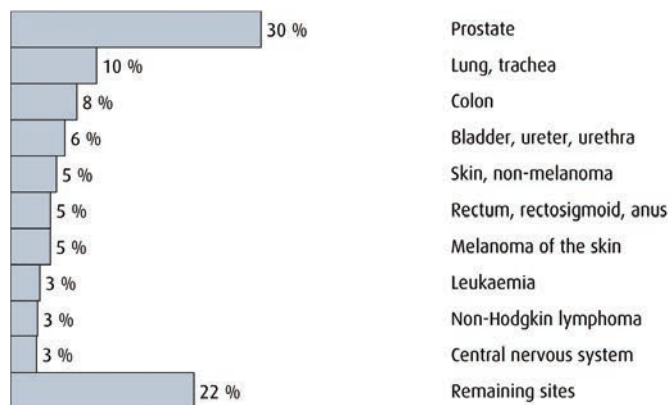
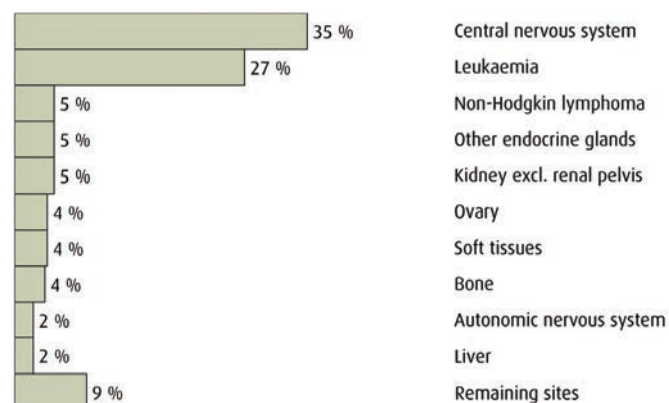
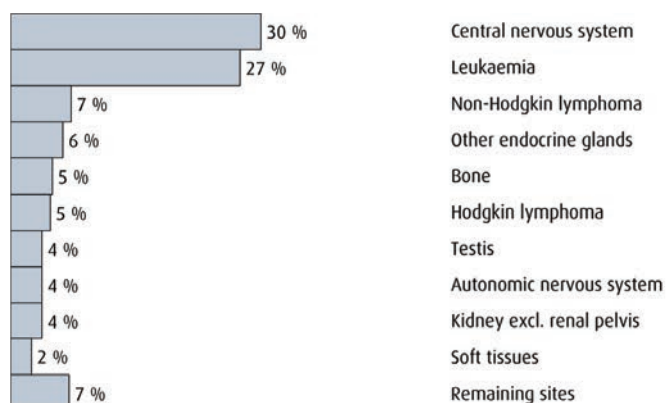
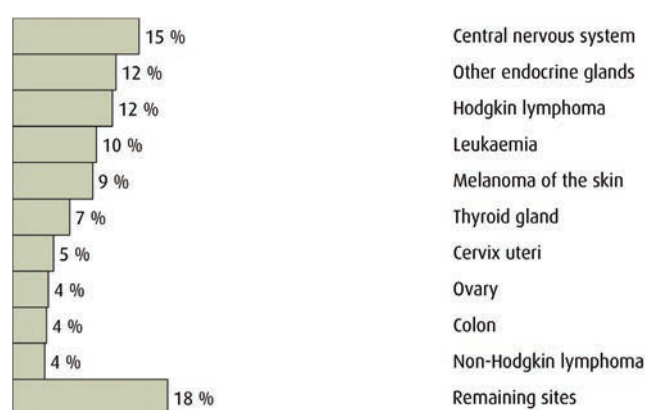
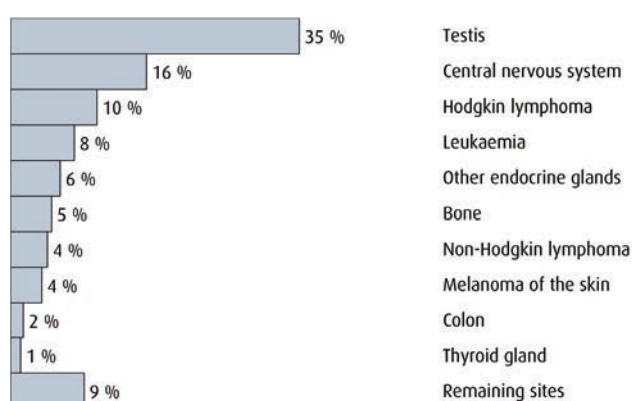
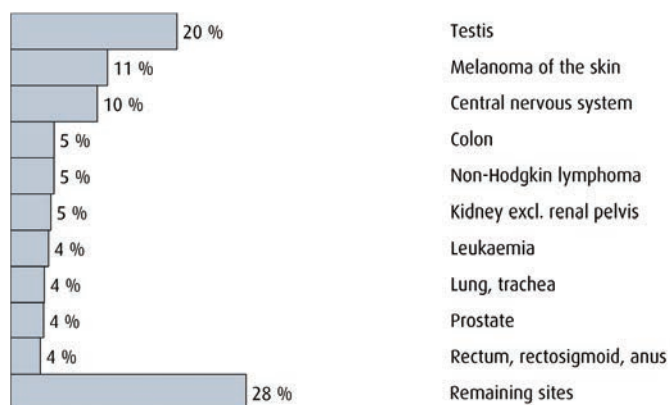
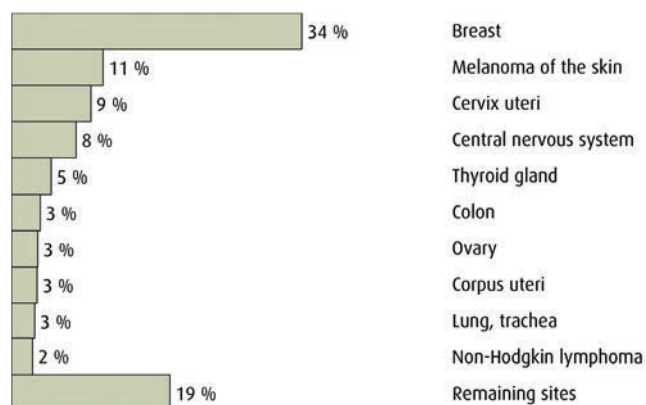
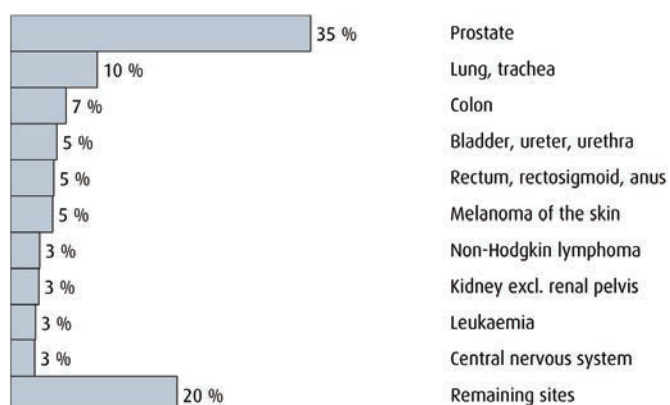
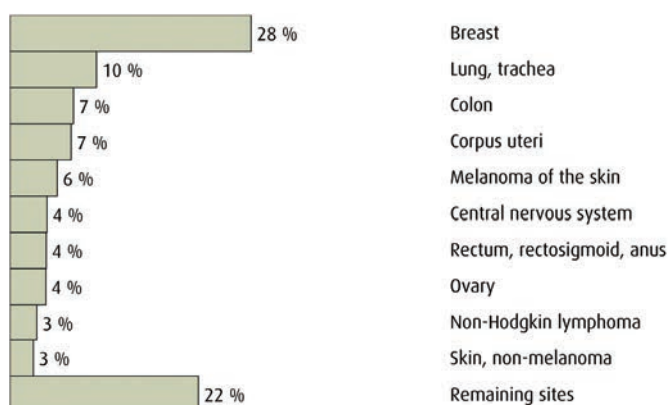
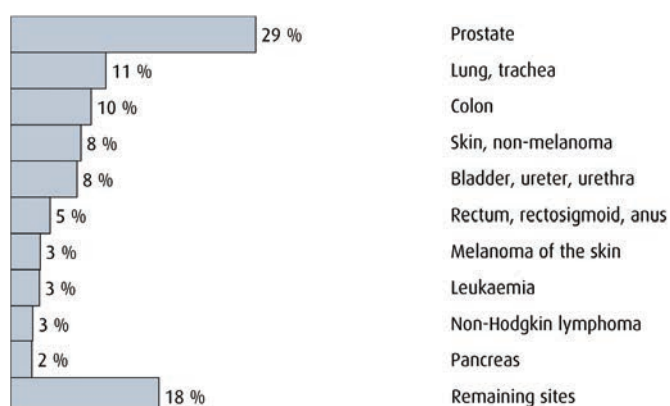
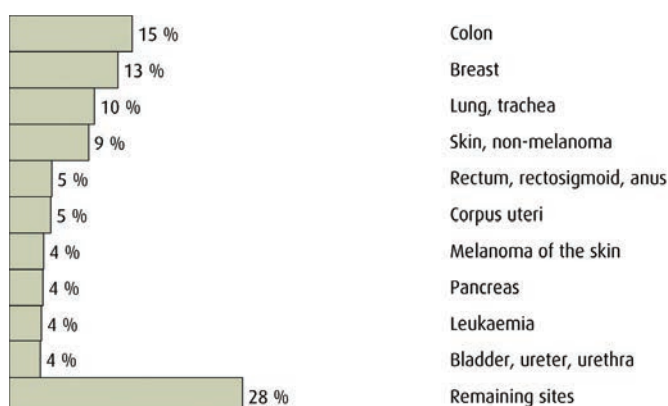
Figure 5. The most frequent incident cancers by age and sex, 2007-2011**A MALES** all ages (75 959 cases)**B FEMALE** all ages (65 231 cases)**C MALES** 0-14 years (406 cases)**D FEMALE** 0-14 years (364 cases)**E MALES** 15-24 years (586 cases)**F FEMALE** 15-24 years (476 cases)

Figure 5. The most frequent incident cancers by age and sex, 2007-2011**G MALES 25-49 years (5 509 cases)****H FEMALE 25-49 years (8 685 cases)****I MALES 50-69 years (32 622 cases)****J FEMALE 50-69 years (26 010 cases)****K MALES 70+ years (36 836 cases)****L FEMALE 70+ years (29 696 cases)**

The age-standardised rates and male:female (M:F) ratios for selected cancer types in 1978-1982 and 2007-2011 are compared in Table 7. Men tend to have higher rates of incidence for most cancer types in both time periods, with the exceptions of melanoma of the skin, cancer in the gallbladder and thyroid cancer. The highest M:F ratios are observed for several head and neck cancers. The most frequent cancers - including cancers of the lung, bladder, stomach and rectum- are consistently more common among men.

The decline in the M:F ratios for several neoplasms over the last 25 years may largely be the result of decreasing incidence trends in men and increasing incidence trends in women for a number of cancer types. For lung cancer, the reduction of the M:F ratios over the last two to three decades points to a differential in sex-specific trends with the rapidly increasing trends in lung cancer rates among women contrasting with the recent declines in the last decade among men.

Table 7. Sex ratios (male:female) of age-standardised rates (world) in 1978-82 and 2007-2011 by primary site, sorted in descending order in the last period

ICD10	Site	1978-1982			2007-2011		
		M	F	M/F ratio	M	F	M/F ratio
C32	Larynx, epiglottis	3.1	0.3	10.4	2.3	0.5	5.0
C15	Oesophagus	2.7	0.7	3.8	3.9	1.1	3.6
C66-68	Bladder, ureter, urethra	18.1	5.5	3.3	21.5	6.4	3.3
C09-14	Pharynx	1.6	0.5	3.2	2.8	1.1	2.6
C01-02	Tongue	1.0	0.4	2.7	1.8	0.7	2.4
C22	Liver	1.8	1.0	1.9	2.7	1.3	2.1
C64	Kidney excl. renal pelvis	7.5	4.0	1.9	11.5	5.6	2.1
C16	Stomach	18.0	9.2	2.0	6.9	3.5	2.0
C65	Renal pelvis	1.0	0.4	2.2	1.2	0.6	1.9
C00	Lip	3.4	0.4	7.9	1.7	0.9	1.9
C90	Multiple myeloma	4.7	3.0	1.5	4.9	3.1	1.5
C19-21	Rectum, rectosigmoid, anus	14.7	10.1	1.5	17.0	11.5	1.5
C91-95, D45-47	Leukaemia	8.1	5.4	1.5	9.4	6.6	1.4
C33-34	Lung, trachea	30.9	7.3	4.2	35.5	25.3	1.4
C81	Hodgkin lymphoma	2.6	1.6	1.6	2.7	2.0	1.4
C82-85, C96	Non-Hodgkin lymphoma	6.2	4.5	1.4	12.3	9.1	1.4
C25	Pancreas	8.4	5.3	1.6	7.8	6.3	1.2
C18	Colon	17.1	17.4	1.0	26.5	23.7	1.1
C43	Melanoma of the skin	8.9	10.4	0.9	18.3	18.7	1.0
C23-24	Gallbladder, bile ducts	1.1	1.6	0.7	1.6	1.6	0.9
C73	Thyroid gland	1.6	5.1	0.3	2.0	5.8	0.4

* A list of ICD-10 codes where morphologies are excluded or included is given on page 9 in this report.

Figure 6 depicts time trends in incidence for a number of common cancers. Of note are:

By 1960, the most common cancer was stomach cancer in men and women combined, in line with observations of cancer mortality by Norwegian doctors one hundred years ago (Gade, 1916). The marked decrease in stomach cancer incidence over the last 6 decades illustrates the vast potential for changes caused by environmental exposures or lifestyle habits for some forms of cancer. Use of refrigerators and control of *Helicobacter pylori* infection (hygiene and diet) are the most likely explanations for this trend.

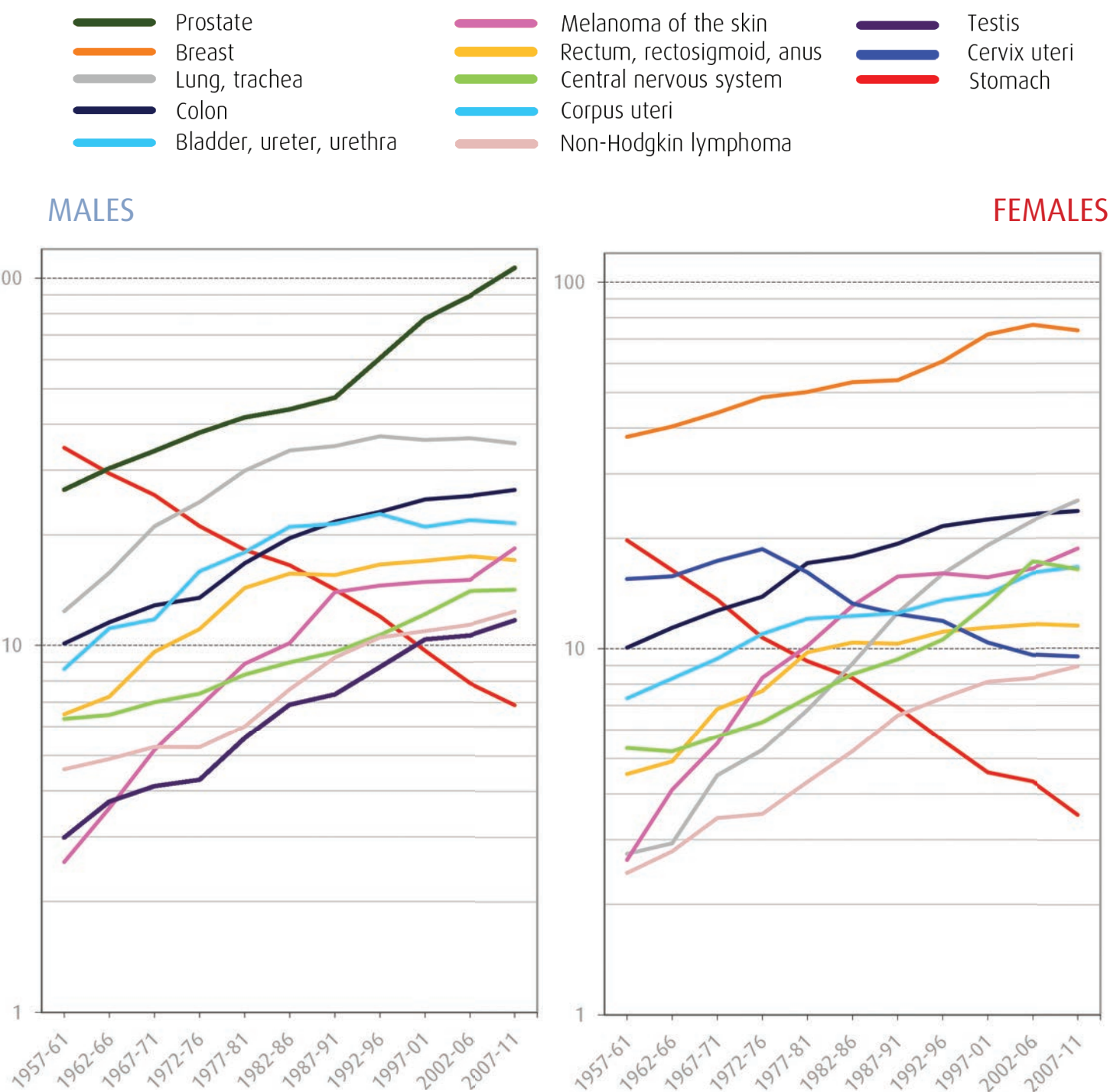
The upsurge in prostate cancer from around 1990 shows another important factor that may influence cancer incidence: changes in screening. For prostate cancer, the introduction and later widespread use of the Prostate Specific Antigen (PSA) test, in combination with subse-

quent biopsies, is the main explanation the doubling of the age-standardised incidence rate since 1990.

For breast cancer, there was a monotonous rise in incidence rates until 2005, with a steeper increase during the late 1990s following the implementation of the mammographic screening programme. From 2005 until 2009 there was a decline in the rates. From 2009 to 2010 there was an increase in women below age 50. From 2010 to 2011 the increase was primarily in women above age 50.

The contrasting lung cancer trends in men and women, with a levelling off observed in men, and rapid increase in women, largely reflect the respective stages of the smoking epidemic.

The downward trend in cancer of the uterine cervix (cervical cancer) is a result of early diagnosis and therapy as part of organized screening activity. Vaccination against

Figure 6. Time trends in age-standardised incidence rates (world) in Norway for selected cancers (semi log-scale), 1957-2011

human papilloma virus started in Norway with the cohort born in 1997. We do however not expect that this primary prevention will affect the incidence rate for another decade.

Increasing exposure to ultraviolet rays through suntanning and solarium use in the last century has led to a marked rise in the incidence of skin cancer, shown for malignant melanoma in the graph. After a levelling off during the 1990s, the rates have now started to increase.

For a number of common cancers, the explanation for the increase in incidence rate is unknown or

incompletely understood. Colon cancer has been associated with an affluent western lifestyle, but the details are unclear. For testicular cancer and non-Hodgkin lymphoma, the true determinants are unknown.

More detailed trends of incidence, mortality and survival for 23 cancers are provided later in this report.

Even if rates were to remain stable over the next 15 years, the number of new cases would certainly increase as a result of the joint effects of demographic population growth and ageing (see the special issue of CiN 2005 for predictions of cancer in Norway up to 2020, by Health Region.)

The cumulative risk is shown in Table 8 and in Figure 7, for the 15 most common cancers in men and women, respectively. The cumulative risk of 13.2 for prostate cancer ranks highest in males and indicates that, in the absence of other causes of death, approximately one in eight men will develop this cancer before the age of 75. The corresponding risk of developing lung cancer is considerably lower in comparison, with about one in 25 men estimated to be diagnosed with the disease before the age of 75.

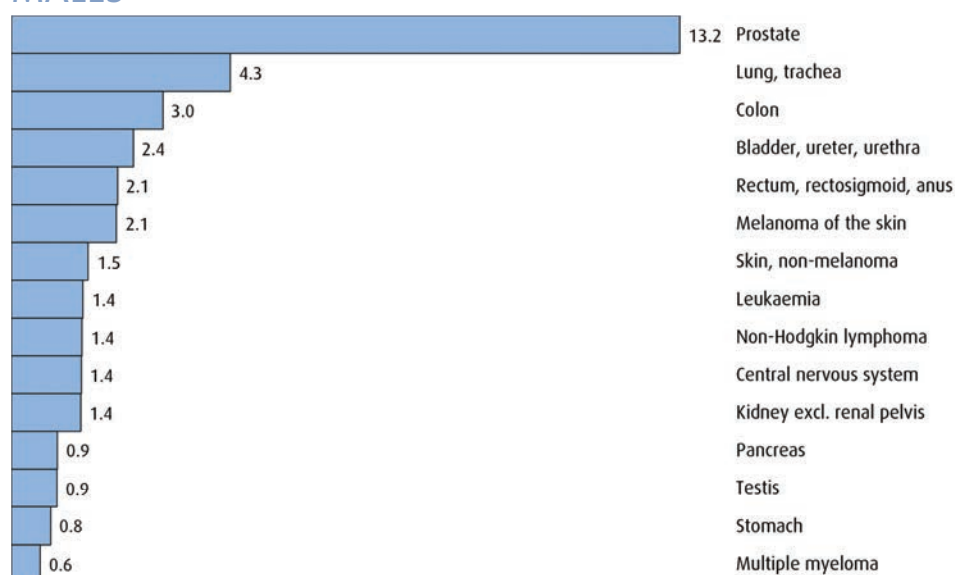
The cumulative risk of breast cancer ranks highest in women, with the figure of 8.0 indicating that about one in 12 Norwegian women develop this disease before the age of 75, in the absence of competing causes. As with men, lung and colon cancers rank second and third. Tables 9-18 provide further information on the distribution of cancer incidence in Norway. The number of incident cases and rates are tabulated according to year of diagnosis, age group, county of residence, and stage.

Further information

This report can be downloaded from the Cancer Registry of Norway website in various formats. The previous and current Special Issue is also available online at: www.kreftregisteret.no

Figure 7. Cumulative risk of developing cancer (%) by the age of 75 for selected cancers by sex, 2007-2011

MALES



FEMALES

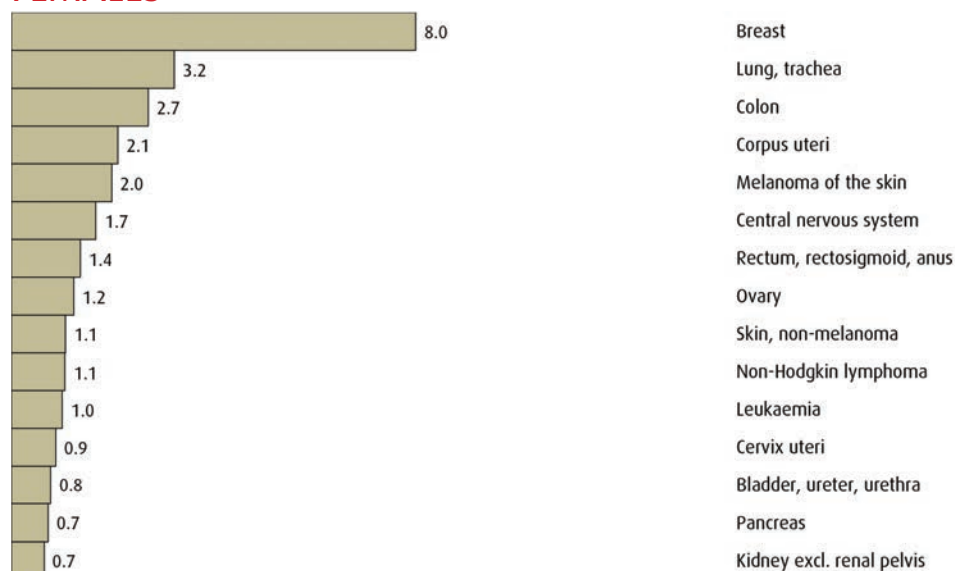


Table 8. Cumulative risk of developing cancer (%) by the age of 75 by primary site and sex, 2007-2011

ICD10	Site	Males	Females
C00-96	All sites	35.2	28.4
C00-14	Mouth, pharynx	0.9	0.5
C00	Lip	0.2	0.1
C01-02	Tongue	0.2	0.1
C03-06	Mouth, other	0.1	0.1
C07-08	Salivary glands	0.1	0.1
C09-14	Pharynx	0.3	0.1
C15-26	Digestive organs	7.9	5.8
C15	Oesophagus	0.5	0.1
C16	Stomach	0.8	0.4
C17	Small intestine	0.2	0.2
C18	Colon	3.0	2.7
C19-21	Rectum, rectosigmoid, anus	2.1	1.4
C22	Liver	0.3	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	4.7	3.3
C30-31	Nose, sinuses	0.1	0.0
C32	Larynx, epiglottis	0.3	0.1
C33-34	Lung, trachea	4.3	3.2
C38	Mediastinum, pleura (non-mesothelioma)	0.0	0.0
C40-41	Bone	0.1	0.1
C43	Melanoma of the skin	2.1	2.0
C44	Skin, non-melanoma	1.5	1.1
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	0.1	8.0
C51-58	Female genital organs		4.5
C53	Cervix uteri		0.9
C54	Corpus uteri		2.1
C55	Uterus, other		0.0
C56	Ovary		1.2
C51-52, C57	Other female genital		0.3
C58	Placenta		0.0
C60-63	Male genital organs	14.1	
C61	Prostate	13.2	
C62	Testis	0.9	
C60, C63	Other male genital	0.1	
C64-68	Urinary organs	3.9	1.5
C64	Kidney excl. renal pelvis	1.4	0.7
C65	Renal pelvis	0.1	0.1
C66-68	Bladder, ureter, urethra	2.4	0.8
C69	Eye	0.1	0.1
C70-72, D32-33	Central nervous system	1.4	1.7
C73	Thyroid gland	0.2	0.6
C37, C74-75	Other endocrine glands	0.4	0.4
C39, C76, C80	Other or unspecified	0.4	0.3
C81-96	Lymphoid and haematopoietic tissue	3.6	2.6
C81	Hodgkin lymphoma	0.2	0.2
C82-85, C96	Non-Hodgkin lymphoma	1.4	1.1
C88	Malignant immunoproliferative diseases	0.1	0.0
C90	Multiple myeloma	0.6	0.4
C91-95, D45-47	Leukaemia	1.4	1.0

Table 9a. Number of new cases by primary site and year, 2002-2011

MALES

ICD10	Site	Year									
		2002	03	04	05	06	07	08	09	10	2011
C00-96	All sites	11837	12758	13428	13389	13706	14624	14783	15143	15220	16189
C00-14	Mouth, pharynx	258	254	257	250	289	286	274	344	308	330
C00	Lip	61	42	37	49	80	71	57	84	75	82
C01-02	Tongue	50	52	53	44	46	57	62	75	59	71
C03-06	Mouth, other	47	56	52	40	53	41	43	65	51	37
C07-08	Salivary glands	23	17	17	26	15	18	18	22	27	18
C09-14	Pharynx	77	87	98	91	95	99	94	98	96	122
C15-26	Digestive organs	2635	2688	2801	2772	2735	2867	2941	2951	3241	3072
C15	Oesophagus	123	138	149	133	148	132	164	148	187	179
C16	Stomach	335	347	348	303	303	337	300	265	303	317
C17	Small intestine	46	58	44	50	66	67	63	83	71	85
C18	Colon	973	990	1074	1075	1076	1110	1176	1127	1300	1220
C19-21	Rectum, rectosigmoid, anus	684	677	693	689	660	656	694	746	777	700
C22	Liver	83	77	82	77	90	98	101	98	125	128
C23-24	Gallbladder, bile ducts	52	56	67	85	58	60	65	74	92	53
C25	Pancreas	306	307	304	327	303	367	341	356	318	323
C26	Other digestive organs	33	38	40	33	31	40	37	54	68	67
C30-34, C38	Respiratory organs	1519	1567	1553	1556	1614	1627	1633	1655	1692	1746
C30-31	Nose, sinuses	28	17	25	24	18	28	25	23	19	21
C32	Larynx, epiglottis	115	94	100	101	116	78	113	89	102	98
C33-34	Lung, trachea	1364	1440	1416	1420	1467	1502	1486	1534	1563	1618
C38	Mediastinum, pleura (non-mesothelioma)	12	16	12	11	13	19	9	9	8	9
C40-41	Bone	28	21	28	25	24	21	23	36	27	29
C43	Melanoma of the skin	476	479	491	592	562	578	675	706	746	854
C44	Skin, non-melanoma	666	656	693	666	764	752	777	865	832	871
C45	Mesothelioma	51	66	74	72	50	62	59	69	77	63
C46	Kaposi's sarcoma	5	5	9	9	9	3	5	7	7	3
C47	Autonomic nervous system	5	7	3	7	6	7	9	7	5	5
C48-49	Soft tissues	58	50	51	48	63	63	51	68	53	64
C50	Breast	14	20	14	18	14	19	21	15	13	28
C60-63	Male genital organs	3051	3729	4164	4017	4196	4795	4774	4750	4557	5307
C61	Prostate	2772	3417	3849	3707	3891	4445	4420	4378	4234	4978
C62	Testis	238	259	269	260	264	307	304	324	274	290
C60, C63	Other male genital	41	53	46	50	41	43	50	48	49	39
C64-68	Urinary organs	1237	1249	1407	1302	1332	1452	1437	1471	1461	1545
C64	Kidney excl. renal pelvis	328	334	395	365	364	401	415	427	489	529
C65	Renal pelvis	37	32	51	28	47	54	57	50	55	36
C66-68	Bladder, ureter, urethra	872	883	961	909	921	997	965	994	917	980
C69	Eye	31	42	31	28	37	29	39	27	36	22
C70-72, D32-33	Central nervous system	381	424	391	463	426	504	446	445	460	464
C73	Thyroid gland	53	53	50	68	81	67	60	74	81	79
C37, C74-75	Other endocrine glands	88	98	76	96	94	131	130	137	100	107
C39, C76, C80	Other or unspecified	231	245	204	216	200	174	174	173	143	175
C81-96	Lymphoid and haematopoietic tissue	1050	1105	1131	1184	1210	1187	1255	1343	1381	1425
C81	Hodgkin lymphoma	53	84	74	64	67	67	77	79	76	65
C82-85, C96	Non-Hodgkin lymphoma	341	373	411	421	465	418	464	487	548	496
C88	Malignant immunoproliferative diseases	31	36	28	32	31	34	33	24	28	30
C90	Multiple myeloma	164	167	180	222	185	187	208	220	201	238
C91-95, D45-47	Leukaemia	461	445	438	445	462	481	473	533	528	596

Table 9b. Number of new cases by primary site and year, 2002-2011

FEMALES

ICD10	Site	Year									
		2002	03	04	05	06	07	08	09	10	2011
C00-96	All sites	11534	11616	12045	12230	12475	12535	12722	12999	13257	13718
C00-14	Mouth, pharynx	132	130	133	182	205	168	193	174	207	201
C00	Lip	25	25	26	41	55	55	52	39	53	46
C01-02	Tongue	27	25	26	32	38	23	33	34	33	38
C03-06	Mouth, other	35	28	40	43	54	37	43	47	44	43
C07-08	Salivary glands	17	20	11	26	22	22	24	17	32	29
C09-14	Pharynx	28	32	30	40	36	31	41	37	45	45
C15-26	Digestive organs	2544	2547	2569	2624	2681	2691	2750	2838	2744	2865
C15	Oesophagus	48	57	54	60	45	56	59	54	68	61
C16	Stomach	256	223	218	235	218	216	212	218	172	199
C17	Small intestine	63	45	49	41	44	55	51	75	58	64
C18	Colon	1135	1234	1186	1197	1286	1269	1287	1357	1276	1386
C19-21	Rectum, rectosigmoid, anus	520	505	574	566	558	547	561	565	579	555
C22	Liver	46	41	42	58	43	54	65	65	75	74
C23-24	Gallbladder, bile ducts	80	83	65	82	78	84	82	85	103	84
C25	Pancreas	349	317	333	325	370	357	370	356	341	374
C26	Other digestive organs	47	42	48	60	39	53	63	63	72	68
C30-34, C38	Respiratory organs	861	936	977	992	1079	1158	1198	1183	1320	1263
C30-31	Nose, sinuses	16	12	27	17	22	32	16	12	20	18
C32	Larynx, epiglottis	18	18	13	17	12	17	23	21	21	16
C33-34	Lung, trachea	823	904	925	951	1040	1102	1154	1142	1271	1224
C38	Mediastinum, pleura (non-mesothelioma)	4	2	12	7	5	7	5	8	8	5
C40-41	Bone	21	19	16	17	19	22	23	29	24	24
C43	Melanoma of the skin	556	552	561	575	662	638	628	733	786	864
C44	Skin, non-melanoma	522	566	576	679	657	679	693	755	716	803
C45	Mesothelioma	8	11	10	9	20	14	10	12	14	13
C46	Kaposi's sarcoma	3	2	4	2	5	3	3	4	3	1
C47	Autonomic nervous system	4	3	7	4	8	6	8	5	6	1
C48-49	Soft tissues	64	69	88	85	83	93	80	102	89	80
C50	Breast	2716	2746	2807	2820	2728	2751	2763	2754	2850	3094
C51-58	Female genital organs	1538	1498	1574	1578	1569	1551	1598	1586	1681	1678
C53	Cervix uteri	312	295	269	306	312	281	295	300	321	303
C54	Corpus uteri	588	631	685	680	660	673	721	712	761	736
C55	Uterus, other	10	13	8	6	9	3	7	11	6	8
C56	Ovary	522	428	468	434	457	450	456	428	446	485
C51-52, C57	Other female genital	103	127	140	146	127	142	119	133	144	141
C58	Placenta	3	4	4	6	4	2	0	2	3	5
C64-68	Urinary organs	582	563	577	603	589	596	618	634	642	660
C64	Kidney excl. renal pelvis	214	203	212	243	212	253	257	238	246	256
C65	Renal pelvis	30	37	27	18	26	23	28	37	35	37
C66-68	Bladder, ureter, urethra	338	323	338	342	351	320	333	359	361	367
C69	Eye	34	34	37	25	30	29	30	38	28	32
C70-72, D32-33	Central nervous system	526	530	595	596	623	625	577	601	552	511
C73	Thyroid gland	145	132	173	165	149	161	173	184	206	216
C37, C74-75	Other endocrine glands	85	100	97	104	120	116	150	124	97	104
C39, C76, C80	Other or unspecified	308	298	283	270	243	235	199	205	195	182
C81-96	Lymphoid and haematopoietic tissue	885	880	961	900	1005	999	1028	1038	1097	1126
C81	Hodgkin lymphoma	42	53	46	49	48	49	42	45	54	69
C82-85, C96	Non-Hodgkin lymphoma	343	333	369	331	385	378	370	401	416	441
C88	Malignant immunoproliferative diseases	20	15	21	21	25	18	15	23	20	18
C90	Multiple myeloma	161	151	154	157	144	166	165	157	182	141
C91-95, D45-47	Leukaemia	319	328	371	342	403	388	436	412	425	457

Table 10a. Age-standardised (world) incidence rates per 100 000 person-years by primary site and year, 2002-2011**MALES**

ICD10	Site	Year									
		2002	03	04	05	06	07	08	09	10	2011
C00-96	All sites	322.5	343.1	353.9	347.5	351.0	369.9	366.7	368.7	358.4	374.2
C00-14	Mouth, pharynx	7.8	7.7	7.6	7.0	7.8	7.8	7.3	8.8	7.6	8.0
C00	Lip	1.7	1.1	1.0	1.2	1.9	1.7	1.3	1.9	1.7	1.7
C01-02	Tongue	1.6	1.7	1.6	1.3	1.2	1.6	1.7	2.1	1.6	1.8
C03-06	Mouth, other	1.4	1.7	1.5	1.1	1.5	1.1	1.2	1.6	1.2	0.8
C07-08	Salivary glands	0.7	0.5	0.5	0.7	0.4	0.5	0.5	0.6	0.6	0.5
C09-14	Pharynx	2.4	2.7	2.9	2.7	2.8	2.8	2.6	2.6	2.6	3.2
C15-26	Digestive organs	68.6	68.8	70.3	68.4	66.2	68.7	69.5	67.9	72.7	68.0
C15	Oesophagus	3.5	3.8	4.0	3.5	3.9	3.3	4.1	3.6	4.3	4.1
C16	Stomach	8.6	8.6	8.2	7.1	7.0	7.9	7.0	5.8	6.8	6.8
C17	Small intestine	1.3	1.7	1.2	1.3	1.8	1.7	1.6	2.2	1.7	2.0
C18	Colon	24.8	24.7	26.5	26.4	25.2	25.8	27.1	25.2	28.1	26.2
C19-21	Rectum, rectosigmoid, anus	18.0	17.8	17.9	17.3	16.2	16.5	16.7	17.9	18.1	16.0
C22	Liver	2.3	2.2	1.9	2.1	2.4	2.5	2.7	2.3	2.9	3.0
C23-24	Gallbladder, bile ducts	1.3	1.4	1.7	2.1	1.4	1.4	1.5	1.6	2.1	1.2
C25	Pancreas	7.9	7.9	8.0	7.9	7.6	8.7	8.0	7.9	7.1	7.2
C26	Other digestive organs	0.8	0.9	1.1	0.7	0.7	0.9	0.8	1.3	1.5	1.4
C30-34, C38	Respiratory organs	41.2	41.7	39.9	39.0	40.8	39.5	39.1	38.8	38.0	38.1
C30-31	Nose, sinuses	0.9	0.5	0.7	0.7	0.4	0.8	0.7	0.6	0.5	0.5
C32	Larynx, epiglottis	3.3	2.8	2.8	2.7	3.2	2.0	2.8	2.2	2.4	2.2
C33-34	Lung, trachea	36.8	38.0	36.2	35.4	36.9	36.2	35.4	35.8	35.0	35.1
C38	Mediastinum, pleura (non-meso-thelioma)	0.3	0.4	0.3	0.3	0.3	0.4	0.2	0.2	0.2	0.2
C40-41	Bone	1.2	0.8	1.1	0.9	1.1	0.7	1.0	1.3	1.0	1.1
C43	Melanoma of the skin	14.3	14.3	14.6	16.8	15.4	15.8	17.7	18.2	19.1	21.1
C44	Skin, non-melanoma	15.6	14.8	15.0	14.4	16.2	15.4	15.6	17.1	16.4	16.2
C45	Mesothelioma	1.4	1.7	1.9	1.7	1.2	1.5	1.4	1.5	1.6	1.3
C46	Kaposi's sarcoma	0.1	0.1	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.1
C47	Autonomic nervous system	0.3	0.4	0.1	0.4	0.2	0.3	0.5	0.5	0.3	0.2
C48-49	Soft tissues	1.9	1.5	1.6	1.5	2.0	1.8	1.6	1.8	1.3	2.0
C50	Breast	0.3	0.5	0.3	0.5	0.3	0.5	0.5	0.4	0.3	0.7
C60-63	Male genital organs	82.3	99.2	110.7	105.8	108.5	124.1	120.1	118.9	109.3	124.6
C61	Prostate	71.2	87.2	98.7	93.5	96.7	110.5	107.0	105.0	97.7	113.0
C62	Testis	9.9	10.5	11.0	10.9	10.8	12.5	11.9	12.6	10.4	10.9
C60, C63	Other male genital	1.2	1.5	1.0	1.4	1.0	1.1	1.2	1.2	1.2	0.8
C64-68	Urinary organs	32.3	32.2	34.9	32.2	32.2	34.9	34.4	33.9	32.9	34.7
C64	Kidney excl. renal pelvis	9.5	9.4	10.9	9.7	9.8	10.4	10.9	11.0	12.1	13.1
C65	Renal pelvis	0.9	0.7	1.3	0.8	1.1	1.3	1.4	1.1	1.2	0.8
C66-68	Bladder, ureter, urethra	21.8	22.1	22.7	21.7	21.2	23.2	22.1	21.8	19.5	20.8
C69	Eye	1.0	1.2	1.1	0.8	1.1	0.8	1.2	0.8	1.0	0.5
C70-72, D32-33	Central nervous system	13.6	15.1	12.9	15.2	13.6	16.4	13.9	13.5	13.5	13.5
C73	Thyroid gland	1.7	1.7	1.5	2.1	2.4	1.8	1.7	2.1	2.3	2.2
C37, C74-75	Other endocrine glands	2.9	3.4	2.6	2.8	3.2	4.1	4.0	4.5	3.1	3.2
C39, C76, C80	Other or unspecified	5.6	5.6	4.6	4.8	4.6	3.8	3.7	3.5	2.9	3.6
C81-96	Lymphoid and haematopoietic tissue	30.5	32.3	32.9	32.9	33.9	32.0	33.3	35.1	34.9	35.2
C81	Hodgkin lymphoma	2.2	3.4	3.1	2.7	2.5	2.4	2.9	2.9	2.8	2.4
C82-85, C96	Non-Hodgkin lymphoma	9.8	10.9	12.0	11.5	12.6	11.3	12.1	12.6	13.6	12.1
C88	Malignant immunoproliferative diseases	0.8	0.8	0.7	0.8	0.7	0.8	0.7	0.6	0.6	0.6
C90	Multiple myeloma	4.3	4.3	4.5	5.4	4.7	4.5	4.9	5.1	4.4	5.4
C91-95, D45-47	Leukaemia	13.3	12.8	12.7	12.5	13.3	12.9	12.7	13.9	13.5	14.7

Table 10b. Age-standardised (world) incidence rates per 100 000 person-years by primary site and year, 2002-2011**FEMALES**

ICD10	Site	Year									
		2002	03	04	05	06	07	08	09	10	2011
C00-96	All sites	286.6	284.1	292.3	291.8	296.9	292.8	292.5	295.5	298.3	302.2
C00-14	Mouth, pharynx	3.3	3.2	3.2	4.1	4.9	3.7	4.2	3.9	4.8	4.5
C00	Lip	0.6	0.5	0.6	0.7	1.2	1.0	1.0	0.7	1.0	0.8
C01-02	Tongue	0.7	0.6	0.7	0.7	0.9	0.5	0.8	0.8	0.7	0.8
C03-06	Mouth, other	0.9	0.7	0.9	0.9	1.2	0.7	0.8	0.9	1.0	0.9
C07-08	Salivary glands	0.5	0.6	0.2	0.7	0.5	0.6	0.6	0.5	0.8	0.8
C09-14	Pharynx	0.8	0.9	0.8	1.1	1.1	0.8	1.1	1.0	1.2	1.2
C15-26	Digestive organs	50.6	49.8	51.5	50.5	52.1	51.0	50.7	52.8	50.1	52.3
C15	Oesophagus	0.9	1.1	1.1	1.1	0.9	1.0	1.2	1.0	1.2	1.2
C16	Stomach	4.7	4.0	4.5	4.4	4.1	4.0	3.5	3.8	2.9	3.4
C17	Small intestine	1.6	1.0	1.2	1.0	1.0	1.2	1.2	1.6	1.2	1.4
C18	Colon	22.5	23.8	23.3	22.6	24.1	23.6	23.3	24.0	22.6	24.9
C19-21	Rectum, rectosigmoid, anus	11.5	10.9	12.1	11.8	12.0	11.8	11.4	11.8	11.5	11.2
C22	Liver	1.0	0.9	1.0	1.3	0.8	1.0	1.2	1.3	1.4	1.4
C23-24	Gallbladder, bile ducts	1.4	1.4	1.2	1.5	1.5	1.6	1.5	1.6	2.0	1.5
C25	Pancreas	6.3	6.2	6.3	5.7	7.0	6.0	6.6	6.6	6.2	6.3
C26	Other digestive organs	0.7	0.6	0.9	1.0	0.6	0.8	0.9	1.1	1.2	1.0
C30-34, C38	Respiratory organs	21.5	23.1	23.4	23.4	24.9	26.1	26.4	25.4	28.2	25.9
C30-31	Nose, sinuses	0.5	0.3	0.5	0.4	0.5	0.7	0.3	0.3	0.4	0.5
C32	Larynx, epiglottis	0.5	0.5	0.3	0.5	0.3	0.4	0.6	0.5	0.5	0.3
C33-34	Lung, trachea	20.5	22.4	22.4	22.4	24.0	24.8	25.4	24.4	27.1	24.9
C38	Mediastinum, pleura (non-mesothelioma)	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1
C40-41	Bone	1.0	0.8	0.6	0.6	0.7	0.8	0.7	1.0	1.0	0.9
C43	Melanoma of the skin	16.3	15.9	15.9	16.1	18.7	16.9	16.6	19.3	19.9	21.0
C44	Skin, non-melanoma	8.5	9.1	9.5	10.3	10.3	10.2	10.9	11.2	10.8	11.2
C45	Mesothelioma	0.2	0.2	0.1	0.2	0.4	0.3	0.2	0.3	0.3	0.2
C46	Kaposi's sarcoma	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0
C47	Autonomic nervous system	0.3	0.1	0.3	0.2	0.3	0.3	0.4	0.2	0.2	0.1
C48-49	Soft tissues	1.6	1.9	2.5	2.6	2.2	2.5	2.1	2.6	2.3	2.1
C50	Breast	77.3	77.2	77.5	76.7	73.8	73.1	72.9	70.9	73.4	78.8
C51-58	Female genital organs	41.7	39.9	41.2	41.0	39.7	39.6	39.9	39.3	40.9	40.1
C53	Cervix uteri	10.3	9.5	8.7	9.9	9.8	9.0	9.2	9.6	10.1	9.6
C54	Corpus uteri	15.1	16.2	17.0	16.6	15.6	16.5	17.4	16.2	17.2	16.1
C55	Uterus, other	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.2	0.1	0.1
C56	Ovary	13.8	11.1	12.4	11.0	11.2	11.2	11.0	10.4	10.5	11.2
C51-52, C57	Other female genital	2.2	2.8	2.8	3.2	2.8	2.9	2.2	2.8	2.9	2.9
C58	Placenta	0.1	0.1	0.2	0.3	0.2	0.1	0.0	0.1	0.1	0.2
C64-68	Urinary organs	12.2	11.6	11.3	12.7	12.3	12.4	12.7	13.0	12.7	12.5
C64	Kidney excl. renal pelvis	4.8	4.8	4.9	5.6	5.0	5.8	5.7	5.6	5.4	5.6
C65	Renal pelvis	0.6	0.8	0.4	0.3	0.5	0.4	0.5	0.8	0.6	0.7
C66-68	Bladder, ureter, urethra	6.9	5.9	5.9	6.8	6.7	6.1	6.5	6.6	6.6	6.3
C69	Eye	1.0	0.8	1.0	0.8	0.9	0.8	0.8	1.1	0.9	0.7
C70-72, D32-33	Central nervous system	17.1	16.1	17.6	18.1	17.6	18.3	16.8	16.9	15.7	14.4
C73	Thyroid gland	4.7	4.2	5.4	5.1	4.8	5.0	5.3	5.9	6.5	6.4
C37, C74-75	Other endocrine glands	2.9	3.8	3.2	3.9	4.2	4.0	5.0	4.6	3.1	3.4
C39, C76, C80	Other or unspecified	5.1	4.5	4.7	4.4	4.0	3.6	3.3	3.1	3.0	2.4
C81-96	Lymphoid and haematopoietic tissue	21.3	21.6	23.3	21.0	24.9	24.2	23.5	23.9	24.7	25.3
C81	Hodgkin lymphoma	1.5	2.1	1.7	2.0	2.1	1.9	1.4	1.8	1.9	2.7
C82-85, C96	Non-Hodgkin lymphoma	8.2	7.9	9.1	7.8	9.2	9.1	8.5	9.2	9.3	9.5
C88	Malignant immunoproliferative diseases	0.4	0.3	0.4	0.3	0.6	0.3	0.3	0.4	0.4	0.4
C90	Multiple myeloma	3.3	2.8	3.1	3.3	2.7	3.3	3.3	3.2	3.4	2.5
C91-95, D45-47	Leukaemia	7.9	8.6	9.0	7.6	10.4	9.5	10.0	9.3	9.7	10.2

Table 11a. Average annual number of new cases by primary site and five-year age group, 2007-2011

ICD10	Site	0-4	5-9	10-14	15-19	20-24	25-29
C00-96	All sites	36	18	27	45	72	101
C00-14	Mouth, pharynx	0	0	0	1	1	1
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	0	1
C09-14	Pharynx	0	0	0	1	0	0
C15-26	Digestive organs	1	0	1	1	2	6
C15	Oesophagus	0	0	0	0	0	0
C16	Stomach	0	0	0	0	0	0
C17	Small intestine	0	0	0	0	0	1
C18	Colon	0	0	0	1	1	3
C19-21	Rectum, rectosigmoid, anus	0	0	0	0	0	1
C22	Liver	1	0	0	0	0	0
C23-24	Gallbladder, bile ducts	0	0	0	0	0	0
C25	Pancreas	0	0	0	0	0	1
C26	Other digestive organs	0	0	0	0	0	0
C30-34, C38	Respiratory organs	0	0	0	1	1	1
C30-31	Nose, sinuses	0	0	0	0	0	0
C32	Larynx, epiglottis	0	0	0	0	0	0
C33-34	Lung, trachea	0	0	0	1	0	1
C38	Mediastinum, pleura (non-mesothelioma)	0	0	0	0	0	0
C40-41	Bone	0	1	3	3	3	1
C43	Melanoma of the skin	0	0	0	1	3	5
C44	Skin, non-melanoma	1	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	3	0	0	0	1	0
C48-49	Soft tissues	2	0	0	1	0	1
C50	Breast	0	0	0	0	0	0
C60-63	Male genital organs	1	1	2	9	32	51
C61	Prostate	0	0	0	0	0	0
C62	Testis	1	1	2	9	32	51
C60, C63	Other male genital	0	0	0	0	0	0
C64-68	Urinary organs	3	0	0	1	2	3
C64	Kidney excl. renal pelvis	2	0	0	1	1	1
C65	Renal pelvis	0	0	0	0	0	0
C66-68	Bladder, ureter, urethra	0	0	0	0	1	1
C69	Eye	1	0	0	0	0	0
C70-72, D32-33	Central nervous system	9	7	8	10	9	12
C73	Thyroid gland	0	0	0	0	1	2
C37, C74-75	Other endocrine glands	2	1	2	3	4	4
C39, C76, C80	Other or unspecified	0	0	0	0	0	0
C81-96	Lymphoid and haematopoietic tissue	13	8	11	13	13	13
C81	Hodgkin lymphoma	0	1	3	5	8	6
C82-85, C96	Non-Hodgkin lymphoma	2	1	2	4	2	3
C88	Malignant immunoproliferative diseases	0	0	0	0	0	0
C90	Multiple myeloma	0	0	0	0	0	0
C91-95, D45-47	Leukaemia	11	5	6	5	4	4

MALES

Age											
30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
148	196	267	390	719	1288	2160	2358	2160	2093	1769	1345
1	4	10	14	31	41	49	46	36	33	21	19
0	0	2	1	4	7	6	11	11	13	9	9
0	1	2	5	7	8	12	11	8	4	4	2
0	1	1	1	4	5	9	9	5	6	3	4
0	1	1	1	1	1	2	1	3	2	2	2
0	1	4	6	16	20	21	13	8	8	3	2
12	26	45	77	145	250	372	454	442	461	406	313
0	1	3	5	9	18	24	28	24	21	17	12
1	4	4	8	17	21	35	41	43	47	47	36
1	1	3	2	5	8	11	12	11	9	7	3
5	8	16	25	48	82	131	167	180	197	179	143
3	7	10	17	37	76	101	118	109	103	76	55
1	1	4	6	7	9	16	14	13	13	15	10
0	1	1	2	4	6	10	8	9	10	9	9
0	3	4	9	16	26	41	57	46	52	48	37
1	1	1	2	2	4	4	9	6	9	8	8
2	5	12	29	73	140	255	270	270	275	220	117
0	0	1	1	1	2	4	4	3	2	2	1
0	0	1	2	6	14	16	18	11	12	11	5
2	5	10	26	65	123	234	246	255	259	206	109
0	0	0	0	0	1	1	2	1	2	1	1
1	1	1	1	1	1	2	2	1	3	2	1
13	26	39	43	58	72	98	95	79	73	61	44
4	4	6	8	14	31	55	84	108	140	170	193
0	0	0	1	2	3	10	11	12	13	8	6
0	0	1	1	0	0	0	0	0	0	0	1
0	0	0	1	0	0	0	0	0	0	0	0
1	2	3	5	4	6	8	7	6	6	4	4
0	0	1	2	1	2	4	2	3	3	1	1
54	50	45	64	172	424	837	938	748	614	463	332
0	0	7	36	153	411	825	926	742	607	456	328
54	48	37	25	15	8	5	5	2	1	1	1
0	1	1	2	4	6	7	6	4	5	6	3
5	12	28	42	75	120	197	203	211	233	195	144
3	8	17	24	39	45	70	64	62	51	43	22
0	0	0	2	2	3	8	7	8	9	7	3
2	4	11	17	34	72	120	132	141	173	145	118
0	0	1	2	3	2	6	5	3	4	2	2
21	20	25	36	36	47	57	45	38	34	28	23
4	7	7	5	6	7	8	4	5	8	4	3
4	7	6	9	10	11	19	9	12	11	5	3
0	1	2	4	7	9	15	20	23	23	31	34
24	30	34	48	80	120	169	164	164	161	148	107
9	7	5	3	5	4	4	5	3	2	2	1
7	12	15	19	35	48	71	69	56	55	48	33
0	0	0	0	1	2	4	7	3	4	5	3
1	2	4	6	14	20	26	27	31	34	29	17
7	10	9	19	26	46	63	57	70	65	63	52

Table 11b. Average annual number of new cases by primary site and five-year age group, 2007-2011

ICD10	Site	0-4	5-9	10-14	15-19	20-24	25-29
C00-96	All sites	33	19	21	36	59	109
C00-14	Mouth, pharynx	0	0	0	0	1	3
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	1
C07-08	Salivary glands	0	0	0	0	1	1
C09-14	Pharynx	0	0	0	0	0	0
C15-26	Digestive organs	1	1	1	2	3	6
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	0	0	2	2	4
C19-21	Rectum, rectosigmoid, anus	0	0	0	0	1	1
C22	Liver	1	0	1	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	0	0	0
C30-34, C38	Respiratory organs	0	1	0	0	1	1
C30-31	Nose, sinuses	0	0	0	0	0	0
C32	Larynx, epiglottis	0	0	0	0	0	0
C33-34	Lung, trachea	0	0	0	0	1	1
C38	Mediastinum, pleura (non-mesothelioma)	0	0	0	0	0	0
C40-41	Bone	0	1	1	2	1	1
C43	Melanoma of the skin	0	0	0	1	8	17
C44	Skin, non-melanoma	1	0	0	0	2	0
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	1	1	1	1	1	2
C50	Breast	0	0	0	0	3	12
C51-58	Female genital organs	1	0	2	3	7	25
C53	Cervix uteri	0	0	0	0	4	20
C54	Corpus uteri	0	0	0	0	0	1
C55	Uterus, other	0	0	0	0	0	0
C56	Ovary	1	0	2	2	2	3
C51-52, C57	Other female genital	0	0	0	0	0	0
C58	Placenta	0	0	0	0	0	1
C64-68	Urinary organs	2	1	0	0	1	1
C64	Kidney excl. renal pelvis	2	1	0	0	1	1
C65	Renal pelvis	0	0	0	0	0	0
C66-68	Bladder, ureter, urethra	0	0	0	0	0	0
C69	Eye	2	0	0	0	0	1
C70-72, D32-33	Central nervous system	12	7	7	6	8	11
C73	Thyroid gland	0	0	0	2	5	9
C37, C74-75	Other endocrine glands	2	1	1	4	7	8
C39, C76, C80	Other or unspecified	0	0	0	0	0	0
C81-96	Lymphoid and haematopoietic tissue	11	6	7	13	12	11
C81	Hodgkin lymphoma	0	0	1	6	5	6
C82-85, C96	Non-Hodgkin lymphoma	1	1	1	1	2	3
C88	Malignant immunoproliferative diseases	0	0	0	0	0	0
C90	Multiple myeloma	0	0	0	0	0	0
C91-95, D45-47	Leukaemia	10	5	4	5	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+	
172	307	467	682	960	1169	1566	1506	1368	1438	1448	1685	
3	2	4	9	16	15	20	25	21	20	21	27	
1	0	1	2	3	2	4	5	5	7	7	12	
1	0	1	2	3	3	4	4	3	3	4	3	
0	0	0	1	3	3	4	7	7	5	6	7	
1	1	1	2	1	2	3	3	2	3	2	2	
0	1	1	3	7	6	5	6	4	2	2	2	
9	20	36	68	119	181	268	317	353	416	453	524	
0	0	1	1	2	5	6	8	7	10	7	13	
1	1	2	6	9	11	15	21	21	28	37	49	
1	1	1	2	5	6	7	8	8	8	7	6	
4	8	15	28	48	73	115	154	175	203	229	256	
2	5	10	20	34	50	71	67	70	79	71	81	
0	1	0	2	2	4	6	5	7	12	12	13	
0	1	2	1	3	6	9	11	11	14	15	14	
1	2	4	6	13	23	34	38	46	54	63	74	
0	0	1	1	2	2	5	6	8	8	12	20	
2	6	10	32	66	115	188	183	191	194	143	91	
0	0	0	1	1	2	2	2	2	2	3	2	
0	0	0	0	3	3	3	2	3	3	2	1	
1	5	10	30	61	110	182	178	185	189	138	87	
0	0	0	0	1	1	1	0	1	1	1	0	
1	1	1	2	1	1	2	2	2	1	1	2	
22	41	53	54	61	74	77	78	59	56	58	70	
2	4	9	10	19	26	43	55	73	100	126	259	
0	0	0	0	1	1	1	1	3	2	2	1	
0	0	0	0	0	0	1	0	0	0	1	1	
0	0	0	0	0	0	0	0	0	0	0	0	
1	3	4	4	5	8	13	12	9	9	8	7	
36	83	176	287	359	359	422	342	191	177	188	206	
37	61	69	89	141	171	221	200	164	153	134	141	
30	45	34	33	30	19	24	14	12	12	12	11	
2	7	15	27	56	90	117	112	94	79	63	57	
0	0	0	0	0	0	1	0	1	1	1	2	
3	7	16	24	44	51	65	60	40	49	40	44	
1	2	3	5	11	11	15	13	17	12	18	27	
1	0	0	0	0	0	0	0	0	0	0	0	
1	4	11	18	30	44	81	75	86	92	93	89	
1	4	7	11	15	21	35	29	32	35	28	26	
0	0	0	0	1	3	4	4	4	7	5	3	
0	1	4	7	14	20	41	41	49	51	60	59	
1	1	1	1	2	4	5	3	3	3	2	3	
20	29	30	42	52	56	64	55	53	40	40	41	
14	20	21	17	18	19	19	11	12	9	7	6	
6	9	10	10	12	8	11	9	8	6	5	2	
1	0	2	4	5	8	17	16	18	25	39	69	
15	20	29	36	54	78	113	124	123	134	127	146	
7	4	3	2	3	2	2	3	3	2	2	1	
4	9	13	15	27	34	51	53	49	49	45	45	
0	0	0	0	1	1	3	2	2	5	2	2	
0	0	3	6	8	12	18	19	19	29	23	24	
4	6	10	13	16	28	40	47	50	49	55	73	

Table 12a. Age-specific incidence rates per 100 000 person-years by primary site and five-year age group, 2007-2011

ICD10	Site	0-4	5-9	10-14	15-19	20-24	25-29
C00-96	All sites	23.1	11.8	17.0	27.4	46.0	64.6
C00-14	Mouth, pharynx	0.0	0.0	0.1	0.8	0.5	0.6
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	0.2	0.3
C03-06	Mouth, other	0.0	0.0	0.0	0.1	0.0	0.0
C07-08	Salivary glands	0.0	0.0	0.1	0.2	0.1	0.4
C09-14	Pharynx	0.0	0.0	0.0	0.5	0.1	0.0
C15-26	Digestive organs	0.9	0.1	0.4	0.7	1.1	3.8
C15	Oesophagus	0.0	0.0	0.0	0.0	0.0	0.0
C16	Stomach	0.0	0.0	0.0	0.2	0.3	0.1
C17	Small intestine	0.0	0.0	0.0	0.0	0.0	0.5
C18	Colon	0.0	0.0	0.2	0.5	0.6	1.8
C19-21	Rectum, rectosigmoid, anus	0.0	0.0	0.0	0.0	0.2	0.6
C22	Liver	0.9	0.1	0.0	0.0	0.0	0.3
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	0.4
C26	Other digestive organs	0.0	0.0	0.1	0.0	0.0	0.1
C30-34, C38	Respiratory organs	0.0	0.1	0.1	0.6	0.5	0.8
C30-31	Nose, sinuses	0.0	0.1	0.0	0.2	0.2	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	0.4	0.2	0.8
C38	Mediastinum, pleura (non-mesothelioma)	0.0	0.0	0.1	0.0	0.0	0.0
C40-41	Bone	0.0	0.7	1.9	1.7	1.9	0.5
C43	Melanoma of the skin	0.0	0.0	0.1	0.7	2.0	3.2
C44	Skin, non-melanoma	0.4	0.0	0.2	0.2	0.5	0.6
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	0.3
C47	Autonomic nervous system	1.7	0.1	0.1	0.1	0.4	0.1
C48-49	Soft tissues	1.2	0.0	0.1	0.4	0.0	0.9
C50	Breast	0.0	0.0	0.0	0.0	0.0	0.0
C60-63	Male genital organs	0.4	0.4	1.1	5.3	20.7	33.0
C61	Prostate	0.0	0.0	0.0	0.1	0.0	0.0
C62	Testis	0.4	0.4	1.1	5.2	20.7	33.0
C60, C63	Other male genital	0.0	0.0	0.0	0.0	0.0	0.0
C64-68	Urinary organs	1.7	0.3	0.2	0.5	1.0	1.7
C64	Kidney excl. renal pelvis	1.4	0.3	0.2	0.4	0.5	0.8
C65	Renal pelvis	0.0	0.0	0.0	0.0	0.0	0.0
C66-68	Bladder, ureter, urethra	0.3	0.0	0.0	0.1	0.5	0.9
C69	Eye	0.8	0.0	0.0	0.0	0.0	0.0
C70-72, D32-33	Central nervous system	6.0	4.4	5.0	6.2	5.8	7.4
C73	Thyroid gland	0.0	0.0	0.0	0.0	0.9	1.1
C37, C74-75	Other endocrine glands	1.5	0.7	1.0	1.9	2.4	2.3
C39, C76, C80	Other or unspecified	0.0	0.0	0.0	0.0	0.0	0.0
C81-96	Lymphoid and haematopoietic tissue	8.6	5.0	6.6	8.1	8.2	8.1
C81	Hodgkin lymphoma	0.1	0.7	1.6	2.8	4.8	3.7
C82-85, C96	Non-Hodgkin lymphoma	1.3	0.9	1.5	2.2	1.0	2.0
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, D45-47	Leukaemia	7.2	3.4	3.5	3.1	2.4	2.4

MALES

Age												
30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	
90.6	107.1	142.5	225.5	444.1	854.3	1492.1	2229.9	2915.9	3559.8	4027.5	3972.1	
0.9	2.3	5.6	8.0	19.2	27.5	34.1	43.2	48.1	55.9	47.4	54.5	
0.0	0.2	0.9	0.8	2.4	4.9	4.3	10.9	15.4	21.8	19.6	25.8	
0.2	0.7	1.3	2.7	4.2	5.0	8.1	10.6	11.3	7.5	8.2	4.7	
0.1	0.4	0.6	0.6	2.2	3.5	6.0	8.4	7.1	9.6	7.3	10.9	
0.2	0.7	0.8	0.6	0.6	0.9	1.5	1.1	3.7	3.4	5.5	6.4	
0.2	0.3	2.0	3.4	9.8	13.1	14.2	12.2	10.6	13.6	6.8	6.6	
7.5	14.1	24.1	44.4	89.8	166.1	257.1	430.3	596.5	783.6	923.8	924.3	
0.2	0.4	1.5	3.0	5.7	12.1	16.7	26.3	31.8	35.0	37.8	36.4	
0.5	2.0	2.2	4.8	10.5	14.2	24.3	39.0	58.3	79.1	106.5	106.0	
0.6	0.7	1.4	1.3	3.0	5.6	7.5	11.3	14.2	15.3	15.9	10.0	
3.3	4.2	8.4	14.4	29.8	54.4	90.4	157.6	243.6	335.9	408.3	421.2	
1.7	3.9	5.6	10.0	22.7	50.7	69.8	111.7	147.8	175.8	173.0	162.1	
0.6	0.5	1.9	3.6	4.6	5.7	10.8	13.1	17.4	21.5	34.6	28.2	
0.0	0.3	0.7	1.2	2.2	3.8	6.6	7.7	12.7	17.0	21.0	27.4	
0.1	1.6	2.0	5.4	10.0	17.1	28.5	54.8	62.2	88.6	109.3	110.5	
0.4	0.3	0.3	0.9	1.4	2.5	2.5	8.7	8.4	15.4	17.3	22.5	
1.5	2.9	6.2	16.7	45.2	93.0	176.0	254.8	365.2	468.0	499.9	343.9	
0.1	0.2	0.5	0.4	0.7	1.5	2.9	3.9	3.8	4.1	4.6	3.6	
0.0	0.1	0.4	1.1	4.0	9.3	10.8	17.0	15.4	20.4	25.0	14.1	
1.3	2.6	5.1	15.0	40.5	81.4	161.4	232.1	344.4	440.2	468.1	322.0	
0.0	0.0	0.1	0.2	0.0	0.8	1.0	1.7	1.6	3.4	2.3	4.3	
0.5	0.8	0.7	0.5	0.5	0.9	1.5	1.4	1.6	4.8	3.6	1.7	
7.8	14.1	21.0	24.8	36.1	47.8	67.5	88.5	106.2	124.6	139.8	129.9	
2.4	2.3	3.2	4.8	8.4	20.3	37.6	79.2	145.3	237.8	387.5	570.8	
0.0	0.0	0.0	0.3	1.1	2.1	6.8	10.6	15.7	22.1	19.1	18.2	
0.2	0.2	0.4	0.4	0.0	0.1	0.1	0.4	0.3	0.0	0.9	2.4	
0.1	0.1	0.2	0.4	0.1	0.0	0.3	0.3	0.0	0.0	0.0	0.6	
0.6	1.2	1.7	2.8	2.6	3.7	5.2	6.5	8.2	10.9	9.5	10.6	
0.0	0.1	0.4	1.1	0.5	1.3	2.6	2.0	3.4	4.8	2.3	4.2	
33.2	27.0	24.1	36.8	106.5	281.3	578.1	888.5	1010.9	1042.7	1054.4	983.3	
0.0	0.1	3.6	20.7	94.6	272.2	569.8	877.4	1002.4	1031.8	1037.1	971.5	
33.0	26.4	20.0	14.7	9.5	5.3	3.7	5.1	2.5	2.0	3.2	2.3	
0.2	0.5	0.4	1.4	2.3	3.7	4.6	5.9	6.1	8.9	14.1	9.5	
3.0	6.5	14.8	24.4	46.4	79.8	136.2	192.2	285.2	395.9	444.3	423.8	
1.9	4.1	9.0	13.6	24.2	30.0	48.0	59.5	82.7	86.8	97.4	66.2	
0.0	0.2	0.0	0.9	1.2	2.3	5.3	7.2	11.5	15.6	15.9	10.2	
1.1	2.2	5.9	9.9	20.9	47.6	82.9	125.5	191.0	293.5	331.0	347.4	
0.2	0.2	0.7	1.3	1.7	1.3	4.0	4.4	3.5	6.8	3.6	4.7	
12.6	11.1	13.2	20.6	22.1	31.4	39.5	42.7	51.0	57.9	62.8	68.4	
2.7	3.7	3.8	3.0	3.7	4.9	5.4	3.8	7.0	13.3	10.0	7.8	
2.6	3.7	3.3	5.2	6.3	7.0	13.3	8.1	16.3	18.0	11.8	8.4	
0.0	0.4	0.9	2.2	4.3	6.2	10.2	18.8	31.3	39.4	69.7	99.7	
14.8	16.3	18.0	27.8	49.6	79.4	116.5	154.5	220.1	273.3	336.9	315.2	
5.7	3.6	2.7	2.0	2.9	2.5	3.1	4.5	4.6	4.1	5.0	3.0	
4.4	6.3	8.0	11.3	21.5	32.0	49.3	64.6	74.7	93.7	109.7	97.9	
0.0	0.0	0.0	0.1	0.9	1.5	2.6	6.4	4.7	6.1	12.3	8.8	
0.4	0.9	2.4	3.4	8.6	13.0	18.0	25.3	42.2	58.5	66.0	51.3	
4.3	5.5	4.9	11.1	15.8	30.4	43.5	53.7	94.0	110.9	143.9	154.2	

Table 12b. Age-specific incidence rates per 100 000 person-years by primary site and five-year age group, 2007-2011

ICD10	Site	0-4	5-9	10-14	15-19	20-24	25-29
C00-96	All sites	22.5	12.9	13.6	23.1	39.4	71.8
C00-14	Mouth, pharynx	0.0	0.0	0.3	0.1	0.9	1.7
C00	Lip	0.0	0.0	0.0	0.0	0.0	0.3
C01-02	Tongue	0.0	0.0	0.0	0.0	0.0	0.1
C03-06	Mouth, other	0.0	0.0	0.0	0.0	0.0	0.4
C07-08	Salivary glands	0.0	0.0	0.3	0.1	0.7	0.6
C09-14	Pharynx	0.0	0.0	0.0	0.0	0.3	0.3
C15-26	Digestive organs	0.4	0.4	0.4	1.4	2.1	3.9
C15	Oesophagus	0.0	0.0	0.0	0.0	0.0	0.0
C16	Stomach	0.0	0.0	0.0	0.0	0.1	0.3
C17	Small intestine	0.0	0.0	0.0	0.0	0.0	0.0
C18	Colon	0.0	0.1	0.0	1.2	1.3	2.5
C19-21	Rectum, rectosigmoid, anus	0.0	0.0	0.0	0.0	0.4	0.8
C22	Liver	0.4	0.3	0.4	0.3	0.1	0.1
C23-24	Gallbladder, bile ducts	0.0	0.0	0.0	0.0	0.1	0.1
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	0.1
C30-34, C38	Respiratory organs	0.0	0.4	0.1	0.1	0.8	0.7
C30-31	Nose, sinuses	0.0	0.3	0.0	0.0	0.2	0.1
C32	Larynx, epiglottis	0.0	0.0	0.0	0.0	0.0	0.0
C33-34	Lung, trachea	0.0	0.1	0.1	0.1	0.5	0.5
C38	Mediastinum, pleura (non-mesothelioma)	0.0	0.0	0.0	0.0	0.0	0.0
C40-41	Bone	0.3	0.5	0.9	1.4	0.8	0.8
C43	Melanoma of the skin	0.1	0.3	0.0	0.8	5.2	10.9
C44	Skin, non-melanoma	0.4	0.0	0.1	0.1	1.2	0.3
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	0.1
C47	Autonomic nervous system	0.9	0.1	0.0	0.3	0.1	0.0
C48-49	Soft tissues	0.5	0.8	0.5	0.5	0.4	1.2
C50	Breast	0.0	0.0	0.0	0.3	1.7	7.8
C51-58	Female genital organs	0.7	0.1	1.2	1.7	4.5	16.3
C53	Cervix uteri	0.0	0.0	0.0	0.1	2.9	13.1
C54	Corpus uteri	0.0	0.0	0.0	0.0	0.1	0.5
C55	Uterus, other	0.0	0.0	0.0	0.0	0.0	0.0
C56	Ovary	0.5	0.1	1.2	1.4	1.2	1.8
C51-52, C57	Other female genital	0.1	0.0	0.0	0.0	0.3	0.3
C58	Placenta	0.0	0.0	0.0	0.1	0.0	0.5
C64-68	Urinary organs	1.4	0.7	0.3	0.3	0.4	0.5
C64	Kidney excl. renal pelvis	1.4	0.7	0.3	0.1	0.4	0.4
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	0.1	0.0	0.1
C69	Eye	1.1	0.0	0.0	0.1	0.1	0.9
C70-72, D32-33	Central nervous system	8.0	4.5	4.4	4.1	5.2	7.4
C73	Thyroid gland	0.0	0.0	0.3	1.0	3.1	6.2
C37, C74-75	Other endocrine glands	1.1	0.7	0.5	2.8	4.9	5.3
C39, C76, C80	Other or unspecified	0.0	0.0	0.0	0.0	0.1	0.3
C81-96	Lymphoid and haematopoietic tissue	7.6	4.2	4.6	8.1	7.7	7.5
C81	Hodgkin lymphoma	0.0	0.0	0.8	3.8	3.4	3.9
C82-85, C96	Non-Hodgkin lymphoma	0.7	0.7	0.9	0.9	1.5	2.0
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, D45-47	Leukaemia	6.9	3.6	2.9	3.3	2.8	1.6

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+
109.2	175.6	263.9	417.5	615.9	799.3	1101.8	1377.9	1628.9	1935.9	2196.5	2203.0
1.9	1.4	2.5	5.5	10.1	10.5	14.1	23.1	24.6	26.6	32.4	35.1
0.4	0.1	0.6	1.0	1.7	1.6	3.0	4.5	6.4	9.2	10.9	15.5
0.5	0.2	0.7	1.1	1.8	1.8	2.9	3.9	3.1	4.6	6.7	4.4
0.1	0.1	0.2	0.5	1.7	1.9	2.5	6.5	7.9	6.4	9.1	9.2
0.6	0.3	0.5	1.4	0.8	1.1	2.0	2.5	2.6	3.7	3.0	2.9
0.3	0.6	0.6	1.6	4.2	4.1	3.6	5.8	4.5	2.7	2.7	3.1
5.8	11.6	20.2	41.5	76.1	124.0	188.2	291.2	420.2	560.6	686.7	685.8
0.0	0.1	0.6	0.5	1.3	3.7	4.3	7.0	7.9	13.7	10.0	16.5
0.8	0.7	1.1	3.7	6.0	7.7	10.7	19.6	25.4	38.2	56.3	63.6
0.5	0.3	0.7	1.3	3.3	4.4	4.8	7.0	9.8	11.0	11.2	7.8
2.3	4.8	8.5	17.0	31.1	49.9	80.6	140.9	208.2	273.7	346.9	334.5
1.4	3.1	5.6	12.1	21.6	34.2	50.2	62.1	83.0	106.4	107.3	105.3
0.1	0.5	0.1	1.5	1.3	2.7	4.1	4.3	8.9	15.9	18.3	16.7
0.0	0.7	0.9	0.8	1.9	4.1	6.6	10.3	12.8	18.3	23.3	17.8
0.8	1.1	2.4	3.8	8.5	15.7	23.6	35.0	55.2	73.2	95.8	97.2
0.0	0.2	0.3	0.7	1.2	1.6	3.2	5.0	9.0	10.3	17.6	26.5
1.4	3.4	5.7	19.4	42.5	78.8	131.9	167.2	227.2	261.9	217.7	119.1
0.3	0.2	0.2	0.4	0.8	1.4	1.7	1.7	2.1	2.7	4.8	3.2
0.3	0.2	0.0	0.1	1.7	1.9	2.0	2.0	3.6	3.5	2.5	1.3
0.9	3.0	5.4	18.7	39.4	75.1	127.6	163.3	220.0	254.4	208.9	114.1
0.0	0.0	0.0	0.2	0.6	0.4	0.6	0.2	1.4	1.3	1.5	0.5
0.6	0.6	0.7	1.1	0.5	1.0	1.7	1.5	2.4	1.6	1.2	2.6
14.2	23.7	30.0	32.8	39.0	50.6	54.3	69.8	69.8	75.9	87.7	91.6
1.5	2.3	5.1	5.9	12.3	17.5	30.5	50.2	87.5	134.2	190.7	338.9
0.0	0.1	0.2	0.1	0.5	0.6	0.8	1.2	3.1	3.0	2.7	1.3
0.0	0.0	0.1	0.0	0.1	0.0	0.4	0.0	0.0	0.0	1.2	1.1
0.1	0.0	0.2	0.3	0.3	0.3	0.3	0.0	0.2	0.0	0.3	0.5
0.8	1.9	2.0	2.7	3.1	5.6	8.9	10.9	11.0	12.1	11.8	8.9
23.0	47.7	99.4	175.7	230.3	245.2	296.9	312.1	227.5	238.8	285.4	269.2
23.6	35.1	39.0	54.7	90.5	117.0	155.8	182.6	195.1	205.5	203.2	184.4
19.0	25.8	19.4	20.2	19.0	13.0	16.6	12.5	14.9	15.5	17.6	14.6
1.5	3.9	8.7	16.4	36.2	61.6	82.1	102.6	111.6	106.8	96.1	74.5
0.0	0.0	0.0	0.1	0.3	0.0	0.8	0.2	0.7	1.3	2.1	2.6
2.0	4.3	9.1	14.7	28.0	34.9	46.1	55.2	48.1	65.6	60.2	56.9
0.5	0.9	1.8	3.1	7.0	7.5	10.2	12.2	19.9	16.1	27.2	35.9
0.5	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.8	2.5	6.3	10.9	19.1	30.0	56.7	68.8	102.6	124.5	141.8	116.0
0.6	2.1	4.1	6.6	9.5	14.5	24.8	26.7	38.7	47.3	42.7	34.3
0.0	0.0	0.2	0.2	0.5	1.9	2.9	4.0	5.0	8.9	7.6	4.2
0.1	0.5	2.0	4.0	9.1	13.7	29.0	38.1	58.9	68.2	91.5	77.6
0.4	0.7	0.3	0.6	1.2	3.0	3.2	3.0	3.1	3.5	3.7	3.9
12.7	16.5	17.2	25.7	33.2	38.6	45.3	50.6	63.2	54.2	61.2	53.4
8.6	11.6	11.7	10.6	11.3	12.6	13.2	9.8	13.7	12.3	10.7	8.4
3.7	5.1	5.6	6.1	7.8	5.6	7.9	8.0	9.6	8.0	6.9	2.6
0.5	0.2	1.0	2.2	3.3	5.3	12.0	14.6	21.7	32.9	58.8	90.0
9.5	11.2	16.6	21.8	34.8	53.0	79.7	113.3	146.4	180.2	192.5	190.2
4.4	2.5	1.6	1.0	1.7	1.4	1.1	2.4	3.6	3.3	3.6	1.3
2.3	5.1	7.1	9.2	17.2	23.2	35.6	48.3	58.0	65.8	67.8	58.5
0.0	0.0	0.2	0.2	0.5	0.8	1.8	2.2	2.6	6.5	2.4	3.2
0.1	0.2	1.9	3.7	5.1	8.2	12.8	17.1	22.2	39.2	35.1	31.8
2.7	3.4	5.8	7.7	10.3	19.4	28.4	43.3	59.9	65.5	83.5	95.4

Table 13a. Average annual number of new cases by primary site and five-year period, 1957-2011

ICD10	Site	1957-61	1962-66	1967-71
C00-96	All sites	4093	4722	5605
C00-14	Mouth, pharynx	187	189	215
C00	Lip	97	94	113
C01-02	Tongue	20	22	21
C03-06	Mouth, other	23	22	31
C07-08	Salivary glands	12	13	15
C09-14	Pharynx	34	38	36
C15-26	Digestive organs	1659	1741	1893
C15	Oesophagus	77	78	80
C16	Stomach	843	786	745
C17	Small intestine	10	13	18
C18	Colon	246	306	369
C19-21	Rectum, rectosigmoid, anus	157	193	277
C22	Liver	22	23	41
C23-24	Gallbladder, bile ducts	21	22	27
C25	Pancreas	148	185	226
C26	Other digestive organs	134	135	110
C30-34, C38	Respiratory organs	350	477	676
C30-31	Nose, sinuses	19	21	21
C32	Larynx, epiglottis	34	50	68
C33-34	Lung, trachea	284	396	575
C38	Mediastinum, pleura (non-mesothelioma)	13	10	13
C40-41	Bone	12	17	18
C43	Melanoma of the skin	56	80	117
C44	Skin, non-melanoma	83	68	106
C45	Mesothelioma	1	2	4
C46	Kaposi's sarcoma	3	4	4
C47	Autonomic nervous system	19	15	14
C48-49	Soft tissues	21	25	34
C50	Breast	7	8	9
C60-63	Male genital organs	764	962	1159
C61	Prostate	689	871	1058
C62	Testis	55	68	78
C60, C63	Other male genital	20	23	23
C64-68	Urinary organs	321	433	519
C64	Kidney excl. renal pelvis	106	129	159
C65	Renal pelvis	10	11	21
C66-68	Bladder, ureter, urethra	205	293	339
C69	Eye	20	17	24
C70-72, D32-33	Central nervous system	125	136	150
C73	Thyroid gland	20	26	35
C37, C74-75	Other endocrine glands	7	10	21
C39, C76, C80	Other or unspecified	63	88	127
C81-96	Lymphoid and haematopoietic tissue	375	424	480
C81	Hodgkin lymphoma	47	53	61
C82-85, C96	Non-Hodgkin lymphoma	99	115	133
C88	Malignant immunoproliferative diseases	0	0	2
C90	Multiple myeloma	73	83	95
C91-95, D45-47	Leukaemia	156	172	189

MALES

Period							
1972-76	1977-81	1982-86	1987-91	1992-96	1997-01	2002-06	2007-11
6527	7656	8693	9373	10525	11472	13024	15192
245	237	256	253	259	261	262	308
118	112	102	91	73	61	54	74
28	27	36	36	43	49	49	65
30	38	46	48	57	46	50	47
14	14	15	18	18	23	20	21
55	45	57	61	67	82	90	102
1978	2196	2378	2393	2463	2568	2726	3014
82	89	84	104	107	121	138	162
650	601	580	519	449	381	327	304
18	19	30	27	32	48	53	74
417	542	675	762	850	949	1038	1187
336	459	527	539	582	618	681	715
54	50	69	61	59	71	82	110
29	38	47	49	53	61	64	69
252	271	297	295	281	276	309	341
142	127	68	36	51	43	35	53
828	1056	1231	1291	1402	1443	1562	1671
23	25	20	24	21	24	22	23
74	94	108	106	105	107	105	96
711	918	1091	1153	1257	1296	1421	1541
20	19	12	8	20	17	13	11
23	21	24	20	21	21	25	27
161	220	264	381	427	471	520	712
183	224	295	381	483	575	689	819
9	21	27	38	39	51	63	66
7	6	8	13	13	5	7	5
12	8	8	8	6	6	6	7
47	52	44	43	47	49	54	60
10	11	12	13	13	15	16	19
1390	1671	1900	2119	2683	3233	3831	4837
1282	1527	1718	1924	2439	2954	3527	4491
85	115	152	170	208	246	258	300
23	29	30	25	36	32	46	46
681	826	1002	1053	1144	1140	1305	1473
177	211	253	257	270	294	357	452
26	32	35	32	40	36	39	50
478	582	714	763	834	810	909	971
18	27	25	23	29	27	34	31
169	195	221	245	284	342	417	464
36	44	46	52	42	49	61	72
25	32	43	42	53	66	90	121
160	185	229	280	298	272	219	168
547	622	679	724	819	878	1136	1318
62	67	53	51	51	57	68	73
146	172	224	279	324	354	402	483
7	8	10	8	18	22	32	30
126	151	153	154	167	167	184	211
206	224	240	231	260	278	450	522

Table 13b. Average annual number of new cases by primary site and five-year period, 1957-2011

ICD10	Site	1957-61	1962-66	1967-71
C00-96	All sites	4237	4676	5472
C00-14	Mouth, pharynx	60	69	73
C00	Lip	8	8	11
C01-02	Tongue	11	14	17
C03-06	Mouth, other	11	13	17
C07-08	Salivary glands	8	14	13
C09-14	Pharynx	22	20	16
C15-26	Digestive organs	1392	1467	1610
C15	Oesophagus	23	32	28
C16	Stomach	581	532	492
C17	Small intestine	8	11	15
C18	Colon	286	359	438
C19-21	Rectum, rectosigmoid, anus	127	149	229
C22	Liver	12	13	23
C23-24	Gallbladder, bile ducts	49	52	59
C25	Pancreas	105	124	167
C26	Other digestive organs	202	195	159
C30-34, C38	Respiratory organs	93	111	167
C30-31	Nose, sinuses	13	12	14
C32	Larynx, epiglottis	2	5	6
C33-34	Lung, trachea	73	87	143
C38	Mediastinum, pleura (non-mesothelioma)	4	7	5
C40-41	Bone	10	9	14
C43	Melanoma of the skin	60	93	128
C44	Skin, non-melanoma	53	40	59
C45	Mesothelioma	0	1	2
C46	Kaposi's sarcoma	0	1	2
C47	Autonomic nervous system	16	9	16
C48-49	Soft tissues	18	26	27
C50	Breast	942	1072	1236
C51-58	Female genital organs	894	966	1129
C53	Cervix uteri	348	361	404
C54	Corpus uteri	181	222	268
C55	Uterus, other	24	17	15
C56	Ovary	269	297	358
C51-52, C57	Other female genital	69	66	80
C58	Placenta	3	3	4
C64-68	Urinary organs	200	226	274
C64	Kidney excl. renal pelvis	78	90	117
C65	Renal pelvis	6	6	12
C66-68	Bladder, ureter, urethra	117	130	145
C69	Eye	15	16	18
C70-72, D32-33	Central nervous system	111	119	131
C73	Thyroid gland	53	61	91
C37, C74-75	Other endocrine glands	6	7	13
C39, C76, C80	Other or unspecified	54	70	100
C81-96	Lymphoid and haematopoietic tissue	259	312	382
C81	Hodgkin lymphoma	33	37	47
C82-85, C96	Non-Hodgkin lymphoma	64	83	116
C88	Malignant immunoproliferative diseases	0	0	1
C90	Multiple myeloma	40	64	79
C91-95, D45-47	Leukaemia	122	129	139

FEMALES

Period							
1972-76	1977-81	1982-86	1987-91	1992-96	1997-01	2002-06	2007-11
6247	7145	7998	8634	9605	10604	11980	13046
81	90	105	109	132	130	156	189
11	16	22	27	29	26	34	49
17	17	25	22	24	27	30	32
16	23	25	29	37	33	40	43
12	15	13	12	20	20	19	25
24	19	20	18	21	24	33	40
1730	2037	2172	2210	2363	2476	2593	2778
31	31	35	40	40	51	53	60
419	407	388	341	296	241	230	203
18	21	27	31	29	43	48	61
514	693	787	888	1018	1116	1208	1315
275	381	431	451	491	513	545	561
30	36	44	42	42	47	46	67
56	73	82	75	73	80	78	88
189	224	275	282	311	325	339	360
199	171	104	61	63	60	47	64
203	258	353	484	625	769	969	1224
13	13	15	14	17	16	19	20
7	11	12	11	20	20	16	20
173	228	322	453	581	726	929	1179
9	6	4	5	7	8	6	7
13	14	14	14	18	19	18	24
200	265	361	443	489	512	581	730
115	153	222	299	403	475	600	729
2	2	5	7	9	8	12	13
5	3	6	7	5	4	3	3
9	5	6	9	8	6	5	5
38	41	46	46	46	61	78	89
1431	1563	1756	1863	2099	2491	2763	2842
1246	1289	1297	1323	1402	1441	1551	1619
442	400	354	346	344	311	299	300
326	370	390	412	468	528	649	721
7	8	5	6	8	9	9	7
340	379	433	450	461	462	462	453
128	128	111	103	117	127	129	136
2	3	3	6	4	3	4	2
328	380	429	461	494	514	583	630
118	138	157	182	191	190	217	250
16	18	17	22	24	23	28	32
194	225	255	257	278	302	338	348
20	21	22	25	29	28	32	31
151	186	225	261	310	421	574	573
111	132	143	136	137	124	153	188
16	33	47	39	48	63	101	118
112	177	225	286	317	302	280	203
437	496	566	613	672	760	926	1058
43	40	38	34	34	42	48	52
118	151	203	252	277	325	352	401
4	4	6	8	12	13	20	19
108	128	133	134	141	150	153	162
164	172	186	186	208	230	353	424

Table 14a. Age-standardised (world) incidence rates per 100 000 person-years by primary site and five-year period, 1957-2011

ICD10	Site	1957-61	1962-66	1967-71
C00-96	All sites	173.0	183.1	201.7
C00-14	Mouth, pharynx	7.8	7.4	7.8
C00	Lip	4.0	3.6	4.1
C01-02	Tongue	0.8	0.8	0.8
C03-06	Mouth, other	1.0	0.9	1.1
C07-08	Salivary glands	0.5	0.5	0.5
C09-14	Pharynx	1.5	1.5	1.3
C15-26	Digestive organs	68.3	65.4	65.5
C15	Oesophagus	3.2	2.9	2.7
C16	Stomach	34.5	29.4	25.7
C17	Small intestine	0.5	0.5	0.7
C18	Colon	10.1	11.6	12.8
C19-21	Rectum, rectosigmoid, anus	6.5	7.2	9.6
C22	Liver	1.0	0.9	1.5
C23-24	Gallbladder, bile ducts	0.9	0.8	0.9
C25	Pancreas	6.2	7.0	7.8
C26	Other digestive organs	5.5	5.0	3.8
C30-34, C38	Respiratory organs	15.3	18.9	24.9
C30-31	Nose, sinuses	0.8	0.8	0.8
C32	Larynx, epiglottis	1.5	1.9	2.5
C33-34	Lung, trachea	12.4	15.7	21.1
C38	Mediastinum, pleura (non-mesothelioma)	0.6	0.4	0.5
C40-41	Bone	0.7	0.9	0.8
C43	Melanoma of the skin	2.6	3.6	5.2
C44	Skin, non-melanoma	3.4	2.5	3.6
C45	Mesothelioma	0.0	0.1	0.2
C46	Kaposi's sarcoma	0.1	0.1	0.1
C47	Autonomic nervous system	0.9	0.7	0.6
C48-49	Soft tissues	0.9	1.1	1.4
C50	Breast	0.3	0.3	0.3
C60-63	Male genital organs	30.3	35.0	38.8
C61	Prostate	26.6	30.3	33.8
C62	Testis	3.0	3.7	4.1
C60, C63	Other male genital	0.8	0.9	0.8
C64-68	Urinary organs	13.7	16.7	18.5
C64	Kidney excl. renal pelvis	4.7	5.1	5.9
C65	Renal pelvis	0.4	0.5	0.8
C66-68	Bladder, ureter, urethra	8.6	11.1	11.8
C69	Eye	0.9	0.8	1.1
C70-72, D32-33	Central nervous system	6.3	6.5	7.0
C73	Thyroid gland	0.9	1.1	1.4
C37, C74-75	Other endocrine glands	0.4	0.5	1.0
C39, C76, C80	Other or unspecified	2.7	3.5	4.5
C81-96	Lymphoid and haematopoietic tissue	17.4	18.2	19.2
C81	Hodgkin lymphoma	2.4	2.6	2.7
C82-85, C96	Non-Hodgkin lymphoma	4.6	4.9	5.3
C88	Malignant immunoproliferative diseases	0.0	0.0	0.1
C90	Multiple myeloma	3.0	3.2	3.3
C91-95, D45-47	Leukaemia	7.4	7.6	7.8

Period							
1972-76	1977-81	1982-86	1987-91	1992-96	1997-01	2002-06	2007-11
220.7	244.4	264.1	275.6	301.3	321.5	343.6	367.6
8.4	7.9	8.4	8.2	8.4	8.0	7.6	7.9
4.0	3.6	3.2	2.6	2.2	1.7	1.4	1.7
1.0	0.9	1.2	1.3	1.4	1.6	1.5	1.8
1.0	1.3	1.6	1.6	1.9	1.4	1.4	1.2
0.5	0.5	0.5	0.6	0.6	0.7	0.6	0.5
1.9	1.6	2.0	2.1	2.4	2.6	2.7	2.8
64.4	67.3	69.2	67.9	67.9	68.3	68.5	69.4
2.7	2.7	2.6	3.2	3.2	3.4	3.7	3.9
21.1	18.2	16.5	14.2	12.0	9.7	7.9	6.9
0.6	0.6	1.0	0.8	0.9	1.4	1.5	1.9
13.5	16.7	19.6	21.7	23.1	25.0	25.5	26.5
11.1	14.3	15.7	15.5	16.6	17.0	17.5	17.0
1.8	1.6	2.2	1.8	1.7	2.0	2.2	2.7
0.9	1.1	1.3	1.4	1.5	1.6	1.6	1.6
8.3	8.3	8.6	8.3	7.7	7.3	7.8	7.8
4.5	3.7	1.8	0.9	1.3	1.0	0.8	1.2
28.7	34.6	38.5	39.3	41.7	40.6	40.5	38.7
0.8	0.8	0.7	0.7	0.6	0.7	0.6	0.6
2.6	3.2	3.5	3.4	3.4	3.1	2.9	2.3
24.5	29.9	34.0	34.9	37.1	36.2	36.7	35.5
0.8	0.7	0.4	0.2	0.6	0.5	0.3	0.3
1.0	0.9	1.1	0.9	1.0	0.9	1.0	1.0
6.8	8.9	10.1	14.0	14.5	14.9	15.1	18.3
5.7	6.5	8.1	10.1	12.2	14.1	15.2	16.1
0.3	0.6	0.8	1.2	1.1	1.4	1.6	1.5
0.2	0.2	0.2	0.4	0.4	0.1	0.2	0.1
0.6	0.4	0.4	0.5	0.3	0.3	0.3	0.4
1.8	2.0	1.6	1.6	1.6	1.6	1.7	1.7
0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5
43.0	48.3	51.8	55.4	70.3	88.9	101.3	119.4
38.0	41.7	43.9	47.3	60.5	77.6	89.5	106.6
4.3	5.6	6.9	7.4	8.7	10.4	10.6	11.7
0.8	0.9	0.9	0.8	1.0	0.9	1.2	1.1
23.1	26.2	30.5	30.3	32.1	30.7	32.7	34.2
6.3	7.2	8.4	7.9	8.1	8.7	9.9	11.5
0.9	1.0	1.1	1.0	1.2	1.0	1.0	1.2
15.9	17.9	21.0	21.4	22.8	21.0	21.9	21.5
0.7	1.1	1.0	0.9	1.0	0.9	1.1	0.9
7.4	8.3	9.0	9.6	10.7	12.2	14.1	14.2
1.4	1.6	1.6	1.9	1.5	1.7	1.9	2.0
1.1	1.5	1.9	1.7	2.1	2.5	3.0	3.8
5.4	5.8	6.7	7.8	7.9	6.8	5.0	3.5
20.2	21.9	22.8	23.8	26.3	27.4	32.5	34.1
2.7	2.8	2.1	2.1	2.2	2.4	2.8	2.7
5.3	6.0	7.6	9.3	10.5	10.9	11.4	12.3
0.2	0.2	0.3	0.2	0.5	0.6	0.8	0.7
4.1	4.7	4.5	4.4	4.6	4.4	4.6	4.9
7.9	8.2	8.3	7.8	8.6	9.1	12.9	13.6

Table 14b. Age-standardised (world) incidence rates per 100 000 person-years by primary site and five-year period, 1957-2011

ICD10	Site	1957-61	1962-66	1967-71
C00-96	All sites	165.0	168.9	184.9
C00-14	Mouth, pharynx	2.2	2.3	2.2
C00	Lip	0.3	0.3	0.3
C01-02	Tongue	0.4	0.5	0.4
C03-06	Mouth, other	0.4	0.4	0.5
C07-08	Salivary glands	0.3	0.5	0.5
C09-14	Pharynx	0.8	0.7	0.5
C15-26	Digestive organs	48.2	45.9	45.6
C15	Oesophagus	0.8	0.9	0.7
C16	Stomach	19.8	16.4	13.6
C17	Small intestine	0.3	0.4	0.5
C18	Colon	10.1	11.4	12.7
C19-21	Rectum, rectosigmoid, anus	4.5	4.9	6.8
C22	Liver	0.5	0.5	0.7
C23-24	Gallbladder, bile ducts	1.7	1.6	1.6
C25	Pancreas	3.7	3.9	4.7
C26	Other digestive organs	6.8	5.9	4.2
C30-34, C38	Respiratory organs	3.5	3.8	5.3
C30-31	Nose, sinuses	0.5	0.4	0.4
C32	Larynx, epiglottis	0.1	0.2	0.2
C33-34	Lung, trachea	2.7	2.9	4.5
C38	Mediastinum, pleura (non-mesothelioma)	0.2	0.3	0.2
C40-41	Bone	0.6	0.4	0.6
C43	Melanoma of the skin	2.6	4.1	5.5
C44	Skin, non-melanoma	1.9	1.2	1.6
C45	Mesothelioma	0.0	0.1	0.1
C46	Kaposi's sarcoma	0.0	0.1	0.0
C47	Autonomic nervous system	0.7	0.4	0.8
C48-49	Soft tissues	0.8	1.0	1.1
C50	Breast	37.8	40.4	44.0
C51-58	Female genital organs	37.8	38.3	43.0
C53	Cervix uteri	15.5	15.8	17.4
C54	Corpus uteri	7.3	8.3	9.4
C55	Uterus, other	0.8	0.5	0.4
C56	Ovary	11.4	11.4	13.3
C51-52, C57	Other female genital	2.6	2.2	2.4
C58	Placenta	0.2	0.2	0.2
C64-68	Urinary organs	7.5	7.5	8.2
C64	Kidney excl. renal pelvis	3.1	3.2	3.7
C65	Renal pelvis	0.2	0.2	0.3
C66-68	Bladder, ureter, urethra	4.2	4.1	4.1
C69	Eye	0.7	0.7	0.7
C70-72, D32-33	Central nervous system	5.3	5.2	5.8
C73	Thyroid gland	2.1	2.5	3.6
C37, C74-75	Other endocrine glands	0.3	0.3	0.6
C39, C76, C80	Other or unspecified	2.0	2.4	3.0
C81-96	Lymphoid and haematopoietic tissue	11.0	12.1	13.2
C81	Hodgkin lymphoma	1.6	1.7	2.0
C82-85, C96	Non-Hodgkin lymphoma	2.6	3.1	4.0
C88	Malignant immunoproliferative diseases	0.0	0.0	0.0
C90	Multiple myeloma	1.5	2.1	2.2
C91-95, D45-47	Leukaemia	5.4	5.2	5.0

FEMALES

Period							
1972-76	1977-81	1982-86	1987-91	1992-96	1997-01	2002-06	2007-11
199.9	213.3	224.8	233.1	252.2	269.6	290.3	296.3
2.3	2.4	2.7	2.8	3.4	3.3	3.8	4.2
0.3	0.4	0.5	0.6	0.7	0.6	0.7	0.9
0.4	0.4	0.6	0.6	0.6	0.7	0.7	0.7
0.4	0.6	0.6	0.7	0.9	0.8	0.9	0.9
0.4	0.4	0.4	0.4	0.6	0.6	0.5	0.7
0.7	0.5	0.6	0.6	0.6	0.7	0.9	1.1
45.3	48.8	48.3	47.4	49.4	50.1	50.9	51.4
0.7	0.7	0.7	0.9	0.8	1.0	1.0	1.1
10.7	9.3	8.3	6.9	5.6	4.6	4.3	3.5
0.6	0.6	0.7	0.8	0.7	1.1	1.1	1.3
13.9	17.1	17.9	19.3	21.6	22.5	23.3	23.7
7.7	9.8	10.4	10.3	11.1	11.4	11.6	11.5
0.8	0.9	1.1	0.9	1.0	1.1	1.0	1.3
1.3	1.6	1.7	1.5	1.5	1.6	1.4	1.6
4.9	5.2	5.8	5.7	6.1	6.0	6.3	6.3
4.8	3.6	1.7	1.0	1.0	0.8	0.7	1.0
6.2	7.6	9.9	13.3	17.2	20.2	23.3	26.4
0.4	0.3	0.4	0.3	0.4	0.4	0.4	0.4
0.2	0.3	0.3	0.3	0.6	0.5	0.4	0.5
5.3	6.8	9.1	12.5	16.0	19.2	22.3	25.3
0.3	0.1	0.1	0.1	0.2	0.2	0.1	0.1
0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.9
8.3	10.2	13.1	15.7	16.0	15.7	16.6	18.7
2.9	3.4	4.5	5.6	7.3	8.2	9.5	10.9
0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3
0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1
0.4	0.3	0.3	0.4	0.4	0.2	0.3	0.2
1.4	1.4	1.5	1.5	1.4	1.7	2.2	2.3
48.5	50.2	53.3	54.0	60.8	72.0	76.5	73.8
45.7	45.1	42.5	41.4	42.0	40.5	40.7	40.0
18.7	16.2	13.3	12.4	11.9	10.4	9.6	9.5
11.0	12.1	12.3	12.5	13.5	14.1	16.1	16.7
0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1
12.2	13.2	14.0	13.7	13.6	12.9	11.9	10.9
3.5	3.3	2.8	2.5	2.7	2.8	2.7	2.7
0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.1
9.1	9.9	10.1	10.8	11.0	11.1	12.0	12.7
3.7	4.0	4.0	4.7	4.7	4.5	5.0	5.6
0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6
5.0	5.4	5.6	5.7	5.8	6.1	6.4	6.4
0.8	0.7	0.9	0.9	1.0	0.7	0.9	0.9
6.3	7.3	8.5	9.4	10.6	13.3	17.3	16.4
4.3	5.0	5.2	4.8	4.7	4.1	4.8	5.8
0.7	1.5	2.1	1.6	2.0	2.4	3.6	4.0
3.0	4.3	4.9	5.9	6.2	5.4	4.5	3.1
13.9	14.7	16.1	16.6	17.8	19.6	22.4	24.3
1.7	1.6	1.4	1.3	1.4	1.8	1.9	2.0
3.7	4.5	5.7	6.9	7.4	8.2	8.4	9.1
0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.4
3.0	3.1	3.0	2.9	2.8	3.1	3.0	3.1
5.5	5.4	5.8	5.4	5.9	6.3	8.7	9.7

Table 15a. Average annual number of new cases by primary site and county, 2007-2011

ICD10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud
C00-96	All sites	15192	972	1548	1374	678	639	887
C00-14	Mouth, pharynx	308	21	29	36	14	10	16
C00	Lip	74	6	7	4	4	3	5
C01-02	Tongue	65	3	7	9	2	3	2
C03-06	Mouth, other	47	4	4	6	2	1	2
C07-08	Salivary glands	21	2	3	2	0	1	0
C09-14	Pharynx	102	6	8	15	6	3	6
C15-26	Digestive organs	3014	181	306	276	133	133	168
C15	Oesophagus	162	9	18	17	9	7	11
C16	Stomach	304	15	29	30	12	15	15
C17	Small intestine	74	4	7	6	4	3	3
C18	Colon	1187	75	114	100	51	54	65
C19-21	Rectum, rectosigmoid, anus	715	47	73	62	32	29	43
C22	Liver	110	6	14	15	6	4	4
C23-24	Gallbladder, bile ducts	69	3	6	7	3	4	4
C25	Pancreas	341	18	37	34	16	14	19
C26	Other digestive organs	53	4	7	7	2	2	3
C30-34, C38	Respiratory organs	1671	113	152	142	78	72	89
C30-31	Nose, sinuses	23	1	4	2	1	1	1
C32	Larynx, epiglottis	96	6	7	9	6	5	4
C33-34	Lung, trachea	1541	105	140	130	71	66	83
C38	Mediastinum, pleura (non-mesothelioma)	11	1	1	1	0	0	0
C40-41	Bone	27	1	3	4	1	1	1
C43	Melanoma of the skin	712	53	91	72	29	26	49
C44	Skin, non-melanoma	819	56	82	73	35	26	68
C45	Mesothelioma	66	4	8	5	1	3	4
C46	Kaposi's sarcoma	5	0	1	2	0	0	0
C47	Autonomic nervous system	7	0	0	0	0	0	0
C48-49	Soft tissues	60	3	8	7	4	2	3
C50	Breast	19	1	3	2	1	0	1
C60-63	Male genital organs	4837	309	475	390	203	218	287
C61	Prostate	4491	291	438	343	192	205	272
C62	Testis	300	16	32	41	10	12	13
C60, C63	Other male genital	46	2	4	5	2	1	2
C64-68	Urinary organs	1473	103	157	129	70	58	81
C64	Kidney excl. renal pelvis	452	31	52	39	22	18	28
C65	Renal pelvis	50	4	6	5	1	2	2
C66-68	Bladder, ureter, urethra	971	68	98	86	46	38	51
C69	Eye	31	3	3	3	1	1	1
C70-72, D32-33	Central nervous system	464	27	44	45	20	16	24
C73	Thyroid gland	72	3	8	12	2	2	5
C37, C74-75	Other endocrine glands	121	7	12	13	6	4	6
C39, C76, C80	Other or unspecified	168	12	16	18	9	8	9
C81-96	Lymphoid and haematopoietic tissue	1318	74	152	146	71	58	75
C81	Hodgkin lymphoma	73	5	7	9	5	2	3
C82-85, C96	Non-Hodgkin lymphoma	483	26	51	54	27	26	21
C88	Malignant immunoproliferative diseases	30	2	4	2	2	1	3
C90	Multiple myeloma	211	11	26	23	9	9	13
C91-95, D45-47	Leukaemia	522	30	65	58	28	21	36

Vestfold	Telemark	Aust-Agder	Vest-Agder	Rogaland	Hordaland	Sogn og Fjordane	Møre og Romsdal	Sør-Trøndelag	Nord-Trøndelag	Nordland	Troms	Finnmark
840	599	391	514	1249	1475	401	897	805	412	827	474	208
17	13	8	9	25	30	6	18	18	7	20	9	4
5	3	2	3	8	7	2	4	4	1	4	1	1
5	2	2	1	4	5	1	5	3	1	5	1	1
2	2	1	1	5	5	1	3	2	1	3	1	0
2	1	0	1	2	2	0	1	0	0	1	1	0
4	4	2	3	6	10	2	5	8	3	6	4	2
156	111	68	96	237	315	80	182	173	88	169	104	37
7	5	5	6	11	15	5	8	9	4	11	5	2
14	11	5	10	21	32	9	22	18	9	20	12	7
5	3	2	2	7	7	1	4	7	3	3	2	1
69	45	22	40	101	131	31	74	62	38	65	37	11
36	22	20	22	55	77	22	47	39	16	37	27	9
3	6	2	4	8	10	2	4	8	3	7	4	0
3	3	3	2	5	7	3	3	5	2	4	2	1
16	16	8	8	27	33	6	18	23	11	20	13	5
3	1	1	2	3	3	1	3	3	2	3	2	1
98	65	48	69	131	157	42	96	92	43	92	56	36
1	1	0	1	2	3	1	1	1	1	1	1	1
5	5	3	4	7	10	1	6	4	3	7	3	1
91	58	44	64	122	143	40	88	86	40	83	52	34
1	1	0	0	0	1	0	1	1	0	1	1	0
1	2	1	1	3	2	1	2	1	1	2	1	0
49	28	14	23	74	66	13	28	38	18	22	15	5
54	46	27	41	82	76	16	29	38	21	31	15	5
6	3	2	2	5	8	3	3	3	1	2	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	1	1	0	0	1	0	0	0	0
3	2	2	1	5	7	1	3	1	3	3	2	1
2	1	0	1	1	2	0	1	2	0	1	0	0
257	187	128	152	412	464	152	327	239	122	296	158	62
241	177	120	139	381	429	146	307	218	115	276	144	55
13	8	7	11	27	29	5	18	18	6	17	12	6
3	2	1	1	4	6	1	2	2	1	3	2	1
81	58	38	43	112	137	36	93	79	41	83	49	24
22	17	9	15	35	45	9	30	25	13	22	12	8
3	3	1	2	4	4	1	2	4	1	2	2	1
57	38	28	26	73	88	26	60	49	27	60	35	15
2	1	2	1	3	3	1	2	1	1	1	0	1
22	18	14	17	41	49	11	23	32	14	24	16	8
3	2	1	4	2	6	2	7	6	2	4	2	1
7	5	2	5	9	16	2	6	6	4	6	3	2
9	6	5	5	12	15	5	8	8	5	10	5	4
71	51	33	44	95	123	31	69	65	41	63	39	18
3	2	2	2	6	9	1	3	5	2	3	3	0
23	18	12	17	35	44	13	30	23	13	24	15	9
3	1	0	1	1	4	0	1	2	2	1	1	0
13	8	6	4	16	16	5	12	11	8	12	6	3
29	22	12	19	36	50	12	23	25	16	23	14	5

Table 15b. Average annual number of new cases by primary site and county, 2007-2011

ICD10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud
C00-96	All sites	13046	807	1371	1437	594	541	767
C00-14	Mouth, pharynx	189	12	19	23	9	10	10
C00	Lip	49	3	5	5	2	3	3
C01-02	Tongue	32	1	4	4	2	2	3
C03-06	Mouth, other	43	3	4	5	3	2	2
C07-08	Salivary glands	25	2	2	3	1	2	1
C09-14	Pharynx	40	3	4	6	2	1	2
C15-26	Digestive organs	2778	182	270	278	123	107	155
C15	Oesophagus	60	3	7	9	3	2	3
C16	Stomach	203	10	14	19	8	9	11
C17	Small intestine	61	4	6	6	3	1	4
C18	Colon	1315	93	123	138	59	48	78
C19-21	Rectum, rectosigmoid, anus	561	36	64	53	22	22	29
C22	Liver	67	4	8	7	4	2	3
C23-24	Gallbladder, bile ducts	88	5	7	9	5	5	4
C25	Pancreas	360	24	33	32	15	14	20
C26	Other digestive organs	64	4	7	5	3	3	4
C30-34, C38	Respiratory organs	1224	75	134	136	59	49	71
C30-31	Nose, sinuses	20	1	2	2	2	1	2
C32	Larynx, epiglottis	20	1	2	5	1	1	1
C33-34	Lung, trachea	1179	73	129	128	56	47	68
C38	Mediastinum, pleura (non-mesothelioma)	7	0	1	1	0	0	0
C40-41	Bone	24	1	2	3	1	1	1
C43	Melanoma of the skin	730	49	84	81	30	29	47
C44	Skin, non-melanoma	729	47	63	72	28	22	70
C45	Mesothelioma	13	1	2	1	0	1	1
C46	Kaposi's sarcoma	3	0	0	0	0	0	0
C47	Autonomic nervous system	5	0	0	1	0	0	0
C48-49	Soft tissues	89	5	8	9	4	5	4
C50	Breast	2842	164	329	344	123	111	160
C51-58	Female genital organs	1619	101	171	179	86	86	92
C53	Cervix uteri	300	16	36	35	15	16	16
C54	Corpus uteri	721	44	78	77	40	36	39
C55	Uterus, other	7	0	1	0	0	0	1
C56	Ovary	453	31	44	55	24	25	29
C51-52, C57	Other female genital	136	10	12	11	7	8	7
C58	Placenta	2	0	0	0	0	0	0
C64-68	Urinary organs	630	49	52	72	29	24	30
C64	Kidney excl. renal pelvis	250	22	19	26	12	8	14
C65	Renal pelvis	32	2	3	3	2	0	1
C66-68	Bladder, ureter, urethra	348	24	30	43	16	16	15
C69	Eye	31	2	3	5	2	2	1
C70-72, D32-33	Central nervous system	573	28	59	58	25	27	30
C73	Thyroid gland	188	8	23	20	11	6	11
C37, C74-75	Other endocrine glands	118	7	12	14	4	3	6
C39, C76, C80	Other or unspecified	203	13	18	24	10	10	12
C81-96	Lymphoid and haematopoietic tissue	1058	62	122	117	49	46	66
C81	Hodgkin lymphoma	52	2	6	6	3	2	3
C82-85, C96	Non-Hodgkin lymphoma	401	23	43	45	20	19	22
C88	Malignant immunoproliferative diseases	19	1	3	2	1	0	2
C90	Multiple myeloma	162	9	19	19	8	10	9
C91-95, D45-47	Leukaemia	424	27	52	45	17	16	30

FEMALES

Vestfold	Telemark	Aust-Agder	Vest-Agder	Rogaland	Hordaland	Sogn og Fjordane	Møre og Romsdal	Sør-Trøndelag	Nord-Trøndelag	Nordland	Troms	Finnmark
696	514	303	477	1038	1238	277	673	751	368	659	372	165
11	7	4	7	13	15	4	8	10	5	12	8	2
3	2	1	3	6	4	1	2	2	2	3	1	0
2	1	1	1	1	1	1	1	2	1	2	2	0
3	3	1	1	2	3	1	2	2	1	4	2	0
1	0	0	1	2	2	0	1	2	1	1	1	0
2	2	1	2	2	4	0	1	2	1	2	1	1
145	94	58	92	219	288	71	172	168	77	158	83	37
3	2	1	2	4	4	2	2	4	1	3	3	1
11	8	3	6	16	27	5	15	12	6	13	6	5
2	1	1	2	4	6	2	3	8	2	4	1	1
66	45	26	42	110	138	34	84	76	35	72	38	12
36	17	14	21	43	62	16	30	29	16	29	15	8
2	1	1	3	6	6	2	3	5	1	3	3	1
4	5	2	3	5	8	3	7	6	4	3	3	1
19	12	9	13	27	33	7	24	24	10	25	11	8
4	3	1	2	4	5	1	5	4	2	5	2	1
67	48	35	55	85	103	21	58	68	34	67	41	20
1	1	0	1	0	2	0	1	0	0	1	1	1
1	1	0	0	1	2	0	0	1	0	1	1	0
65	46	34	54	84	99	20	57	66	33	65	39	18
0	0	0	0	0	1	0	0	1	0	0	0	1
1	1	1	1	2	4	0	2	1	1	1	0	0
44	28	21	26	76	68	12	30	44	19	19	14	6
39	43	27	47	74	65	10	22	39	19	26	10	5
1	0	0	0	1	1	0	1	1	1	0	0	0
0	0	0	0	0	0	0	1	0	0	0	0	0
0	0	0	0	0	2	0	0	0	0	0	0	0
4	4	1	2	6	8	2	4	6	4	7	4	2
158	106	59	103	230	260	58	154	154	80	135	79	35
78	68	33	56	130	145	33	76	88	43	84	50	20
13	10	6	9	22	29	6	13	15	9	21	10	3
37	34	15	27	60	67	13	30	42	17	34	23	7
1	0	0	0	1	1	0	0	0	1	0	0	0
18	16	9	16	36	36	9	24	24	12	22	13	9
8	8	3	4	10	13	4	10	6	4	7	4	1
0	0	0	0	0	0	0	0	0	0	0	0	0
29	23	20	19	45	59	14	33	44	17	42	20	8
9	10	6	8	15	23	7	11	18	10	18	9	4
3	1	1	1	3	3	0	2	2	1	2	1	0
17	12	13	10	27	32	7	20	23	7	22	10	4
2	1	0	0	4	3	1	2	1	0	1	1	0
28	23	9	19	46	63	16	27	39	24	29	17	8
9	9	3	8	8	20	3	11	13	4	12	6	2
6	3	2	3	6	18	4	8	8	3	7	2	1
11	10	4	7	15	14	5	8	12	9	11	8	2
62	45	25	30	79	103	24	55	56	26	48	28	14
3	2	2	2	4	5	2	3	5	1	2	1	0
23	15	10	13	30	39	8	22	20	9	22	12	7
1	1	0	0	1	3	1	1	0	0	1	0	1
9	7	3	3	12	16	3	8	7	4	8	6	1
26	20	10	11	32	41	11	20	23	12	17	10	5

Table 16a. Age-standardised (world) incidence rates per 100 000 person-years by primary site and county, 2007-2011

ICD10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud
C00-96	All sites	367.6	390.3	358.3	342.9	349.0	341.9	384.9
C00-14	Mouth, pharynx	7.9	8.9	7.0	9.6	7.7	6.5	7.0
C00	Lip	1.7	2.3	1.7	0.9	1.6	1.4	2.1
C01-02	Tongue	1.8	1.3	1.6	2.5	1.6	1.8	1.1
C03-06	Mouth, other	1.2	1.7	1.0	1.6	0.9	0.5	0.8
C07-08	Salivary glands	0.5	0.7	0.7	0.6	0.1	0.7	0.2
C09-14	Pharynx	2.8	2.9	1.9	4.0	3.5	2.1	2.8
C15-26	Digestive organs	69.4	68.9	67.8	66.6	63.3	68.6	69.7
C15	Oesophagus	3.9	3.5	4.0	4.5	4.2	3.6	4.7
C16	Stomach	6.9	5.7	6.2	7.2	5.4	7.7	6.0
C17	Small intestine	1.9	1.9	1.6	1.4	1.9	1.8	1.4
C18	Colon	26.5	27.8	24.9	23.1	23.1	26.8	27.0
C19-21	Rectum, rectosigmoid, anus	17.0	18.6	16.8	15.1	15.6	15.7	17.9
C22	Liver	2.7	2.3	3.4	3.7	2.9	2.0	1.8
C23-24	Gallbladder, bile ducts	1.6	1.3	1.4	1.7	1.4	2.4	1.4
C25	Pancreas	7.8	6.7	7.9	8.3	7.8	7.3	8.0
C26	Other digestive organs	1.2	1.3	1.5	1.6	1.0	1.2	1.4
C30-34, C38	Respiratory organs	38.7	43.5	32.9	35.1	38.4	36.3	36.5
C30-31	Nose, sinuses	0.6	0.4	0.9	0.5	0.3	0.9	0.5
C32	Larynx, epiglottis	2.3	2.4	1.6	2.2	3.2	2.3	1.6
C33-34	Lung, trachea	35.5	40.5	30.2	32.2	34.9	32.8	34.3
C38	Mediastinum, pleura (non-mesothelioma)	0.3	0.3	0.2	0.2	0.1	0.3	0.1
C40-41	Bone	1.0	1.1	0.9	1.1	0.7	0.7	0.6
C43	Melanoma of the skin	18.3	23.0	22.1	17.7	16.1	15.6	22.1
C44	Skin, non-melanoma	16.1	17.9	15.2	14.8	13.3	10.6	24.8
C45	Mesothelioma	1.5	1.4	1.7	1.1	0.6	1.2	1.9
C46	Kaposi's sarcoma	0.1	0.0	0.1	0.5	0.0	0.0	0.1
C47	Autonomic nervous system	0.4	0.4	0.1	0.2	0.6	0.2	0.6
C48-49	Soft tissues	1.7	1.2	2.2	1.9	2.5	1.8	1.7
C50	Breast	0.5	0.6	0.7	0.6	0.4	0.1	0.7
C60-63	Male genital organs	119.4	123.6	112.7	99.9	105.8	118.7	127.5
C61	Prostate	106.6	111.1	100.3	87.7	93.6	104.2	116.9
C62	Testis	11.7	11.7	11.5	11.1	11.1	13.7	9.5
C60, C63	Other male genital	1.1	0.9	0.9	1.1	1.1	0.7	1.1
C64-68	Urinary organs	34.2	41.0	35.2	31.6	33.9	29.2	34.4
C64	Kidney excl. renal pelvis	11.5	13.5	12.6	10.0	12.3	10.2	12.9
C65	Renal pelvis	1.2	1.5	1.6	1.3	0.5	0.9	0.8
C66-68	Bladder, ureter, urethra	21.5	26.1	21.0	20.3	21.0	18.2	20.7
C69	Eye	0.9	1.2	0.9	1.0	0.6	0.5	0.5
C70-72, D32-33	Central nervous system	14.2	14.7	12.9	12.7	14.4	11.0	13.1
C73	Thyroid gland	2.0	1.6	2.2	3.0	1.5	1.0	2.4
C37, C74-75	Other endocrine glands	3.8	3.7	3.4	3.6	5.4	3.6	3.4
C39, C76, C80	Other or unspecified	3.5	4.3	3.1	4.4	3.5	3.3	3.5
C81-96	Lymphoid and haematopoietic tissue	34.1	33.2	37.2	37.6	40.5	33.2	34.6
C81	Hodgkin lymphoma	2.7	3.1	2.5	2.7	4.7	2.0	2.5
C82-85, C96	Non-Hodgkin lymphoma	12.3	11.7	12.1	14.0	15.4	14.7	9.4
C88	Malignant immunoproliferative diseases	0.7	0.7	0.9	0.5	0.7	0.4	1.1
C90	Multiple myeloma	4.9	4.3	5.8	5.6	4.4	4.2	5.5
C91-95, D45-47	Leukaemia	13.6	13.5	16.0	14.8	15.3	11.9	16.1

MALES

Vestfold	Telemark	Aust-Agder	Vest-Agder	Rogaland	Hordaland	Sogn og Fjordane	Møre og Romsdal	Sør-Trøndelag	Nord-Trøndelag	Nordland	Troms	Finnmark
400.1	370.1	408.3	371.2	390.7	377.1	387.1	386.7	337.9	328.7	367.0	354.7	323.4
8.8	8.3	8.7	6.7	7.9	7.8	6.5	8.3	8.2	6.4	9.1	6.8	6.9
2.1	1.4	1.9	2.0	2.4	1.5	1.6	1.6	1.7	1.2	1.8	0.9	0.9
2.9	1.8	2.6	0.8	1.2	1.5	1.0	2.5	1.6	1.2	2.5	1.1	2.7
1.0	1.1	1.3	0.5	1.7	1.4	1.3	1.5	0.9	1.0	1.2	1.0	0.2
0.8	1.1	0.2	1.0	0.5	0.6	0.3	0.3	0.2	0.1	0.4	0.4	0.5
2.0	2.9	2.7	2.4	2.0	2.7	2.3	2.4	3.7	2.9	3.2	3.5	2.7
70.2	67.2	67.1	65.5	71.3	77.1	73.1	72.2	68.2	65.5	69.0	75.1	54.5
3.6	3.4	4.9	4.0	3.2	3.8	5.7	3.8	3.4	2.8	4.5	3.9	2.7
5.6	6.6	5.2	6.7	6.1	7.7	8.2	9.0	6.8	6.9	7.8	8.1	10.6
2.3	2.2	1.8	1.9	2.2	1.9	1.1	1.7	3.1	2.0	1.3	1.9	0.9
30.3	25.8	21.2	26.2	29.5	31.1	27.1	28.2	23.1	27.7	26.3	26.3	16.3
16.7	13.4	20.4	15.6	17.2	19.9	19.5	19.1	16.2	12.9	15.7	20.6	13.4
1.6	3.8	1.9	3.0	2.6	2.9	1.9	1.5	3.2	2.5	2.8	2.8	0.4
1.3	2.1	2.8	1.3	1.4	1.6	2.7	1.1	2.2	0.9	1.4	1.1	1.0
7.3	9.4	8.3	5.5	8.1	7.6	6.1	6.7	9.0	8.2	8.0	9.1	7.1
1.5	0.6	0.5	1.1	0.8	0.6	1.0	1.0	1.1	1.6	1.0	1.3	2.0
45.5	39.0	48.7	50.0	40.1	38.6	39.0	40.0	36.1	31.2	37.3	39.5	51.5
0.6	0.6	0.4	0.6	0.6	0.7	0.7	0.6	0.4	0.5	0.7	0.6	1.0
2.4	3.1	3.3	2.8	2.3	2.5	0.5	3.0	1.9	1.9	2.8	2.1	2.2
42.0	34.8	44.9	46.4	37.1	35.1	37.5	36.1	33.5	28.7	33.3	36.3	47.9
0.5	0.4	0.0	0.2	0.0	0.4	0.2	0.3	0.3	0.1	0.5	0.5	0.4
0.8	1.7	0.6	1.1	1.3	1.0	1.3	1.4	0.5	0.8	1.7	0.7	0.8
26.0	19.4	14.3	17.5	24.2	18.1	14.4	12.3	16.9	15.0	11.1	11.8	8.3
21.2	22.9	24.5	23.9	22.0	15.5	10.8	9.8	13.5	12.6	11.4	10.0	6.6
2.7	1.9	1.9	1.3	1.5	1.9	2.2	0.9	1.4	1.0	0.9	1.1	1.4
0.2	0.2	0.0	0.3	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.1	0.0
0.5	0.1	0.2	0.6	0.4	0.5	0.0	0.1	0.9	1.2	0.0	0.0	0.8
1.4	1.5	2.6	1.0	1.9	1.9	1.5	1.3	0.6	3.1	1.1	1.6	1.1
0.8	0.4	0.4	0.5	0.3	0.6	0.0	0.3	0.6	0.2	0.5	0.2	0.7
124.2	116.0	136.2	113.6	130.9	121.1	149.7	145.8	103.0	98.6	135.6	119.0	96.9
111.8	105.6	123.5	100.0	118.5	108.4	140.0	130.1	90.7	88.2	119.8	102.5	80.6
11.1	9.0	12.1	12.7	11.1	11.1	8.5	14.7	11.5	10.0	14.6	15.1	15.1
1.3	1.4	0.6	1.0	1.4	1.6	1.2	1.1	0.8	0.4	1.2	1.3	1.2
36.3	34.2	39.1	28.9	33.6	33.3	33.0	38.0	31.9	31.4	35.7	33.5	37.7
10.5	11.5	10.1	11.0	11.1	12.2	9.9	13.9	11.5	11.0	10.9	9.0	12.7
1.3	1.7	1.5	1.0	1.0	1.0	0.9	1.1	1.7	1.0	0.6	1.1	1.5
24.6	21.0	27.5	16.9	21.6	20.1	22.2	23.1	18.7	19.4	24.3	23.3	23.5
1.3	0.6	1.8	1.3	1.1	0.7	0.8	0.9	0.6	0.4	0.7	0.5	0.9
14.1	14.2	18.5	16.4	15.4	15.3	13.8	13.5	15.8	14.9	13.5	15.0	14.8
1.6	1.2	0.8	3.6	0.9	1.7	1.5	3.5	3.3	1.5	1.8	1.3	1.9
4.1	4.2	2.5	4.1	3.3	5.1	2.9	3.5	3.6	4.9	3.4	2.7	4.7
3.3	2.9	4.2	3.3	3.5	3.2	4.0	2.9	2.8	3.4	3.7	3.0	5.4
37.0	34.2	36.2	31.6	31.1	33.6	32.7	31.7	29.9	36.4	30.3	33.1	28.4
2.2	2.0	3.6	2.5	2.7	3.1	1.6	2.1	3.2	3.2	2.0	3.8	0.6
12.0	11.8	12.5	12.7	11.1	12.2	12.7	13.7	10.2	11.3	11.6	13.1	13.4
1.3	0.4	0.1	0.5	0.3	0.9	0.5	0.4	0.6	1.4	0.5	0.5	0.2
6.0	5.5	6.1	2.8	4.8	3.8	4.3	4.7	4.2	5.9	4.7	4.2	5.4
15.6	14.5	13.9	13.2	12.2	13.6	13.6	10.8	11.6	14.7	11.4	11.5	8.8

Table 16b. Age-standardised (world) incidence rates per 100 000 person-years by primary site and county, 2007-2011

ICD10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud
C00-96	All sites	296.3	302.1	299.8	300.6	297.6	283.2	314.9
C00-14	Mouth, pharynx	4.2	4.4	3.9	4.9	4.3	5.0	3.9
C00	Lip	0.9	0.8	0.8	0.8	0.5	0.9	0.9
C01-02	Tongue	0.7	0.6	0.8	1.0	0.9	0.9	1.0
C03-06	Mouth, other	0.9	0.8	0.8	1.0	1.0	1.0	0.8
C07-08	Salivary glands	0.7	1.2	0.4	0.7	0.7	1.4	0.2
C09-14	Pharynx	1.1	1.1	1.0	1.4	1.2	0.8	1.0
C15-26	Digestive organs	51.4	56.3	50.9	48.1	47.3	45.8	51.6
C15	Oesophagus	1.1	1.0	1.3	1.6	1.1	1.0	1.0
C16	Stomach	3.5	2.3	2.6	3.3	2.9	3.5	3.5
C17	Small intestine	1.3	1.4	1.4	1.4	1.6	0.2	1.6
C18	Colon	23.7	28.5	22.7	22.7	23.0	21.2	25.3
C19-21	Rectum, rectosigmoid, anus	11.5	12.1	12.8	10.1	9.1	10.1	10.5
C22	Liver	1.3	1.5	1.5	1.5	1.6	1.0	1.0
C23-24	Gallbladder, bile ducts	1.6	1.6	1.4	1.7	1.8	2.0	1.4
C25	Pancreas	6.3	7.1	6.2	5.1	5.2	5.8	6.0
C26	Other digestive organs	1.0	0.8	1.1	0.8	1.0	1.0	1.4
C30-34, C38	Respiratory organs	26.4	25.9	27.1	27.2	28.4	24.0	27.0
C30-31	Nose, sinuses	0.4	0.3	0.6	0.4	0.7	0.5	0.7
C32	Larynx, epiglottis	0.5	0.2	0.4	1.2	0.5	0.3	0.6
C33-34	Lung, trachea	25.3	25.5	26.0	25.4	27.1	23.1	25.7
C38	Mediastinum, pleura (non-mesothelioma)	0.1	0.0	0.1	0.2	0.1	0.1	0.0
C40-41	Bone	0.9	0.7	0.7	1.0	0.9	0.9	0.5
C43	Melanoma of the skin	18.7	21.5	20.1	18.0	16.6	18.4	22.8
C44	Skin, non-melanoma	10.9	11.3	9.2	8.8	8.7	7.0	22.0
C45	Mesothelioma	0.3	0.2	0.3	0.3	0.2	0.2	0.5
C46	Kaposi's sarcoma	0.1	0.0	0.1	0.1	0.0	0.0	0.0
C47	Autonomic nervous system	0.2	0.1	0.1	0.3	0.0	0.0	0.2
C48-49	Soft tissues	2.3	2.7	2.0	2.2	2.1	2.5	2.0
C50	Breast	73.8	71.0	79.3	83.4	70.8	65.8	73.7
C51-58	Female genital organs	40.0	41.3	39.8	40.3	45.5	47.6	41.5
C53	Cervix uteri	9.5	8.5	9.9	9.3	11.1	12.0	10.2
C54	Corpus uteri	16.7	17.3	17.0	17.2	18.7	17.5	16.5
C55	Uterus, other	0.1	0.0	0.1	0.1	0.1	0.1	0.3
C56	Ovary	10.9	12.5	10.3	11.8	11.8	13.9	12.2
C51-52, C57	Other female genital	2.7	3.1	2.4	2.0	3.6	3.7	2.4
C58	Placenta	0.1	0.0	0.1	0.1	0.2	0.4	0.0
C64-68	Urinary organs	12.7	16.4	9.8	13.2	12.7	11.3	11.3
C64	Kidney excl. renal pelvis	5.6	7.9	3.9	5.5	5.6	4.3	6.0
C65	Renal pelvis	0.6	0.7	0.6	0.6	0.8	0.2	0.2
C66-68	Bladder, ureter, urethra	6.4	7.8	5.4	7.1	6.3	6.7	5.0
C69	Eye	0.9	0.7	0.8	1.2	1.4	1.0	0.6
C70-72, D32-33	Central nervous system	16.4	14.2	15.0	14.0	16.9	19.4	17.1
C73	Thyroid gland	5.8	4.1	6.5	5.3	8.1	4.5	6.3
C37, C74-75	Other endocrine glands	4.0	4.7	4.0	4.1	3.6	2.5	3.2
C39, C76, C80	Other or unspecified	3.1	3.2	2.6	3.3	3.7	3.6	2.9
C81-96	Lymphoid and haematopoietic tissue	24.3	23.4	27.7	24.9	26.2	23.7	27.9
C81	Hodgkin lymphoma	2.0	1.6	2.2	1.8	3.0	1.6	2.4
C82-85, C96	Non-Hodgkin lymphoma	9.1	8.4	9.5	9.4	10.6	9.1	9.8
C88	Malignant immunoproliferative diseases	0.4	0.3	0.5	0.5	0.3	0.2	0.5
C90	Multiple myeloma	3.1	2.8	3.9	3.5	3.4	4.5	3.1
C91-95, D45-47	Leukaemia	9.7	10.3	11.6	9.7	9.0	8.2	12.2

FEMALES

Vestfold	Telemark	Aust-Agder	Vest-Agder	Rogaland	Hordaland	Sogn og Fjordane	Møre og Romsdal	Sør-Trøndelag	Nord-Trøndelag	Nordland	Troms	Finnmark
308.9	299.8	298.2	311.2	301.7	295.5	272.1	281.2	298.2	293.0	291.6	267.2	264.6
4.4	4.2	4.6	4.8	3.8	3.3	2.9	3.0	4.1	3.4	5.1	6.4	3.2
0.9	0.6	1.4	1.6	1.7	0.7	1.4	0.7	0.5	0.6	1.2	0.9	0.0
0.9	0.7	0.7	0.7	0.4	0.3	0.6	0.5	0.6	0.7	0.9	1.2	0.5
0.9	1.5	0.9	0.7	0.5	0.6	0.3	0.8	0.8	0.6	1.4	1.2	0.3
0.5	0.1	0.6	0.7	0.6	0.4	0.6	0.4	1.0	0.7	0.4	1.9	0.7
1.2	1.3	1.0	1.0	0.6	1.3	0.0	0.7	1.2	0.8	1.3	1.2	1.7
51.9	43.1	47.8	50.1	54.4	55.4	53.6	55.6	53.6	49.5	53.7	46.7	49.1
1.0	0.6	1.2	1.0	1.0	0.7	1.6	0.4	1.4	0.8	1.0	1.9	1.1
3.5	4.2	2.3	3.6	3.8	4.6	2.9	4.8	3.6	2.7	4.5	3.1	6.1
0.5	0.7	1.5	1.1	1.0	1.5	1.8	1.3	2.7	1.3	1.6	0.6	0.9
22.4	20.2	21.3	21.6	26.2	25.7	23.6	26.4	23.6	21.1	23.5	21.9	16.9
13.8	8.7	11.6	11.9	11.8	13.7	15.1	10.4	10.6	12.5	12.0	9.1	12.3
1.3	0.5	0.5	1.2	1.4	1.0	1.6	1.0	1.4	1.3	1.3	1.6	1.2
1.3	2.2	1.6	1.9	1.5	1.5	1.8	2.5	1.5	2.0	1.2	1.6	0.7
6.9	4.9	7.0	6.7	6.7	6.0	4.5	7.8	7.6	6.6	7.3	6.0	9.3
1.2	1.1	0.9	1.0	1.0	0.6	0.8	1.1	1.3	1.2	1.2	0.9	0.6
28.6	26.9	33.9	36.3	24.1	23.5	20.8	22.9	25.0	24.6	26.9	27.2	28.5
0.7	0.4	0.5	0.8	0.1	0.4	0.0	0.2	0.1	0.2	0.5	0.8	0.3
0.6	0.6	0.2	0.1	0.3	0.4	0.4	0.1	0.5	0.3	0.2	0.7	0.5
27.2	25.7	33.2	35.4	23.6	22.6	20.2	22.3	24.1	23.9	26.2	25.6	26.2
0.1	0.2	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.2	0.0	0.0	1.4
0.9	0.9	1.8	0.9	1.0	1.3	0.1	1.1	0.6	1.4	0.5	0.0	0.3
21.1	19.4	19.8	20.1	22.8	18.1	13.7	14.7	20.6	21.7	10.3	13.4	13.4
11.0	17.2	19.5	18.6	14.1	9.8	5.1	5.8	10.7	10.1	8.1	6.1	6.7
0.3	0.2	0.4	0.0	0.3	0.2	0.4	0.3	0.2	0.7	0.2	0.0	0.2
0.0	0.0	0.1	0.2	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
0.0	0.2	1.0	0.8	0.1	0.6	0.8	0.2	0.4	0.0	0.2	0.0	0.0
2.5	2.5	1.5	1.4	1.9	2.3	2.0	1.9	2.8	2.5	3.1	3.8	4.2
80.1	72.0	67.9	78.0	76.6	71.5	67.3	75.3	68.2	72.4	69.6	64.0	61.5
37.5	43.5	35.0	40.3	41.1	38.5	36.4	34.1	38.2	37.7	43.2	39.8	35.7
8.6	8.5	8.3	9.2	8.1	9.5	9.7	8.3	8.3	10.7	14.7	10.5	7.3
16.6	21.0	14.4	17.5	18.3	16.7	13.5	12.8	16.8	13.7	15.3	16.8	12.6
0.2	0.1	0.2	0.1	0.2	0.2	0.0	0.0	0.0	0.3	0.0	0.0	0.0
8.6	10.0	9.3	11.6	11.5	9.3	9.7	9.8	10.6	9.8	10.6	9.5	14.2
3.0	3.9	2.7	2.0	2.8	2.8	3.5	3.3	2.2	3.2	2.7	2.7	1.6
0.4	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.3	0.0
11.4	12.0	17.7	10.3	12.0	12.2	11.0	12.4	15.5	13.3	15.8	13.0	12.7
4.4	5.5	6.4	5.1	4.7	5.4	5.4	4.9	7.1	8.2	7.6	5.4	7.3
1.3	0.2	1.3	0.5	0.5	0.7	0.3	0.7	0.6	0.4	0.7	0.8	0.4
5.7	6.2	10.0	4.7	6.8	6.1	5.3	6.8	7.8	4.7	7.6	6.7	5.0
1.0	1.0	0.3	0.1	1.5	1.0	1.4	0.8	0.5	0.2	0.5	0.9	0.4
15.7	18.5	12.7	14.9	17.1	18.4	19.8	14.3	19.9	23.5	16.7	14.0	17.2
5.8	7.7	3.4	8.2	2.7	6.7	3.8	6.2	6.8	5.1	7.3	4.9	4.1
4.7	2.6	2.5	2.6	2.4	6.1	7.1	5.9	4.3	3.8	5.4	2.7	2.8
3.5	3.7	3.0	2.8	3.1	2.3	2.6	2.4	3.2	4.5	3.1	4.1	2.5
28.4	24.4	25.2	20.9	22.8	24.1	23.2	24.1	23.7	18.6	21.8	20.5	22.2
2.2	1.5	2.8	2.5	1.7	1.7	2.9	2.0	3.1	1.2	1.5	1.4	0.7
10.4	7.5	9.5	8.2	8.9	9.1	7.1	9.4	8.5	6.7	9.4	9.0	10.8
0.4	0.7	0.5	0.2	0.1	0.6	0.8	0.5	0.2	0.0	0.2	0.0	0.6
3.6	3.2	2.3	1.6	2.9	3.1	2.1	3.0	2.4	3.0	2.7	3.2	2.0
11.8	11.5	10.2	8.4	9.1	9.5	10.3	9.3	9.4	7.7	8.0	6.9	8.1

Table 17a. Average annual number of new cases for selected primary sites, stage and period of diagnosis, 1957-2011

MALES

ICD10	Site	Stage	Period											%
			1957-61	1962-66	1967-71	1972-76	1977-81	1982-86	1987-91	1992-96	1997-01	2002-06	2007-11	2007-11
C00-14	Mouth, pharynx	Total	187	189	215	245	237	256	253	259	261	262	308	100.0
		Localized	128	134	138	162	150	159	157	141	99	86	133	43.3
		Regional	45	45	46	66	72	89	81	92	99	122	141	45.8
		Distant	4	6	10	10	8	5	10	12	12	12	12	3.8
		Unknown	10	5	21	6	6	3	6	14	50	41	22	7.1
C15	Oesophagus	Total	77	78	80	82	89	84	104	107	121	138	162	100.0
		Localized	49	46	42	38	44	38	41	46	26	30	54	33.1
		Regional	10	10	13	17	19	22	24	25	25	37	44	27.3
		Distant	13	18	18	22	21	22	34	25	35	44	45	27.9
		Unknown	5	4	8	4	5	3	4	10	36	27	19	11.7
C16	Stomach	Total	843	786	745	650	601	580	519	449	381	327	304	100.0
		Localized	238	220	185	165	179	184	182	146	66	60	89	29.2
		Regional	172	173	150	145	154	161	143	129	111	102	84	27.5
		Distant	360	342	328	296	233	206	176	141	133	116	98	32.3
		Unknown	74	51	84	43	35	29	19	33	71	49	34	11.0
C18	Colon	Total	246	306	369	417	542	675	762	850	949	1038	1187	100.0
		Localized	99	125	138	150	153	206	246	239	172	190	203	17.1
		Regional	67	72	87	120	217	274	279	354	457	522	636	53.6
		Distant	67	97	125	132	152	174	210	221	248	259	303	25.6
		Unknown	14	13	19	15	20	21	28	35	72	66	45	3.8
C19-21	Rectum, rectosigmoid, anus	Total	157	193	277	336	459	527	539	582	618	681	715	100.0
		Localized	77	94	128	160	209	235	232	247	187	180	182	25.5
		Regional	40	52	72	91	155	187	196	214	241	288	370	51.8
		Distant	28	41	61	76	84	94	100	105	123	134	133	18.6
		Unknown	12	6	15	8	11	11	11	16	68	79	30	4.2
C22	Liver	Total	22	23	41	54	50	69	61	59	71	82	110	100.0
		Localized	11	11	20	25	25	38	34	33	24	26	49	44.7
		Regional	0	1	1	5	4	6	4	3	5	8	11	10.2
		Distant	8	10	16	21	15	19	12	11	17	19	26	23.6
		Unknown	2	0	4	3	5	7	10	12	25	29	24	21.5
C23-24	Gallbladder, bile ducts	Total	21	22	27	29	38	47	49	53	61	64	69	100.0
		Localized	8	8	9	8	11	17	19	14	11	11	14	20.3
		Regional	3	4	3	7	9	10	9	10	13	22	24	34.9
		Distant	8	9	12	13	16	16	14	16	16	18	19	27.6
		Unknown	1	1	2	1	2	4	7	14	21	13	12	17.2
C25	Pancreas	Total	148	185	226	252	271	297	295	281	276	309	341	100.0
		Localized	44	54	53	49	44	61	64	46	19	25	33	9.8
		Regional	17	21	29	34	35	41	26	34	39	72	73	21.5
		Distant	75	101	125	147	161	155	161	130	136	164	186	54.4
		Unknown	12	9	19	22	31	40	44	71	82	49	49	14.3
C33-34	Lung, trachea	Total	284	396	575	711	918	1091	1153	1257	1296	1421	1541	100.0
		Localized	85	136	187	226	301	367	385	370	222	195	284	18.4
		Regional	57	84	109	132	163	219	228	258	325	411	432	28.0
		Distant	121	154	242	303	391	433	459	480	573	670	697	45.2
		Unknown	21	22	37	50	64	72	81	149	176	146	128	8.3
C43	Melanoma of the skin	Total	56	80	117	161	220	264	381	427	471	520	712	100.0
		Localized	35	53	74	127	182	218	327	365	298	290	484	68.0
		Regional	8	11	15	16	16	19	16	14	16	22	36	5.0
		Distant	10	15	16	15	16	18	23	23	29	33	26	3.6
		Unknown	2	1	12	3	7	9	14	24	128	175	166	23.4
C61	Prostate	Total	689	871	1058	1282	1527	1718	1924	2439	2954	3527	4491	100.0
		Localized	407	581	664	865	1026	1148	1294	1608	1040	1587	2545	56.7
		Regional	31	31	40	73	65	64	61	104	116	234	806	17.9
		Distant	183	210	236	268	331	440	483	387	401	414	353	7.9
		Unknown	69	49	118	76	105	66	87	340	1396	1293	787	17.5
C62	Testis	Total	55	68	78	85	115	152	170	208	246	258	300	100.0
		Localized	37	44	50	46	63	84	115	142	136	143	213	71.1
		Regional	3	4	7	17	26	42	29	35	37	47	38	12.5
		Distant	13	19	18	21	24	24	24	24	33	27	31	10.3
		Unknown	2	1	3	1	2	2	2	7	40	40	18	6.1
C64	Kidney except renal pelvis	Total	106	129	159	177	211	253	257	270	294	357	452	100.0
		Localized	55	70	74	75	81	113	120	137	111	164	262	57.9
		Regional	10	17	23	39	50	50	44	39	43	39	43	9.6
		Distant	36	39	56	60	75	79	81	66	75	84	87	19.2
		Unknown	5	3	5	3	5	10	13	28	65	70	61	13.4
C66-68	Bladder, ureter, urethra	Total	205	293	339	478	582	714	763	834	810	909	971	100.0
		Localized	164	248	270	385	487	617	671	725	438	500	704	72.6
		Regional	16	24	35	55	52	58	50	40	42	75	71	7.3
		Distant	17	16	16	28	32	25	30	24	34	35	37	3.8
		Unknown	8	5	18	10	12	14	12	45	295	299	158	16.3
C70-72, D32-33	Central nervous system	Total	125	136	150	169	195	221	245	284	342	417	464	100.0
		Non-malignant	33	36	44	47	60	70	75	117	150	211	228	49.2
		Malignant	92	100	106	122	135	152	170	167	192	206	236	50.8
C73	Thyroid gland	Total	20	26	35	36	44	46	52	42	49	61	72	100.0
		Localized	6	5	13	17	21	20	28	19	20	19	28	39.3
		Regional	10	13	13	14	16	17	15	12	17	26	33	46.3
		Distant	3	8	8	5	7	8	8	8	7	7	7	9.4
		Unknown	1	0	1	0	0	1	1	2	6	8	4	5.0

Table 17b. Average annual number of new cases for selected primary sites, stage and period of diagnosis, 1957-2011**FEMALES**

ICD10	Site	Stage	Period											2007- 2011
			1957- 61	1962- 66	1967- 71	1972- 76	1977- 81	1982- 86	1987- 91	1992- 96	1997- 01	2002- 06	2007- 11	
C00-14	Mouth, pharynx	Total	60	69	73	81	90	105	109	132	130	156	189	100.0
		Localized	34	41	41	42	54	59	71	85	54	61	97	51.4
		Regional	19	23	26	29	29	40	32	36	40	60	69	36.8
		Distant	3	3	3	4	3	3	4	4	6	5	5	2.7
		Unknown	4	2	3	5	4	3	1	7	30	31	17	9.1
C15	Oesophagus	Total	23	32	28	31	31	35	40	40	51	53	60	100.0
		Localized	14	21	17	15	17	19	19	23	12	13	23	38.6
		Regional	4	3	3	7	5	8	8	6	8	14	13	22.5
		Distant	3	4	6	6	7	5	10	6	11	12	12	19.8
		Unknown	2	3	3	3	2	2	2	4	20	14	11	19.1
C16	Stomach	Total	581	532	492	419	407	388	341	296	241	230	203	100.0
		Localized	159	156	110	103	117	135	127	106	47	43	64	31.4
		Regional	97	98	85	89	104	97	87	72	62	65	44	21.6
		Distant	240	218	233	193	150	127	113	94	79	82	69	33.8
		Unknown	85	60	64	34	36	29	14	24	54	41	27	13.2
C18	Colon	Total	286	359	438	514	693	787	888	1018	1116	1208	1315	100.0
		Localized	111	148	166	181	193	227	284	289	210	226	226	17.2
		Regional	72	84	117	154	277	337	345	427	545	610	724	55.1
		Distant	80	108	132	158	191	190	220	235	258	288	298	22.7
		Unknown	22	19	23	20	32	33	39	67	103	84	66	5.0
C19-21	Rectum, rectosigmoid, anus	Total	127	149	229	275	381	431	451	491	513	545	561	100.0
		Localized	60	73	104	129	174	194	218	220	161	153	164	29.1
		Regional	32	38	62	81	123	147	144	168	191	225	271	48.2
		Distant	27	30	53	57	74	77	81	92	97	97	100	17.7
		Unknown	8	7	10	8	11	12	14	21	69	70	28	4.9
C22	Liver	Total	12	13	23	30	36	44	42	42	47	46	67	100.0
		Localized	5	6	10	16	17	19	23	19	11	13	25	37.8
		Regional	0	1	1	1	1	3	2	2	5	6	9	12.9
		Distant	5	6	10	11	14	14	10	8	11	8	15	22.8
		Unknown	2	1	2	1	4	7	7	13	19	19	18	26.4
C23-24	Gallbladder, bile ducts	Total	49	52	59	56	73	82	75	73	80	78	88	100.0
		Localized	14	15	15	16	22	25	26	20	10	15	16	17.8
		Regional	7	8	8	11	11	21	14	12	14	18	24	27.4
		Distant	25	27	35	26	36	29	23	22	28	26	32	36.1
		Unknown	3	2	2	3	4	7	12	19	27	18	16	18.7
C25	Pancreas	Total	105	124	167	189	224	275	282	311	325	339	360	100.0
		Localized	31	41	42	43	44	61	75	54	26	30	45	12.6
		Regional	9	12	19	24	30	35	29	32	40	67	73	20.2
		Distant	54	63	89	103	125	138	133	129	144	168	174	48.3
		Unknown	10	8	18	19	25	41	46	95	115	74	68	18.9
C33-34	Lung, trachea	Total	73	87	143	173	228	322	453	581	726	929	1179	100.0
		Localized	17	28	46	51	68	89	139	164	104	139	257	21.8
		Regional	10	10	20	27	31	59	85	118	166	244	301	25.6
		Distant	38	43	65	84	108	149	197	224	338	448	523	44.3
		Unknown	9	5	11	11	20	26	33	75	117	97	97	8.3
C43	Melanoma of the skin	Total	60	93	128	200	265	361	443	489	512	581	730	100.0
		Localized	48	76	92	177	237	323	410	437	340	345	523	71.6
		Regional	6	7	8	9	9	16	12	10	11	18	25	3.5
		Distant	5	8	13	11	13	13	11	17	22	20	14	2.0
		Unknown	1	3	16	3	6	9	11	25	140	199	168	23.0
C50	Breast	Total	942	1072	1236	1431	1563	1756	1863	2099	2491	2763	2842	100.0
		Localized	1	5	5	21	25	33	39	16	21	17	19	0.7
		I	414	506	590	710	810	858	751	581	783	1122	1176	41.4
		II	356	348	385	423	378	499	693	774	931	1136	1095	38.5
		III	49	93	78	106	59	92	109	88	85	89	162	5.7
		IV	94	97	120	111	80	95	125	132	126	127	101	3.6
C53	Cervix uteri	Total	348	361	404	442	400	354	346	344	311	299	300	100.0
		I	151	150	207	243	225	204	195	215	181	172	177	59.1
		II	116	135	124	112	86	71	72	61	63	56	61	20.3
		III	50	48	47	59	55	53	47	36	36	31	23	7.7
		IV	25	22	19	24	23	22	28	27	25	26	31	10.2
		Unknown	7	6	7	3	10	3	5	5	6	13	8	2.6
C54	Corpus uteri	Total	181	222	268	326	370	390	412	468	528	649	721	100.0
		Localized	145	184	212	271	285	296	309	350	342	411	536	74.4
		Regional	9	13	15	24	45	46	48	47	59	79	58	8.0
		Distant	19	23	36	29	32	39	50	60	70	84	95	13.1
		Unknown	8	2	6	3	8	9	6	11	58	75	32	4.5
C56	Ovary	Total	269	297	358	340	379	433	450	461	462	462	453	100.0
		Localized	86	98	121	135	101	117	128	118	91	83	91	20.1
		Regional	23	14	22	20	37	33	20	16	12	13	15	3.3
		Distant	149	176	208	182	236	270	287	298	305	317	303	66.9
		Unknown	12	8	8	4	5	13	16	30	54	49	44	9.6
C64	Kidney except renal pelvis	Total	78	90	117	118	138	157	182	191	190	217	250	100.0
		Localized	43	52	62	60	64	70	93	102	73	101	146	58.5
		Regional	9	9	16	23	28	34	26	22	20	23	21	8.2
		Distant	22	27	35	31	43	46	49	44	50	41	42	16.9
		Unknown	4	2	4	4	4	8	15	23	47	52	41	16.4
C66-68	Bladder, ureter, urethra	Total	117	130	145	194	225	255	257	278	302	338	348	100.0
		Localized	74	84	95	134	165	206	216	221	143	173	243	69.8
		Regional	13	22	20	25	27	26	17	17	18	32	29	8.3
		Distant	20	18	19	24	19	15	16	15	24	22	20	5.7
		Unknown	11	7	10	10	14	9	8	25	116	112	56	16.2
C70-72, D32-33	Central nervous system	Total	111	119	131	151	186	225	261	310	421	574	573	100.0
		Non-malignant	46	56	57	61	83	104	133	175	271	403	399	69.7
		Malignant	66	62	73	90	104	121	128	135	150	171	174	30.3
C73	Thyroid gland	Total	53	61	91	111	132	143	136	137	124	153	188	100.0
		Localized	21	29	49	67	84	97	90	85	57	72	105	55.7
		Regional	17	22	27	28	32	33	33	37	38	47	60	32.0
		Distant	12	8	10	14	13	10	9	10	11	10	7	3.6
		Unknown	3	1	4	2	3	3	4	4	18	24	16	8.6

Table 18a. Age-standardised (world) incidence rates per 100 000 person-years for selected primary sites, stage and period of diagnosis, 1957-2011

			Period										
ICD10	Site	Stage	1957-61	1962-66	1967-71	1972-76	1977-81	1982-86	1987-91	1992-96	1997-01	2002-06	2007-11
C00-14	Mouth, pharynx	Total	7.8	7.4	7.8	8.4	7.9	8.4	8.2	8.4	8.0	7.6	7.9
		Localized	5.4	5.2	5.0	5.6	5.0	5.2	4.9	4.4	3.0	2.4	3.3
		Regional	1.9	1.7	1.7	2.3	2.4	3.0	2.8	3.1	3.2	3.6	3.8
		Distant	0.2	0.2	0.4	0.4	0.3	0.2	0.3	0.4	0.4	0.3	0.3
		Unknown	0.4	0.2	0.7	0.2	0.2	0.1	0.2	0.4	1.5	1.2	0.5
C15	Oesophagus	Total	3.2	2.9	2.7	2.7	2.7	2.6	3.2	3.2	3.4	3.7	3.9
		Localized	2.0	1.7	1.4	1.2	1.3	1.1	1.2	1.3	0.7	0.8	1.3
		Regional	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.9	0.8	1.1	1.1
		Distant	0.6	0.7	0.6	0.7	0.7	0.7	1.1	0.8	1.0	1.2	1.1
		Unknown	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.3	0.9	0.7	0.4
C16	Stomach	Total	34.5	29.4	25.7	21.1	18.2	16.5	14.2	12.0	9.7	7.9	6.9
		Localized	9.4	8.0	6.2	5.3	5.2	5.0	4.7	3.6	1.6	1.4	1.9
		Regional	7.3	6.7	5.3	4.7	4.9	4.7	4.1	3.7	3.0	2.5	1.9
		Distant	15.0	13.0	11.4	9.8	7.1	6.0	4.9	3.9	3.5	2.9	2.3
		Unknown	2.8	1.7	2.8	1.3	1.0	0.7	0.5	0.8	1.6	1.0	0.7
C18	Colon	Total	10.1	11.6	12.8	13.5	16.7	19.6	21.7	23.1	25.0	25.5	26.5
		Localized	4.0	4.7	4.7	4.8	4.7	5.8	6.7	6.4	4.5	4.6	4.5
		Regional	2.8	2.8	3.1	3.9	6.9	8.1	8.2	9.6	12.1	12.7	14.1
		Distant	2.8	3.7	4.4	4.3	4.6	5.1	6.1	6.3	6.7	6.7	7.1
		Unknown	0.5	0.4	0.6	0.4	0.6	0.5	0.7	0.8	1.7	1.5	0.8
C19-21	Rectum, rectosigmoid, anus	Total	6.5	7.2	9.6	11.1	14.3	15.7	15.5	16.6	17.0	17.5	17.0
		Localized	3.2	3.5	4.3	5.2	6.5	6.9	6.5	6.9	5.1	4.6	4.2
		Regional	1.7	2.0	2.6	3.1	4.9	5.7	5.9	6.2	6.6	7.4	9.0
		Distant	1.2	1.6	2.1	2.5	2.6	2.9	2.9	3.1	3.6	3.6	3.2
		Unknown	0.5	0.2	0.5	0.3	0.3	0.3	0.3	0.4	1.8	1.8	0.6
C22	Liver	Total	1.0	0.9	1.5	1.8	1.6	2.2	1.8	1.7	2.0	2.2	2.7
		Localized	0.5	0.4	0.7	0.9	0.8	1.1	1.1	1.0	0.7	0.7	1.2
		Regional	0.0	0.0	0.0	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.3
		Distant	0.4	0.4	0.6	0.7	0.5	0.7	0.4	0.3	0.5	0.5	0.6
		Unknown	0.1	0.0	0.2	0.1	0.2	0.2	0.3	0.3	0.6	0.7	0.5
C23-24	Gallbladder, bile ducts	Total	0.9	0.8	0.9	0.9	1.1	1.3	1.4	1.5	1.6	1.6	1.6
		Localized	0.3	0.3	0.3	0.2	0.3	0.5	0.5	0.4	0.3	0.3	0.3
		Regional	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.6	0.6
		Distant	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.5
		Unknown	0.1	0.0	0.1	0.0	0.1	0.1	0.2	0.3	0.5	0.3	0.2
C25	Pancreas	Total	6.2	7.0	7.8	8.3	8.3	8.6	8.3	7.7	7.3	7.8	7.8
		Localized	1.8	2.0	1.8	1.6	1.3	1.7	1.6	1.2	0.5	0.6	0.7
		Regional	0.7	0.8	1.0	1.1	1.1	1.2	0.8	1.1	1.1	1.9	1.7
		Distant	3.2	3.8	4.3	4.9	5.1	4.6	4.7	3.8	3.8	4.4	4.4
		Unknown	0.5	0.3	0.6	0.7	0.9	1.1	1.1	1.7	1.9	1.1	0.9
C33-34	Lung, trachea	Total	12.4	15.7	21.1	24.5	29.9	34.0	34.9	37.1	36.2	36.7	35.5
		Localized	3.7	5.3	6.8	7.6	9.3	10.8	10.9	10.6	6.2	4.9	6.5
		Regional	2.5	3.4	4.1	4.8	5.8	7.2	7.3	7.9	9.1	10.6	10.0
		Distant	5.3	6.1	8.9	10.6	12.9	14.1	14.5	14.8	16.6	17.7	16.4
		Unknown	0.9	0.9	1.2	1.6	1.8	1.9	2.2	3.8	4.3	3.4	2.7
C43	Melanoma of the skin	Total	2.6	3.6	5.2	6.8	8.9	10.1	14.0	14.5	14.9	15.1	18.3
		Localized	1.6	2.4	3.3	5.4	7.4	8.4	12.0	12.5	9.6	8.6	12.5
		Regional	0.4	0.5	0.6	0.7	0.7	0.7	0.6	0.5	0.5	0.7	0.9
		Distant	0.5	0.7	0.7	0.6	0.6	0.7	0.8	0.8	0.9	0.9	0.6
		Unknown	0.1	0.0	0.6	0.1	0.3	0.3	0.5	0.7	3.9	4.9	4.4
C61	Prostate	Total	26.6	30.3	33.8	38.0	41.7	43.9	47.3	60.5	77.6	89.5	106.6
		Localized	15.6	20.1	21.2	25.4	27.9	29.1	31.3	39.6	29.1	42.6	62.6
		Regional	1.2	1.1	1.3	2.2	1.8	1.8	1.9	3.5	3.8	6.4	18.7
		Distant	7.1	7.4	7.6	8.1	9.2	11.4	12.1	9.4	9.5	9.2	7.1
		Unknown	2.6	1.7	3.7	2.2	2.8	1.7	1.9	8.0	35.3	31.3	18.2
C62	Testis	Total	3.0	3.7	4.1	4.3	5.6	6.9	7.4	8.7	10.4	10.6	11.7
		Localized	2.0	2.4	2.7	2.3	3.1	3.8	5.0	5.9	5.7	5.9	8.3
		Regional	0.1	0.2	0.4	0.8	1.2	2.0	1.3	1.5	1.6	1.9	1.5
		Distant	0.7	1.1	1.0	1.1	1.1	1.1	1.1	1.0	1.4	1.2	1.2
		Unknown	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.3	1.6	1.6	0.7
C64	Kidney except renal pelvis	Total	4.7	5.1	5.9	6.3	7.2	8.4	7.9	8.1	8.7	9.9	11.5
		Localized	2.5	2.8	2.8	2.7	2.8	3.8	3.8	4.2	3.5	4.7	6.8
		Regional	0.4	0.7	0.9	1.4	1.7	1.7	1.4	1.2	1.3	1.0	1.1
		Distant	1.5	1.6	2.1	2.1	2.5	2.6	2.5	2.0	2.1	2.3	2.1
		Unknown	0.2	0.1	0.2	0.1	0.2	0.3	0.3	0.7	1.8	1.9	1.5
C66-68	Bladder, ureter, urethra	Total	8.6	11.1	11.8	15.9	17.9	21.0	21.4	22.8	21.0	21.9	21.5
		Localized	6.9	9.4	9.5	12.9	15.1	18.2	18.8	20.0	11.7	12.1	15.5
		Regional	0.7	0.9	1.2	1.8	1.5	1.7	1.4	1.1	1.1	1.9	1.7
		Distant	0.7	0.6	0.5	0.9	0.9	0.7	0.9	0.6	0.9	0.9	0.8
		Unknown	0.3	0.2	0.6	0.3	0.3	0.4	0.3	1.1	7.3	7.0	3.5
C70-72, D32-33	Central nervous system	Total	6.3	6.5	7.0	7.4	8.3	9.0	9.6	10.7	12.2	14.1	14.2
		Non-malignant	1.6	1.7	2.0	1.9	2.4	2.6	2.6	4.2	5.2	6.9	6.9
		Malignant	4.7	4.8	5.0	5.4	5.9	6.4	6.9	6.5	7.0	7.1	7.3
C73	Thyroid gland	Total	0.9	1.1	1.4	1.4	1.6	1.6	1.9	1.5	1.7	1.9	2.0
		Localized	0.3	0.2	0.5	0.7	0.8	0.7	1.0	0.7	0.7	0.6	0.8
		Regional	0.4	0.6	0.5	0.6	0.6	0.6	0.6	0.5	0.6	0.8	1.0
		Distant	0.1	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2
		Unknown	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1

Table 18b. Age-standardised (world) incidence rates per 100 000 person-years for selected primary sites, stage and period of diagnosis, 1957-2011**FEMALES**

			Period										
ICD10	Site	Stage	1957-61	1962-66	1967-71	1972-76	1977-81	1982-86	1987-91	1992-96	1997-01	2002-06	2007-11
C00-14	Mouth, pharynx	Total	2.2	2.3	2.2	2.3	2.4	2.7	2.8	3.4	3.3	3.8	4.2
		Localized	1.3	1.4	1.3	1.2	1.5	1.5	1.8	2.2	1.4	1.5	2.1
		Regional	0.7	0.7	0.8	0.8	0.8	1.1	0.9	0.9	1.0	1.5	1.6
		Distant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
		Unknown	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.7	0.7	0.3
C15	Oesophagus	Total	0.8	0.9	0.7	0.7	0.7	0.7	0.9	0.8	1.0	1.0	1.1
		Localized	0.5	0.6	0.4	0.3	0.3	0.4	0.4	0.4	0.2	0.2	0.4
		Regional	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.3
		Distant	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.3	0.3	0.2
		Unknown	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.3	0.2	0.2
C16	Stomach	Total	19.8	16.4	13.6	10.7	9.3	8.3	6.9	5.6	4.6	4.3	3.5
		Localized	5.1	4.6	2.8	2.5	2.5	2.7	2.4	1.7	0.9	0.8	1.1
		Regional	3.6	3.3	2.5	2.4	2.6	2.2	2.0	1.5	1.3	1.3	0.7
		Distant	8.5	6.9	6.8	5.2	3.5	3.0	2.3	2.1	1.7	1.7	1.3
		Unknown	2.5	1.6	1.5	0.7	0.7	0.5	0.2	0.3	0.7	0.6	0.4
C18	Colon	Total	10.1	11.4	12.7	13.9	17.1	17.9	19.3	21.6	22.5	23.3	23.7
		Localized	3.9	4.6	4.8	4.9	4.7	5.1	6.0	6.1	4.3	4.3	3.9
		Regional	2.6	2.8	3.5	4.3	7.1	7.8	7.7	9.2	11.1	11.8	13.2
		Distant	2.9	3.5	3.9	4.3	4.8	4.4	5.1	5.4	5.5	5.9	5.8
		Unknown	0.7	0.5	0.6	0.5	0.6	0.5	0.6	0.9	1.6	1.3	0.7
C19-21	Rectum, rectosigmoid, anus	Total	4.5	4.9	6.8	7.7	9.8	10.4	10.3	11.1	11.4	11.6	11.5
		Localized	2.1	2.4	3.1	3.5	4.5	4.7	4.9	4.9	3.8	3.3	3.3
		Regional	1.2	1.3	1.9	2.4	3.2	3.6	3.5	4.1	4.4	5.0	5.7
		Distant	1.0	1.0	1.6	1.6	1.9	1.9	1.7	1.8	2.1	2.2	2.1
		Unknown	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	1.2	1.2	0.4
C22	Liver	Total	0.5	0.5	0.7	0.8	0.9	1.1	0.9	1.0	1.1	1.0	1.3
		Localized	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.3	0.3	0.5
		Regional	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2
		Distant	0.2	0.2	0.3	0.3	0.4	0.4	0.3	0.2	0.3	0.2	0.3
		Unknown	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.4	0.4	0.3
C23-24	Gallbladder, bile ducts	Total	1.7	1.6	1.6	1.3	1.6	1.7	1.5	1.5	1.6	1.4	1.6
		Localized	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.2	0.3	0.3
		Regional	0.3	0.3	0.2	0.3	0.2	0.5	0.3	0.3	0.3	0.4	0.5
		Distant	0.9	0.9	1.0	0.6	0.8	0.5	0.5	0.5	0.6	0.5	0.6
		Unknown	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.2	0.2
C25	Pancreas	Total	3.7	3.9	4.7	4.9	5.2	5.8	5.7	6.1	6.0	6.3	6.3
		Localized	1.0	1.2	1.1	1.0	1.0	1.2	1.4	1.0	0.4	0.5	0.8
		Regional	0.3	0.4	0.6	0.7	0.7	0.8	0.7	0.7	0.9	1.4	1.4
		Distant	2.0	2.1	2.5	2.7	3.1	3.1	2.9	2.9	3.0	3.4	3.4
		Unknown	0.4	0.2	0.5	0.5	0.5	0.8	0.7	1.4	1.7	1.0	0.8
C33-34	Lung, trachea	Total	2.7	2.9	4.5	5.3	6.8	9.1	12.5	16.0	19.2	22.3	25.3
		Localized	0.6	0.9	1.5	1.5	2.0	2.3	3.6	4.4	2.8	3.4	5.6
		Regional	0.4	0.4	0.7	0.9	1.0	1.9	2.5	3.4	4.6	5.9	6.6
		Distant	1.4	1.5	2.1	2.6	3.3	4.4	5.8	6.6	9.3	11.1	11.6
		Unknown	0.3	0.2	0.3	0.3	0.5	0.6	0.7	1.6	2.5	2.0	1.6
C43	Melanoma of the skin	Total	2.6	4.1	5.5	8.3	10.2	13.1	15.7	16.0	15.7	16.6	18.7
		Localized	2.1	3.4	4.1	7.5	9.3	12.0	14.8	14.5	10.8	10.0	13.5
		Regional	0.3	0.3	0.4	0.4	0.3	0.4	0.3	0.3	0.2	0.4	0.5
		Distant	0.2	0.3	0.5	0.4	0.4	0.4	0.3	0.5	0.5	0.5	0.3
		Unknown	0.0	0.1	0.6	0.1	0.2	0.3	0.3	0.8	4.1	5.6	4.4
C50	Breast	Total	37.8	40.4	44.0	48.5	50.2	53.3	54.0	60.8	72.0	76.5	73.8
		Pagets stage 0	0.0	0.0	0.2	0.7	0.7	1.0	1.1	0.4	0.5	0.4	0.5
		I	16.6	19.0	20.9	23.7	25.5	25.3	21.6	17.3	24.5	33.3	32.4
		II	14.8	13.8	14.4	15.2	12.6	15.8	21.4	24.2	28.2	32.7	29.3
		III	1.8	3.2	2.5	3.2	1.4	2.2	3.0	2.1	2.2	2.1	4.1
		IV	3.6	3.4	4.0	3.4	2.3	2.7	3.3	3.8	3.3	3.0	2.3
C53	Cervix uteri	Unknown	1.1	1.0	2.0	2.2	7.6	6.4	3.6	13.0	13.2	5.0	5.2
		Total	15.5	15.8	17.4	18.7	16.2	13.3	12.4	11.9	10.4	9.6	9.5
		I	7.0	7.0	9.7	11.4	10.1	8.4	7.5	8.0	6.6	6.1	6.1
		II	5.1	5.8	5.0	4.3	3.1	2.6	2.4	2.0	1.9	1.6	1.8
		III	2.1	1.9	1.7	2.1	1.9	1.6	1.5	1.1	1.0	0.8	0.6
C54	Corpus uteri	IV	1.0	0.8	0.7	0.8	0.7	0.6	0.9	0.7	0.7	0.7	0.8
		Unknown	0.3	0.2	0.2	0.1	0.3	0.1	0.2	0.1	0.2	0.4	0.2
		Total	7.3	8.3	9.4	11.0	12.1	12.3	12.5	13.5	14.1	16.1	16.7
		Localized	5.9	7.0	7.5	9.3	9.6	9.6	9.7	10.3	9.5	10.6	12.6
		Regional	0.4	0.4	0.5	0.7	1.3	1.3	1.4	1.3	1.5	1.9	1.3
C56	Ovary	Distant	0.7	0.8	1.2	0.9	0.9	1.1	1.4	1.7	1.8	2.0	2.1
		Unknown	0.3	0.1	0.2	0.1	0.2	0.2	0.1	0.2	1.4	1.6	0.7
		Total	11.4	11.4	13.3	12.2	13.2	14.0	13.7	13.6	12.9	11.9	10.9
		Localized	3.9	3.9	4.7	5.2	3.7	4.1	4.2	3.9	3.0	2.6	2.6
		Regional	0.9	0.5	0.8	0.7	1.2	1.1	0.7	0.4	0.3	0.3	0.4
C64	Kidney except renal pelvis	Distant	6.1	6.6	7.5	6.2	8.1	8.4	8.5	8.7	8.3	8.0	7.2
		Unknown	0.5	0.3	0.3	0.1	0.2	0.3	0.3	0.6	1.3	1.1	0.7
		Total	3.1	3.2	3.7	3.7	4.0	4.0	4.7	4.7	4.5	5.0	5.6
		Localized	1.7	1.9	2.0	1.9	1.9	1.9	2.5	2.8	2.0	2.6	3.5
		Regional	0.4	0.3	0.6	0.7	0.8	0.9	0.8	0.6	0.5	0.5	0.5
C66-68	Bladder, ureter, urethra	Distant	0.8	1.0	1.1	0.9	1.2	1.1	1.2	1.0	1.1	0.9	0.8
		Unknown	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	1.0	1.0	0.8
		Total	4.2	4.1	4.1	5.0	5.4	5.6	5.7	5.8	6.1	6.4	6.4
		Localized	2.6	2.6	2.8	3.5	4.0	4.6	4.8	4.7	3.1	3.5	4.5
		Regional	0.5	0.7	0.6	0.7	0.6	0.6	0.4	0.4	0.4	0.6	0.6
C70-72, D32-33	Central nervous system	Distant	0.7	0.6	0.5	0.6	0.5	0.3	0.3	0.3	0.5	0.4	0.4
		Unknown	0.3	0.2	0.3	0.2	0.3	0.2	0.1	0.4	2.1	1.9	1.0
		Total	5.3	5.2	5.8	6.3	7.3	8.5	9.4	10.6	13.3	17.3	16.4
		Non-malignant	2.1	2.3	2.3	2.4	3.1	3.6	4.4	5.6	8.1	11.8	11.0
		Malignant	3.3	2.9	3.4	3.9	4.2	4.9	4.9	5.0	5.2	5.5	5.4
C73	Thyroid gland	Total	2.1	2.5	3.6	4.3	5.0	5.2	4.8	4.7	4.1	4.8	5.8
		Localized	0.9	1.2	2.0	2.8	3.4	3.7	3.3	3.1	2.1	2.4	3.3
		Regional	0.7	1.0	1.1	1.1	1.1	1.1	1.1	1.3	1.3	1.5	1.9
		Distant	0.4	0.3	0.3	0.4	0.3	0.2	0.2	0.3	0.2	0.2	0.1
		Unknown	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.5	0.7	0.5

Mortality

There were 10 970 deaths from cancer in Norway in 2011, of which 5 885 were among men and 5 085 among women (Table 19). Cancers of the lung, colon, rectum, prostate and female breast account for half of the total cancer mortality. As previously, lung cancer ranked first in men in terms of cancer mortality numbers, responsible for 1 267 deaths, followed by prostate cancer (1 052 deaths) colon cancer (535 deaths) and pancreas cancer (314 deaths).

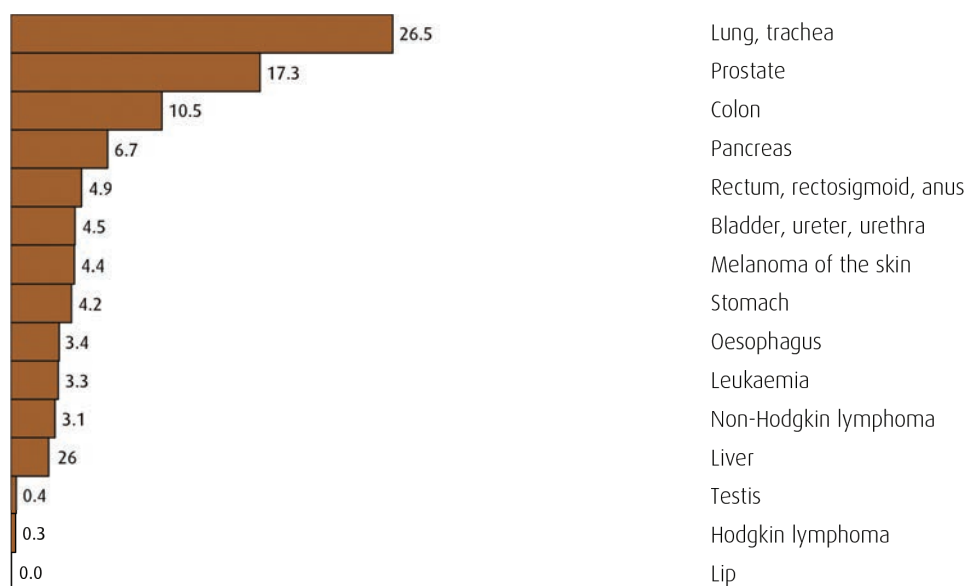
Lung cancer mortality also ranks highest among women (917 deaths). Colon cancer (621 deaths) and breast cancer (605 deaths) represent the second and third most frequent cause of cancer deaths among women.

Figure 8 shows the distribution of age-standardised mortality rates for selected cancer sites. There is at least a 100-fold variation in rates across these cancers. Given the very poor prognosis for pancreatic cancer, it ranks among the top five causes of cancer deaths among both men and women, even though pancreatic cancer is a relatively rare cancer.

The Trends section in this report examines the mortality time trends in relation to those of incidence and survival for 23 selected cancer sites.

Figure 8. Age-standardised (world) mortality rates per 100 000 person-years for selected cancers in Norway, 2011 (Source: Statistics Norway)

Males



Females

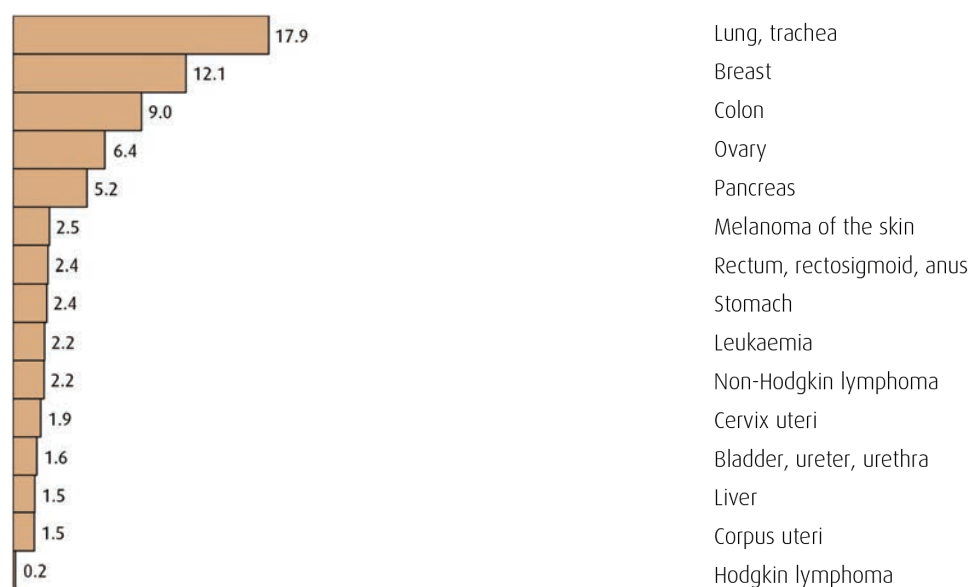


Table 19. Number of cancer deaths in Norway by primary site and sex, 2011 (Source: Statistics Norway)

ICD10	Site	Males	Females	Total
C00-96	All sites	5885	5085	10970
C00-14	Mouth, pharynx	94	59	153
C00	Lip	2		2
C01-02	Tongue	30	13	43
C03-06	Mouth, other	22	21	43
C07-08	Salivary glands	7	9	16
C09-14	Pharynx	33	16	49
C15-26	Digestive organs	1652	1537	3189
C15	Oesophagus	145	39	184
C16	Stomach	204	158	362
C17	Small intestine	32	29	61
C18	Colon	535	621	1156
C19-21	Rectum, rectosigmoid, anus	238	160	398
C22	Liver	118	92	210
C23-24	Gallbladder, bile ducts	28	55	83
C25	Pancreas	314	332	646
C26	Other digestive organs	38	51	89
C30-34, C38	Respiratory organs	1310	931	2241
C30-31	Nose, sinuses	5	2	7
C32	Larynx, epiglottis	34	10	44
C33-34	Lung, trachea	1267	917	2184
C38	Mediastinum, pleura (non-mesothelioma)	4	2	6
C40-41	Bone	13	10	23
C43	Melanoma of the skin	196	129	325
C44	Skin, non-melanoma	23	14	37
C45	Mesothelioma	65	8	73
C46	Kaposi's sarcoma	2		2
C47	Autonomic nervous system	1	2	3
C48-49	Soft tissues	36	35	71
C50	Breast	7	605	612
C51-58	Female genital organs		593	593
C53	Cervix uteri		66	66
C54	Corpus uteri		92	92
C55	Uterus, other		66	66
C56	Ovary		326	326
C51-52, C57	Other female genital		43	43
C58	Placenta			
C60-63	Male genital organs	1070		1070
C61	Prostate	1052		1052
C62	Testis	11		11
C60, C63	Other male genital	7		7
C64-68	Urinary organs	439	245	684
C64	Kidney excl. renal pelvis	183	101	284
C65	Renal pelvis	6	4	10
C66-68	Bladder, ureter, urethra	250	140	390
C69	Eye	2	4	6
C70-72, D32-33	Central nervous system	217	161	378
C73	Thyroid gland	13	22	35
C37, C74-75	Other endocrine glands	7	8	15
C39, C76, C80	Other or unspecified	209	271	480
C81-96	Lymphoid and haematopoietic tissue	529	451	980
C81	Hodgkin lymphoma	17	7	24
C82-85, C96	Non-Hodgkin lymphoma	162	159	321
C88	Malignant immunoproliferative diseases	12	6	18
C90	Multiple myeloma	135	99	234
C91-95, D45-47	Leukaemia	202	180	382

Survival

Long-term estimates of survival are becoming increasingly relevant as life expectancy amongst cancer patients increases and cancer care continues to advance (Brenner & Hakulinen, 2002). Given that cancer patients survive longer, there is a need to communicate information not only about prognosis at the time of diagnosis, but for a period of time thereafter, to those who survive their cancer diagnosis (Janssen-Heijnen & al, 2007). Figures 9-A to 9-X depict these two aspects of cancer survival in Norway for all cancers combined and for 23 specific cancer types.

Relative survival estimates are presented by sex and age, 1 to 15 years after diagnosis, with age strata determined cancer specifically according to relevant biological and/or clinical criteria.

Table 20 provides the five-year relative survival estimates over the last four decades by stage, cancer site and sex. While the stage-specific count of cases by five-year period of diagnosis in Tables 17 a and b are not equivalent to the size of patient groups used in the survival calculations, the underlying numbers do provide a reasonable indication of the absolute number of patients involved in the survival analyses at different time periods and their relative distribution. Table 21 gives the 1-, 5-, 10- and 15-year relative survival estimates (with 95% confidence intervals) for the follow-up period 2009-2011 by cancer site and sex.

For some sites, the cumulative survival curves tend to level off a certain number of years after diagnosis, indicating that from this point forward, the cancer patient group has a similar mortality to the group without cancer, or in other words, statistically, these patients appear to be “cured” (Lambert, 2007). This concept of statistical “cure” involves attributes of survival observed among patients as a group, and should be distinguished from clinical cure, as is determined on the basis of a lack of specific symptoms in an individual.

Estimates of five-year relative survival conditional on being alive 1 to 10 years after diagnosis are included in the sex-specific figures, and better quantify the prognosis of cancer patients at time points beyond the initial diagnosis (Figure 9-A to 9-X, dashed lines). When conditional five-year relative survival reaches beyond 90-95%, we usually say that there is little or no excess mortality among the cancer patients, with mortality equivalent to that shown in the general population, analogous to the notion of statistical cure that may be observed in the long-term relative survival estimates.

The overall profile of the sex- and age-specific survival of all cancer patients 1 to 15 years after diagnosis in Norway is presented in Figure 9-A. The levelling-off of the five-year relative survival occurs some 8 to 10 years after diagnosis, while the attainment of five-year conditional relative survival estimates of 90-95% is reached in patients alive 3-5 years after diagnosis (dashed lines). As was mentioned in the Trends section, the combined-cancer estimates are an aggregate of many different cancer types with different diagnostic and treatment possibilities. Survival estimates will be particularly influenced by PSA testing for prostate cancer and mammographic screening for female breast cancer.

The cumulative five-year relative survival described by cancer site, sex and age, and five-year conditional relative survival by site and age (Figures 9-B to 9-X) are fairly self-explanatory and highlight the wide variations in patient survival according to these three variables. The 90 percentage point difference in five-year survival among patients with testicular cancer (Figure 9-Q) compared to patients with pancreatic cancer (Figure 9-I) strikingly illustrates the wide differential in prognosis according to the type of cancer diagnosed. Long-term survival following diagnosis of melanoma and cancers of the oral cavity, central nervous system and thyroid gland clearly varies in men and women. This may be due to biological or anatomical differences or may relate to sex-specific differences in stage at presentation, subsite or histological type, as well as levels of co-morbidity.

The overall cancer survival tends to diminish with increasing age at diagnosis, yet the age-specific differences are rather narrow for colon cancer (Figure 9-E) relative to, for example, ovarian cancer (Figure 9-O) or leukaemia (Figure 9-X). For certain cancers, including breast and corpus uteri cancer, long-term survival among patients diagnosed under the age of 50 is lower than for patients diagnosed aged 50-59. This in part represents the diagnosis of more aggressive tumours in the younger age group, and, for the breast cancer, the impact of screening in the older group.

The figures also illustrate a positive aspect of cancer survival; cancer patients who are alive for a certain time after diagnosis show good prospects of surviving their cancer and being cured. In fact, for more than two-thirds of the cancer types diagnosed in Norway, the five-year conditional relative survival reaches 90% 2-5 years after diagnosis. In general terms, this means that survivors of these cancers will, within a few years of diagnosis, have mortality rates similar to that of the general population, and would be considered (statistically) cured. The extent to which survivors may be considered cured does however vary; five-year conditional survival from breast cancer reaches 90% 2 years after diagnosis

(Figure 9-L) and slowly increases to 94% 10 years from diagnosis. As is evident from the continual decline in long-term breast cancer survival by age however, the cancer represents a disease for which a certain proportion may be considered cured. However there remains a group of survivors with a persistent excess mortality. There are also cancers associated with particularly poor survival diagnosis, for which cure is not expected, including cancers of the oesophagus (Figure 9-C), liver (Figure 9-G) and pancreas (Figure 9-I).

In general, caution is required in interpreting cancer-specific incidence and survival according to stage, particularly given the time-varying proportion of staging recorded as unknown. A visual description of survival trends in colon, breast and prostate cancer by stage was provided in the Special Issue in Cancer in Norway 2007.

Table 20a. Five-year relative survival (period approach) by primary site, stage and period of follow up, 1972-2011**MALES**

ICD10	Site	Stage	Relative survival (%)							
			1972-76	1977-81	1982-86	1987-91	1992-96	1997-01	2002-06	2007-11
C00-96	All sites	Total	34.1	38.6	41.7	44.1	49.8	54.5	61.0	67.8
C00-14	Mouth, pharynx	Total	62.3	64.7	57.4	55.0	58.1	56.5	57.6	61.6
		Localized	82.1	83.8	78.8	73.4	79.2	79.8	83.3	77.8
		Regional	23.3	30.0	24.0	26.5	32.0	35.7	44.9	49.7
		Distant	5.8	-	-	9.9	10.6	11.4	12.9	14.9
		Unknown	-	-	-	-	59.4	62.3	55.5	78.3
C15	Oesophagus	Total	3.2	3.7	2.8	4.8	5.0	7.9	8.4	11.4
		Localized	4.8	3.9	4.0	7.2	7.2	21.5	22.7	27.2
		Regional	1.9	3.0	6.4	5.9	7.5	6.0	9.6	12.8
		Distant	0.0	0.8	0.0	0.8	0.3	2.0	1.0	0.0
		Unknown	-	-	-	0.0	-	4.7	8.1	7.2
C16	Stomach	Total	12.8	15.0	16.3	17.2	17.4	17.4	18.3	23.5
		Localized	40.1	38.7	37.4	35.7	34.4	58.0	52.1	51.6
		Regional	14.5	17.7	19.9	20.5	21.1	16.8	21.9	22.5
		Distant	1.5	1.0	1.1	0.7	0.5	1.4	1.2	2.2
		Unknown	4.0	3.7	2.0	8.2	4.7	9.5	15.7	38.4
C18	Colon	Total	37.8	42.9	46.8	47.0	49.9	52.2	56.4	60.6
		Localized	69.1	71.9	76.9	77.0	80.2	87.1	87.8	86.6
		Regional	42.2	51.4	56.4	56.8	59.1	66.2	70.5	76.8
		Distant	5.4	5.6	3.9	5.1	3.9	5.0	8.2	10.7
		Unknown	7.5	19.6	10.5	12.8	16.3	29.1	55.4	56.2
C19-21	Rectum, rectosigmoid, anus	Total	34.9	39.6	44.5	46.8	48.5	55.9	59.4	64.8
		Localized	58.1	60.6	65.5	67.3	69.3	81.4	85.6	81.6
		Regional	24.0	31.4	40.7	46.6	46.0	60.8	68.3	75.8
		Distant	3.9	3.7	3.5	2.3	4.3	6.2	10.3	15.8
		Unknown	-	22.1	22.9	39.5	27.5	39.1	55.8	50.7
C22	Liver	Total	0.4	1.5	0.9	1.9	4.1	3.7	7.8	12.8
		Localized	0.9	3.3	1.2	3.5	7.3	13.2	14.3	25.2
		Regional	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
		Distant	0.0	0.7	0.2	0.0	0.0	0.5	2.9	1.7
		Unknown	0.0	0.0	0.0	-	0.0	0.5	4.9	12.2
C23-24	Gallbladder, bile ducts	Total	4.6	6.6	7.1	10.7	7.5	11.5	14.2	14.9
		Localized	-	12.9	12.6	18.2	16.5	29.4	40.3	27.1
		Regional	-	11.7	9.3	18.9	17.3	22.8	18.3	18.4
		Distant	0.0	1.0	1.3	1.2	1.1	1.7	4.3	1.9
		Unknown	0.0	0.0	0.0	-	0.0	6.7	3.7	-
C25	Pancreas	Total	0.9	1.2	0.8	1.4	1.6	1.7	3.3	5.0
		Localized	4.5	4.4	1.3	3.4	2.3	5.2	20.9	17.6
		Regional	1.4	5.2	1.9	4.6	7.3	5.0	4.6	10.2
		Distant	0.1	0.2	0.4	0.2	0.5	0.7	1.2	1.7
		Unknown	0.5	0.7	1.9	2.8	0.8	1.2	3.1	5.4
C33-34	Lung, trachea	Total	7.7	7.5	7.6	7.5	7.7	8.3	9.2	12.1
		Localized	18.9	16.7	18.8	16.7	17.4	30.3	39.7	40.2
		Regional	9.9	10.9	8.7	10.7	10.1	9.2	10.7	15.5
		Distant	0.7	0.8	0.5	0.6	0.8	0.6	0.8	1.5
		Unknown	2.1	3.3	3.1	1.5	5.4	6.5	9.7	13.7
C43	Melanoma of the skin	Total	57.2	70.7	69.7	74.8	78.0	78.5	78.1	76.5
		Localized	66.2	80.1	78.5	83.3	85.2	86.3	90.0	83.1
		Regional	36.9	28.2	30.8	29.5	40.7	24.8	47.4	37.5
		Distant	8.9	14.1	2.1	5.8	11.7	8.8	7.4	7.8
		Unknown	-	-	69.1	40.3	48.7	76.9	74.8	78.5
C61	Prostate	Total	52.4	53.6	57.4	56.6	62.9	73.2	81.8	89.5
		Localized	66.1	67.1	73.3	70.2	74.3	85.2	96.3	97.6
		Regional	34.5	43.3	37.1	48.6	67.1	78.1	77.6	88.6
		Distant	17.7	19.8	19.6	23.9	23.6	23.6	27.8	34.2
		Unknown	48.7	33.2	41.7	49.4	58.5	78.3	82.9	90.2
C62	Testis	Total	67.8	80.5	92.9	94.0	96.7	95.6	96.5	97.5
		Localized	88.3	91.7	97.4	99.4	99.5	98.9	98.8	99.7
		Regional	72.7	87.2	95.2	92.8	98.9	96.9	97.1	96.6
		Distant	21.0	40.6	76.5	73.6	76.6	81.7	82.9	86.3
		Unknown	-	0.0	-	-	-	91.5	97.1	96.9
C64	Kidney except renal pelvis	Total	35.5	36.3	38.3	40.4	49.4	46.9	59.8	65.6
		Localized	61.8	72.2	66.6	69.6	72.6	76.7	85.0	85.1
		Regional	45.6	40.2	47.0	47.7	52.8	49.8	58.3	54.7
		Distant	6.1	4.3	3.4	5.4	6.7	3.9	8.7	10.5
		Unknown	-	-	-	-	28.8	41.8	64.1	77.4
C66-68	Bladder, ureter, urethra	Total	57.6	65.2	67.4	69.4	72.0	71.3	72.6	74.3
		Localized	68.1	74.4	75.3	75.5	77.8	81.9	84.1	83.2
		Regional	12.3	26.4	26.3	27.2	25.7	25.2	24.5	31.0
		Distant	5.3	3.3	0.0	6.7	5.1	4.4	3.4	5.9
		Unknown	40.2	28.9	29.7	60.9	48.9	68.2	71.7	75.3
C70-72, D32-33	Central nervous system	Total	24.3	33.5	36.1	40.1	46.2	53.9	58.9	61.5
		Non-malignant	46.5	57.9	73.6	72.4	81.6	92.3	93.6	93.4
		Malignant	16.2	23.7	22.6	27.6	28.2	27.5	26.8	30.3
C73	Thyroid gland	Total	76.7	77.8	78.5	77.2	78.2	78.5	89.1	83.1
		Localized	92.1	91.9	92.0	95.0	95.9	98.3	100.6	94.6
		Regional	79.0	79.8	90.1	81.7	85.7	80.8	93.7	88.0
		Distant	-	-	-	-	-	-	-	-
		Unknown	-	-	0.0	-	-	-	-	-
C81	Hodgkin lymphoma	Total	50.2	56.4	63.8	74.6	85.8	89.3	88.0	86.8
C82-85, C96	Non-Hodgkin lymphoma	Total	32.0	40.8	44.1	45.7	49.0	52.7	61.4	69.3
C91-95	Leukaemia	Total	15.3	23.4	26.3	32.4	42.6	44.9	55.6	61.4

'-': Not estimated due to few patients in the group (<50 patients at start of follow-up)

Table 20b Five-year relative survival (period approach) by primary site, stage and period of follow up, 1972-2011**FEMALES**

ICD10	Site	Stage	Relative survival (%)							
			1972-76	1977-81	1982-86	1987-91	1992-96	1997-01	2002-06	2007-11
C00-96	All sites	Total	47.3	50.0	52.9	54.4	58.3	61.6	65.4	69.1
C00-14	Mouth, pharynx	Total	56.4	59.8	60.4	58.1	65.6	60.0	65.7	71.1
		Localized	74.6	71.4	80.3	70.6	80.1	83.2	84.5	85.1
		Regional	36.4	42.4	33.4	39.9	43.5	33.7	52.1	53.4
		Distant	-	-	-	-	-	-	-	-
		Unknown	-	-	-	-	-	58.3	64.0	81.3
C15	Oesophagus	Total	3.7	6.8	9.3	7.6	10.5	6.7	9.5	12.7
		Localized	4.7	8.9	9.1	13.5	14.6	14.7	23.2	18.1
		Regional	-	-	-	-	-	-	6.2	20.3
		Distant	-	0.0	-	-	0.0	0.0	0.0	1.5
		Unknown	0.0	0.0	-	-	-	7.1	8.9	9.4
C16	Stomach	Total	11.3	13.8	19.9	19.6	21.3	21.7	21.6	24.1
		Localized	32.5	36.5	44.8	38.0	41.3	61.9	57.7	51.5
		Regional	14.3	16.3	20.9	23.2	24.5	29.0	22.8	26.5
		Distant	2.1	1.3	0.9	0.7	1.2	1.1	3.4	3.5
		Unknown	5.1	4.6	4.9	6.6	13.1	7.8	20.7	31.3
C18	Colon	Total	38.3	42.5	47.6	50.2	53.9	56.4	58.3	62.1
		Localized	69.5	71.1	77.1	79.8	84.7	88.3	90.2	90.0
		Regional	40.4	53.7	56.4	60.2	61.5	68.2	70.5	75.9
		Distant	5.3	3.1	4.2	4.7	5.3	7.9	8.3	13.2
		Unknown	27.0	17.4	11.6	15.1	19.0	40.7	56.6	40.6
C19-21	Rectum, rectosigmoid, anus	Total	39.9	44.3	48.4	50.6	55.6	59.2	64.6	67.9
		Localized	64.5	69.3	69.9	71.4	75.0	86.6	89.4	90.4
		Regional	26.5	35.6	43.0	47.9	55.5	61.6	69.6	74.2
		Distant	3.8	4.8	5.8	6.1	3.6	7.2	12.6	15.8
		Unknown	-	-	15.3	24.8	34.0	51.5	55.1	66.4
C22	Liver	Total	2.5	1.3	1.7	5.5	6.1	6.0	15.1	11.8
		Localized	5.4	5.3	3.7	10.6	9.1	16.3	30.4	20.6
		Regional	0.0	0.0	0.0	-	-	-	-	-
		Distant	0.5	0.0	0.0	-	-	-	-	2.5
		Unknown	0.0	0.0	0.0	-	0.0	4.3	11.9	15.0
C23-24	Gallbladder, bile ducts	Total	4.9	6.2	8.7	9.5	6.5	10.4	9.0	15.7
		Localized	17.2	23.4	20.7	19.3	17.4	29.4	20.4	36.9
		Regional	15.4	7.5	10.1	22.4	6.5	23.1	23.2	23.2
		Distant	0.0	0.0	0.7	0.0	0.0	0.3	0.2	1.9
		Unknown	0.0	0.0	-	1.5	6.2	4.4	4.1	-
C25	Pancreas	Total	0.7	0.8	1.6	1.6	2.3	2.2	2.9	4.5
		Localized	3.8	2.7	2.4	3.7	8.7	8.7	11.9	16.3
		Regional	0.9	1.3	6.4	5.6	5.3	3.8	3.6	6.8
		Distant	0.1	0.3	0.6	0.3	0.3	0.3	0.9	1.2
		Unknown	0.0	0.0	1.9	1.3	0.3	3.8	2.9	7.3
C33-34	Lung, trachea	Total	10.3	10.3	8.3	8.3	10.6	12.2	13.4	16.8
		Localized	27.5	29.2	23.4	18.7	26.7	44.4	52.8	50.5
		Regional	14.8	12.7	8.3	13.3	11.6	13.9	14.2	19.4
		Distant	1.2	0.6	0.8	0.6	1.2	1.8	1.7	2.3
		Unknown	5.8	6.5	8.2	7.5	3.6	9.1	17.0	19.2
C43	Melanoma of the skin	Total	79.3	83.5	84.8	88.0	89.4	89.2	87.9	89.2
		Localized	86.7	89.1	90.2	91.9	93.1	94.8	93.7	93.9
		Regional	45.9	36.0	42.5	42.5	52.1	54.2	57.5	49.8
		Distant	18.4	16.2	12.1	6.1	20.8	13.5	19.2	23.5
		Unknown	-	-	64.9	72.3	72.4	89.7	86.6	88.6
C50	Breast	Total	67.1	69.7	73.6	74.8	76.6	82.6	86.3	88.8
		Pageets stage 0	79.6	74.5	78.8	71.3	86.3	93.2	101.1	93.7
		I	84.6	85.3	86.7	90.4	92.3	96.5	98.1	98.9
		II	56.8	59.9	67.1	72.7	75.2	80.1	84.6	89.1
		III	44.3	50.6	57.5	50.8	50.8	59.7	66.3	72.2
		IV	14.7	10.0	18.6	15.4	19.9	18.2	16.4	23.4
		Unknown	71.3	61.5	57.2	62.1	77.4	85.5	84.3	67.6
C53	Cervix uteri	Total	70.0	71.5	68.3	66.6	71.0	71.8	77.4	77.6
		I	88.7	89.5	86.3	84.9	86.2	90.1	94.0	93.6
		II	65.0	63.6	59.8	59.5	59.2	58.3	70.1	72.3
		III	30.4	32.7	33.8	27.0	34.6	37.8	44.2	49.6
		IV	9.3	11.9	4.2	17.8	22.8	9.2	20.5	18.6
C54	Corpus uteri	Total	75.5	77.7	76.2	76.0	78.3	81.9	82.5	84.3
		Localized	82.6	86.2	86.4	87.1	86.5	93.0	92.6	93.4
		Regional	42.4	61.1	61.7	58.2	71.8	70.6	77.9	73.7
		Distant	25.4	19.2	23.5	24.5	35.1	39.2	34.7	42.3
		Unknown	-	-	33.6	-	33.9	55.9	82.8	85.6
C56	Ovary	Total	39.8	40.0	36.5	37.4	39.9	45.1	44.0	44.3
		Localized	69.9	79.5	80.1	82.5	83.1	91.0	90.8	86.7
		Regional	40.0	45.6	45.6	47.7	47.6	61.5	58.5	76.6
		Distant	15.7	18.8	16.7	17.7	21.0	27.9	27.6	30.2
		Unknown	-	-	38.4	21.7	16.9	46.5	57.1	44.8
C64	Kidney except renal pelvis	Total	41.8	39.2	43.6	48.6	51.7	49.9	61.5	69.9
		Localized	66.3	69.4	70.7	76.7	78.1	79.6	87.1	86.1
		Regional	44.8	41.0	50.0	51.8	48.7	44.9	48.8	51.1
		Distant	4.7	4.2	4.1	7.7	4.8	6.1	8.6	12.7
		Unknown	-	0.0	-	13.1	23.4	46.6	60.6	77.5
C66-68	Bladder, ureter, urethra	Total	48.3	51.3	57.4	61.1	61.1	60.2	65.6	66.7
		Localized	65.1	65.9	69.0	70.8	69.5	79.3	83.2	78.4
		Regional	15.4	12.7	17.7	12.5	26.7	23.5	23.3	21.3
		Distant	3.5	3.3	2.5	6.8	2.6	5.4	2.1	8.9
		Unknown	-	26.8	-	-	31.2	53.3	61.6	66.7
C70-72, D32-33	Central nervous system	Total	34.0	41.6	48.3	56.4	60.4	67.0	75.3	77.7
		Non-malignant	68.0	72.6	85.2	82.3	86.1	91.9	94.4	95.6
		Malignant	14.6	19.2	22.5	31.9	32.7	28.9	32.7	33.1
C73	Thyroid gland	Total	76.4	84.6	87.5	88.1	90.6	89.4	91.6	94.0
		Localized	93.8	95.6	96.2	94.9	98.8	101.0	101.5	101.0
		Regional	72.3	81.6	84.0	83.8	86.4	89.1	86.3	91.8
		Distant	9.7	13.0	10.4	-	33.6	24.4	35.3	-
		Unknown	-	-	-	-	-	81.5	86.8	90.3
C81	Hodgkin lymphoma	Total	47.9	59.5	65.6	74.6	83.4	88.8	85.1	88.8
C82-85, C96	Non-Hodgkin lymphoma	Total	37.6	41.9	50.3	53.0	54.8	56.2	61.2	72.7
C91-95	Leukaemia	Total	18.8	21.2	29.4	29.3	43.0	49.9	55.3	63.6

-/-: Not estimated due to few patients in the group (<50 patients at start of follow-up)

Table 21. 1-, 5-, 10- and 15-year relative survival proportion (95% confidence interval) by cancer site and sex, period approach follow-up 2009-2011

ICD10	Site	Sex	1-year		5-year		10-year		15-year	
C00-14	Mouth, pharynx	M	85.3	(82.3, 87.9)	60.8	(56.7, 64.8)	49.6	(44.9, 54.3)	40.6	(35.4, 46.0)
		F	85.3	(81.4, 88.6)	70.1	(64.9, 75.0)	62.6	(55.8, 69.1)	61.1	(52.7, 69.6)
C15	Oesophagus	M	43.2	(38.3, 48.1)	13.7	(10.2, 17.9)	15.2	(10.7, 20.6)	8.2	(2.9, 17.7)
		F	37.4	(29.6, 45.3)	10.9	(6.1, 17.5)	11.8	(6.1, 19.9)	4.9	(0.8, 16.5)
C16	Stomach	M	51.1	(47.0, 55.0)	24.1	(20.7, 27.6)	22.4	(18.6, 26.7)	21.2	(16.7, 26.4)
		F	44.9	(40.1, 49.6)	24.2	(20.3, 28.4)	22.8	(18.4, 27.7)	20.5	(15.5, 26.2)
C18	Colon	M	78.9	(77.2, 80.5)	61.6	(59.3, 63.8)	55.9	(53.0, 58.9)	52.8	(48.9, 56.7)
		F	78.4	(76.8, 79.9)	62.3	(60.2, 64.3)	56.5	(53.9, 59.2)	53.0	(49.8, 56.3)
C19-21	Rectum, rectosigmoid, anus	M	86.7	(84.9, 88.4)	66.5	(63.7, 69.2)	55.2	(51.7, 58.7)	53.0	(48.6, 57.5)
		F	86.7	(84.6, 88.6)	68.3	(65.3, 71.2)	63.5	(59.8, 67.3)	62.3	(57.6, 67.2)
C22	Liver	M	35.1	(28.8, 41.5)	15.8	(11.2, 21.2)	8.4	(3.7, 16.0)	6.7	(2.3, 15.1)
		F	31.6	(24.0, 39.4)	15.0	(9.2, 22.4)	10.7	(5.2, 18.9)	13.9	(6.8, 24.5)
C23-24	Gallbladder, bile ducts	M	44.1	(36.3, 51.6)	14.7	(9.5, 21.1)	13.1	(7.7, 20.4)	9.6	(4.2, 18.5)
		F	43.3	(36.2, 50.2)	15.9	(11.1, 21.6)	11.9	(6.6, 19.2)	14.2	(7.6, 23.7)
C25	Pancreas	M	25.2	(22.2, 28.4)	4.7	(3.4, 6.4)	4.0	(2.6, 5.9)	3.5	(1.8, 6.4)
		F	22.8	(19.9, 25.8)	5.5	(4.0, 7.4)	4.4	(2.8, 6.6)	3.8	(1.9, 6.8)
C33-34	Lung, trachea	M	36.1	(34.5, 37.7)	12.1	(11.0, 13.2)	8.9	(7.7, 10.1)	7.2	(6.0, 8.6)
		F	43.1	(41.2, 45.0)	18.3	(16.8, 19.9)	13.6	(12.0, 15.3)	10.7	(8.9, 12.7)
C43	Melanoma of the skin	M	93.3	(91.8, 94.6)	76.3	(73.7, 78.7)	70.4	(67.1, 73.6)	69.2	(65.2, 73.0)
		F	96.5	(95.3, 97.5)	87.8	(85.7, 89.8)	83.8	(81.1, 86.5)	83.2	(79.9, 86.4)
C50	Breast	F	96.9	(96.3, 97.4)	88.7	(87.7, 89.7)	82.0	(80.7, 83.3)	76.5	(74.8, 78.1)
C53	Cervix uteri	F	91.1	(88.8, 93.1)	79.1	(75.9, 82.1)	77.5	(73.8, 80.9)	75.7	(71.6, 79.6)
C54	Corpus uteri	F	93.3	(91.9, 94.6)	84.4	(82.2, 86.5)	80.6	(77.7, 83.5)	78.7	(74.9, 82.4)
C56	Ovary	F	77.5	(74.7, 80.0)	44.6	(41.5, 47.7)	36.6	(33.4, 39.9)	35.8	(32.3, 39.4)
C61	Prostate	M	98.0	(97.5, 98.4)	90.8	(89.8, 91.7)	79.9	(78.3, 81.6)	70.1	(67.3, 72.9)
C62	Testis	M	99.1	(97.9, 99.6)	97.3	(95.7, 98.5)	95.7	(93.7, 97.4)	94.6	(92.1, 96.7)
C64	Kidney except renal pelvis	M	82.8	(80.1, 85.1)	68.1	(64.6, 71.5)	59.3	(54.7, 63.8)	55.0	(48.9, 61.2)
		F	83.4	(79.8, 86.5)	71.5	(66.9, 75.7)	64.3	(58.3, 70.2)	58.9	(51.1, 66.7)
C66-68	Bladder, ureter, urethra	M	88.0	(86.3, 89.5)	73.8	(71.3, 76.2)	68.9	(65.5, 72.2)	64.7	(60.3, 69.2)
		F	83.1	(80.1, 85.7)	68.7	(64.6, 72.6)	66.7	(61.4, 71.9)	62.7	(55.8, 69.7)
C70-72, D32-33	Central nervous system	M	76.4	(73.6, 78.9)	60.9	(57.7, 64.0)	57.1	(53.6, 60.6)	57.5	(53.3, 61.6)
		F	85.6	(83.5, 87.5)	77.0	(74.4, 79.4)	77.1	(74.1, 80.0)	74.9	(70.9, 78.7)
C73	Thyroid gland	M	91.9	(86.3, 95.6)	88.2	(80.9, 93.9)	87.5	(78.3, 95.0)	81.8	(69.9, 92.4)
		F	96.7	(94.4, 98.2)	93.9	(90.4, 96.6)	94.2	(89.7, 98.0)	94.8	(88.9, 99.9)
C81	Hodgkin lymphoma	M	88.8	(83.1, 92.8)	83.9	(77.3, 89.1)	80.5	(73.1, 86.7)	81.9	(73.9, 88.6)
		F	94.8	(88.7, 97.9)	90.4	(82.7, 95.5)	92.3	(83.5, 98.6)	93.6	(83.9, 100.8)
C82-85, C96	Non-Hodgkin lymphoma	M	81.5	(79.0, 83.8)	70.1	(66.9, 73.2)	61.6	(57.5, 65.8)	57.9	(52.7, 63.1)
		F	83.9	(81.2, 86.3)	75.3	(71.8, 78.5)	70.6	(66.0, 75.0)	70.0	(64.1, 75.7)
C91-95	Leukaemia	M	80.4	(77.8, 82.7)	64.5	(61.2, 67.8)	59.5	(55.1, 63.9)	60.4	(54.6, 66.3)
		F	77.8	(74.8, 80.5)	65.4	(61.7, 68.9)	57.9	(53.1, 62.6)	56.9	(50.8, 63.0)

* A list of ICD-10 codes where morphologies are excluded or included is given on page 9 in this report.

Relative survival (RS) up to 15 years after diagnosis by sex and age (2009–11)

Figure 9A: All sites (ICD10 C00–96, D32–33, D35.2–35.4, D42–43, D44.3–44.5, D46, D47)

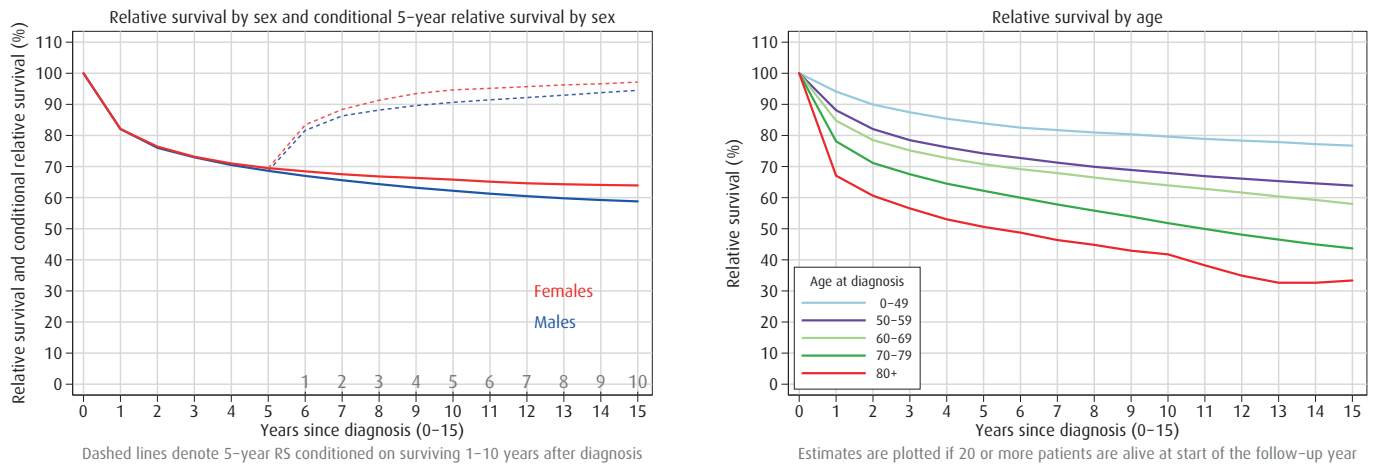


Figure 9B: Mouth, pharynx (ICD-10 C00–14)

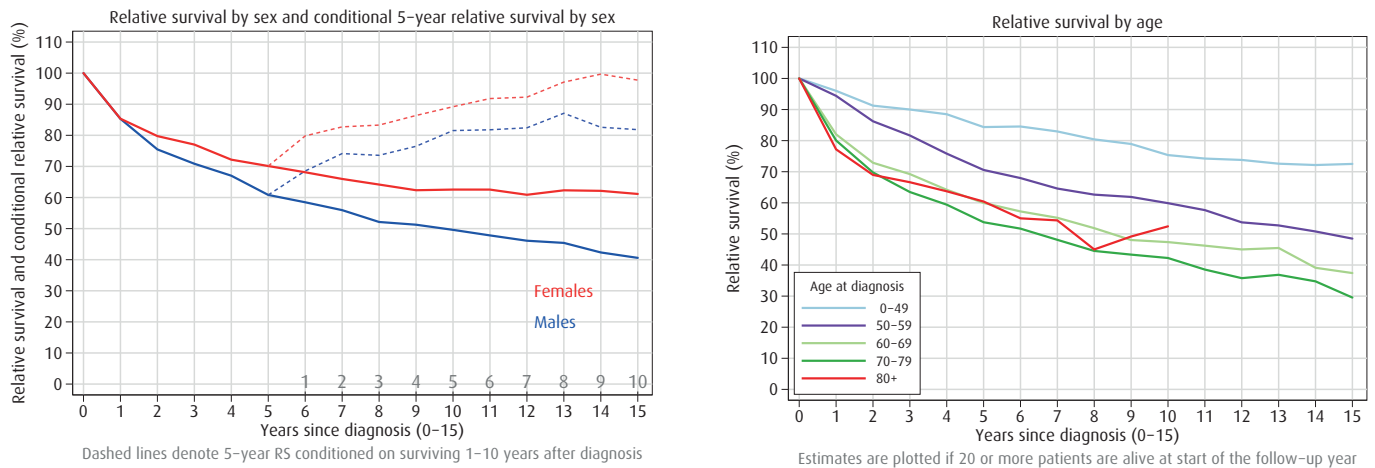
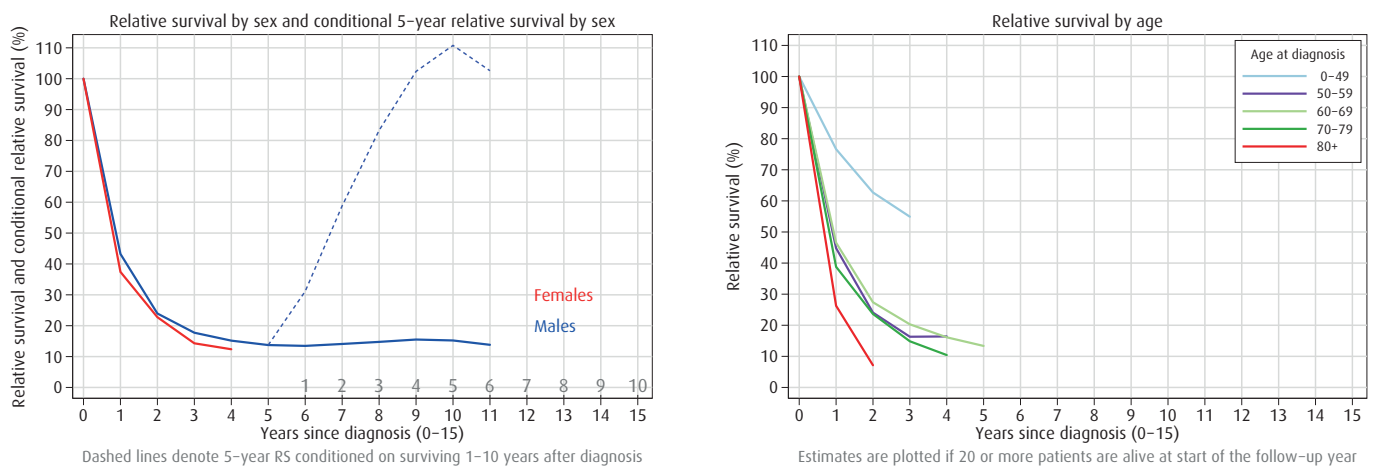


Figure 9C: Oesophagus (ICD-10 C15)



Relative survival (RS) up to 15 years after diagnosis by sex and age (2009–11)

Figure 9D: Stomach (ICD-10 C16)

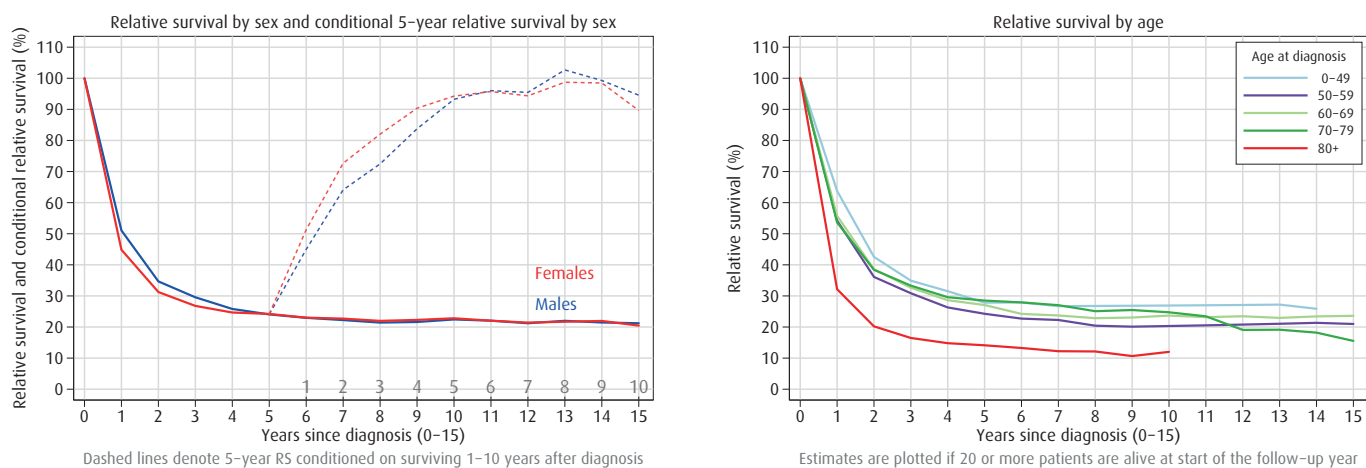


Figure 9E: Colon (ICD-10 C18)

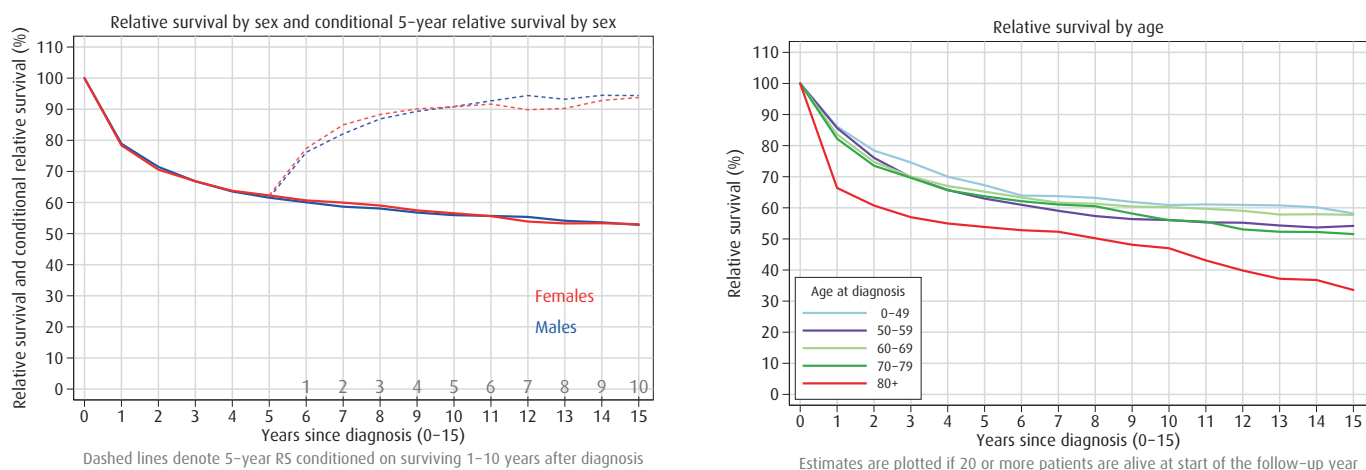
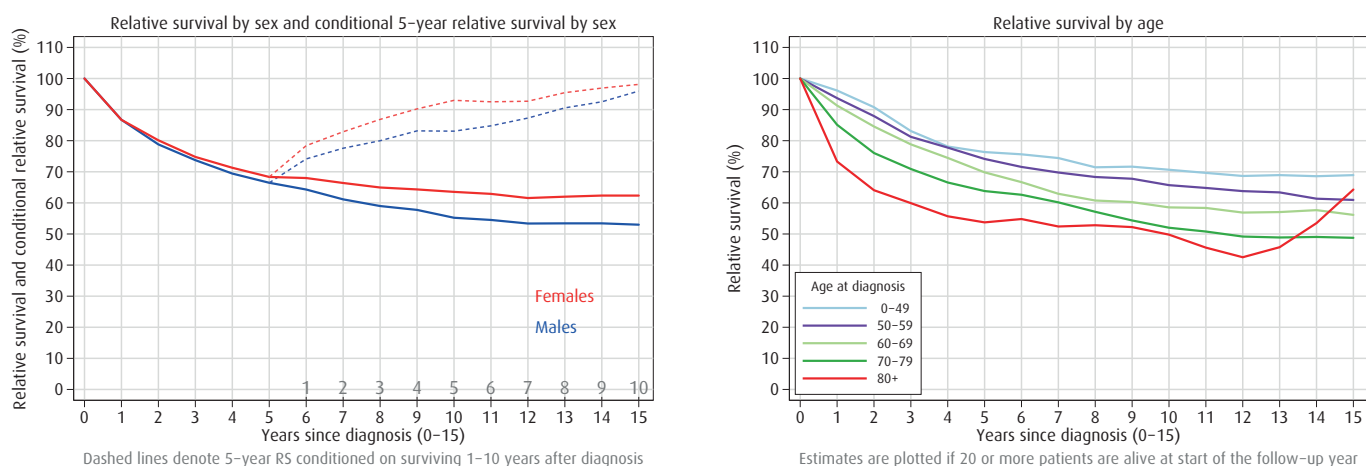


Figure 9F: Rectum, rectosigmoid, anus (ICD-10 C19–21)



Relative survival (RS) up to 15 years after diagnosis by sex and age (2009–11)

Figure 9G: Liver (ICD-10 C22)

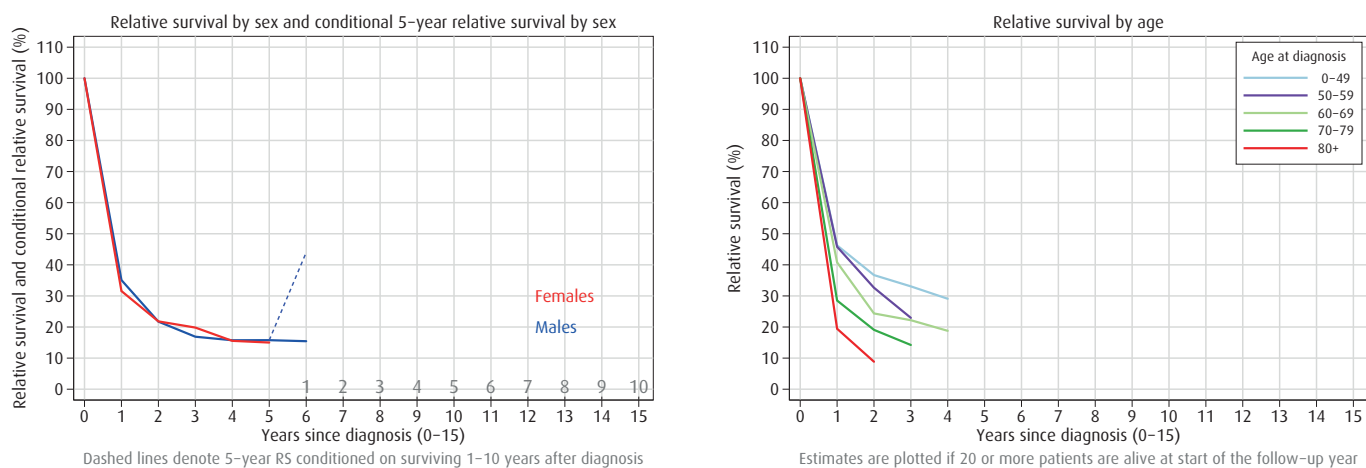


Figure 9H: Gallbladder, bile ducts (ICD-10 C23-24)

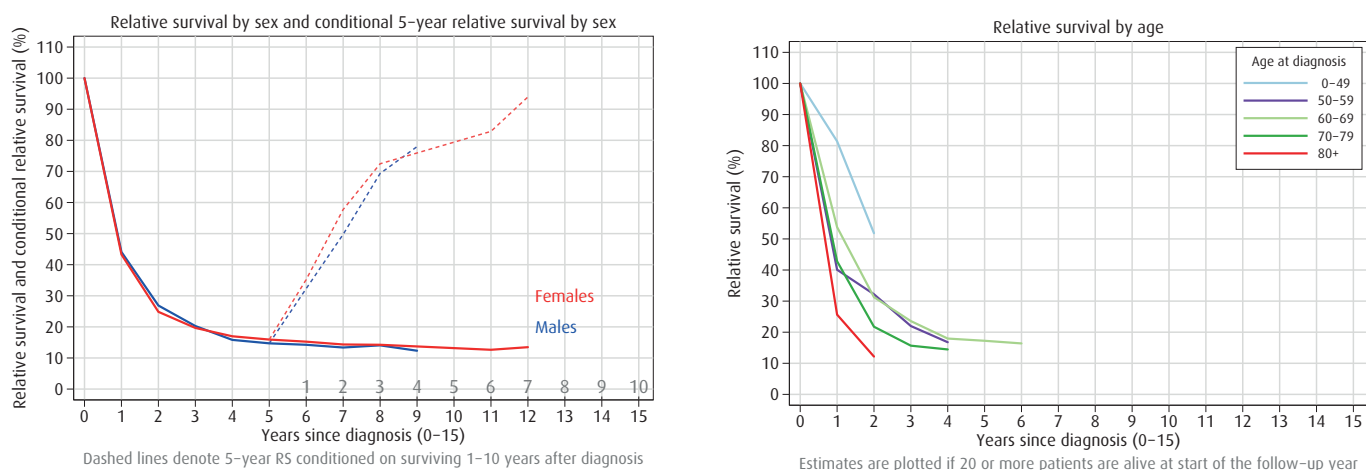
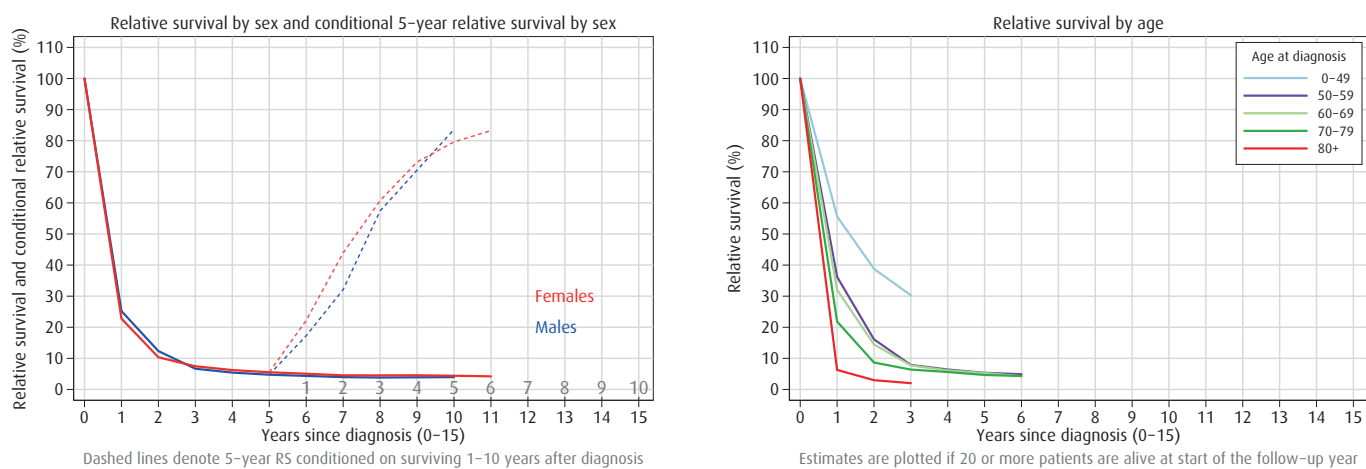


Figure 9I: Pancreas (ICD-10 C25)



Relative survival (RS) up to 15 years after diagnosis by sex and age (2009–11)

Figure 9J: Lung, trachea (ICD-10 C33–34)

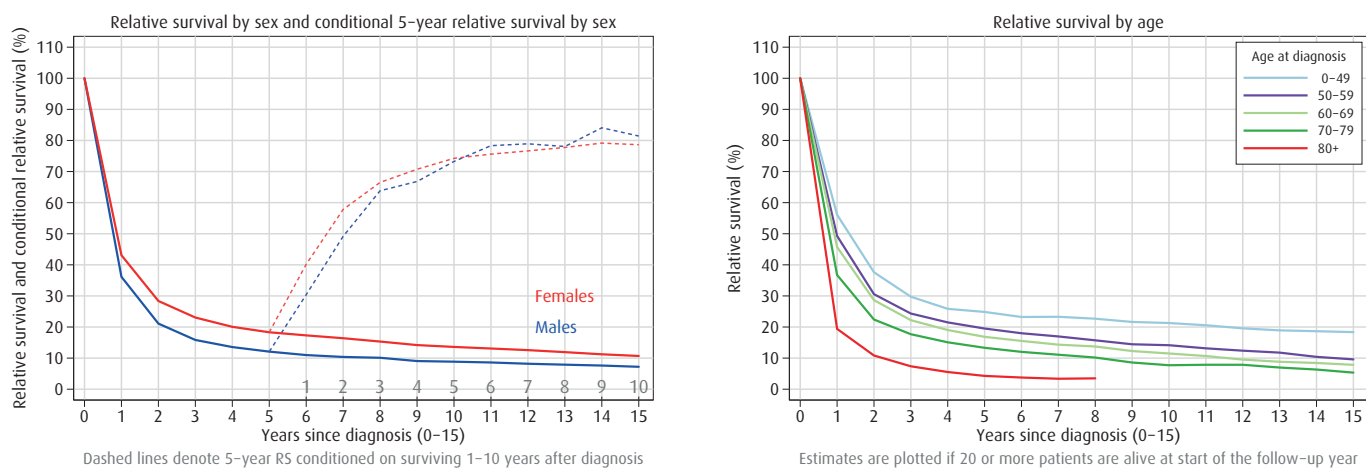


Figure 9K: Melanoma of the skin (ICD-10 C43)

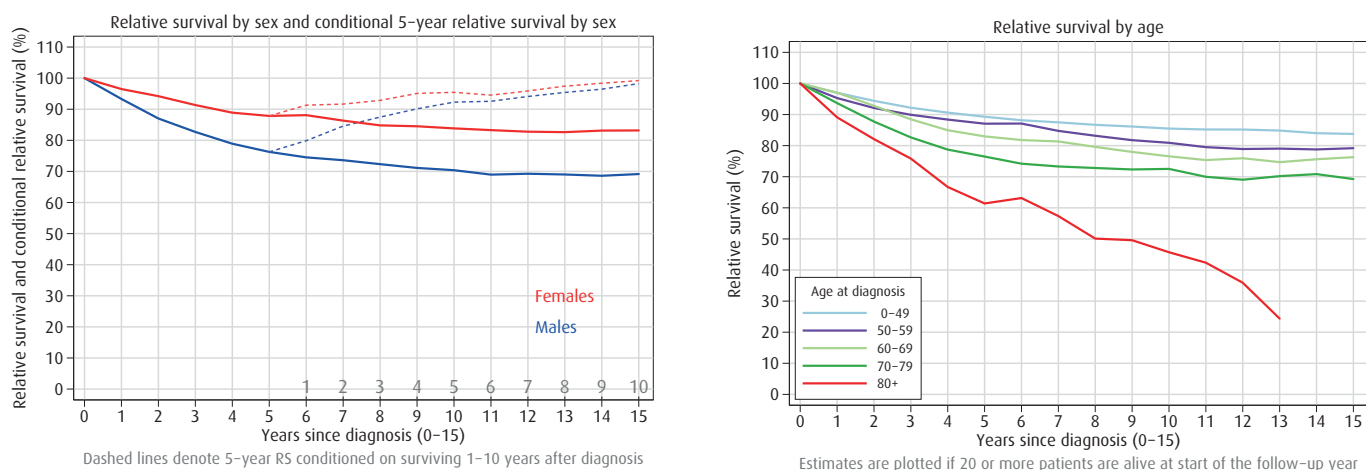
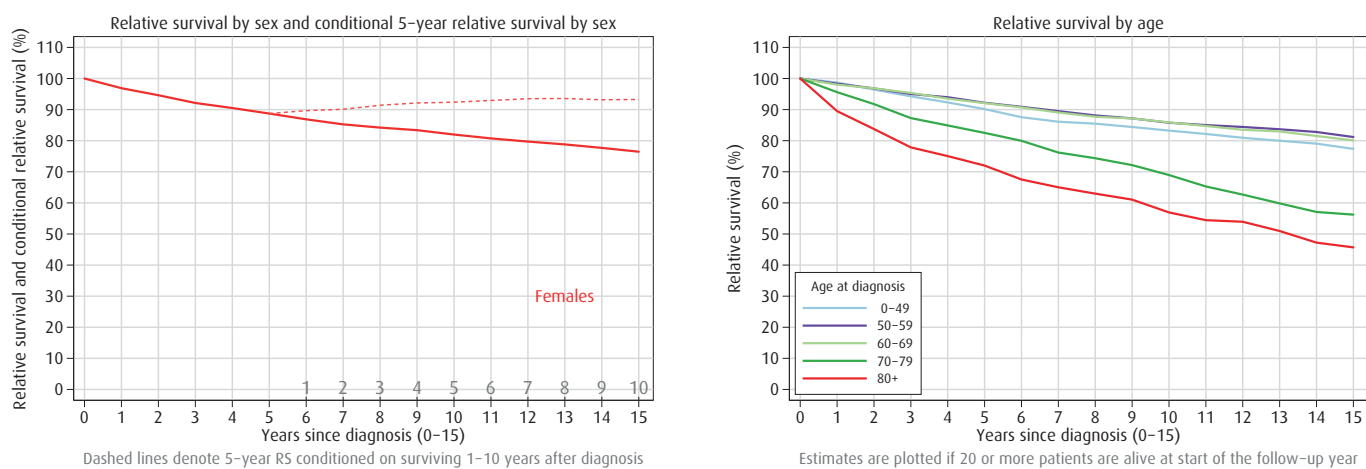


Figure 9L: Breast (ICD-10 C50)



Relative survival (RS) up to 15 years after diagnosis by sex and age (2009–11)

Figure 9M: Cervix uteri (ICD-10 C53)

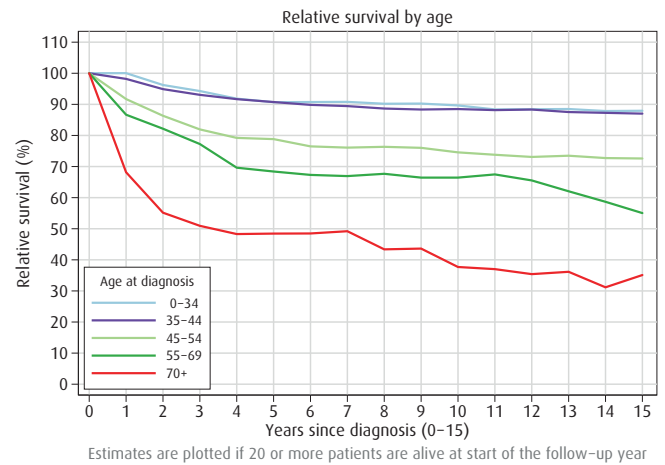
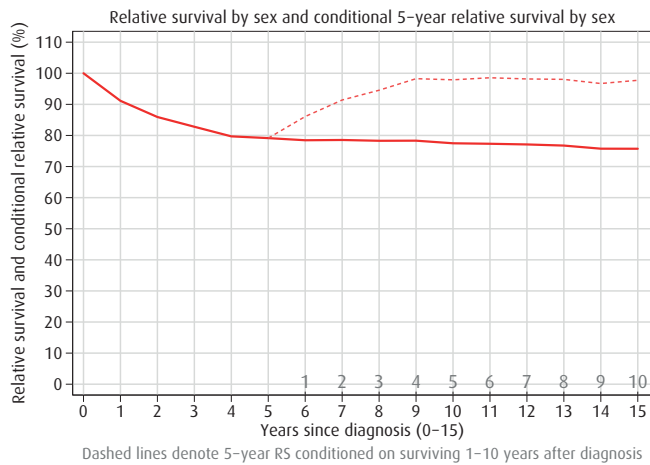


Figure 9N: Corpus uteri (ICD-10 C54)

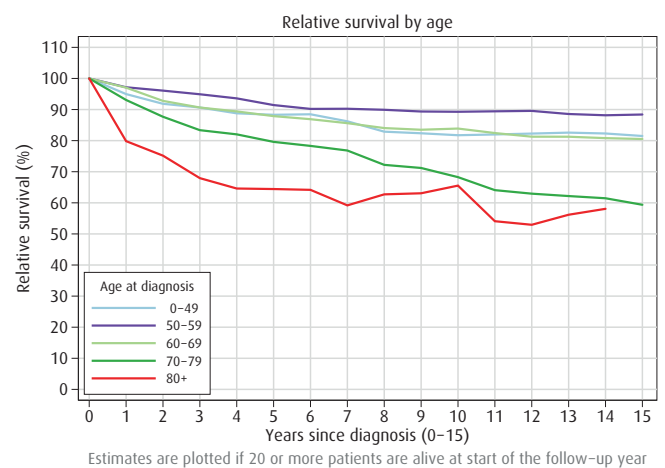
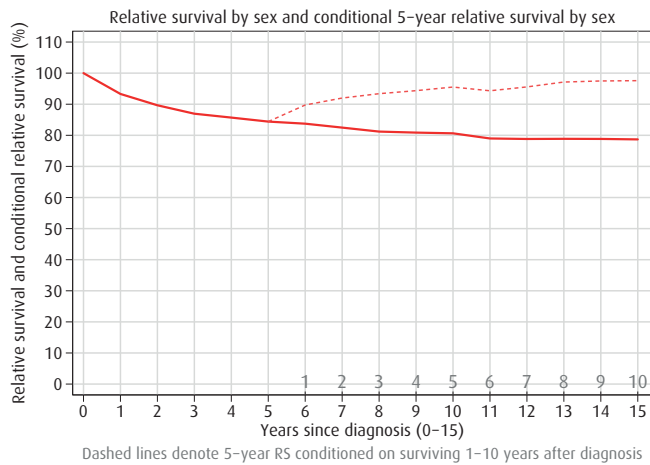
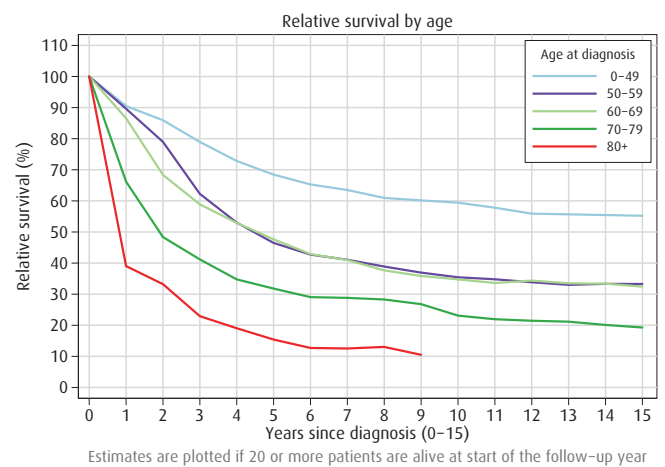
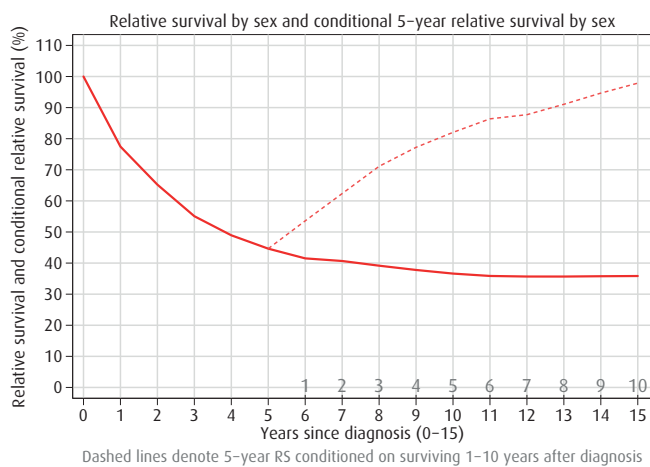


Figure 9O: Ovary (ICD-10 C56)



Relative survival (RS) up to 15 years after diagnosis by sex and age (2009–11)

Figure 9P: Prostate (ICD-10 C61)

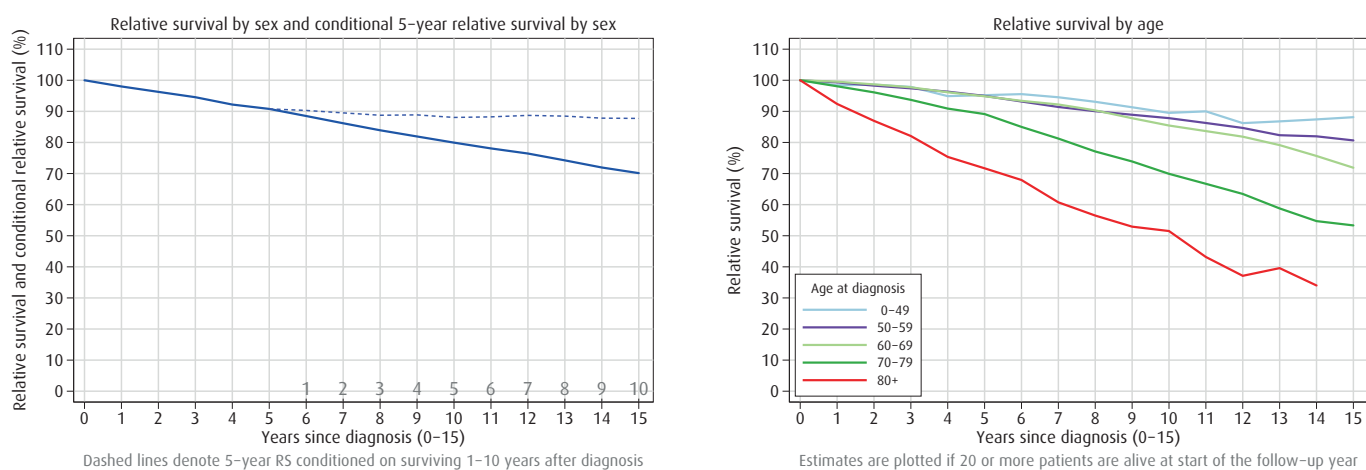


Figure 9Q: Testis (ICD-10 C62)

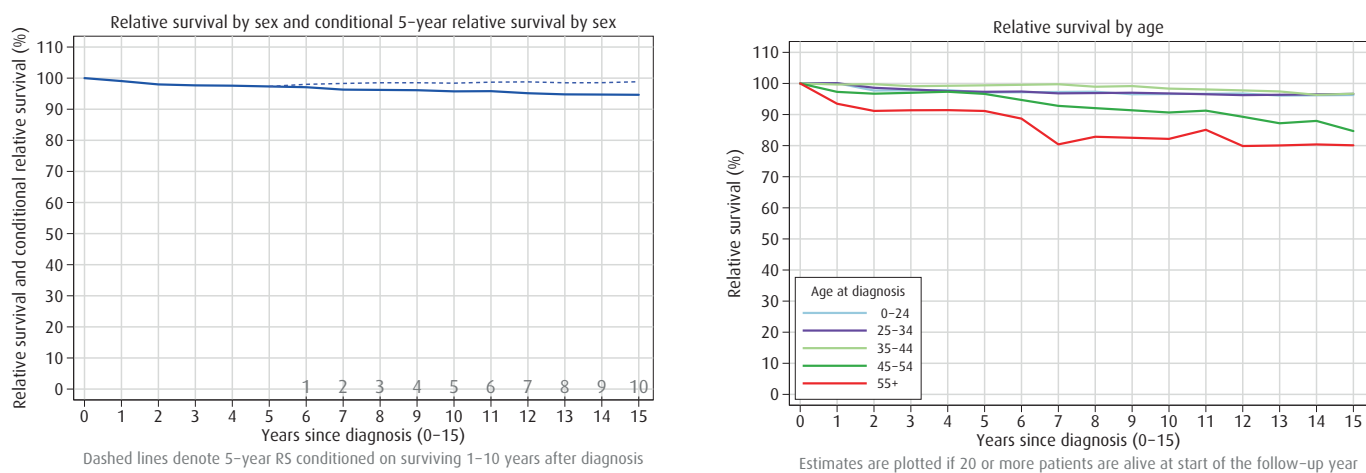
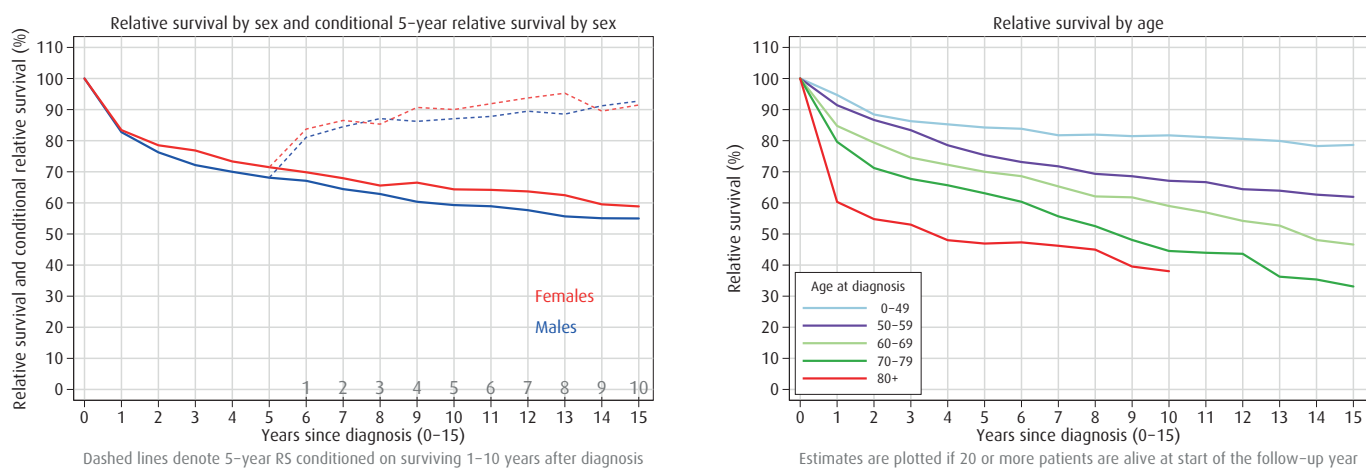


Figure 9R: Kidney excluding renal pelvis (ICD-10 C64)



Relative survival (RS) up to 15 years after diagnosis by sex and age (2009–11)

Figure 9S: Bladder, ureter, urethra (ICD-10 C66–68)

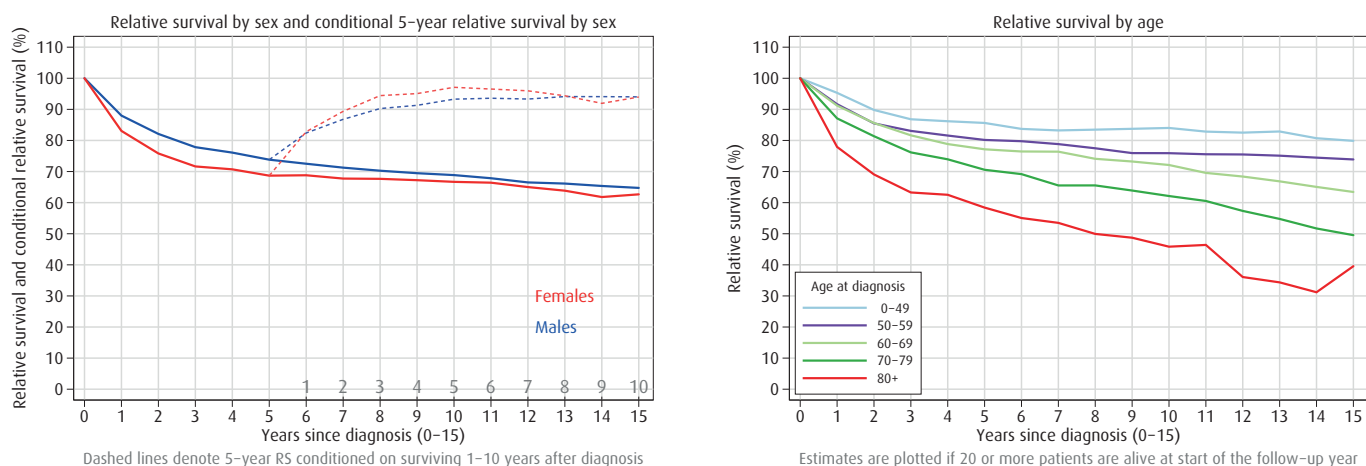


Figure 9T: Central nervous system (ICD-10 C70–72, D32–33, D35.2–35.4, D42–43, D44.3–44.5)

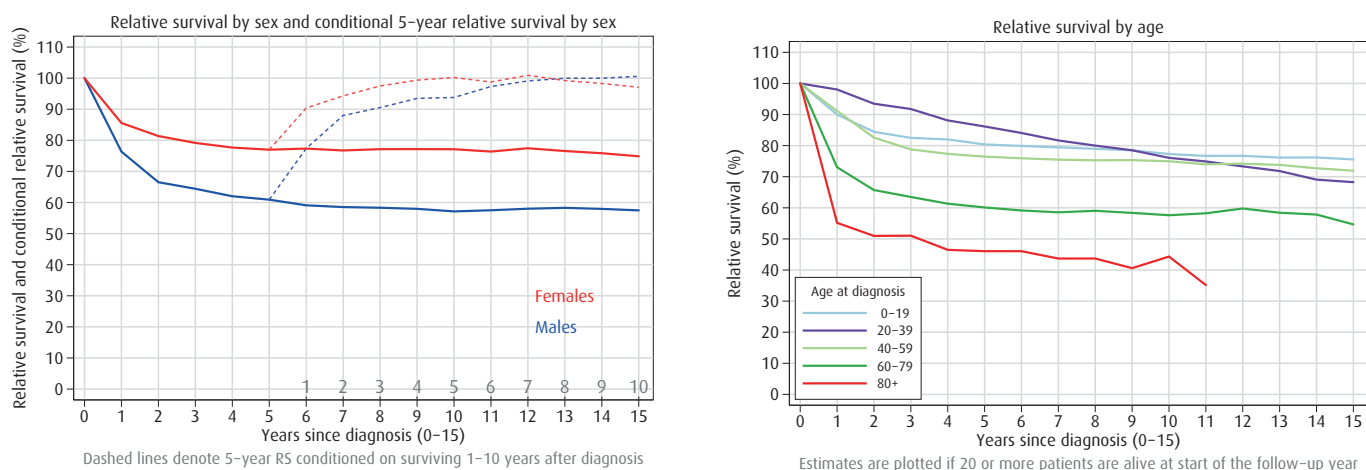
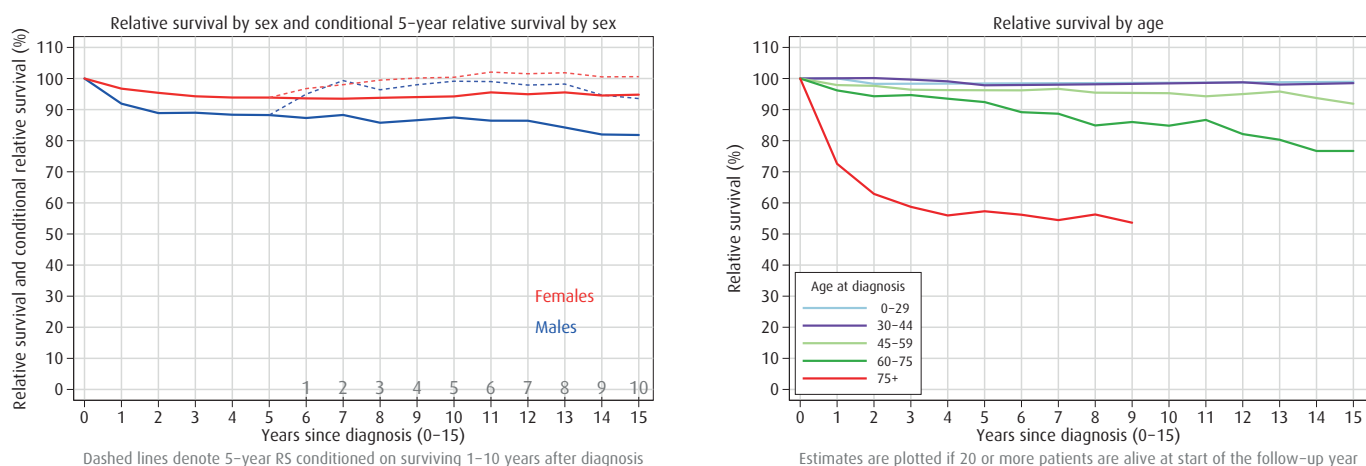


Figure 9U: Thyroid gland (ICD-10 C73)



Relative survival (RS) up to 15 years after diagnosis by sex and age (2009–11)

Figure 9V: Hodgkin lymphoma (ICD-10 C81)

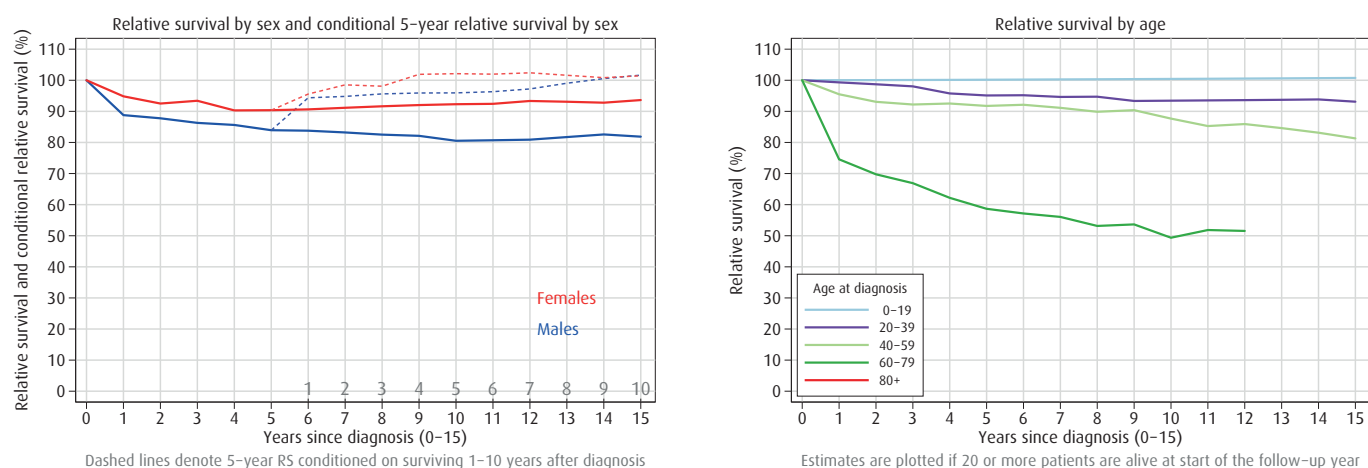


Figure 9W: Non-Hodgkin lymphoma (ICD-10 C82-85, C96)

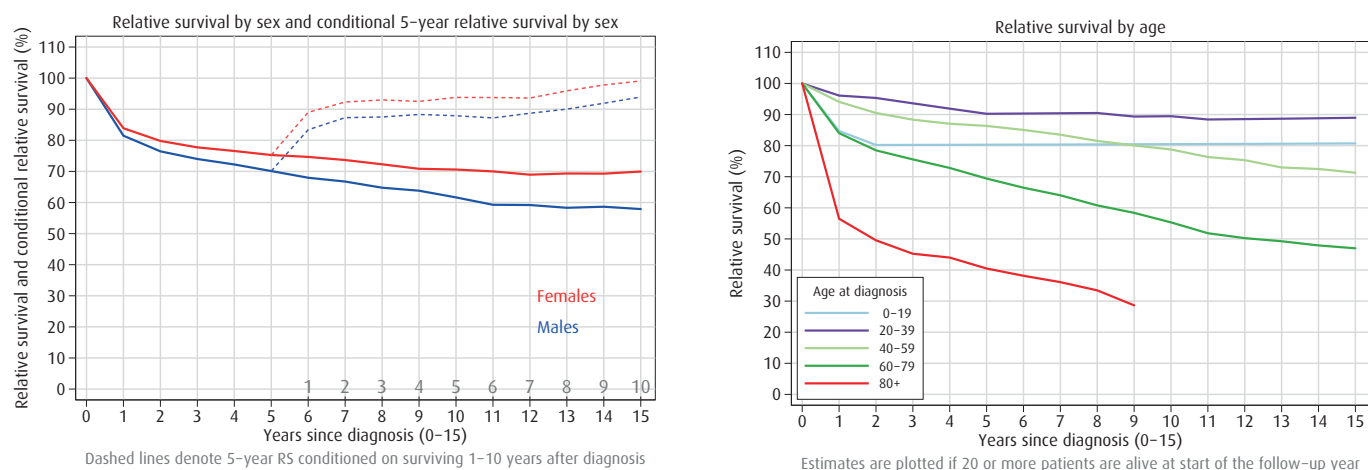
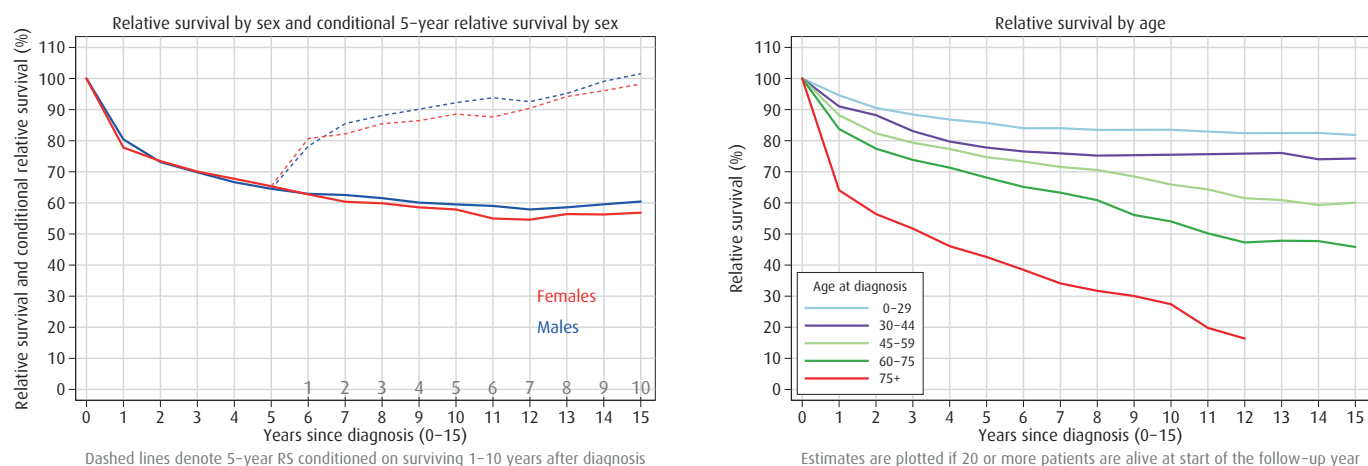


Figure 9X: Leukaemia (ICD-10 C91-95, D45-47)



Prevalence

As of 31 December 2011, more than 215 000 persons were alive and previously diagnosed with cancer in Norway. The cancer prevalence in Table 22 provides the numbers of cancer survivors 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. The highest 10-year prevalence occurs for breast cancer (15 980) followed by melanoma of the skin (9 535), colon (5 626) and prostate cancer (5 500).

In terms of new cases, there are almost twice as many lung cancers as melanoma in Norway, but the prevalence of lung cancer survivors ten years after the diagnosis is less than 10% of the prevalence for melanoma patients. This reflects the vast difference in survival between those two cancers. Differences in prognosis - rather than incidence - may explain much of the site-specific variability in prevalence.

Table 22. Prevalence of cancer 31.12.2001 and 31.12.2011, both sexes

ICD10	Site	Total no. of persons alive		Years after diagnosis			
		31.12.01	31.12.11	<1	1-4	5-9	10+
C00-96	All sites	148270	215733	21577	62301	51024	80831
C00-14	Mouth, pharynx	3127	4013	450	1265	897	1401
C00	Lip	1292	1324	117	394	255	558
C01-02	Tongue	437	683	93	226	152	212
C03-06	Mouth, other	549	657	67	193	177	220
C07-08	Salivary glands	403	507	41	139	102	225
C09-14	Pharynx	482	889	142	337	219	191
C15-26	Digestive organs	23934	32367	4228	10393	7605	10141
C15	Oesophagus	227	416	149	160	62	45
C16	Stomach	2130	1951	338	522	378	713
C17	Small intestine	464	841	117	317	217	190
C18	Colon	13007	17860	2135	5738	4361	5626
C19-21	Rectum, rectosigmoid, anus	7805	10585	1115	3411	2548	3511
C22	Liver	135	307	89	116	34	68
C23-24	Gallbladder, bile ducts	261	344	74	128	58	84
C25	Pancreas	413	681	290	229	90	72
C26	Other digestive organs	79	158	45	41	44	28
C30-34, C38	Respiratory organs	4741	6996	1821	2485	1296	1394
C30-31	Nose, sinuses	261	317	37	99	75	106
C32	Larynx, epiglottis	1054	1099	102	314	278	405
C33-34	Lung, trachea	3394	5569	1688	2071	947	863
C38	Mediastinum, pleura (non-mesothelioma)	52	47	7	11	4	25
C40-41	Bone	499	703	46	142	129	386
C43	Melanoma of the skin	13419	19309	1653	4463	3658	9535
C44	Skin, non-melanoma	8334	12871	1580	4540	3256	3495
C45	Mesothelioma	72	108	46	48	7	7
C46	Kaposi's sarcoma	92	88	3	24	21	40
C47	Autonomic nervous system	223	255	6	37	32	180
C48-49	Soft tissues	970	1295	131	341	240	583
C50	Breast	27071	38501	3019	9676	9826	15980
C51-58	Female genital organs	18306	21258	1464	4485	4111	11198
C53	Cervix uteri	6734	6841	286	944	1038	4573
C54	Corpus uteri	6915	9215	700	2333	2111	4071
C55	Uterus, other	40	39	2	5	11	21
C56	Ovary	3838	4156	382	922	737	2115
C51-52, C57	Other female genital	954	1201	121	347	271	462
C58	Placenta	129	150	5	7	17	121
C60-63	Male genital organs	21292	41058	5049	15678	10921	9410
C61	Prostate	16687	34361	4754	14454	9653	5500
C62	Testis	4342	6382	285	1150	1178	3769
C60, C63	Other male genital	310	454	35	143	123	153
C64-68	Urinary organs	12117	16459	1793	5190	4001	5475
C64	Kidney excl. renal pelvis	3055	5072	646	1747	1209	1470
C65	Renal pelvis	434	560	64	186	115	195
C66-68	Bladder, ureter, urethra	8810	11117	1133	3375	2735	3874
C69	Eye	786	935	53	196	197	489
C70-72, D32-33	Central nervous system	6050	10696	802	2779	2855	4260
C73	Thyroid gland	3460	4569	256	832	802	2679
C37, C74-75	Other endocrine glands	1641	3073	201	862	747	1263
C39, C76, C80	Other or unspecified	467	531	104	150	117	160
C81-96	Lymphoid and haematopoietic tissue	10289	17847	2063	5871	4293	5620
C81	Hodgkin lymphoma	1619	2287	132	419	458	1278
C82-85, C96	Non-Hodgkin lymphoma	4489	7424	802	2378	1836	2408
C88	Malignant immunoproliferative diseases	251	411	46	160	121	84
C90	Multiple myeloma	1138	1647	301	774	349	223
C91-95, D45-47	Leukaemia	2812	6201	819	2200	1551	1631

Trends in incidence, mortality and survival, Norway 1965-2011

There has been considerable discussion as to the relative merits of incidence, mortality and survival in cancer research generally, and in time trend analysis specifically (Boyle, 1989; Coleman, 2000; Doll & Peto, 1981; Peto & al, 2000). Analysing trends in incidence may provide some insight into changes in the incidence and distribution of risk factors, and to the impact of interventions aimed at prevention and early diagnosis. Mortality rates and survival proportions are both key measures of disease outcome, and may alert us to the beneficial effects of screening, or to the introduction of more effective therapies and better disease management.

The contribution of artefacts to the observed cancer incidence and mortality trends have been comprehensively addressed by Saxen (Saxen, 1982) and Muir et al. (Muir & al, 1994). Others have investigated the accuracy of death certificates (e.g. Percy & al, 1981; Alfsen & al, 2010). Apart from artefacts related to registration practices, many of the factors that affect incidence also apply to mortality, given that both rely on the accuracy of the initial cancer diagnosis. As with incidence, survival estimates are susceptible to changes in diagnostic practices and disease classifications, as well as the spread of screening tools that detect cases earlier.

There is a general consensus that a combined description of trends in incidence, mortality and survival often serves to confirm and clarify understanding of the underlying biological, epidemiological and clinical processes. As each indicator is subject to unique or shared artefacts that tend to vary according to cancer type over time, their simultaneous assessment often enables the identification of systematic deviations in one or more of the three measures. Figure 10-A to 10-X present time trends during 1965-2011 for age-standardised incidence and mortality rates and five-year relative survival estimates based on a moving three-year observation (period) window. The survival trends are plotted as crude rather than age-adjusted estimates for purposes of consistency; the age-specific numbers were sparse for certain neoplasms for certain years,

and thus standardised estimates could not be calculated. It should be noted that these summary measures will often fail to reflect true underlying age-calendar year interactions for specific cancers, such as differentials in survival and mortality trends by age with respect to calendar time, or the presence of strong birth cohort influences in incidence trends.

The trends for “All sites” in Figure 10-A is a persistent increase in cancer incidence and survival in Norway over the last four decades, combined with a fairly constant mortality trend up until the early 1990s. The decline in mortality that follows is more evident in men than in women. The interpretation of these aggregated estimates is evidently a non-trivial exercise, in that they comprise many different cancer types variable in terms of their capacity to be diagnosed as well as treated. In combination however, prostate, breast, lung, colon and rectal cancer represent half of the total incidence and mortality burden, specifically, 49.5% of the new cancer cases in Norway in 2011, and 49.2% of the cancer deaths in 2011.

For men, more than 30% of all cancers diagnosed in 2011 were prostate cancers. Screening for prostate cancer using the PSA test is in Norway not recommended in men without symptoms or increased risk due to inheritance. However, the proportion of cases where PSA testing has led to further examination has been increasing and it is the leading single cause for performing a biopsy. Both incidence and five-year relative survival from 1990 (Figure 10-O) probably reflects the availability of the PSA test and the upsurge in its use and in the detection of disease. Mortality has declined from around 1996 and both early diagnosis and improved and more active treatment may have had an impact.

Breast cancer among women comprises more than 20% of all female cancer cases. There was a monotonous trend in incidence rates between 1952 and 2005 with a steeper increase in the mid 1990s followed by a notable decline in the incidence rate of breast cancer between 2005 and 2009. The Norwegian Breast Cancer Screening Programme began screening women aged 50-69 in 1996 as a four-year pilot project in four of

the 19 Norwegian counties, and gradually expanded to become nationwide by 2005. The implementation of screening may explain much of the increasing incidence trend from the mid-1990s to 2005 with subsequent declining rates, and partly, as a consequence of advancing time of diagnosis, the increasing survival.

From 2009 to 2010 there was an increase in breast cancer incidence rates among women under 50 years, which resulted in the overall rate increasing from 70.9 to 73.4. The overall rate further increased to 78.8 in 2011. The increase from 2010 to 2011 occurred in women above 50. This may be linked to increased media attention regarding breast cancer and mammographic screening, in particular in women above 70. The increase is likely also due to implementation of a new diagnostic tool for detection of breast cancer, tomosynthesis. This technique was used in a large trial conducted within the screening programme in Oslo in the period of November 2010 to December 2011, and had a significantly higher detection rate compared to digital mammography (Skaane & al, 2013). The five-year relative survival has increased in the last two decades, while mortality began declining around 1996 (Figure 10-M). The recent declines in mortality in Norway most likely reflect improvements in breast cancer treatment from the 1990s, as well as the implementation of the screening programme.

Trends in lung cancer incidence and mortality are quite similar and reflect the uniformly poor survival over time, whereas the varying trends by sex reflect the differing phases of the smoking epidemic in Norwegian men and women (Figure 10-J). Overall lung cancer incidence and mortality rates among males began to level off in the early 1990s, in contrast to the continuing increases in women. It is worth noting that the steady rise in female age-standardised lung cancer rates conceals a plateau in the rate among women in their fifties, which is suggestive of a coming peak in the trend. While five-year relative survival for lung cancer patients has not changed substantially, the observation of a slight improvement during the last decade, more evident in women, is intriguing. This may be a result of better surgical treatment, earlier stage at presentation, and less co-morbidity.

Both colon and rectal cancer incidence has been increasing for many decades, but the rectal cancer rates have levelled off since the 1980s (Figure 10-E and 10-F). Of particular note is the increasing survival and declining mortality following rectal cancer in Norway in both sexes. Among the likely determinants is the national introduction of total mesorectal excision in the early 1990s, increasing specialisation, and use of preoperative radiation. However, our colon cancer incidence and mortality rates are among the highest in the Nordic countries, and remain a concern.

Some other specific sites are also worthy of note. The long-term decline in stomach cancer incidence and mortality, is most likely caused by primary prevention following the widespread use of refrigerators and the assumed reduction in *Helicobacter pylori* infections, following changes both in diet and hygiene. The survival of stomach cancer has been only moderately increasing over time (Figure 10-D).

In contrast, testicular cancer has shown a uniform and still unexplained increase during the last decades (Figure 10-Q), as well as a rapid increase in survival. The improved survival started in the 1970s with the introduction of cisplatin therapy for advanced germ-cell tumours, leading to greatly improved prognosis for testicular cancer in young and middle-aged men

In summary, the overall trends in cancer survival probably reflect both artefacts, such as screening and improved diagnostics as well as improvements in treatment. For prostate and breast cancer both early diagnosis and improvements in treatment are likely to have played a role. For rectal cancer the improved survival is most likely caused by better treatment.

Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 10-A: All sites (ICD10 C00-96, D32-33, D35.2-35.4, D42-43, D44.3-44.5, D46, D47)

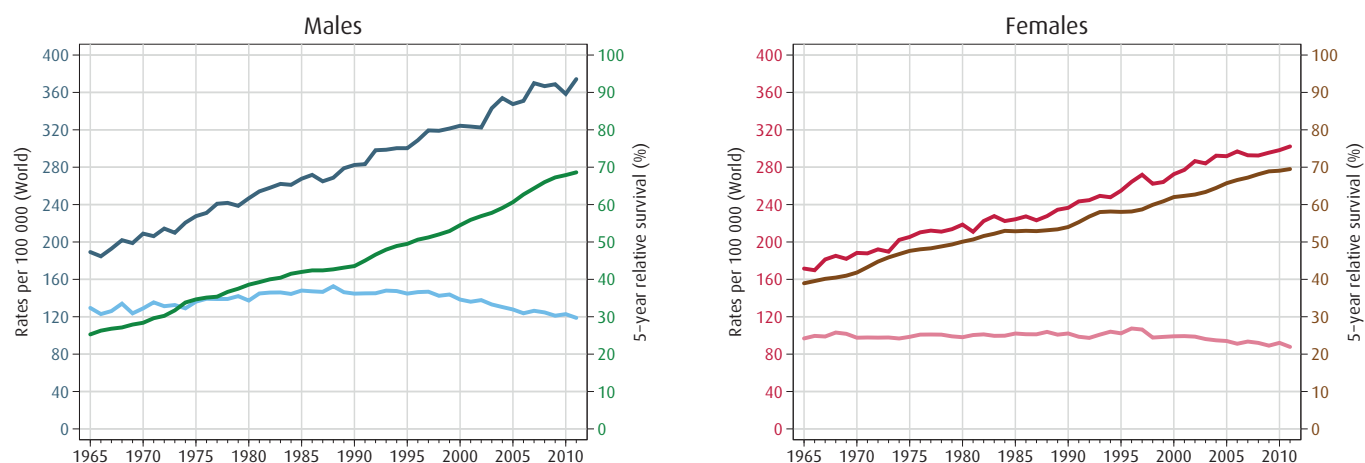


Figure 10-B: Mouth, pharynx (ICD-10 C00-14)

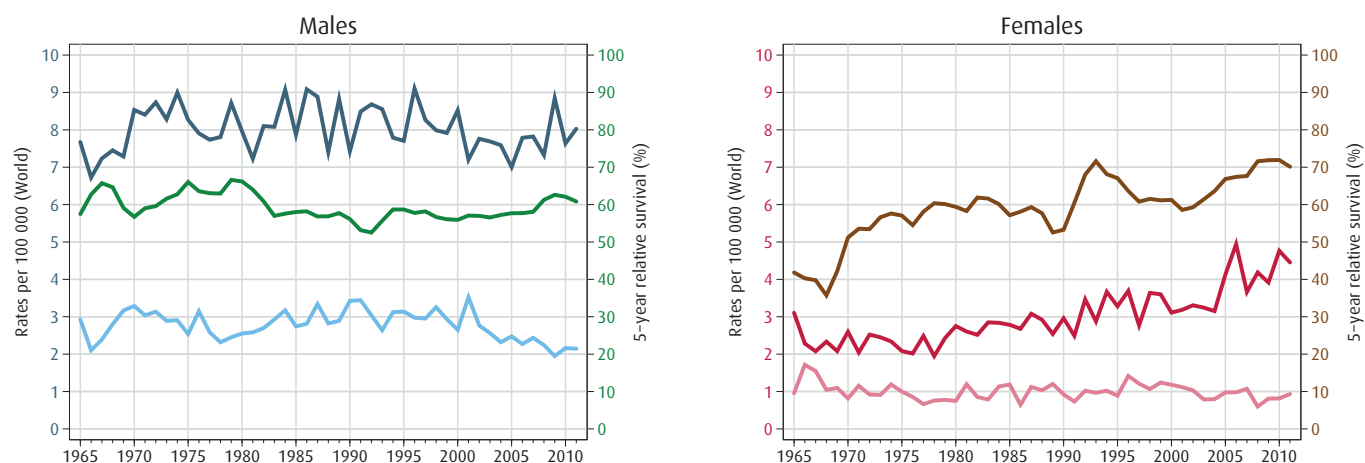
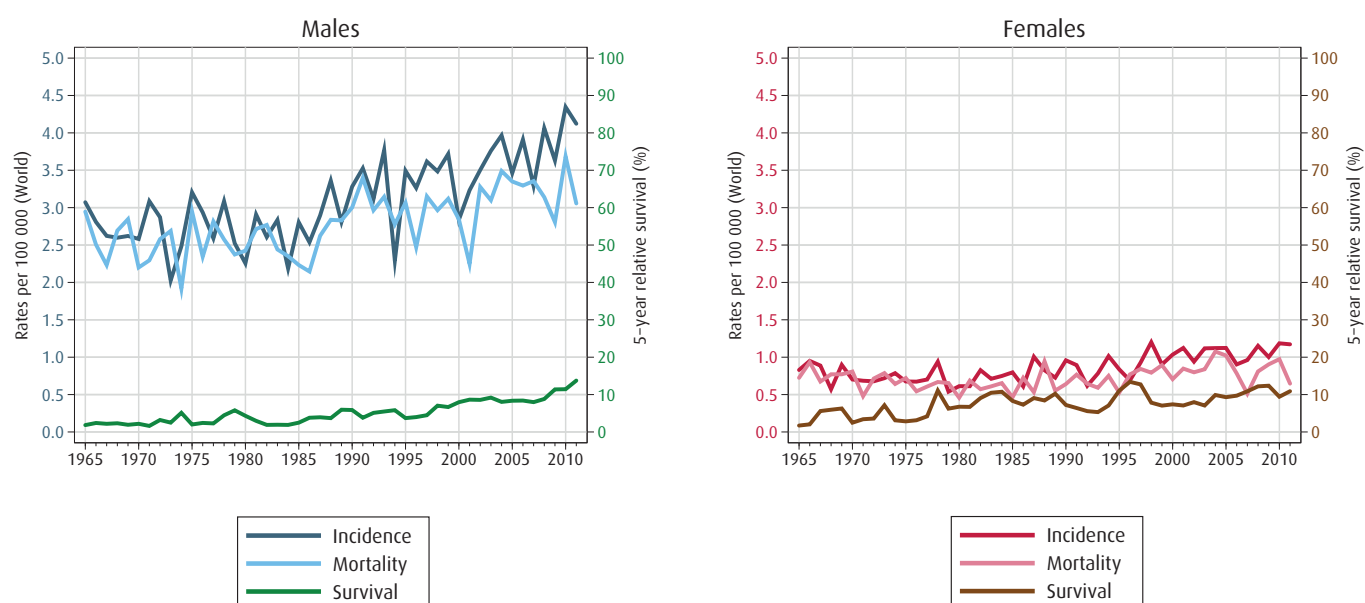


Figure 10-C: Oesophagus (ICD-10 C15)



Incidence
Mortality
Survival

Incidence
Mortality
Survival

Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 10-D: Stomach (ICD-10 C16)

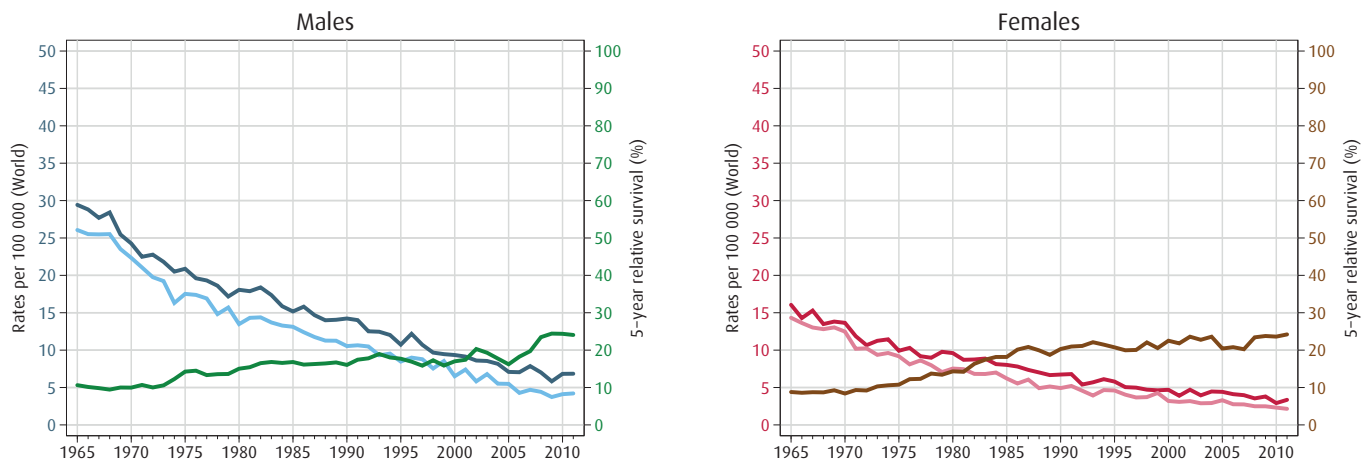


Figure 10-E: Colon (ICD-10 C18)

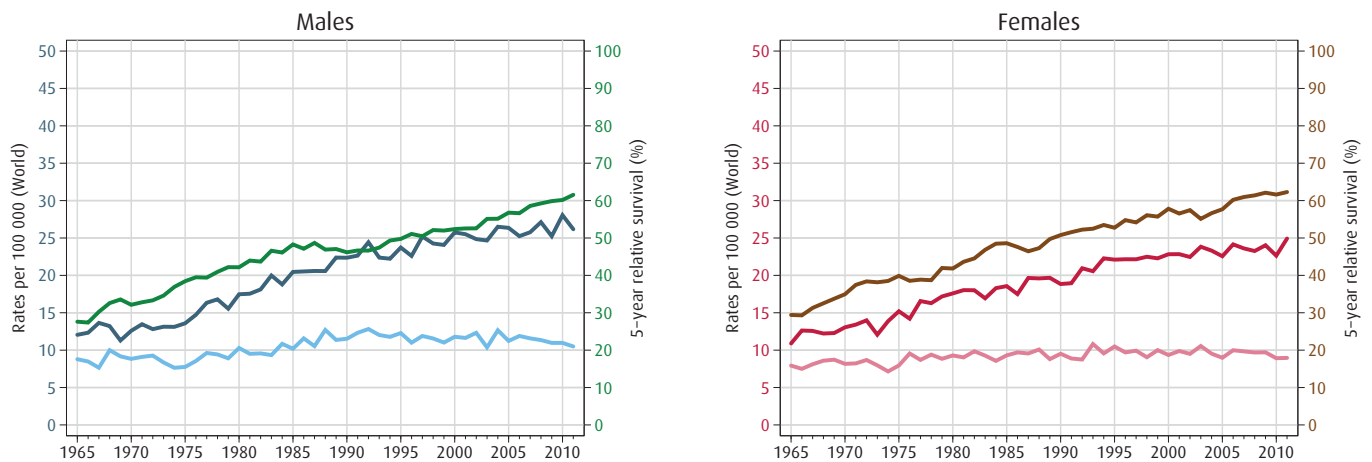
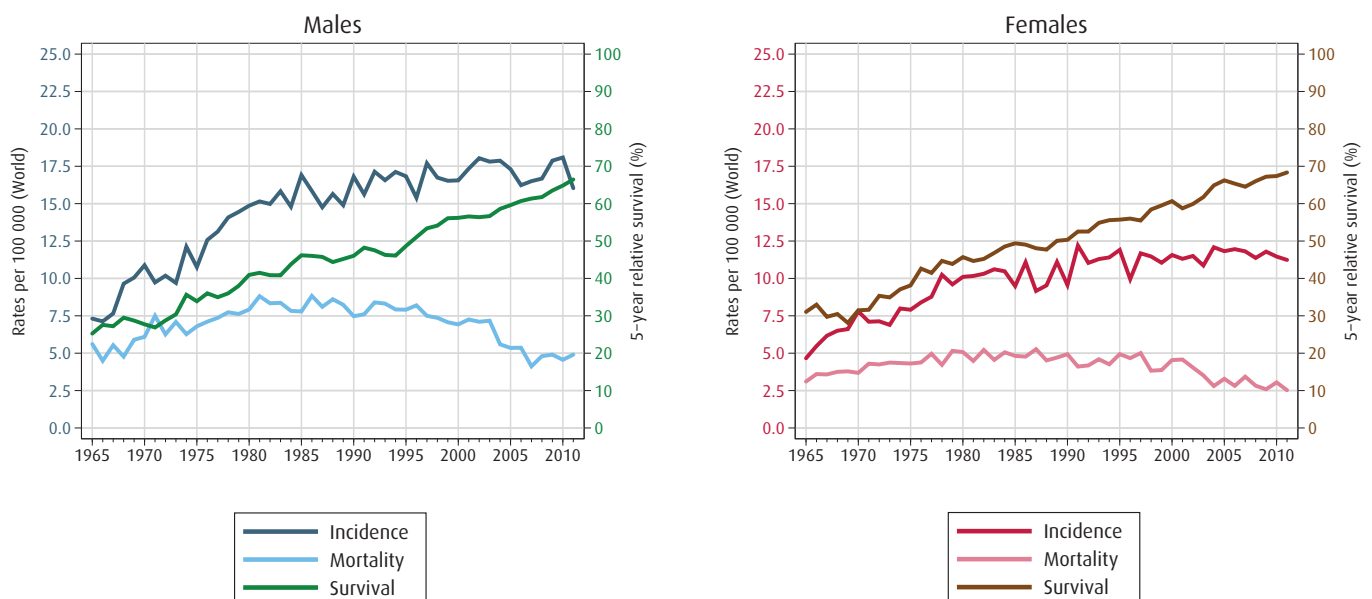


Figure 10-F: Rectum, rectosigmoid, anus (ICD-10 C19-21)



Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 10-G: Liver (ICD-10 C22)

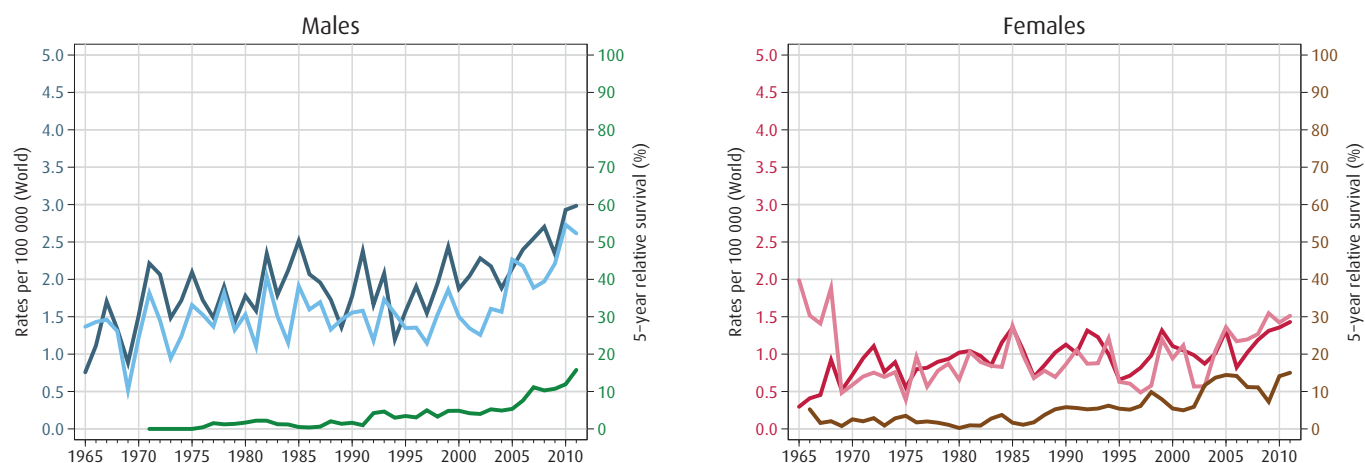


Figure 10-H: Gallbladder, bile ducts (ICD-10 C23-24)

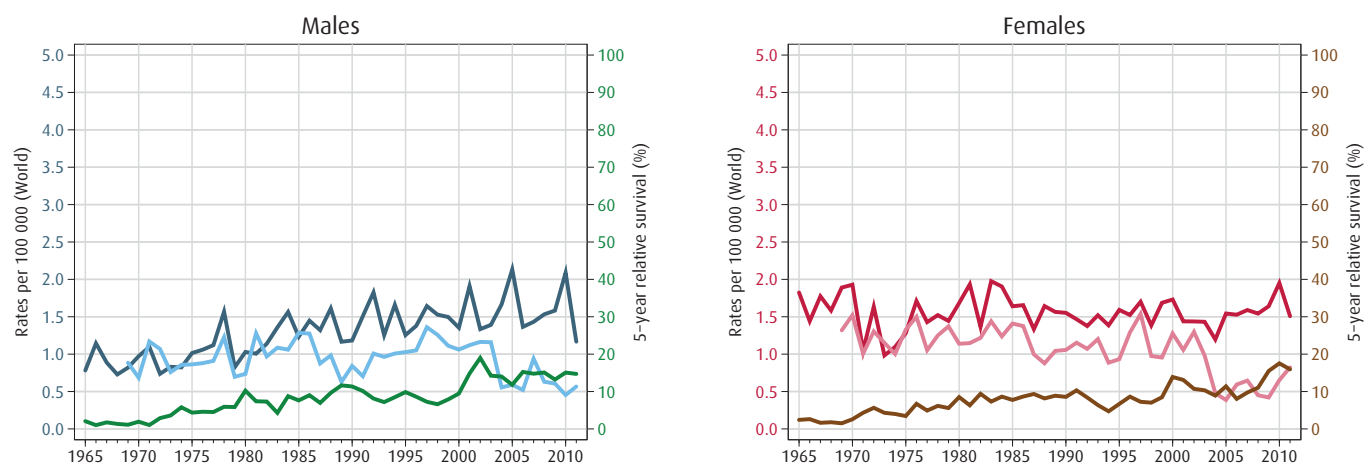
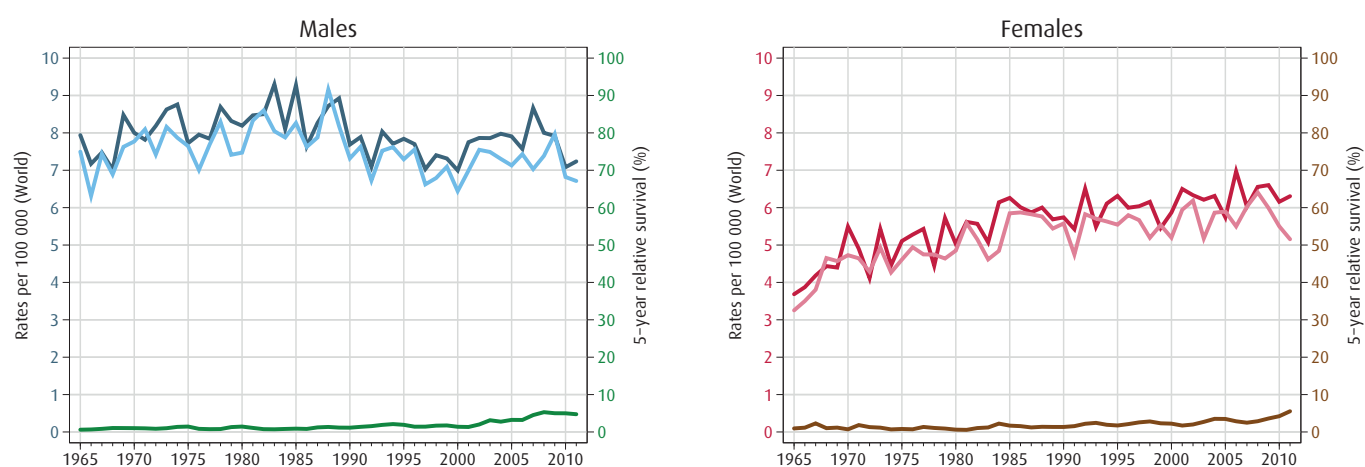


Figure 10-I: Pancreas (ICD-10 C25)



— Incidence
— Mortality
— Survival

— Incidence
— Mortality
— Survival

Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 10-J: Lung, trachea (ICD-10 C33-34)

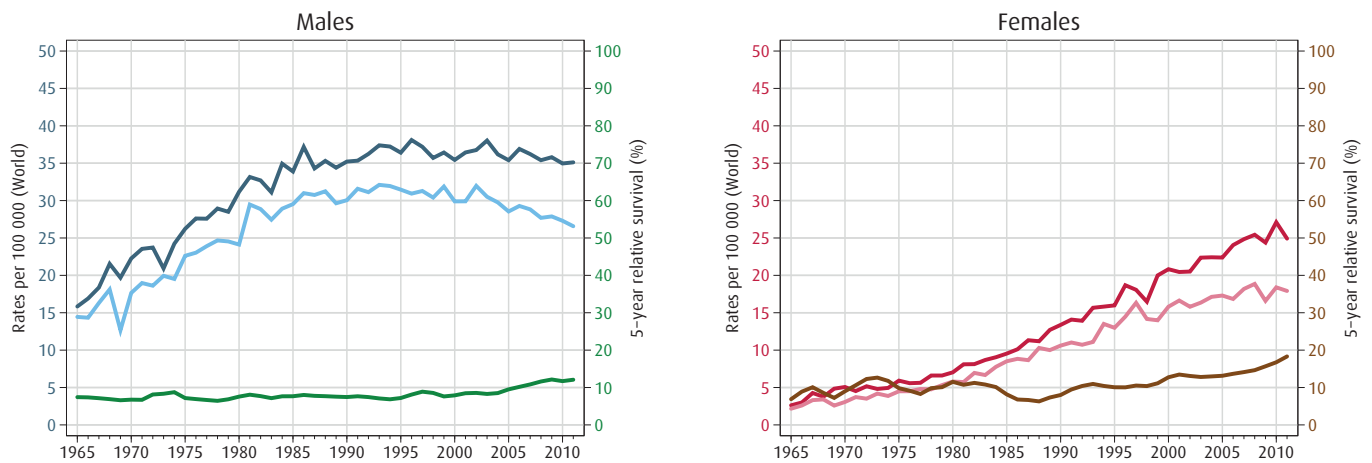


Figure 10-K: Melanoma of the skin (ICD-10 C43)

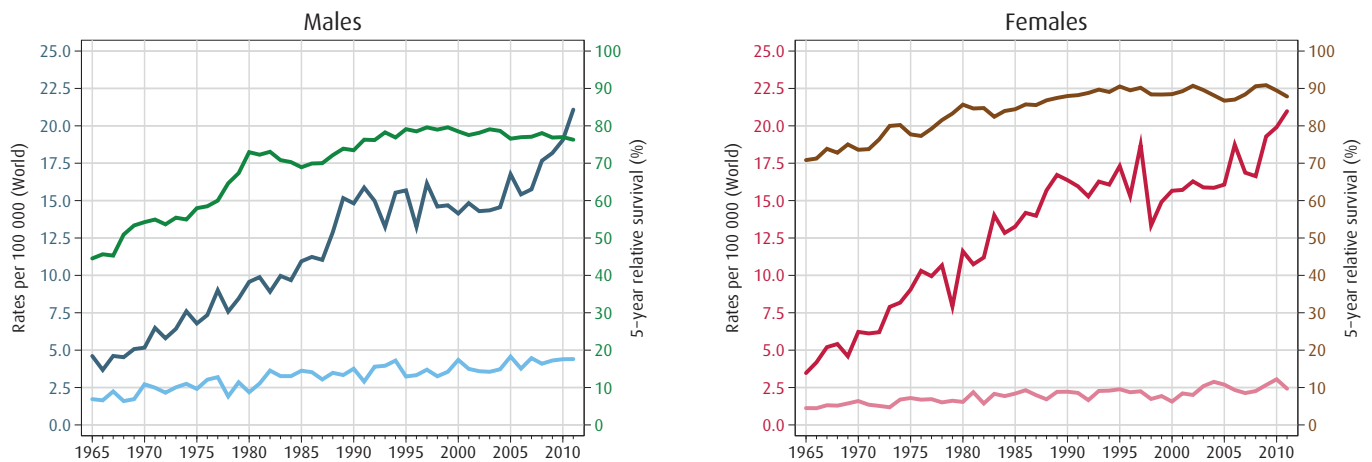
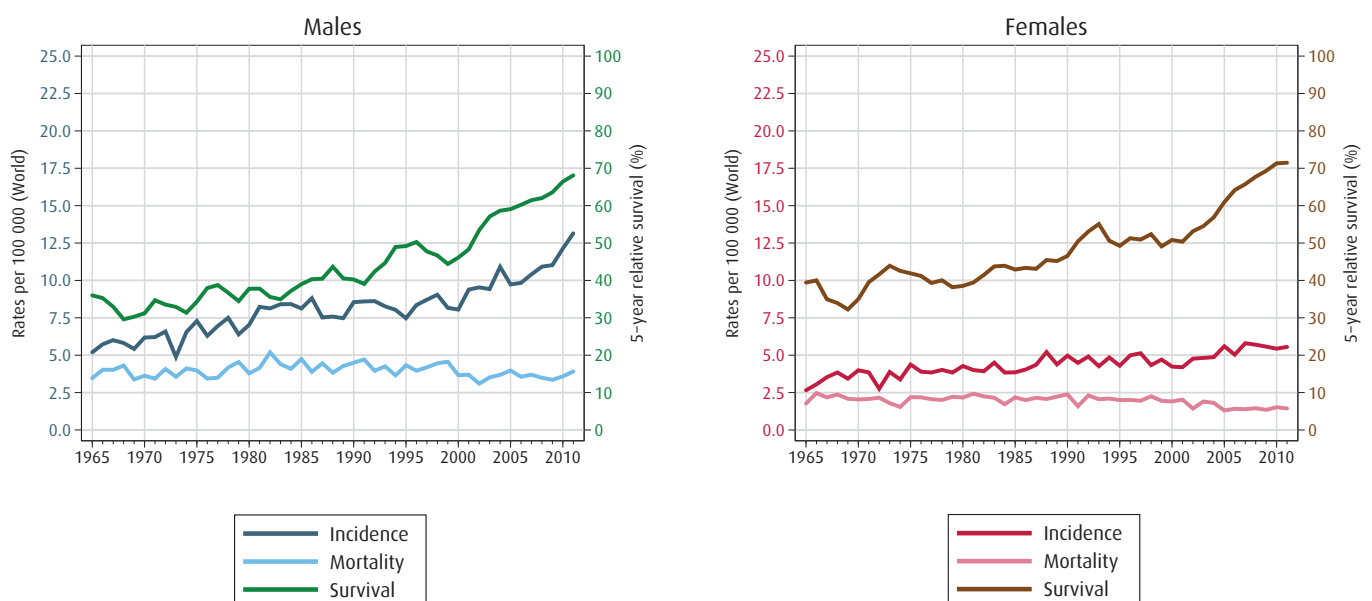


Figure 10-L: Kidney excluding renal pelvis (ICD-10 C64)



Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 10-M: Breast (ICD-10 C50)

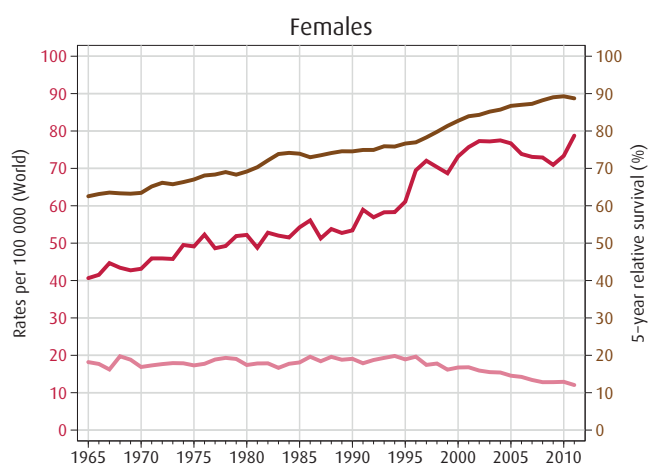


Figure 10-N: Cervix uteri (ICD-10 C53)

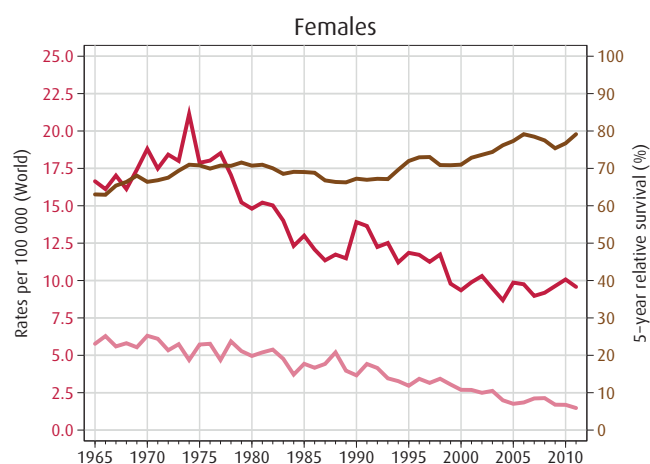


Figure 10-O: Prostate (ICD-10 C61)

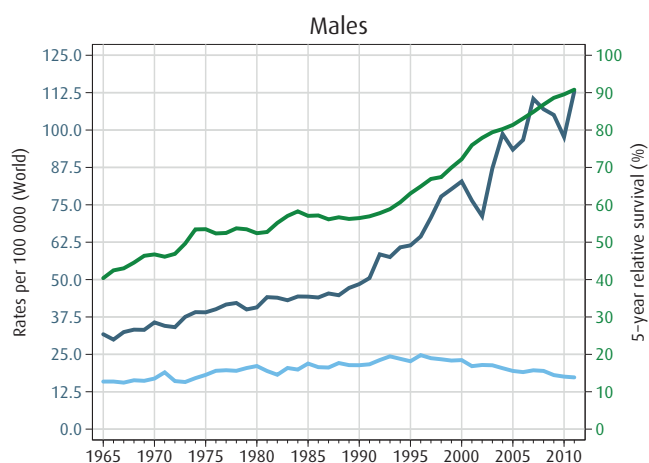


Figure 10-P: Corpus uteri (ICD-10 C54)

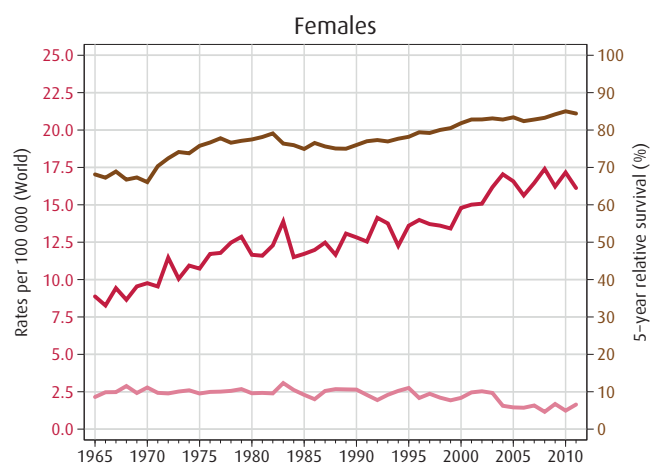


Figure 10-Q: Testis (ICD-10 C62)

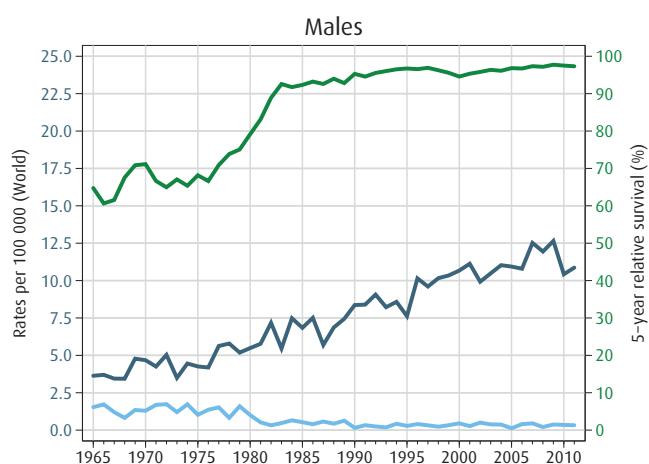
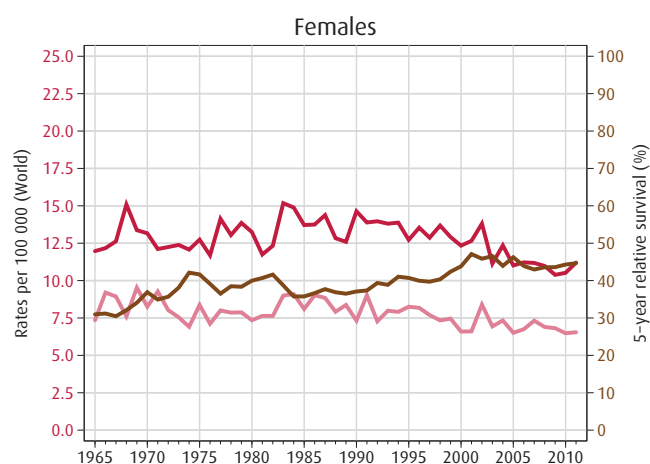


Figure 10-R: Ovary (ICD-10 C56)



— Incidence
— Mortality
— Survival

— Incidence
— Mortality
— Survival

Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 10-S: Bladder, ureter, urethra (ICD-10 C66-68)

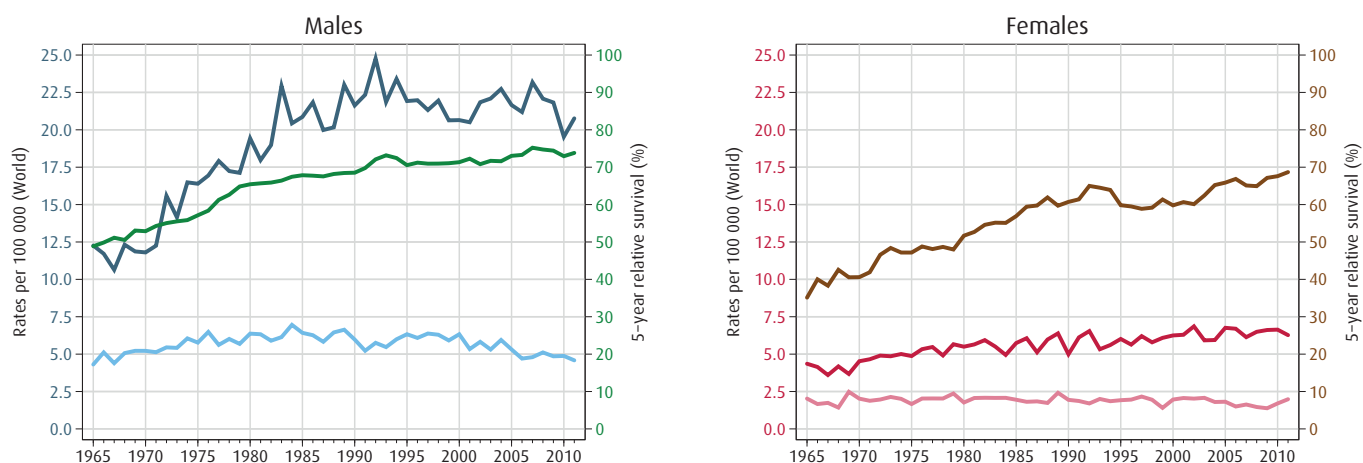


Figure 10-T: Central nervous system (ICD-10 C70-72, D32-33, D35.2-35.4, D42-43, D44.3-44.5)

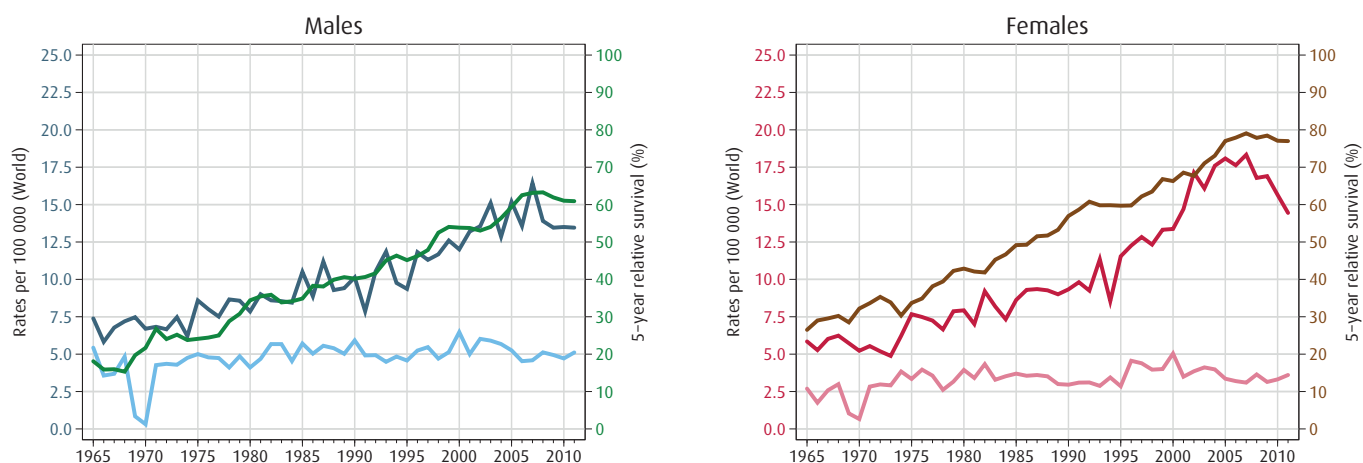
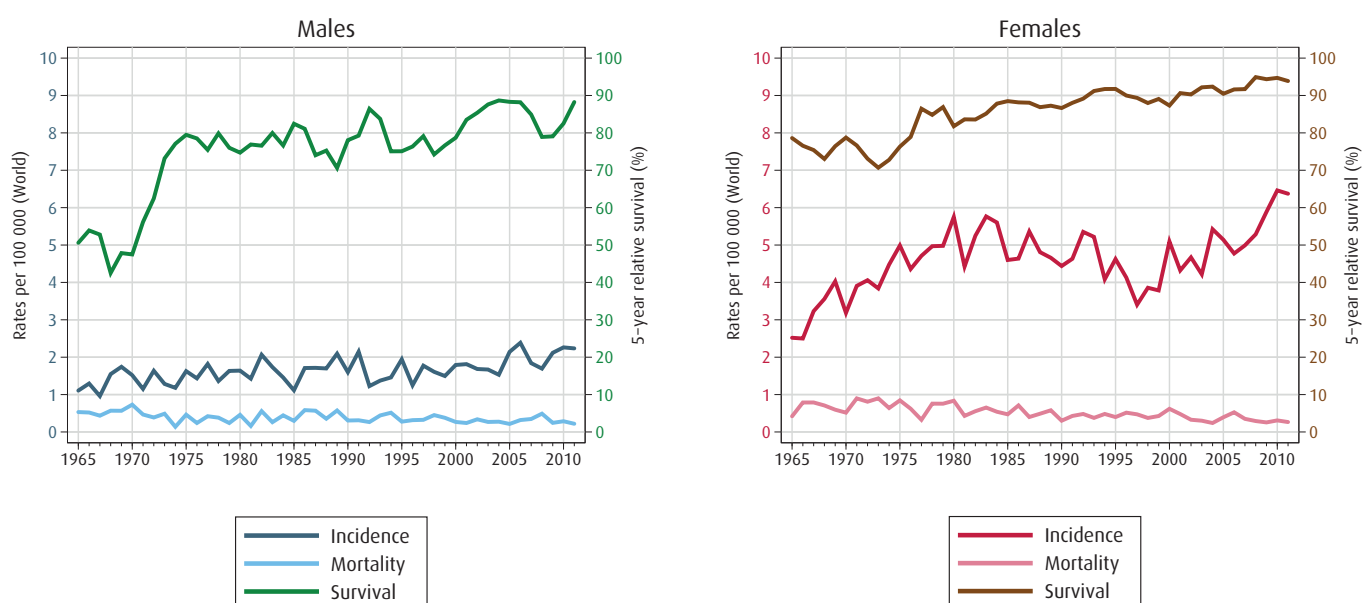


Figure 10-U: Thyroid gland (ICD-10 C73)



Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 10-V: Hodgkin lymphoma (ICD-10 C81)

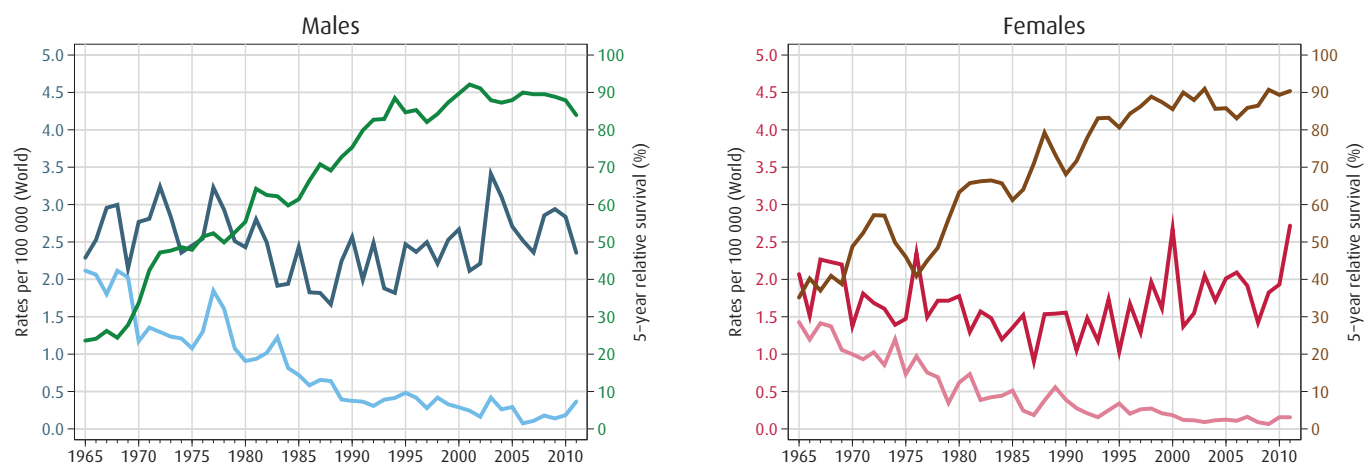


Figure 10-W: Non-Hodgkin lymphoma (ICD-10 C82-85, C96)

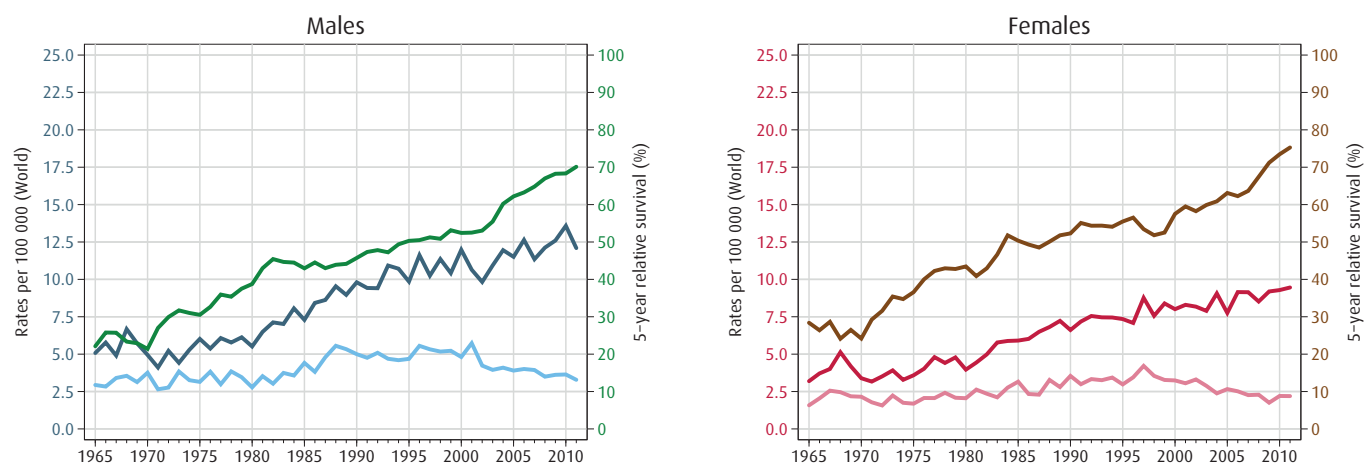
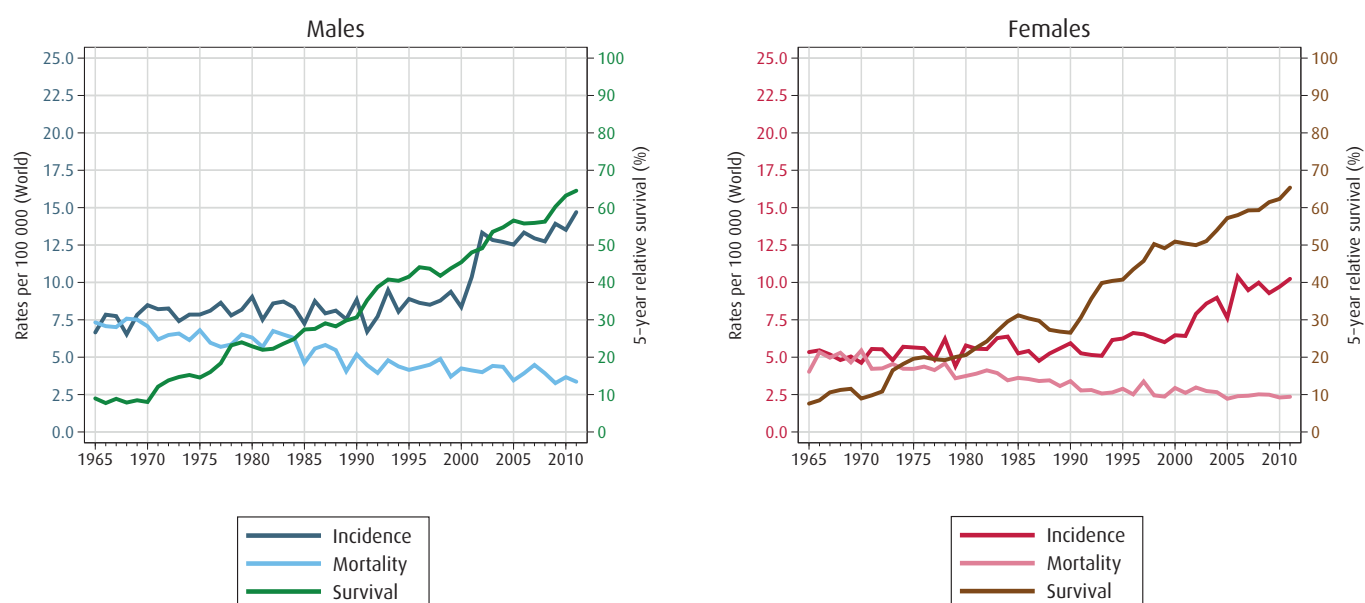


Figure 10-X: Leukaemia (ICD-10 C91-95, D45-47)



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Special issue:

NORDCAN

Cancer data from the Nordic countries

Editor: Siri Larønningen

Writing group: Siri Larønningen, Inger Kristin Larsen, Bjørn Møller, Gerda Engholm¹, Hans H. Storm¹ and Tom Børge Johannesen.

Layout and design: Gunther Zerener

Correspondence to: Siri Larønningen – siri.laronningen@kreftregisteret.no

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¹ NORDCAN Secretariat
Department of Cancer Prevention and Documentation
Danish Cancer Society

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1 The history of NORDCAN

The Association of Nordic Cancer Registries (ANCR)

The Nordic cancer registries represent countries with similar health care systems and have a high degree of quality compared to many cancer registries in the world. The joint population of the Nordic countries is more than 25 million and there are more than 130 000 patients being diagnosed with cancer each year. A considerable advantage of the Nordic countries is the possibility to track the population from birth to death through the personal identification numbers (Table 1).

Table 1: Year of introduction of personal identification numbers in the Nordic countries

Country	Year of Introduction of personal identification numbers
Sweden	1947
Iceland	1953
Norway	1964
Finland	1967
Denmark	1968

The first collaboration between the national cancer registries took place in the early 1950s, right at the beginning of the registration in the countries. There was from the start exchange of visits, experiences and information between the registries. Systematic annual meeting practice started in 1966 and the aim of the collaboration was to compare the cancer incidence rates in the Nordic countries and to use that comparison in order to detect factors that could explain the differences. It was realized that technical factors, definitions etc. played an important role, and therefore a lot of attention was focused on standardisation of definitions and practices.

The wealth of high quality information available from the Nordic cancer registries is well established. A series of projects has been supported by the Nordic Cancer Union (NCU) which is a collaborative body of the cancer societies in the Nordic countries. Since the 1970s, projects have addressed topics such as time trends in incidence (Hakulinen & al 1986; Tulinius & al 1992), the geographic distribution of cancer (cancer atlases) (Jensen & al 1988; Pukkala & al 2007), future predictions of cancer incidence and mortality burden (Wiklund & al 1992; Engeland & al 1993; Engeland & al 1995; Møller & al 2002), cancer survival (Engeland & al 1995; Engeland & al 1998), avoidable cancers (Olsen & al 1997) and the effectiveness of screening (Hristova & Hakama 1997). Information about cancer incidence, mortality, prevalence and survival combined with studies on risk factors, quality of treatment and cancer care are a sound basis for comprehensive cancer control plans, as a means of providing situation analyses, and as an assessment of the need for specific actions and the impact of subsequent interventions. These results have also been communicated in local languages to national authorities in the Nordic countries. High-quality epidemiological collaboration has been conducted in, for instance, childhood cancer and in using biological specimen banks (biobanks) leading to important discoveries in the aetiology of cancer.

NORDCAN

The ANCR has seen the need for an easily accessible and comprehensive graphical and statistical tool providing descriptive epidemiological analyses of the data from the Nordic cancer registries. Registry data is free for use by everyone and the intention is to share as much of the data as possible. NORDCAN was conceived from this principle with a pilot version in 2002 (Association of Nordic Cancer Registries, 2002) and a full version in 2003 (Storm & al 2003). The ambition was to provide a cancer database available for research, complete with comparable and timely data from each of the Nordic countries in a way that was user-friendly and satisfied most of the needs of policy makers, cancer societies, medical professionals, journalists, and the public (Engholm & al 2010). The project has from the onset been a joint activity of the ANCR and the International Agency for Research on Cancer (IARC), with financial support from the NCU. Data for NORDCAN are delivered from the national cancer registries, and the database and program have been developed in collaboration with the Cancer Information Section at IARC. The NORDCAN project group is comprised of representatives from each of these organizations. The group meets regularly to discuss further improvements in the quality of the Registry data and the functionality of the software.

Language availability

The NORDCAN database is available in all the Nordic languages as well as in English, and can be accessed at <http://www.ancr.nu>

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2 The NORDCAN database and program

The NORDCAN database and program contains data on cancer incidence, mortality, prevalence and survival in the Nordic countries, including the Faroe Islands, from the first year of complete registration through the most recently published year. The data availability per June 2013 is shown in Table 2.

Table 2: Data availability in NORDCAN

The NORDCAN database (Version 5.3, 04.2013)

Data availability				
Country	Incidence	Mortality	Prevalence	Survival*
Nordic countries	1960-2010	1953-2009	1980-2010	-
Denmark, national	1943-2011	1951-2011	1963-2011	1964-2008
Denmark, regional	1971-2011	1971-2011	1991-2011	-
Faroe Islands	1960-2010	1983-2010	-	-
Finland, national	1953-2011	1953-2011	1973-2011	1964-2008
Finland, regional	1953-2011	1953-2011	1973-2011	-
Iceland, national	1955-2011	1951-2009	1975-2011	1964-2008
Iceland, regional	1971-2011	1971-2009	1991-2011	-
Norway, national	1953-2010	1953-2010	1973-2010	1964-2008
Norway, regional	1953-2010	1953-2010	1973-2010	-
Sweden, national	1960-2010	1952-2011	1980-2010	1964-2008
Sweden, regional	1970-2010	1970-2011	1990-2010	-
*Data available by five-year periods				

As the time and pace of the completion of annual data differ between the Nordic countries, the main database and program are updated twice a year. At the updates, both new data, new functionality and new entities might be included.

Most recent updates of the NORDCAN database and program

The NORDCAN program was last updated in May 2013 to version 5.3. Besides the inclusion of data for 2011 for some countries, the update included animated maps of incidence, breakpoint analysis and survival data up until 2008.

A new update is planned in September/October 2013, and will most likely include incidence data for 2011 for all countries, mortality data for 2011 for all countries except Iceland, animated maps of mortality, updated survival, a choice of “all sites including non-melanoma skin cancer” and seven more detailed entities for leukaemia: acute lymphatic, chronic lymphatic, other and unspecified lymphatic, acute myeloid, chronic myeloid, other and unspecified myeloid and unspecified cell leukaemia, as well as three groups of cancers not included in any of the present entities except in the all cancer group: “Other specified cancer”, “Unknown primary cancer”, and “Other ill-defined cancers”.

Contents of the NORDCAN database and program

Three main datasets are delivered to the NORDCAN secretariat from each country:

Population

Population by year, sex, five-year age groups and municipality, county or region. Population data stem from the national population registries.

Mortality

Mortality by year of death, underlying cause of death, sex, five-year age groups and county or regions.

Mortality data stem from the national Causes of Death Registries, except for Finland where the data is based on the cancer registry record indicating if the patient died from the registered cancer.

Cancer cases

De-identified individual records of cancer cases for each year of registration from the national cancer registries. These data are only used for check of data, recoding and construction of the NORDCAN entities, preparation of municipal data for the animated maps, calculation of prevalence and survival and development of new facilities in NORDCAN. The dataset contains information about the cancer at the time of diagnosis (for instance topography, morphology, metastasis and information about diagnostics and treatment) and about the cancer patient (for instance age at time of diagnosis, whether the patient is alive or dead and number of days from time of diagnosis until time of death or end of follow up).

The NORDCAN program is based on tabulated counts on a national or regional level. The cancer diagnosis are currently (June 2013) grouped into forty one entities (see Table 3), and the data are presented in five-year age groups (0-4...80-84, 85+).

Table 3. Entities of NORDCAN (version 5.3)

ICD-7	ICD-10	Label
140	C00	Lip
140-8	C00-14	Lip, oral cavity and pharynx
141	C01-02	Tongue
143-4	C03-06+C46.2	Mouth
142	C07-08	Salivary glands
145-8	C09-14	Pharynx
150	C15	Oesophagus
151	C16	Stomach
152	C17	Small intestine
153	C18	Colon
153-4	C18-21	Colorectal
154	C19-21	Rectum and anus
155.0	C22	Liver
155.1	C23-24	Gallbladder
157	C25	Pancreas
160	C30-31	Nose, sinuses
161	C32	Larynx
162.0,1,8	C33-34	Lung
162.2	C38.4+C45.0	Pleura
196	C40-41	Bone
190	C43	Melanoma of skin
191	C44+C46.0	Skin, non-melanoma
197	C49+C46.1	Soft tissues
170	C50	Breast
176	C51-52,C57.7-9	Other female genital organs
171	C53	Cervix uteri
172	C54	Corpus uteri

ICD-7	ICD-10	Label
173-4	C55+C58	Uterus, other
175	C56,C57.0-4	Ovary etc.
179	C60+C63	Penis etc.
177	C61	Prostate
178	C62	Testis
180	C64	Kidney
181	C65-68+D09.0+D41.4	Bladder etc.
192	C69	Eye
193	C70-72+D32-33+D42-43	Brain, central nervous system
194	C73	Thyroid
201	C81	Hodgkin lymphoma
200+202	C82-85,C96	Non-Hodgkin lymphoma
203	C90	Multiple myeloma
204	C91-95	Leukaemia
204.0-2,8	C91-95\C9X.0	Other leukaemia
204.3	C91.0+C92.0+C93.0+C94.0+C95.0	Acute leukaemia
140-204\191	CXX.X\((C44+C46.0)+D09.0+D41.4+D32-33+D42-43	All sites but non-melanoma skin cancer

Data conversion and comparison

To overcome the differences in registration between countries and over time, the NORDCAN data need to be converted to an international standard applying the same rules to each case and dataset. To accomplish this, all data are coded, recoded or converted into ICD-O-3 and ICD-10, and then checked for the validity and consistency between variables in the datasets. All Nordic registries now either use or deliver data that can be converted to ICD-O-3. All conversions and checks at the secretariat are done using the IARCcrgTools (<http://www.iacr.com.fr/iarcrcrgtools.htm>). The IARCcrgTools also makes it possible to apply the multiple primary rules from IARC/IACR (http://www.iacr.com.fr/MPrules_july2004.pdf) in a consistent manner to all datasets.

The output of the IARCcrgTools is the converted and checked dataset with checkflags for each record indicating whether or not the record matches the logical criteria in the program. In addition, the program produces a logfile with summary statistics of the checks and detailed information about the different errors and warnings. An example of summary statistics is given in figure 1.

```
829018 records processed. Summary statistics:

1247 errors (728 individual records) recorded in
U:\nordcan\no\data\iarc.err:

396 invalid ICD0-3 (T) code
570 invalid ICD0-3 (M) code
281 invalid behaviour code

66890 warnings (66067 individual records) recorded in
U:\nordcan\no\data\iarc.chk:

123 unlikely sex/histology combination
2296 unlikely histology/site combination
31 unlikely behaviour/topography combination
6929 unlikely behaviour/histology combination
56999 unlikely basis/histology combination
512 unlikely age/site/histology combination
```

Figure 1: Example of logfile of IARC crg tools

Each of the Nordic countries go through the errors and warnings produced for their dataset in order to correct errors and to be aware of and be able to explain the coding practice leading to warnings.

Inclusions and exclusions

All data that are flagged “ok” after the IARCcrgTools-check are included in the NORDCAN database. This generally means data that generates no errors or warnings at all and data that only generate warnings. The NORDCAN entity for each registration is returned to the national cancer registries along with a variable indicating if a registration is not included and the reason for this.

Excluded from NORDCAN are:

- All data that generate errors during the check. This is a very low percentage, and are most often due to errors in conversions or coding errors. If corrected, these data might be included later.
- Records that are excluded due to the multiple primary rules.
- Basal cell skin cancers. This is due to heterogeneous and incomplete coding over time and between countries.

In addition, non-melanoma skin cancer is currently (June 2013) excluded from the “all cancers combined”-category. This is due to differences in coding practice between Denmark and the other Nordic countries, and for comparison to registries outside the Nordic countries. More information about this is given below.

Main issues of comparability

There are some main issues of comparability over time and between the countries. This is mainly due to different coding practices and/or missing data, but also – for some sites – because of differences in the onset of different screening programmes.

Incidence data

Bladder tumours

The incidence of bladder tumours may not be comparable between the Nordic countries due to varying coding practice over time concerning non-invasive tumours. Non-invasive tumours have always been included in Denmark and Norway, but never in Finland.

Brain and central nervous system tumours

The incidence of brain and central nervous system tumours may not be comparable between the Nordic countries because of the inclusion of benign or unspecified tumours.

Skin, non-melanoma

The incidence of non-melanoma skin cancer is not comparable between Denmark and the other Nordic countries for the years before 1978. This is because Denmark in the period 1943-1977 was the only country that included basal cell carcinomas in this category.

Mortality data

- Numbers of Danish cancer deaths in 2007-2011 is too low, as 3.3, 3.5, 3.8, 4.6 and 5.6%, respectively, are missing cause of death.
- Gallbladder mortality is missing up till 1957 for Iceland, 1960 for Denmark and Sweden and 1968 for Norway.
- Pleura mortality is missing up till 1960 for Denmark and Sweden and 1968 for Norway.
- Acute and other leukaemia mortality can not be separated with certainty for the early years.

More detailed information might be found at the NORDCAN website, under “The NORDCAN database”.

Main differences between NORDCAN and Cancer in Norway

When comparing incidence data between the Norwegian data in NORDCAN and the Norwegian data in the Cancer in Norway-publications, some differences appear. Most of these differences are due to exclusions in the NORDCAN-dataset because of the use of the IARCcrgTools. In addition, the grouping of some cancer cases and entities are different between NORDCAN and Cancer in Norway. There are more differences for the earlier years of registration than for the latter years.

Multiple primary cancers

The IARC multiple primary rules are used for all Norwegian data in both NORDCAN and Cancer in Norway. Some differences still exists, mostly due to the differences in entities and grouping of cancers in NORDCAN compared to Cancer in Norway.

Lip cancers (C00)

Distinguishing between lip skin and the inner mucosa lining of the lip is difficult, and it is also difficult to distinguish lip cancers from other cancers in the mouth region. For the Cancer in Norway-data, all cases coded to C00 are counted as lip cancers, while in NORDCAN some are counted as cancers of the mouth and some as melanoma skin cancers or non-melanoma skin cancers based on the morphology. Some are also excluded due to being basal cell carcinomas.

Cancers of the pharynx (C14)

Combined for all years, only about 32% of the cancers counted as cancers of the pharynx in Cancer in Norway are included in this entity in NORDCAN. The main proportion of the remaining 68% fall into the category of “other cancers”. Up until the current NORDCAN version (5.3) these were only included in the category of “all cancer sites”, but with the next version these will end up in one or more of the three new entities of “other specified cancer”, “unknown primary cancer” and “other ill-defined cancers”.

Cancers of the pleura (C38)

As for cancers of the pharynx, a large proportion of cancers of the pleura are also defined as “other cancers”. With the new update in the autumn of 2013, these will end up in the entity of “other specified cancers”.

Kaposi sarcoma (C46)

Kaposi sarcoma is reported as a separate group in Cancer in Norway, while in NORDCAN Kaposi sarcoma of the skin (C46.0) is reported as non-melanoma skin cancers, Kaposi sarcoma of soft tissue (C46.1) is reported as soft tissue cancers and Kaposi sarcoma of palate (C46.2) is reported as cancers of the mouth. C46.3-C46.9 is currently only included in “all cancer sites”, but will in the future be reported as “other specified cancers”.

Cancers of peripheral nerves and the autonomic nervous system (C47)

These cancers are reported as a separate group in Cancer in Norway. In NORDCAN, most of them are included as cancers of the brain and central nervous system.

Cancers of peritoneum and retroperitoneum (C48)

In Cancer in Norway, these cancers count as soft tissue cancers along with cancers of other connective and soft tissue (C49). In NORDCAN, most of these are reported as “other specified cancers” and currently only included in the “all cancer sites” entity

Cancers of other and unspecified female genital organs (C57)

In NORDCAN, about 30% of all Norwegian cancers of other and unspecified female genital organs – C57.0-C57.4, are counted as ovarian cancers. In Cancer in Norway, only the germ cell cancers of C57 are included as ovarian cancers. The rest of the cancers registered as C57 are grouped with C51 and C52 as “other female genital cancers”.

Cancers of the renal pelvis, ureter, bladder and other and unspecified urinary organs (C65-C68)

As mentioned earlier, there are differences between different countries and over time regarding the inclusion and exclusion of non-invasive bladder tumours. This leads to differences between the Norwegian data in NORDCAN and Cancer in Norway. Many of these cancers for the earlier years are also excluded in NORDCAN because of the multiple primary rules. For C68, about 36% of the cancers are excluded from the bladder cancer entity and only included in “all cancer sites” entity.

Cancers of spinal cord, cranial nerves and other parts of central nervous system (C72)

About 36% of the cancers counted as C72 in Cancer in Norway are excluded from NORDCAN. This is most likely due to problems regarding inclusion of benign or unspecified tumours, as mentioned earlier.

Cancers of thymus (C37), adrenal gland (C74) and other endocrine glands and related structures (C75)

Cancer in Norway reports these cancers as one group. In NORDCAN, most of them count as “other specified cancers”. 15% of the adrenal gland cancers, however, are counted as non-melanoma skin cancers.

Male extragonadal germ cell cancers

Male extragonadal germ cell cancers are included as testicular cancers in Cancer in Norway, but are excluded from this entity in NORDCAN.

Access to NORDCAN data

Aggregated data on incidence, mortality, prevalence and survival is accessible for everyone from the NORDCAN website (<http://www.ancr.nu>). The next chapter will give a thorough demonstration of the use of different facilities at this website.

A researcher in need of a download of aggregated NORDCAN data for use with other software products may approach the Secretariat in Denmark. In the case where more detailed analysis are required, NORDCAN has a password-only download facility of cancer incidence and mortality data along with corresponding person-year data aggregated by cancer type, year, sex, and five-year age group. The password (of limited duration) should be requested from the NORDCAN secretariat. If individual data is wanted for further analysis, each of the Nordic cancer registries should be contacted directly to discuss the options and the research protocol needed to access such data.

3 A guide on how to use the NORDCAN data

The NORDCAN project contains data for 41 major cancer sites or groups of cancers in the Nordic countries (Denmark, Sweden, Finland, Iceland, Faroe Islands and Norway). The internet application provides access to cancer fact sheets and gives the opportunity to conduct online analyses for incidence, mortality, prevalence and survival of cancer. All analyses, except for the survival analyses, allow stratification on geographical regions. A comprehensive description of the NORDCAN project has been presented by Engholm and colleagues (Engholm & al 2010; Engholm & al 2013). NORDCAN is available in five Nordic languages and English, and the choice of language version is made by clicking the relevant flag on the start page with the red Nordic map as shown below. If you want to change to another language while working in NORDCAN, simply click on the relevant flag in the upper right corner of the NORDCAN website.

In this chapter, we will present a guide on how to utilize some of the possibilities in the NORDCAN project, with examples mostly taken from Norway. Before you start using the NORDCAN internet application, we highly recommend that you read the chapter “About NORDCAN” at the NORDCAN website. With the NORDCAN online. With the NORDCAN online program, you can perform simple analysis or create your own graphs, and data can be expressed as absolute numbers or rates. NORDCAN offers both age-specific rates, crude rates and age-standardised rates. For the latter, standardisation is possible according to the World standard population, the European standard (which resembles Scandinavia in the 1950's) or the Nordic standard (2000). Some variation in rates may occur from one year to the next. The interpretations of cancer statistics and examination of time trends should therefore be based on smoothing of numbers by the past several years, and special caution should be given to the interpretation of results on short and long term predictions and breakpoint analyses.

Using NORDCAN Graphs or tables in presentations or manuscripts

To use a graph in a presentation or a manuscript, simply right click on the graph and choose “copy”. You may then paste the graph into the desired location. It is also possible after the right click on the graph to choose “save image as” for later use as a png or bitmap file.

A table can be saved as a pdf-file by printing it using cufteftp or a similar function. A table can by a click in the text-file box be exported to a text file which afterwards can be read from Excel for further tabulation and presentation



NORDCAN

ABOUT NORDCAN

- The NORDCAN project
- The NORDCAN database
- The cancer dictionary
- The NORDCAN group
- Contacts

CANCER FACT SHEETS

-- Select a cancer --
 and
 -- Select a region --

GO

ONLINE ANALYSIS

- Incidence/Mortality
- Prevalence
- Survival

GLOSSARY OF TERMS

LITERATURE

ACKNOWLEDGEMENTS

DOWNLOAD

Last update: 25.04.2013

The NORDCAN project

Welcome to NORDCAN. This project presents the incidence, mortality, prevalence and survival statistics from 41 major cancers in the Nordic countries. This Internet application provides access to summary data with graphic and tabulation facilities. Regional data with up to 6 regions for each country is included for incidence, mortality and prevalence. The database with more detailed geographical information (county) for incidence and mortality and for the period 1972-2006 is only available using the NORDCAN software for PC.

- The Association of the Nordic Cancer Registries (ANCR) has proprietary rights to the materials on the Website. The data extracted from this website is in the public domain. You may use it "as is" but must cite the corresponding reference (see below).
- Systematic retrieval of data to create or compile, directly or indirectly, a collection, database or directory without written permission from ANCR via the [secretariat](#) is prohibited.
- This application has been developed in collaboration with the [Section of Cancer Information \(CIN\)](#) at [IARC](#).
- Nordic Cancer Union (NCU) has financially supported the project.
- Before you start working with NORDCAN, we strongly recommend that you first read the section: The NORDCAN database.
- Tables, graphs and predictions are made based on the selection of the user. It might take a short time to calculate tables, graphs and predictions in the program.

Recommended references

Engholm G, Ferlay J, Christensen N, Johannessen TB, Klint Å, Kettum JE, Møller MC, Ólafsdóttir E, Pukkala E, Storm HH. NORDCAN: Cancer Incidence, Mortality, Prevalence and Survival in the Nordic Countries, Version 5.3 (25.04.2013). Association of the Nordic Cancer Registries. Danish Cancer Society. Available from <http://www.ancr.nu>, accessed on day/month/year.

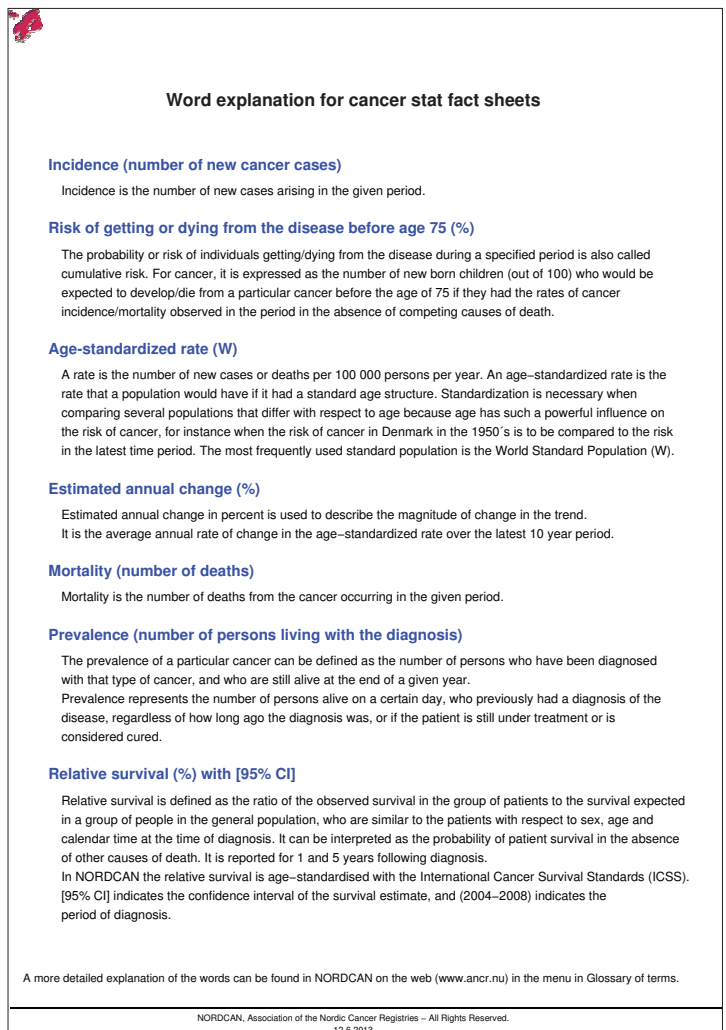
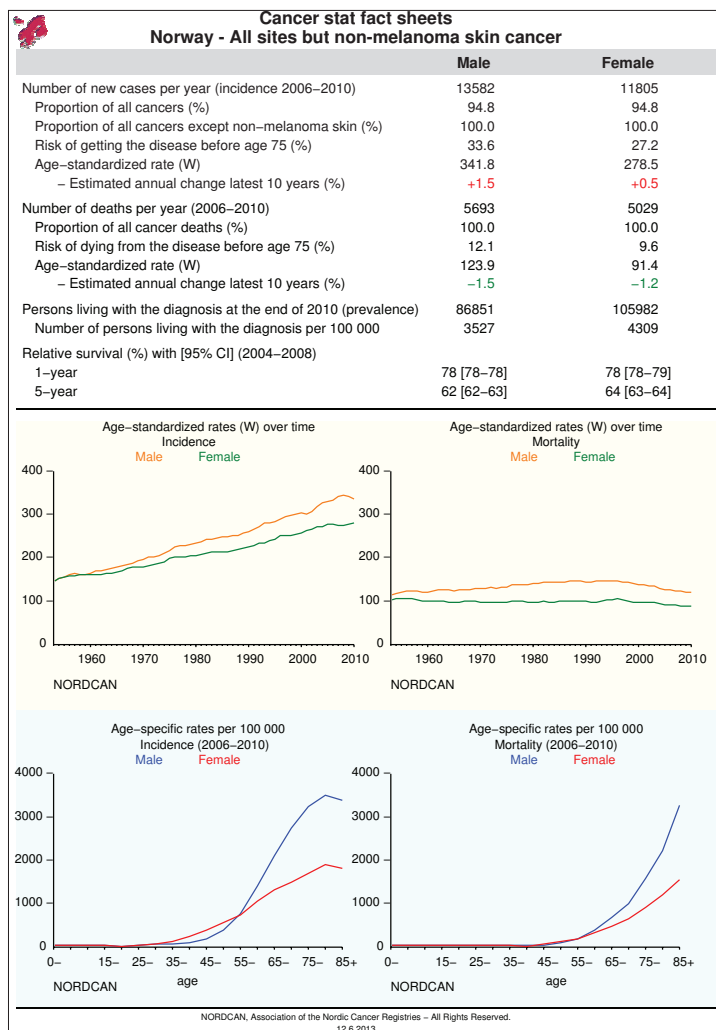
Engholm G, Ferlay J, Christensen N, Bray F, Gjerstorff ML, Klint Å, Kettum JE, Ólafsdóttir E, Pukkala E, Storm HH (2010). NORDCAN-a Nordic tool for cancer information, planning, quality control and research. *Acta Oncol.* 2010 Jun;49(5):725-36.

FACT SHEETS

The cancer facts sheets give quick access to a summary of the cancer burden for specific cancer diseases in the Nordic countries. The sheets provide an overview of the key statistics in terms of incidence, mortality and survival for the latest five-year period and prevalence at the end of the incidence period. It also gives an explanation for the most common measurements used in cancer epidemiology.

Output example: Cancer fact sheet for all sites but non-melanoma skin cancers for Norwegian males and females

During the period 2006–2010, about 25 000 new cases of cancer (excluded non-melanoma skin cancer) were diagnosed per year. The incidence has steadily increased in the past decades, and in the latest 10 years the estimated annual change is 1.5% for men and 0.5% for women. Almost one third of the Norwegian population develops cancer before the age of 75, and the risk of dying from cancer before the age of 75 is 12% in men and 10% in women. Women have a higher probability of surviving a cancer diagnosis. The 1-year relative survival of cancer in total is 73% and 75% in men and women, respectively, whereas the five-year relative survival after the diagnosis is 55% among men and 59% among women.

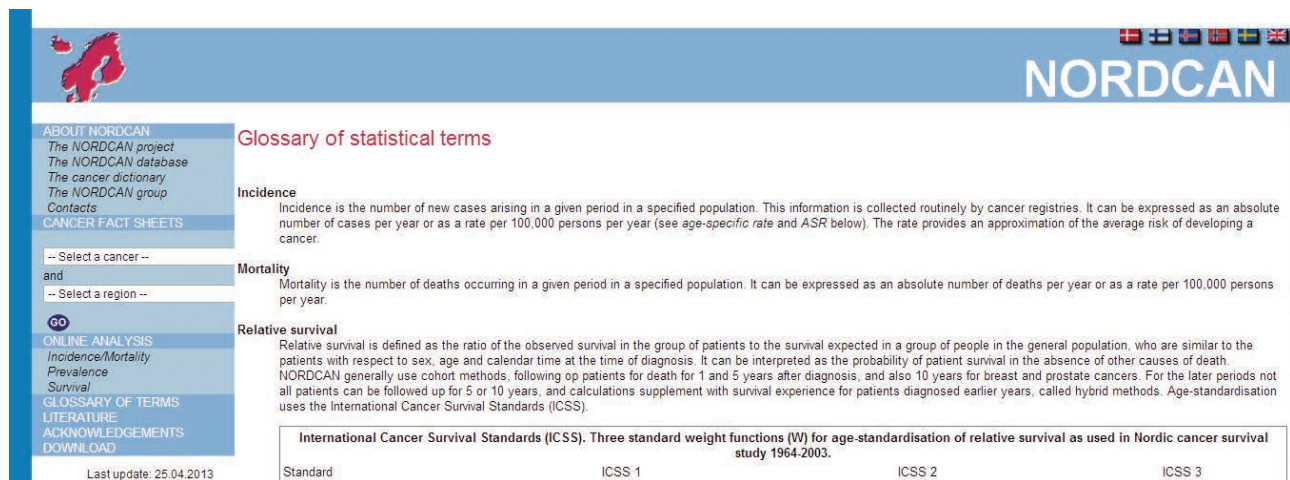


INCIDENCE AND MORTALITY

Definitions¹

Incidence is the number of new cases arising in a given period in a specified population. It can be expressed as an absolute number of cases per year or as a rate per 100,000 persons per year. The rate provides an approximation of the average risk of developing a cancer. Mortality is the number of deaths occurring in a given period in a specified population. It can be expressed as an absolute number of deaths per year or as a rate per 100,000 persons per year. The crude rates are calculated by dividing the number of new cancers (incidence) or cancers deaths (mortality) by the total number of person years at risk in the same period, and may be calculated for a whole population or separately for specific sub-groups, as for example age-specific rates. For comparison between populations or between time periods it is necessary to use age-standardised rates. These rates adjust for population growth and ageing, and give the rates that a population would have with a standard age distribution.

The incidence data is based on registrations in the Nordic cancer registries, whereas cancer mortality data are based on data from death certificates, and might have a lower accuracy than the incidence data due to difficulties in certifying and ascertaining the cause of death.



The screenshot shows the NORDCAN website interface. At the top, there is a blue header with the NORDCAN logo and flags of the Nordic countries. Below the header, a navigation menu on the left includes links for 'ABOUT NORDCAN', 'CANCER FACT SHEETS', 'ONLINE ANALYSIS', 'GLOSSARY OF TERMS', 'LITERATURE', and 'ACKNOWLEDGEMENTS'. The main content area is titled 'Glossary of statistical terms' and contains definitions for 'Incidence', 'Mortality', and 'Relative survival'. At the bottom, there is a table titled 'International Cancer Survival Standards (ICSS): Three standard weight functions (W) for age-standardisation of relative survival as used in Nordic cancer survival study 1964-2003.'.

Glossary of statistical terms

Incidence
Incidence is the number of new cases arising in a given period in a specified population. This information is collected routinely by cancer registries. It can be expressed as an absolute number of cases per year or as a rate per 100,000 persons per year (see age-specific rate and ASR below). The rate provides an approximation of the average risk of developing a cancer.

Mortality
Mortality is the number of deaths occurring in a given period in a specified population. It can be expressed as an absolute number of deaths per year or as a rate per 100,000 persons per year.

Relative survival
Relative survival is defined as the ratio of the observed survival in the group of patients to the survival expected in a group of people in the general population, who are similar to the patients with respect to sex, age and calendar time at the time of diagnosis. It can be interpreted as the probability of patient survival in the absence of other causes of death. NORDCAN generally use cohort methods, following up patients for death for 1 and 5 years after diagnosis, and also 10 years for breast and prostate cancers. For the later periods not all patients can be followed up for 5 or 10 years, and calculations supplement with survival experience for patients diagnosed earlier years, called hybrid methods. Age-standardisation uses the International Cancer Survival Standards (ICSS).

International Cancer Survival Standards (ICSS): Three standard weight functions (W) for age-standardisation of relative survival as used in Nordic cancer survival study 1964-2003.			
Standard	ICSS 1	ICSS 2	ICSS 3

Last update: 25.04.2013

¹ Extracted from the glossary of terms in the NORDCAN project <http://www.ancr.nu>

AGE-SPECIFIC INCIDENCE RATE

Output example: The age-specific incidence rates per 100 000 for selected cancers by age, for Norwegian females, 2006-2010 (combined period)

Cancer is primarily a disease of older people, and for most cancer sites the incidence rates tend to increase with age, with the highest incidence rates occurring at the age of 80 and above. The output table for these analyses give age-standardised rates for all of the three standard populations (World, European and Nordic), and clearly show how the standardised rates (ASR) differs, with lowest rates appearing using the World Standard Population.

Tables

Age-specific rates or numbers

Standardised rates by

- ▶ Countries
- ▶ Cancers
- ▶ Year

Graphs:

Line charts

- ▶ Age-specific curves
- ▶ Cumulative risk by age
- ▶ Time trends
- ▶ Time trends by age
- ▶ Trends by birth cohort

Bar charts by

- ▶ Countries
- ▶ Cancers

Cancer map

Pie chart

Population pyramid

Advanced options:

- ▶ Short or long term predictions.
- ▶ Breakpoint analysis.

Age-specific table (Incidence/Mortality)

Country/Years*
 Norway
 2010
 2009
 2008
 2007
 2006

Sex
 ☐ Male
 ☒ Female

Data type
 ☒ Incidence
 ☐ Mortality

Options
 Results sorted by:
 Cancer (alphabetical)
 Statistic:
 ☒ Rates
 ☐ Numbers

Output
 ☐ Text file

Execute

* Multiple selection is possible using the 'Ctrl' key.
 The output file (text) will be available with a click on the icon that will appear at the bottom of the table.

Norway (2006-2010)																								
Incidence per 100,000 by age - Female																								
Cancer	Total	0-	5-	10-	15-	20-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85+	CR	ASR (W)	ASR (E)	ASR (N)	
Acute leukaemia	512	7.2	3.1	2.4	2.1	1.1	0.7	1.1	1.5	1.4	1.6	2.3	3.3	8.0	8.0	9.8	11.0	16.2	18.5	4.3	3.3	3.6	4.0	
All sites but non-melanoma skin cancer	59025	20.7	12.3	12.0	19.7	34.2	62.3	99.6	159.2	250.7	406.5	595.9	768.1	1065.1	1336.7	1503.2	1720.8	1905.6	1844.1	493.2	278.5	387.1	471.2	
Breast	13775	-	-	-	0.3	1.5	5.4	22.0	44.0	98.0	178.3	229.9	244.2	291.6	320.0	217.5	226.9	278.8	278.4	115.1	73.1	99.2	111.9	
Cervix uteri	1508	-	-	-	-	3.1	11.8	19.7	24.9	20.4	19.3	21.0	14.5	16.9	12.2	15.7	18.9	17.6	14.2	12.6	9.6	11.8	12.7	
Colon	6424	-	0.1	0.1	0.5	1.1	1.9	2.1	4.4	8.7	14.9	30.3	50.0	84.0	144.6	209.2	254.2	347.9	333.1	53.7	23.5	35.7	49.3	
Colorectal	9201	-	0.1	0.1	0.5	1.4	2.6	3.5	7.8	13.9	27.9	52.0	81.2	136.5	212.4	289.9	359.1	456.1	437.4	76.9	35.1	52.7	71.2	
Corpus uteri	3506	-	-	-	-	0.4	1.3	3.9	9.5	15.9	38.1	61.9	78.7	106.4	111.3	103.1	92.9	72.4	29.3	16.7	23.8	28.5		
Lung	5661	-	0.1	0.1	0.1	0.4	0.9	1.0	3.1	5.5	18.6	39.9	77.7	129.2	163.4	216.7	233.7	188.5	113.2	47.3	25.2	36.7	46.0	
Melanoma of skin	3418	0.1	0.1	-	1.3	5.2	11.6	15.2	24.1	29.8	31.9	39.8	45.3	53.3	65.0	66.5	72.6	74.7	82.9	28.6	18.3	24.1	27.8	
Ovary etc.	2337	0.1	0.3	0.9	1.0	1.4	1.4	1.6	3.9	9.2	15.5	29.1	37.8	49.3	59.4	58.2	65.7	63.2	56.6	19.5	11.4	15.9	18.9	
Rectum and anus	2777	-	-	-	-	0.3	0.7	1.4	3.4	5.2	13.0	21.7	31.1	52.5	67.7	80.7	104.9	108.2	104.3	23.2	11.6	17.0	21.9	

Rates based on less than 10 cases are italicised.

(The output example shows an extraction of the output table for some selected cancers)

STANDARDISED INCIDENCE AND MORTALITY RATES BY COUNTRIES AND REGIONS

Output example: Standardised incidence rates per 100 000 for melanoma of the skin, by country and region, Nordic males, 2006-2010 (grouped period)

Sun exposure is a well-known risk factor for the development of cutaneous malignant melanoma. Within the countries there is a gradient of increasing sun exposure from north to south, and a marked north-south gradient of the incidence of malignant melanoma. In Norway, the incidence rates are almost twice as high in the Western and South-Eastern regions as compared to the Northern region. Such patterns, with highest rates in the southern regions, are also observed within Sweden, Denmark and Finland, but are not observed across the Nordic countries. For example the incidence rates in the southern region of Norway are about the same as the rates in the southern region of Denmark.

Tables

Age-specific rates or numbers

Standardised rates by

- Countries
- Cancers
- Year

Graphs:

Line charts

- Age-specific curves
- Cumulative risk by age
- Time trends
- Time trends by age
- Trends by birth cohort

Bar charts by

- Countries
- Cancers

Cancer map

Pie chart

Population pyramid

Advanced options:

- Short or long term predictions.
- Breakpoint analysis.

Standardised rates by countries (Incidence/Mortality)

Cancer/Years*

Melanoma of skin

2010
2009
2008
2007
2006

Sex

☒ Male
☐ Female

Data type

☒ Incidence
☐ Mortality

Options

Results sorted by:

Country ☐ Standard error



Melanoma of skin, Male
Incidence (2006-2010), age 0-85+

Country	Numbers	Crude Rate	ASR(W)	ASR(E)	ASR(N)	Cumulative Risk
Nordic countries	15915	25.6	15.5	21.5	26.2	-
Denmark	3818	28.1	18.0	24.2	29.0	-
DK, North Jutland region	326	22.4	14.1	18.6	22.3	-
DK, Central Jutland region	751	24.3	15.5	21.4	25.9	-
DK, Southern Denmark region	878	29.5	18.7	25.0	29.5	-
DK, The capital region	1354	33.4	22.6	30.1	36.0	-
DK, Zealand region	509	25.1	14.3	19.7	23.9	-
Faroe Islands	13	10.3	8.8	10.5	10.6	-
Finland	2662	20.4	12.2	17.1	21.0	-
FI, Region Helsinki	1011	23.2	15.1	21.1	26.1	-
FI, Region Kuopio	328	16.2	8.7	12.3	14.8	-
FI, Region Oulu	265	14.5	8.8	12.4	15.6	-
FI, Region Tampere	653	24.6	14.1	19.8	24.4	-
FI, Region Turku	401	18.6	10.7	14.7	18.0	-
Iceland	103	12.9	9.6	13.3	16.2	-
IS, Reykjavik-Reykjanes	73	13.4	9.9	14.2	17.9	-
IS, Outside the capital	30	11.9	9.1	11.6	13.1	-
Norway	3247	27.3	17.3	24.4	30.1	-
NO, Central region	383	23.0	14.4	20.0	24.7	-
NO, Northern region	190	16.3	10.3	14.3	17.0	-
NO, South-Eastern region	1963	29.9	18.7	26.4	32.7	-
NO, Western region	711	28.6	19.2	27.2	33.5	-
Sweden	6085	26.5	15.4	21.3	26.1	-
SE, Northern region	377	17.1	9.3	12.9	15.8	-
SE, Stockholm-Gotland region	1220	24.4	15.9	22.2	27.1	-
SE, Southern region	1080	28.2	16.0	22.3	27.6	-
SE, South-Eastern region	741	30.0	17.2	23.5	28.2	-
SE, Uppsala-Örebro region	1265	26.2	14.2	19.8	24.2	-
SE, Western region	1402	30.5	17.7	24.6	30.2	-

Crude and Age-Standardised Rate per 100,000
Cumulative Risk, percent

Output example: Standardised mortality rates per 100 000 for malignant melanoma by country and regions, Nordic males, 2006-2010 (grouped period)

Norway has the highest mortality rates of malignant melanoma in the Nordic countries. The highest rates in Norway are observed in the South-Eastern and Western regions and reflect the high incidence, but might also be partially driven by unfavourable survival and differences in treatment.

Tables

Age-specific rates or numbers

Standardised rates by

- ▶ Countries
- ▶ Cancers
- ▶ Year

Graphs:

Line charts

- ▶ Age-specific curves
- ▶ Cumulative risk by age
- ▶ Time trends
- ▶ Time trends by age
- ▶ Trends by birth cohort

Bar charts by

- ▶ Countries
- ▶ Cancers

Cancer map

Pie chart

Population pyramid

Advanced options:

- ▶ Short or long term predictions.
- ▶ Breakpoint analysis.

Standardised rates by countries (Incidence/Mortality)

Cancer/years*
Melanoma of skin 2010
2009
2008
2007
2006

Sex
☒ Male
☐ Female

Data type
☐ Incidence
☒ Mortality

Age range
from to
0- 85+

Options
Results sorted by:
Country ☐ Standard error

Output
☐ Text file
☐ Countries
☐ Regions
☒ Both

Execute

* Multiple selection is possible using the 'Ctrl' key.
The output file (text) will be available with a click on the icon that will appear at the bottom of the table.



Melanoma of skin, Male
Mortality (2006-2010), age 0-85+

Country	Numbers	Crude Rate	ASR(W)	ASR(E)	ASR(N)	Cumulative Risk
Denmark	717	5.3	3.0	4.4	5.6	-
DK, North Jutland region	77	5.3	2.8	4.1	5.2	-
DK, Central Jutland region	173	5.6	3.3	4.8	6.3	-
DK, Southern Denmark region	165	5.5	3.2	4.5	5.6	-
DK, The capital region	207	5.1	3.0	4.5	6.0	-
DK, Zealand region	95	4.7	2.6	3.6	4.3	-
Faroe Islands	2	1.6	1.1	1.5	1.5	-
Finland	585	4.5	2.4	3.6	4.8	-
FI, Region Helsinki	201	4.6	2.8	4.2	5.7	-
FI, Region Kuopio	91	4.5	2.3	3.3	4.3	-
FI, Region Oulu	79	4.3	2.4	3.5	4.6	-
FI, Region Tampere	133	5.0	2.5	3.8	5.3	-
FI, Region Turku	81	3.8	1.8	2.7	3.7	-
Norway	867	7.3	4.3	6.3	8.4	-
NO, Central region	98	5.9	3.3	4.9	6.6	-
NO, Northern region	39	3.3	2.1	2.8	3.5	-
NO, South-Eastern region	552	8.4	4.8	7.2	9.7	-
NO, Western region	178	7.2	4.5	6.6	8.7	-
Sweden	1397	6.1	3.1	4.6	6.1	-
SE, Northern region	84	3.8	1.8	2.7	3.5	-
SE, Stockholm-Gotland region	251	5.0	3.0	4.5	6.0	-
SE, Southern region	266	7.0	3.5	5.2	6.8	-
SE, South-Eastern region	172	7.0	3.3	4.9	6.5	-
SE, Uppsala-Orebro region	333	6.9	3.3	4.9	6.4	-
SE, Western region	291	6.3	3.2	4.7	6.4	-

Crude and Age-Standardised Rate per 100,000
Cumulative Risk, percent

AGE-SPECIFIC INCIDENCE AND MORTALITY

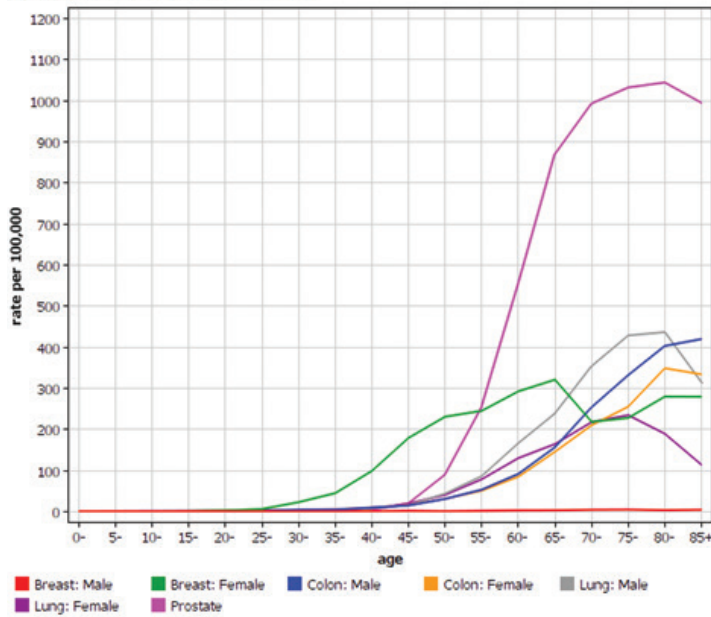
Output example: Age-specific incidence and mortality curves for selected cancers in Norway, 2006-2010

Most cancers in Norway are diagnosed in persons over 50 years, and colorectal, prostate and lung cancers have the highest incidence rates in the oldest age groups (75-85 years). The incidence of breast cancer peaks around 65 years, and reflects the introduction of the Norwegian Breast Cancer Screening program, with detection of tumours at earlier stages and ages. The mortality rates for lung cancer peak around 80 years and are then levelling off, whereas the mortality rates for colorectal, breast and prostate cancers continue to increase and are highest in the oldest age group.

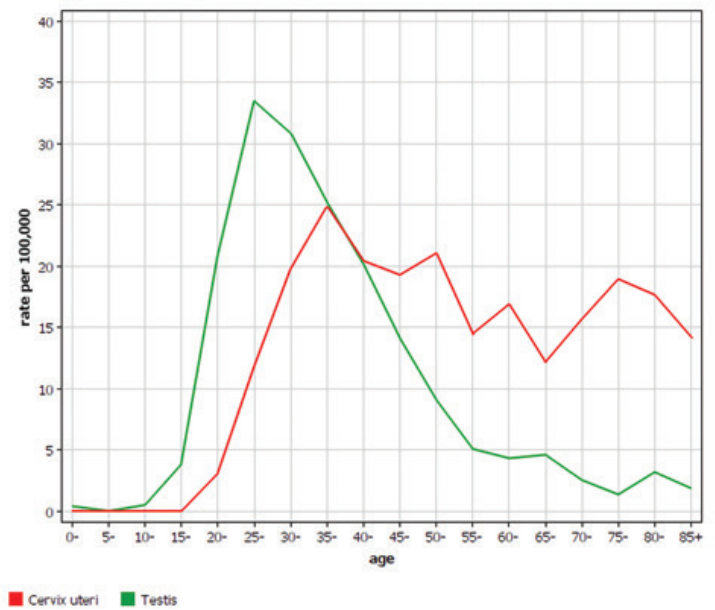
Some cancers, like testicular and cervical cancer, occur more often in younger age groups. Testicular cancer has the highest incidence rates in men between 20-30 years, and the incidence of cervical cancer peaks between 30 and 40 years. The mortality rates for cervical cancer rise until the age of 80, whereas the highest mortality rates for testis cancer occur in age groups between 70 and 80 years.

Tables Age-specific rates or numbers Standardised rates by ► Countries ► Cancers ► Year Graphs: Line charts ► Age-specific curves ► Cumulative risk by age ► Time trends ► Time trends by age ► Trends by birth cohort Bar charts by ► Countries ► Cancers Cancer map Pie chart Population pyramid Advanced options: ► Short or long term predictions. ► Breakpoint analysis.	Age-specific curves (Incidence/Mortality) Cancer*Sex Brain, central nervous system Breast Cervix uteri Colon Colorectal Male ☒ Female ☒ Country*Year* Outside the capital ☒ Norway Central region Northern region South-Eastern region Western region Sweden 2010 2009 2008 2007 2006 Grouped (period) ☒ Individual years ☐ Data type ☒ Incidence ☐ Mortality Age from to 0- 85+ Graphic Orientation ☐ Portrait ☒ Landscape Options ☒ Add grid lines ☐ Add symbols Line style ☐ Thin ☒ Medium ☐ Thick Check curves Execute * Multiple selection is possible using the 'Ctrl' key. You can select up to 12 curves (use the 'Check curves' button if necessary).
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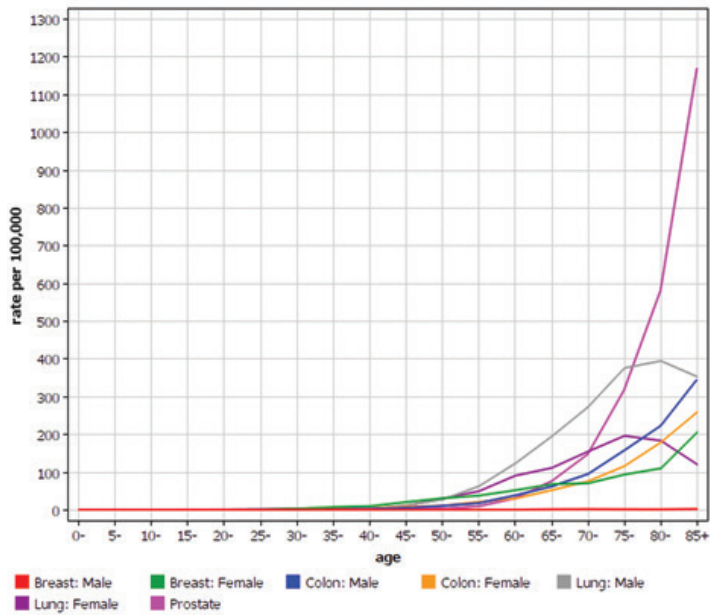
Norway-Incidence (2006-2010)



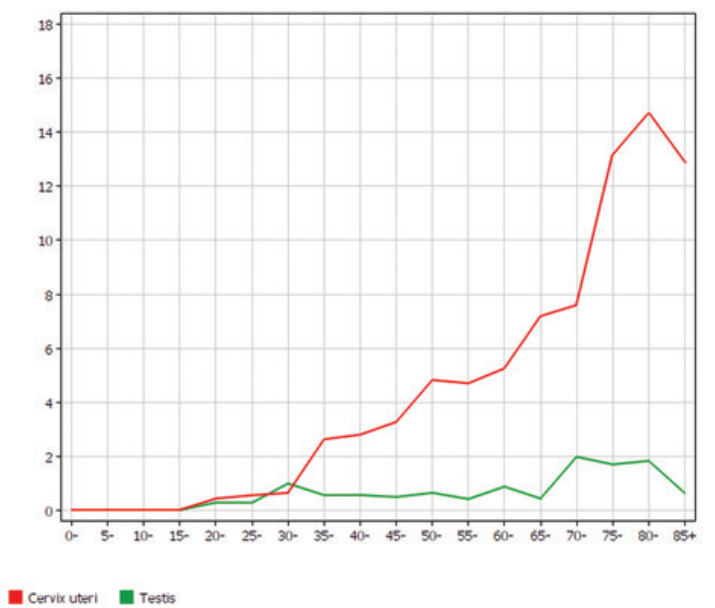
Norway-Incidence (2006-2010)



Norway-Mortality (2006-2010)



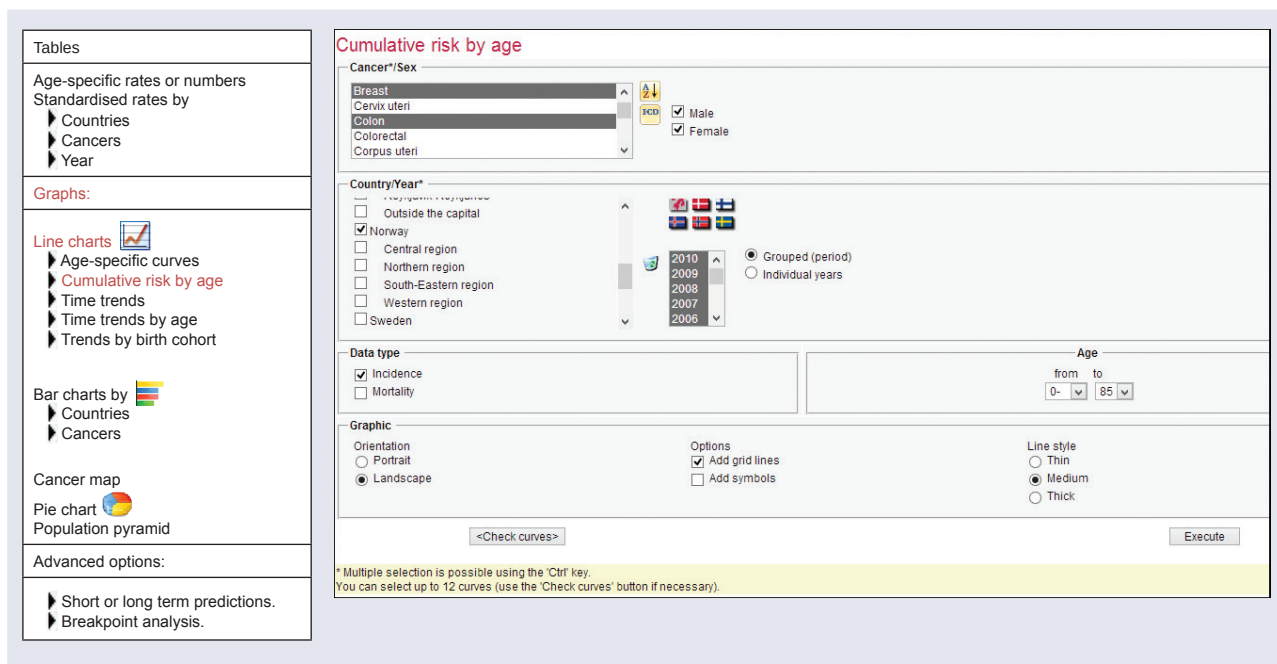
Norway-Mortality (2006-2010)



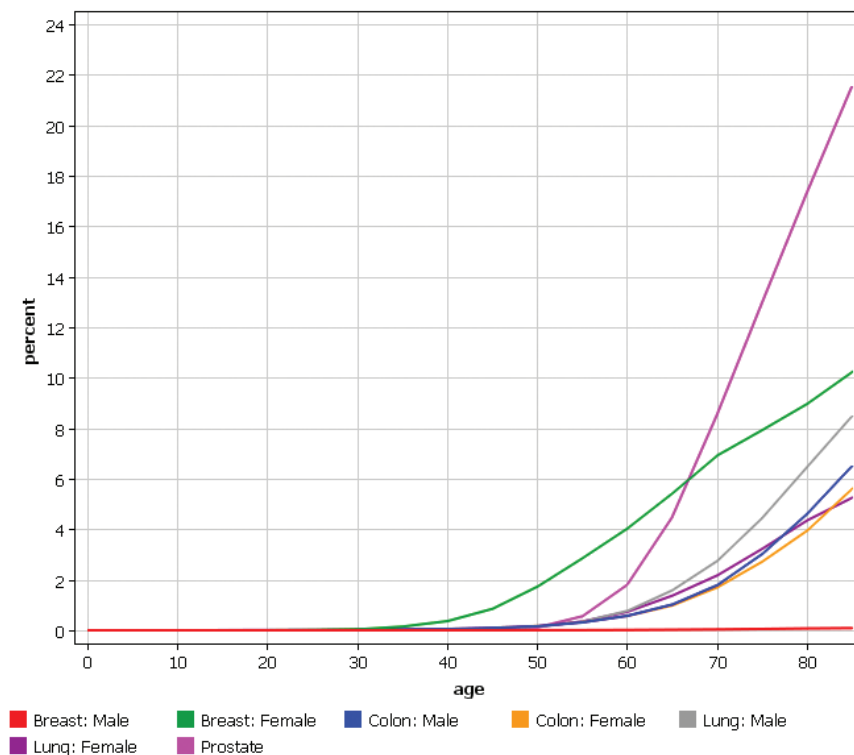
CUMULATIVE RISK BY AGE

Output example: Cumulative incidence for colon, breast, lung and prostate cancer, Norwegian males and females, 2006-2010 (grouped period)

By the age of 75, one out of three Norwegians has developed cancer. The cancer risk increases significantly with age with a steep increase in risk after the age of 60. About 15% of all Norwegian men will be diagnosed with prostate cancer before the age of 75. The cumulative risk for breast cancer starts to rise from the age of 40, and before the age of 75, almost 10 percent of Norwegian women have suffered from this disease.



Norway-Cumulative incidence from age 0 (2006-2010)



TIME TRENDS FOR ONE OR SEVERAL CANCERS

Time trends can, for instance, be used to identify period effects and birth cohort effects. Period effects may act as surrogate measures of events that quickly change rates with the same order of magnitude across all affected age groups under study. Often they transpire from changes in classification criteria or the availability of new diagnostic tests, although the introduction of a powerful carcinogen or screening intervention (affecting all study age groups) may also show up as period effect. Birth cohort effects may provide valuable insight into the nature and intensity of disease-correlated exposures that vary across successive generations (Engholm & al 2010).

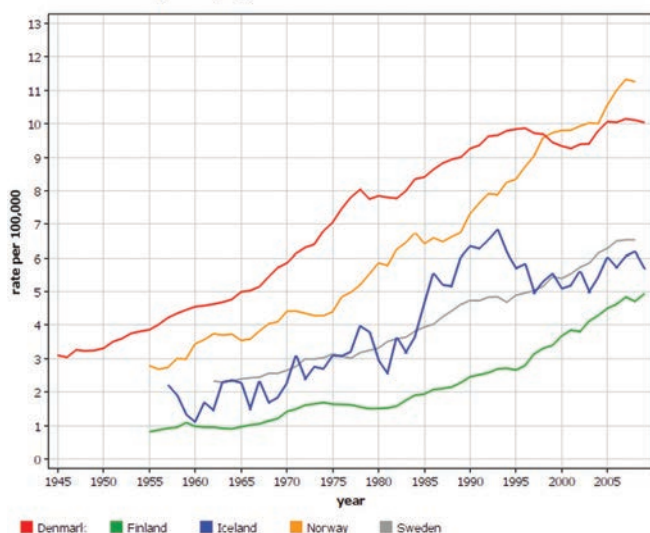
Output example: Incidence and mortality trends of testis cancer, Nordic males, 1953-2010

Norway has the highest incidence of testis cancer among the Nordic countries, and the rate is among the highest worldwide. The aetiology of testis cancer is poorly understood, but evidence from epidemiological and biological studies suggests that environmental factors as oestrogens and antiandrogens in early stage of life are potential risk factors. In Norway there has been nearly a four-folded increase in incidence of testis cancer between the first (1953-57) and the last (2006-2010) five-year period. The mortality rates of testis cancer have decreased since the beginning of registration, and are between 0.2 and 0.4 in all Nordic countries.

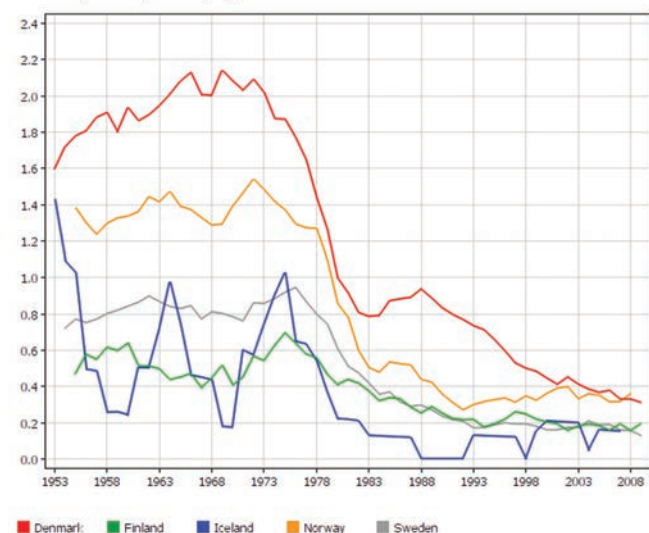
Tables Age-specific rates or numbers Standardised rates by ▶ Countries ▶ Cancers ▶ Year	Time trends (Incidence/Mortality) Cancer/Sex Soft tissues Stomach Testis Thyroid Tongue PCO ☒ Male ☐ Female
Graphs: Line charts ▶ Age-specific curves ▶ Cumulative risk by age ▶ Time trends ▶ Time trends by age ▶ Trends by birth cohort Bar charts by ▶ Countries ▶ Cancers Cancer map Pie chart Population pyramid Advanced options: ▶ Short or long term predictions. ▶ Breakpoint analysis.	Country/Period ☒ Norway ☐ Central region ☐ Northern region ☐ South-Eastern region ☐ Western region ☒ Sweden ☐ Northern region Starting: First available Ending: Last available Data type ☒ Incidence ☐ Mortality Statistic/Age range ASR (W) From: 0- To: 85+ Graphic Orientation: Portrait ☐ Landscape ☒ Options: ☒ Add grid lines ☐ Add trend lines ☐ Add symbols Line style: Thin ☐ Medium ☒ Thick Smoothing: 5 years <Check curves> Execute

Multiple selection is possible using the 'Ctrl' key.
 1. You can select up to 12 curves (use the 'Check curves' button if necessary).

Testis
Incidence: ASR (World) age 0-85+



Testis
Mortality: ASR (World) age 0-85+



TIME TRENDS BY AGE OR BIRTH COHORT

Output example: Incidence trends of lung cancer by age and birth cohort, Norwegian males and females, 1953-2010

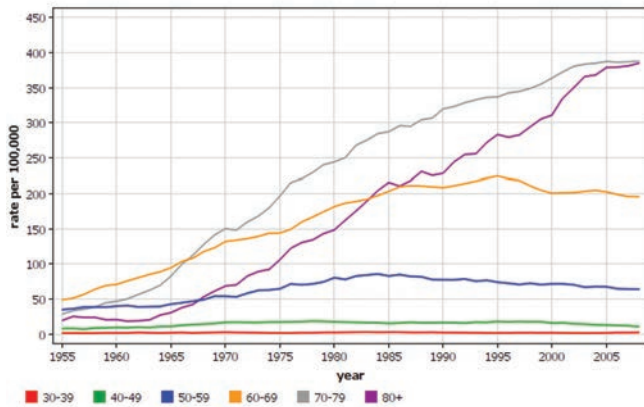
As smoking is a major risk factor for lung cancer, the incidence and mortality trends reflect smoking habits over time. Studies on smoking habits in the Norwegian population have shown that the proportion of smokers among men was 65% up to about 1960, and about 25% in year 2000. Norwegian women had a higher proportion of smokers in year 2000 (above 30%), and women tended to quit smoking at later ages than men (Lund 2009). The total incidence trend of lung cancer among men has been levelling off since the beginning of 1990's.

The age-specific trends, however, show that the incidence in the oldest age groups (70-79 and 80+) has continued to increase. For women, flattening incidence curves is seen in younger women (<59 years), whereas significant increases in incidence are seen for older women.

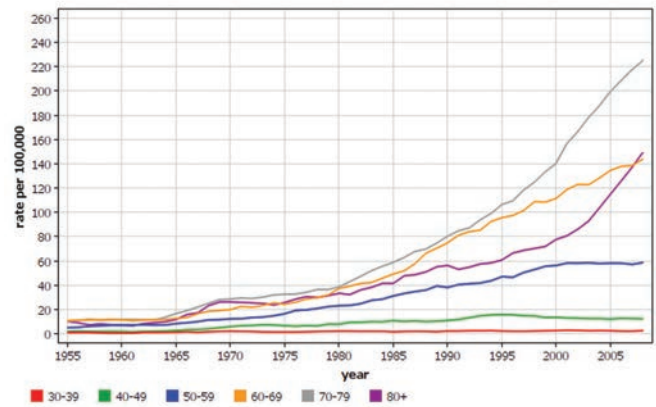
For lung cancer, we see a clear difference between the cohort patterns for men and women. From the cohort plot, it seems the cohort specific risks for men started to level off for those cohorts born around 1920, followed by a decline in the rates for cohorts born after 1946. For women, the risk for consecutive birth cohorts seems to have steadily increased, but with a levelling off of the risk after 1946. These cohort specific risk patterns can be used to make predictions about the future cancer burden. This will be shown later in the section on "short or long term predictions".

Tables Age-specific rates or numbers Standardised rates by ▶ Countries ▶ Cancers ▶ Year Graphs: Line charts ▶ Age-specific curves ▶ Cumulative risk by age ▶ Time trends ▶ Time trends by age ▶ Trends by birth cohort Bar charts by ▶ Countries ▶ Cancers Cancer map Pie chart Population pyramid Advanced options: ▶ Short or long term predictions. ▶ Breakpoint analysis.	Time trends by age (Incidence/Mortality) Cancer/Sex Lung Male Female Country/Period Norway Starting 1953 Ending 2010 Data type ☒ Incidence ☐ Mortality Age From 30- Interval 10 years Number 6 Graphic Orientation ☐ Portrait ☒ Landscape Options ☒ Add grid lines ☐ Add trend lines ☐ Add symbols Line style ☐ Thin ☒ Medium ☐ Thick Smoothing 5 years <Check age-groups> Age from: first age-group selected. Age interval: 5, 10, ..., 25 years. Number: number of age groups (ie lines of the chart). You can select a maximum of 12 lines. Smoothing (simple moving average): for each year, the age-specific rate is calculated over a period of 1 (no smoothing), 3 or 5 years.
	Trends by birth cohort Cancer/Sex Lung Male Female Country Norway Data type ☒ Incidence ☐ Mortality Age From 35- To 85+ Graphic Options ☒ Add grid lines ☐ Add symbols Line style ☐ Thin ☒ Medium ☐ Thick

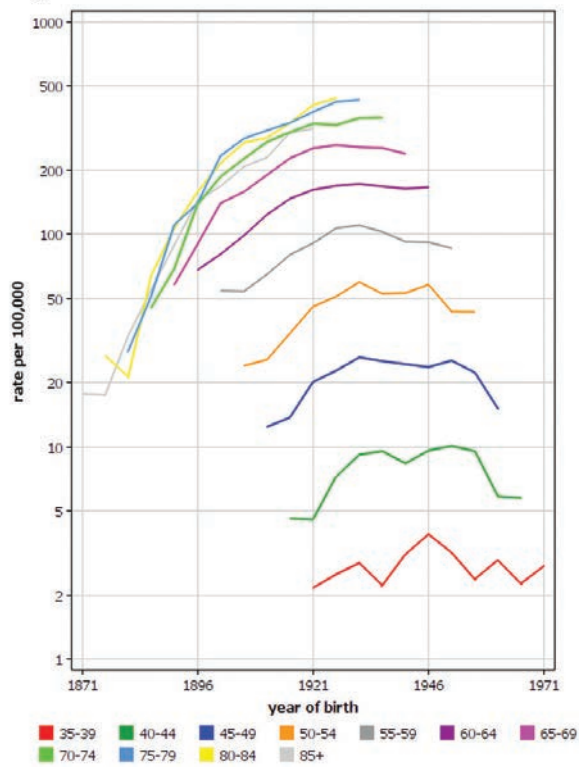
Incidence: Norway
Lung, Male



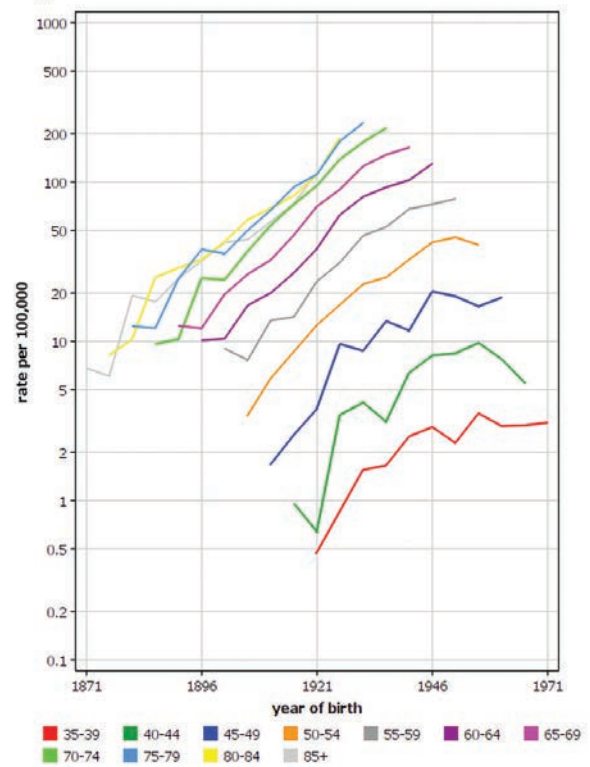
Incidence: Norway
Lung, Female



Norway-Incidence
Lung, Male



Norway-Incidence
Lung, Female



BAR OR PIE CHARTS BY COUNTRIES OR CANCER

Output example: The most frequent cancers in the Nordic countries, 2005-2009 (grouped period)

For both sexes combined, the most common cancers were prostate cancer (113 528 cases, 16.4% of all cancer cases) followed by breast cancer (89 825 cases, 13.0% of all cancer cases), lung cancer (63 779 cases, 9.2% of all cancer cases) and colon cancer (52 041 cases, 7.5% of all cancer cases).

Lung cancer is the leading cause of cancer mortality for both sexes, with 56 511 deaths (18.9% of the total mortality), followed by prostate cancer (27 481 deaths, 9.2%), colon cancer (25 192 deaths, 8.4%), and breast cancer (21 624, 7.2%).

The bar and pie charts show numbers for men and women separately.

Tables

Age-specific rates or numbers

Standardised rates by

▶ Countries

▶ Cancers

▶ Year

Graphs:

Line charts

▶ Age-specific curves

▶ Cumulative risk by age

▶ Time trends

▶ Time trends by age

▶ Trends by birth cohort

Bar charts by

▶ Countries

▶ Cancers

Cancer map

Pie chart

Population pyramid

Advanced options:

▶ Short or long term predictions.

▶ Breakpoint analysis.

Bar chart by cancers

Country/Year*

Nordic countries

2009

2008

2007

2006

2005

Data type

☒ Incidence

☒ Mortality

Statistic/Age range

ASR (W)

From To

0- 85+

Cancers

Top ten

Graphic

☒ Exclude non-melanoma skin cancers from the chart

☒ Add vertical grid lines

Sex

☒ Male

☐ Female

Execute

Pie chart

Country/Year*

Nordic countries

2009

2008

2007

2006

2005

Data type

☒ Incidence

☐ Mortality

Age range

From To

0- 85+

Sex

☒ Male

☐ Female

☐ Both sexes

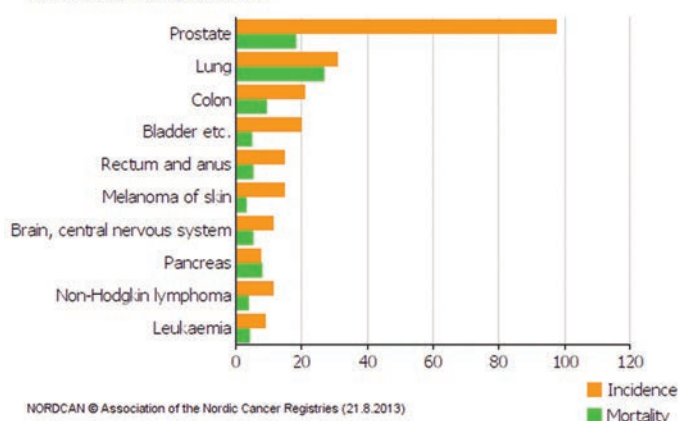
Graphic

☐ Exclude non-melanoma skin cancers from the chart

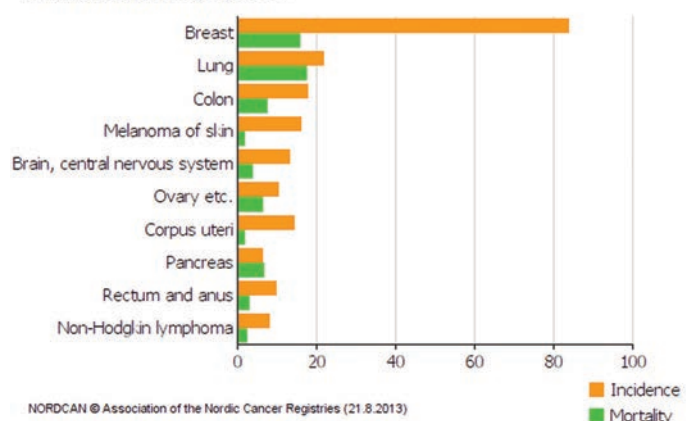
☐ Add join lines to connect the labels to the sectors

Execute

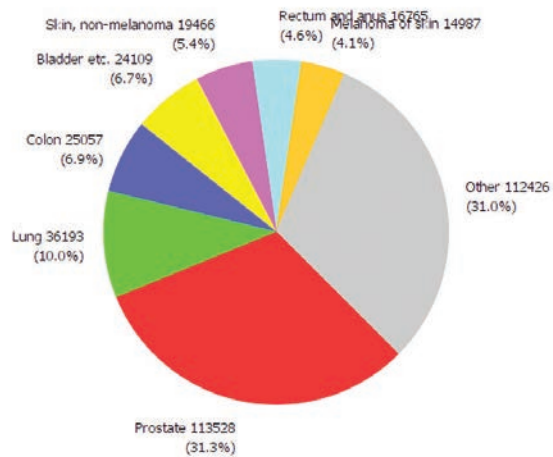
Nordic countries (2005-2009)
Male: ASR (World) age 0-85+



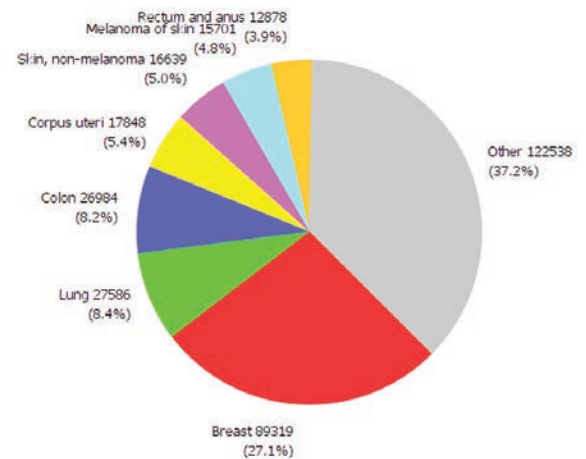
Nordic countries (2005-2009)
Female: ASR (World) age 0-85+



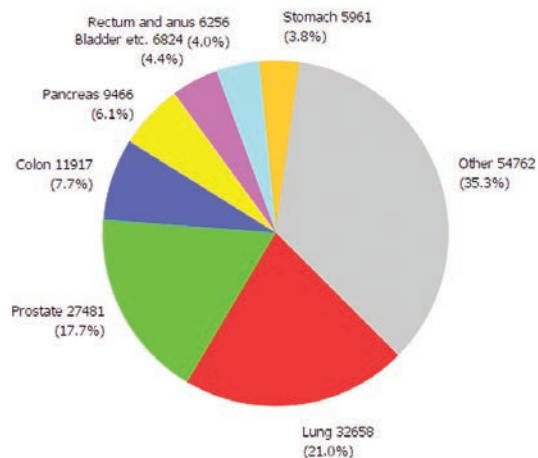
Nordic countries (2005-2009)
Number of cancer cases - Male, age 0-85+



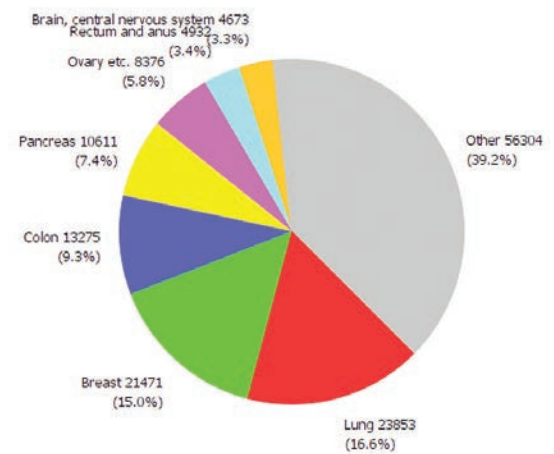
Nordic countries (2005-2009)
Number of cancer cases - Female, age 0-85+



Nordic countries (2005-2009)
Number of cancer deaths - Male, age 0-85+



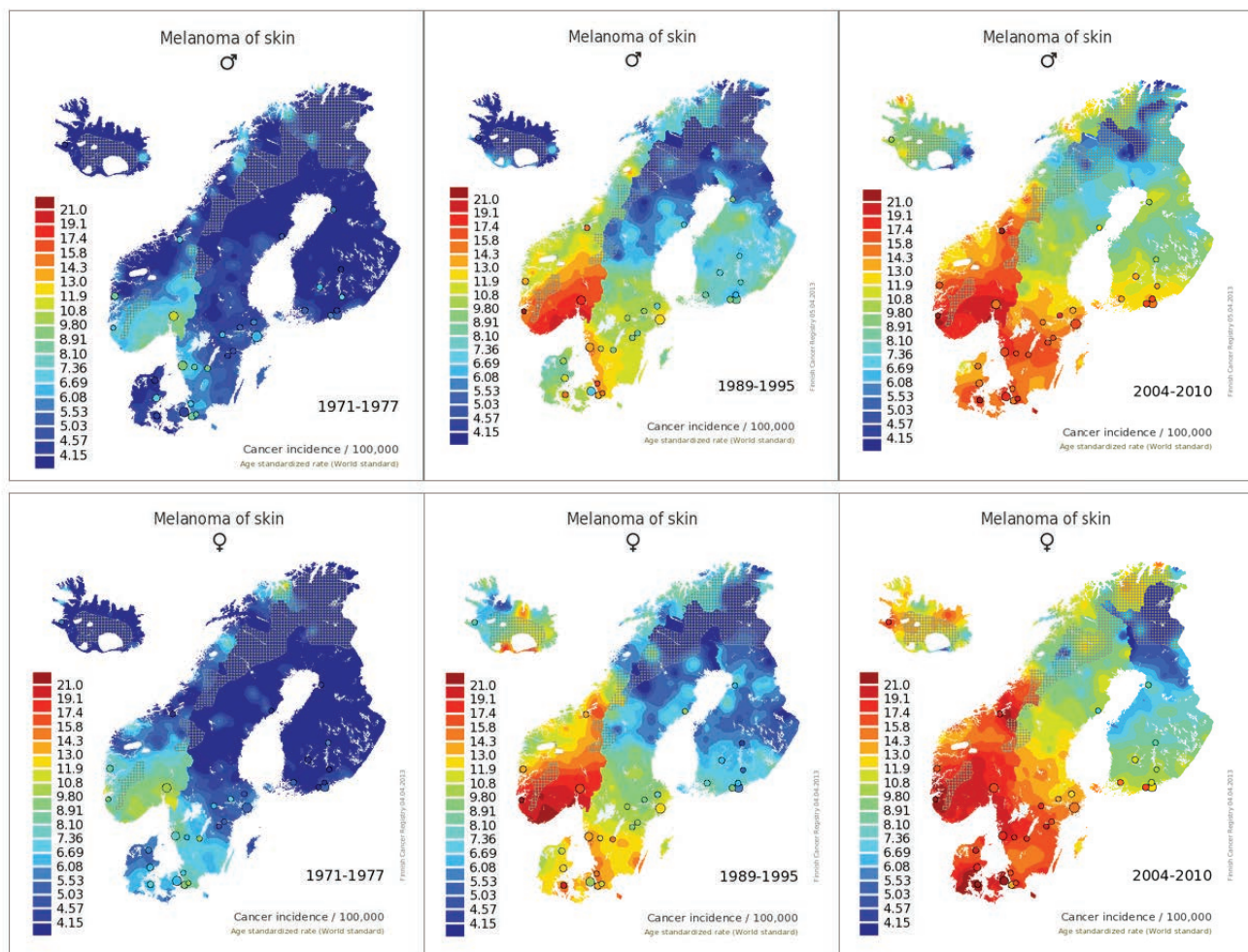
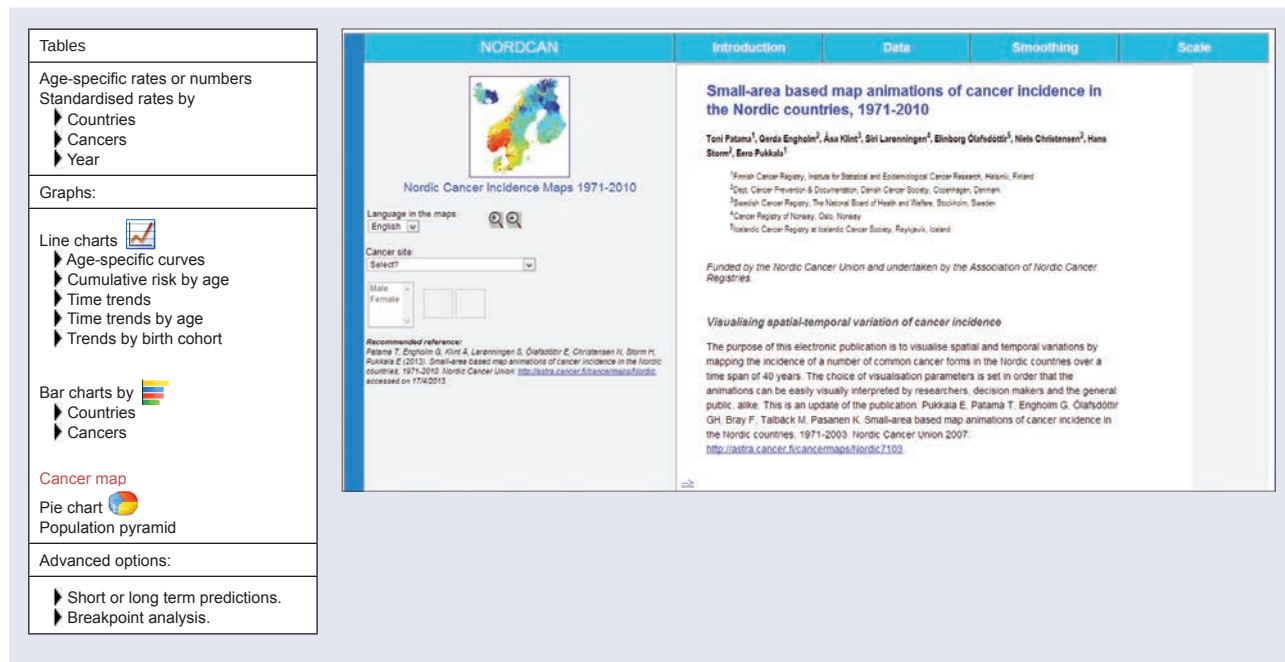
Nordic countries (2005-2009)
Number of cancer deaths - Female, age 0-85+



CANCER MAPS

Output example: The incidence of malignant melanoma in Norway, 1971-77, 1989-95 and 2004-10

Cancer maps are mostly used for illustrating geographical and temporal changes. In this example we have used the incidence of malignant melanoma, due to the significant differences in incidence between north and south, as well as the temporal changes that has been observed during the last decades as described under the section of standardised incidence rates per 100 000 for melanoma of the skin.



POPULATION PYRAMIDS

Output example: The age structure of the Norwegian population in 1953 and in 2010

As most cancers occur in persons over the age of 50, it is important to control for the age structure in the population when comparing incidence rates of cancer at different time periods or between different population (age-standardised incidence rates). Population pyramids presents the age structure of the Nordic population at different years, and results are shown in graphs and in numbers. The example illustrates how the elderly has become a larger proportion of the Norwegian population during the last 60 years. In 1953, 27% of the Norwegian population was 50 years or older, the corresponding number for 2010 is 34%.

Tables

Age-specific rates or numbers
Standardised rates by

- ▶ Countries
- ▶ Cancers
- ▶ Year

Graphs:

Line charts

- ▶ Age-specific curves
- ▶ Cumulative risk by age
- ▶ Time trends
- ▶ Time trends by age
- ▶ Trends by birth cohort

Bar charts by

- ▶ Countries
- ▶ Cancers

Cancer map

Pie chart

Population pyramid

Advanced options:

- ▶ Short or long term predictions.
- ▶ Breakpoint analysis.

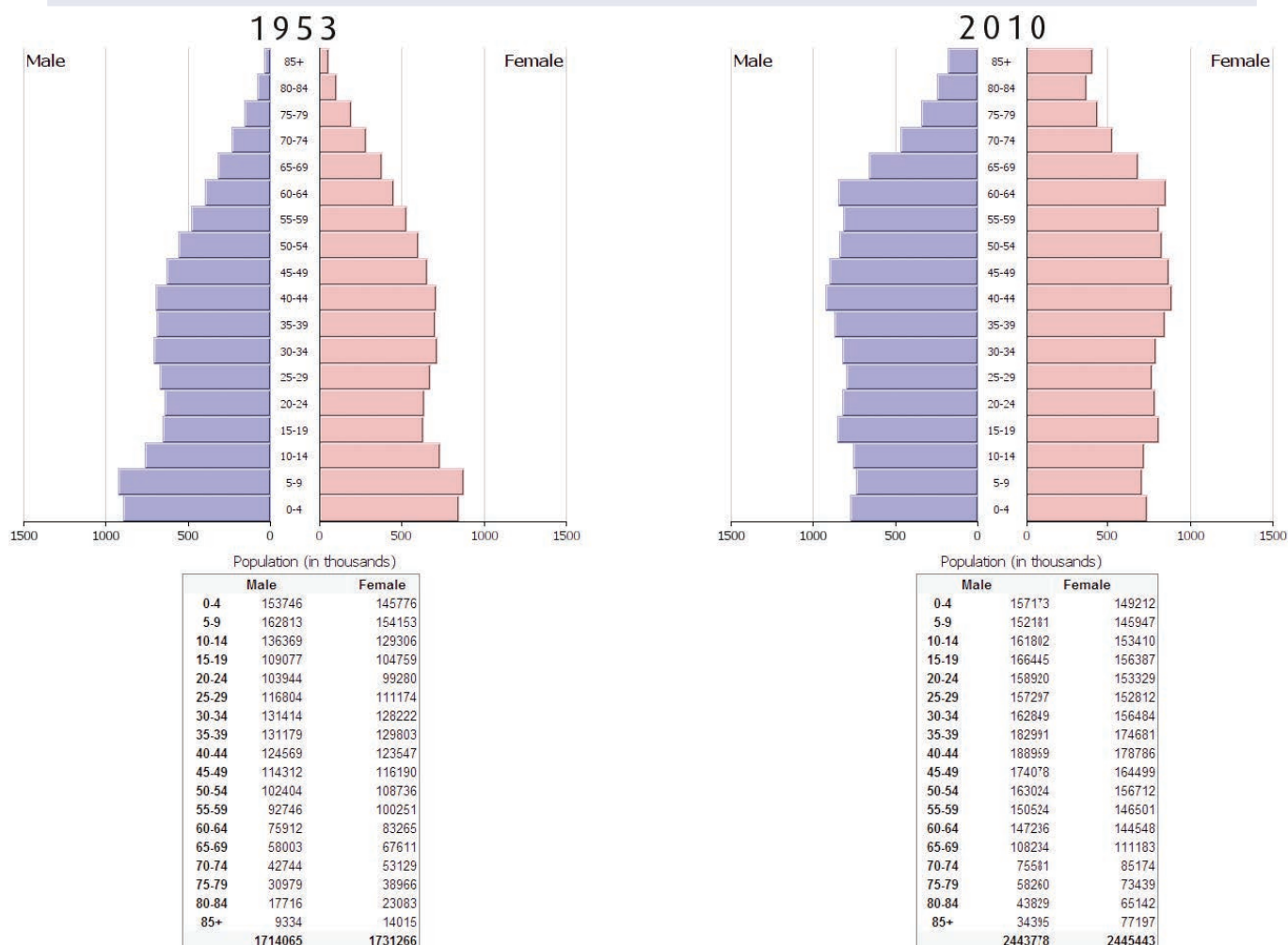
Population pyramid

Country/Year* Norway 1962 1961 1960 1959 1958 1957 1956 1955 1954 1953

☒ Add grid lines

Execute

* Multiple selection is possible using the 'Ctrl' key.



SHORT OR LONG TERM PREDICTIONS

Output example: Long term predictions of male lung cancer in Norway

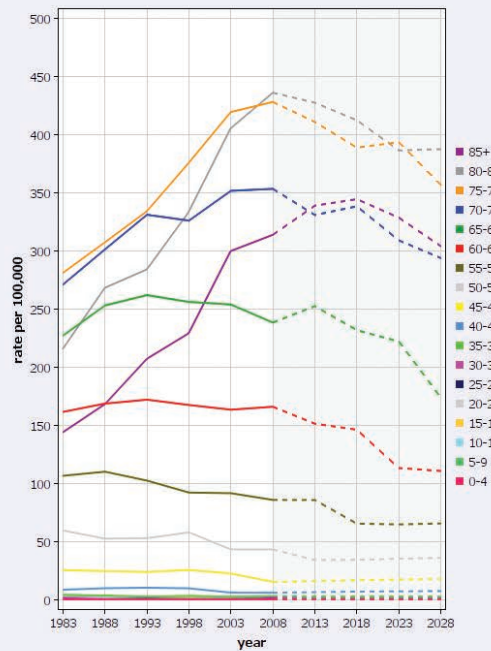
Using the option «Nordpred» shows the current linear trend in incidence rate, including any birth cohort specific patterns observed in the past. For lung cancer, there are large differences in smoking habits from one birth cohort to the next, as seen in the example on “time trends by age or birth cohort”. The plots of the predicted incidence rates indicate that if the current cohort specific pattern of incidence rates continue, we can expect a decline both in the age standardised rates and in all specific age groups except the oldest (85+ years) in the next five years and onwards.

The predicted number of new cancer cases in the future is a product of the predicted incidence rate and the forecasted population size for each age group. For lung cancer, the average annual number of cases is predicted to decline by 445 cases in 2026-2030 due to the predicted decline in the risk component (the incidence rate). However, this is more than compensated for by the increase in the number of cases of 913 due to the forecasted increase in population (the size and age distribution of the population). This means that despite the expected decline in the lung cancer rates for men in Norway, the net (overall) predicted change in the number of new cases in 2026-2030 is an increase of 468 cases, and is due to the increasing age and population size in Norway.

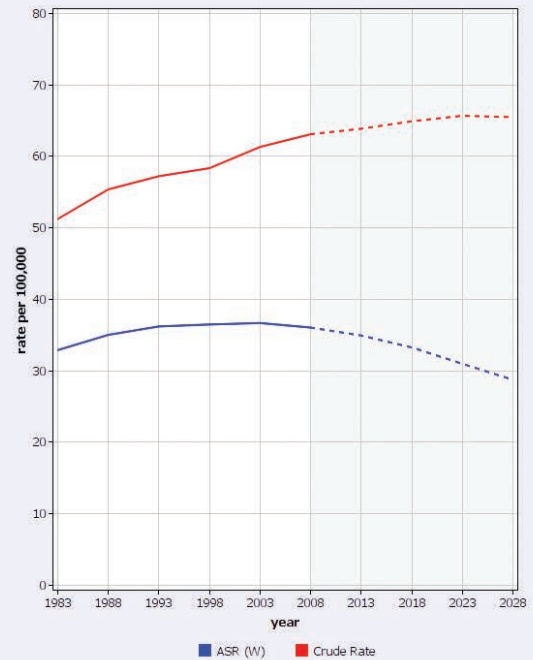
Age-group	1981-1985		2001-2005	2006-2010	2011-2015		2026-2030
0-4	0		0	0	0		0
5-9	0		0	0	0		0
.....							
85+	124		397	506	615		778
Total	5227		6934	7495	8099		9836
Crude rate	51.2		61.3	63.0	63.8		65.4
ASR (W)	32.8		36.6	36.0	34.9		28.7
Average annual	1045		1386	1499	1619		1967
Overall change*	-		-	-	120		468
Change due to change in population*	-		-	-	161		913
Change due to change in risk*	-		-	-	-41		-445

*Compared to the average annual in 2006-2010. Numbers may not add up due to rounding errors.

Prediction of cancer incidence: age-specific rates
Lung: Male
Norway



Prediction of cancer incidence: rates
Lung: Male
Norway



BREAKPOINT ANALYSIS

Output example: The incidence of breast cancer in Norwegian females, 1991-2010

Following steady increases in incidence rates since the start of registration in 1953, a stabilisation and declining in rates was indicated at the beginning of 2000. The breakpoint analysis of breast cancer incidence for the period between 1999 and 2010 shows an estimated annual percentage increase of 3.9% from 1999 to 2002, compared to a decline in rates at 1% for the period from 2002 to 2010.

Tables

Age-specific rates or numbers

Standardised rates by

- ▶ Countries
- ▶ Cancers
- ▶ Year

Graphs:

Line charts

- ▶ Age-specific curves
- ▶ Cumulative risk by age
- ▶ Time trends
- ▶ Time trends by age
- ▶ Trends by birth cohort

Bar charts by

- ▶ Countries
- ▶ Cancers

Cancer map

Pie chart

Population pyramid

Advanced options:

- ▶ Short or long term predictions.
- ▶ Breakpoint analysis.

Breakpoint analysis

This first version of a breakpoint application tests for ONE breakpoint in a time series of data (at least 5-year and maximum 20-year period).

Cancer/Sex

Breast ☐ Male ☒ Female

Country/Period

Norway Starting 1999 Ending 2010

Data type

☒ Incidence ☐ Mortality

Statistic/Age range

ASR (W) From 0- To 85+

Graphic options

☒ Set arithmetic scale minimum to zero

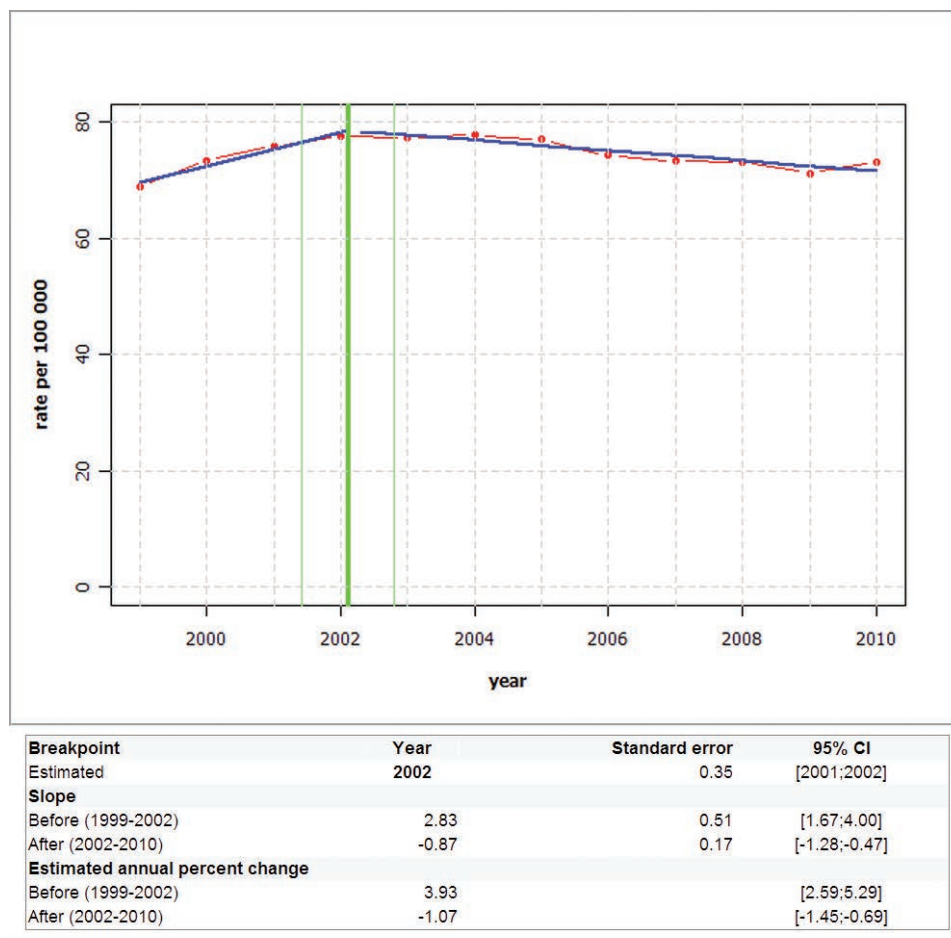
☒ Add grid lines

Execute

References:

Vito M. R. Muggeo (2003). Estimating regression models with unknown break-points. *Statistics in Medicine*, 22, 3055-3071.

Vito M. R. Muggeo (2008). segmented: an R Package to Fit Regression Models with Broken-Line Relationships. *R News*, 8/1, 20-25.



PREVALENCE

Definitions²

Prevalence can be defined as the number of persons in a defined population who have been diagnosed with cancer, and who are still alive at the end of a given year. Total prevalence represents the number of previously diagnosed persons alive at the end of a year regardless of how long ago the diagnosis was, or if the patient is still under treatment or is considered cured. Partial prevalence, which limits the number of patients to those diagnosed during a fixed time in the past, is a particularly useful measure of cancer burden. Prevalence of cancers based on cases diagnosed within one, three, five, ten and all years are presented in NORDCAN, as they are likely to be of relevance to the different stages of cancer therapy, namely, initial treatment (one year), clinical follow-up (three years) and cure (five years). Patients who are still alive five years after diagnosis are usually considered cured as the death rates of these patients are similar to those in the general population. Prevalence is available both as numbers and as proportions per 100 000 persons.

PREVALENCE BY COUNTRIES

Output example: The proportion of cancer survivors in Norway compared to other Nordic countries

In 2010 the total number of cancer survivors in the Nordic countries was 1 030 043, which accounts for about 4% of the total population. Most of them have survived more than five-years after the cancer diagnosis. The corresponding data from Norway was 192 833 cancer survivors, which accounts for 3.9% of the Norwegian population.

Tables by

- Countries
- Cancers
- Year

Graphs:

Line graphs

► Time trends

Prevalence by countries

Cancer/Year
All sites but non-melanoma skin cancer 2010

Sex
☐ Male
☐ Female
☒ Both sexes

Statistic/Age range
from to
Proportion 0- 85+

Option
Results sorted by:
Country

Output
☐ Text file
☒ Countries
☐ Regions
☐ Both

Execute

The output file (text) will be available with a click on the icon that will appear at the bottom of the table.



All sites but non-melanoma skin cancer, Both sexes Prevalence (end of 2010), age 0-85+

Country	Numbers (Proportion per 100,000)									
	1-year		3-year		5-year		10-year		Total	
Nordic countries	101743	(397.7)	267014	(1043.7)	399414	(1561.2)	643131	(2513.8)	1030043	(4026.1)
Denmark	24866	(447.6)	65207	(1173.8)	94722	(1705.1)	144043	(2592.9)	226773	(4082.1)
Finland	19896	(370.1)	51564	(959.3)	77955	(1450.3)	129804	(2414.8)	207211	(3854.9)
Iceland	996	(312.8)	2734	(858.5)	4154	(1304.4)	6800	(2135.2)	10890	(3419.5)
Norway	19028	(386.7)	50000	(1016.0)	75403	(1532.2)	120503	(2448.7)	192833	(3918.4)
Sweden	36957	(392.6)	97509	(1035.8)	147180	(1563.5)	241981	(2570.5)	392336	(4167.7)

Proportions per 100,000

² Extracted from the glossary of terms in the NORDCAN project <http://www.ancr.nu>

PREVALENCE BY CANCER OR BY YEAR

Output example: The prevalence of cancer among Norwegian males and females, 2010, sorted by number of prevalent cases

Prostate cancer is the most prevalent cancer site among males with 177 757 cancer survivors registered at the end of 2010. Of these, 152 970 males were diagnosed with the prostate cancer 10 years ago or more, and 22 139 were alive more than 1 year from the date of diagnosis. A total of 12 691 males were lung cancer survivors, most of them (10 582) had survived more than 10 years, and is thus an accumulation of long term survivors over time, whereas the prevalence of survivors 1, 3 and 5 years after the diagnosis were 4 120, 7 035 and 8 582, respectively, reflecting the poor prognosis.

Tables by

- ▶ Countries
- ▶ **Cancers**
- ▶ Year

Graphs:

- ▶ Line graphs
- ▶ Time trends

Prevalence by cancers
Country/Year
Nordic countries 2010
Sex
☒ Male
☐ Female
☐ Both sexes
Statistic/Age range
Proportion from to
0- 85+
Option
Results sorted by:
Numbers
Output
☐ Text file
Execute

The output file (text) will be available with a click on the icon that will appear at the bottom of the table.

Nordic countries (end of 2010) Prevalence, Male, age 0-85+										
Cancer	Numbers (Proportion per 100,000)									
	1-year		3-year		5-year		10-year		Total	
All sites but non-melanoma skin cancer	52598	(414.0)	137281	(1080.7)	204120	(1606.8)	318657	(2508.4)	449056	(3534.9)
Prostate	22139	(174.3)	63501	(499.9)	97133	(764.6)	152970	(1204.2)	177757	(1399.3)
Colorectal	7441	(58.6)	18841	(148.3)	27417	(215.8)	40902	(322.0)	56753	(446.7)
Bladder etc.	4382	(34.5)	11503	(90.5)	17240	(135.7)	27638	(217.6)	42123	(331.6)
Melanoma of skin	3454	(27.2)	9278	(73.0)	13438	(105.8)	20803	(163.8)	35271	(277.6)
Colon	4559	(35.9)	11383	(89.4)	16400	(129.1)	24221	(190.7)	33522	(263.9)
Skin, non-melanoma	4428	(34.9)	11296	(88.9)	16313	(128.4)	23606	(185.8)	31491	(247.9)
Rectum and anus	3043	(24.0)	7864	(61.9)	11542	(90.9)	17413	(137.1)	24147	(190.1)
Testis	934	(7.4)	2974	(23.4)	4891	(38.5)	9045	(71.2)	23030	(181.3)
Non-Hodgkin lymphoma	2257	(17.8)	5747	(45.2)	8540	(67.2)	13249	(104.3)	19355	(152.4)
Brain, central nervous system	1618	(12.7)	3799	(29.9)	5639	(44.4)	9159	(72.1)	17448	(137.3)
Kidney	1771	(13.9)	4346	(34.2)	6270	(49.4)	9423	(74.2)	13823	(108.8)
Lip, oral cavity and pharynx	1565	(12.3)	3980	(31.3)	5687	(44.8)	8574	(67.5)	13582	(106.9)
Leukaemia	1373	(10.8)	3604	(28.4)	5419	(42.7)	8587	(67.6)	12920	(101.7)
Lung	4120	(32.4)	7035	(55.4)	8592	(67.6)	10582	(83.3)	12691	(99.9)
Other leukaemia	953	(7.5)	2668	(21.0)	4100	(32.3)	6429	(50.6)	8433	(66.4)
Hodgkin lymphoma	319	(2.5)	918	(7.2)	1444	(11.4)	2649	(20.9)	6438	(50.7)
Stomach	999	(7.9)	1974	(15.5)	2592	(20.4)	3612	(28.4)	5474	(43.1)
Larynx	521	(4.1)	1360	(10.7)	2026	(15.9)	3222	(25.4)	4963	(39.1)
Soft tissues	409	(3.2)	1142	(9.0)	1669	(13.1)	2642	(20.8)	4694	(37.0)
Thyroid	312	(2.5)	862	(6.8)	1332	(10.5)	2240	(17.6)	4686	(36.9)
Acute leukaemia	420	(3.3)	940	(7.4)	1323	(10.4)	2162	(17.0)	4492	(35.4)
Multiple myeloma	743	(5.8)	1892	(14.9)	2587	(20.4)	3368	(26.5)	3896	(30.7)
Pharynx	626	(4.9)	1540	(12.1)	2079	(16.4)	2971	(23.4)	3835	(30.2)
Lip	197	(1.6)	591	(4.7)	947	(7.5)	1607	(12.7)	3797	(29.9)
Mouth	365	(2.9)	848	(6.7)	1205	(9.5)	1741	(13.7)	2444	(19.2)
Eye	155	(1.2)	395	(3.1)	617	(4.9)	1074	(8.5)	2283	(18.0)
Penis etc.	223	(1.8)	578	(4.5)	883	(7.0)	1419	(11.2)	2253	(17.7)
Tongue	325	(2.6)	809	(6.4)	1156	(9.1)	1672	(13.2)	2245	(17.7)
Bone	116	(0.9)	318	(2.5)	481	(3.8)	800	(6.3)	2051	(16.1)
Small intestine	296	(2.3)	691	(5.4)	999	(7.9)	1498	(11.8)	1994	(15.7)
Pancreas	818	(6.4)	1258	(9.9)	1402	(11.0)	1608	(12.7)	1797	(14.1)
Oesophagus	647	(5.1)	1108	(8.7)	1281	(10.1)	1571	(12.4)	1781	(14.0)
Salivary glands	123	(1.0)	317	(2.5)	458	(3.6)	764	(6.0)	1453	(11.4)
Liver	450	(3.5)	813	(6.4)	973	(7.7)	1112	(8.8)	1269	(10.0)
Nose, sinuses	119	(0.9)	295	(2.3)	440	(3.5)	658	(5.2)	999	(7.9)
Breast	98	(0.8)	274	(2.2)	415	(3.3)	678	(5.3)	961	(7.6)
Gallbladder	254	(2.0)	431	(3.4)	519	(4.1)	668	(5.3)	828	(6.5)
Pleura	245	(1.9)	383	(3.0)	417	(3.3)	448	(3.5)	481	(3.8)

More than 4% of the Nordic women have suffered from a cancer diagnosis. Most of them are survivors from breast cancer (240 245). The prevalence of breast cancer patients that were alive 1-year after diagnosis (18 730) is almost equal to the number of new cases in 2009 (19 353), reflecting the high 1-year survival.

Tables by

- ▶ Countries
- ▶ **Cancers**
- ▶ Year

Graphs:

Line graphs

▶ Time trends

Prevalence by cancers

Country/Year

Nordic countries
2010

Sex

☐ Male

☒ Female

☐ Both sexes

Statistic/Age range

Proportion from to

0- 85+

Option

Results sorted by:

Numbers

Output

☐ Text file

Execute

The output file (text) will be available with a click on the icon that will appear at the bottom of the table.

Nordic countries (end of 2010)
Prevalence, Female, age 0-85+

Cancer	Numbers (Proportion per 100,000)									
	1-year		3-year		5-year		10-year		Total	
All sites but non-melanoma skin cancer	49145	(381.5)	129733	(1007.2)	195294	(1516.2)	324474	(2519.1)	580987	(4510.6)
Breast	18730	(145.4)	53077	(412.1)	81635	(633.8)	140601	(1091.6)	240245	(1865.2)
Colorectal	6776	(52.6)	17546	(136.2)	26067	(202.4)	41054	(318.7)	63006	(489.2)
Corpus uteri	3457	(26.8)	9710	(75.4)	14978	(116.3)	26049	(202.2)	49966	(387.9)
Melanoma of skin	3592	(27.9)	9888	(76.8)	15004	(116.5)	24538	(190.5)	47776	(370.9)
Colon	4647	(36.1)	11850	(92.0)	17527	(136.1)	27353	(212.4)	41439	(321.7)
Cervix uteri	1163	(9.0)	3248	(25.2)	5043	(39.2)	9112	(70.7)	28381	(220.3)
Brain, central nervous system	2014	(15.6)	5429	(42.1)	8631	(67.0)	15019	(116.6)	28276	(219.5)
Skin, non-melanoma	3518	(27.3)	9535	(74.0)	14007	(108.7)	20352	(158.0)	28038	(217.7)
Rectum and anus	2250	(17.5)	5950	(46.2)	8894	(69.1)	14215	(110.4)	22264	(172.9)
Ovary etc.	1969	(15.3)	4948	(38.4)	7042	(54.7)	10967	(85.1)	22039	(171.1)
Non-Hodgkin lymphoma	1829	(14.2)	4808	(37.3)	7255	(56.3)	11670	(90.6)	17323	(134.5)
Thyroid	931	(7.2)	2567	(19.9)	3956	(30.7)	7022	(54.5)	17305	(134.4)
Bladder etc.	1565	(12.2)	3964	(30.8)	5853	(45.4)	9484	(73.6)	15268	(118.5)
Lung	3729	(29.0)	6858	(53.2)	8509	(66.1)	10694	(83.0)	12936	(100.4)
Leukaemia	988	(7.7)	2620	(20.3)	4067	(31.6)	6639	(51.5)	10568	(82.0)
Kidney	1007	(7.8)	2769	(21.5)	4145	(32.2)	6423	(49.9)	10406	(80.8)
Lip, oral cavity and pharynx	954	(7.4)	2414	(18.7)	3543	(27.5)	5532	(42.9)	8840	(68.6)
Other leukaemia	646	(5.0)	1852	(14.4)	2949	(22.9)	4736	(36.8)	6363	(49.4)
Hodgkin lymphoma	255	(2.0)	697	(5.4)	1126	(8.7)	2062	(16.0)	5050	(39.2)
Other female genital organs	500	(3.9)	1219	(9.5)	1824	(14.2)	2897	(22.5)	4764	(37.0)
Stomach	604	(4.7)	1273	(9.9)	1741	(13.5)	2575	(20.0)	4447	(34.5)
Soft tissues	377	(2.9)	884	(6.9)	1404	(10.9)	2266	(17.6)	4436	(34.4)
Acute leukaemia	342	(2.7)	768	(6.0)	1118	(8.7)	1903	(14.8)	4205	(32.6)
Multiple myeloma	620	(4.8)	1542	(12.0)	2103	(16.3)	2779	(21.6)	3258	(25.3)
Eye	146	(1.1)	415	(3.2)	653	(5.1)	1140	(8.9)	2400	(18.6)
Mouth	265	(2.1)	676	(5.2)	970	(7.5)	1479	(11.5)	2248	(17.5)
Uterus, other	106	(0.8)	274	(2.1)	410	(3.2)	751	(5.8)	2152	(16.7)
Pancreas	811	(6.3)	1250	(9.7)	1444	(11.2)	1646	(12.8)	1900	(14.8)
Salivary glands	142	(1.1)	334	(2.6)	520	(4.0)	881	(6.8)	1829	(14.2)
Small intestine	210	(1.6)	563	(4.4)	836	(6.5)	1259	(9.8)	1787	(13.9)
Tongue	222	(1.7)	530	(4.1)	773	(6.0)	1180	(9.2)	1701	(13.2)
Bone	98	(0.8)	265	(2.1)	388	(3.0)	647	(5.0)	1680	(13.0)
Pharynx	239	(1.9)	581	(4.5)	801	(6.2)	1168	(9.1)	1606	(12.5)
Lip	124	(1.0)	354	(2.7)	562	(4.4)	925	(7.2)	1566	(12.2)
Gallbladder	319	(2.5)	544	(4.2)	658	(5.1)	840	(6.5)	1182	(9.2)
Larynx	98	(0.8)	264	(2.0)	395	(3.1)	633	(4.9)	1026	(8.0)
Liver	264	(2.0)	451	(3.5)	517	(4.0)	621	(4.8)	746	(5.8)
Oesophagus	223	(1.7)	389	(3.0)	462	(3.6)	590	(4.6)	743	(5.8)
Nose, sinuses	83	(0.6)	206	(1.6)	312	(2.4)	480	(3.7)	724	(5.6)
Pleura	28	(0.2)	53	(0.4)	66	(0.5)	80	(0.6)	104	(0.8)

An output example of prevalence by years is not shown in this chapter.

TIME TRENDS OF PREVALENCE

The time trends of prevalence can be expressed as the total prevalence or prevalence after 1, 3, 5 or 10 years since the diagnosis, and the statistics can be given in proportions, numbers or adjusted rates.

Output example: The prevalence of cancer among Norwegian males and females by region, 1975-2010

In this example, we have shown the proportion of persons in the Norwegian population who is alive after a previous cancer diagnosis, stratified on regions, from 1975 until 2010. As the graph shows, there has been a gradual increase in prevalence in all regions since the beginning of 2000 and the differences between regions are small.

Tables by

- Countries
- Cancers
- Year

Graphs:

Line graphs

► Time trends

Time trends (Prevalence)

Cancer*/Sex

Acute leukaemia
All sites but non-melanoma skin cancer
Bladder etc.
Bone
Brain, central nervous system

☐ Male
☐ Female
☒ Both sexes

Country/Period

☐ Outside one capital
☒ Norway
☒ Central region
☒ Northern region
☒ South-Eastern region
☒ Western region
☐ Sweden

Starting: First available | Ending: Last available

Prevalence: Total

Statistic/Age range: Proportion | From: 0+ | To: 85+

Graphic: Orientation: ☐ Portrait ☒ Landscape

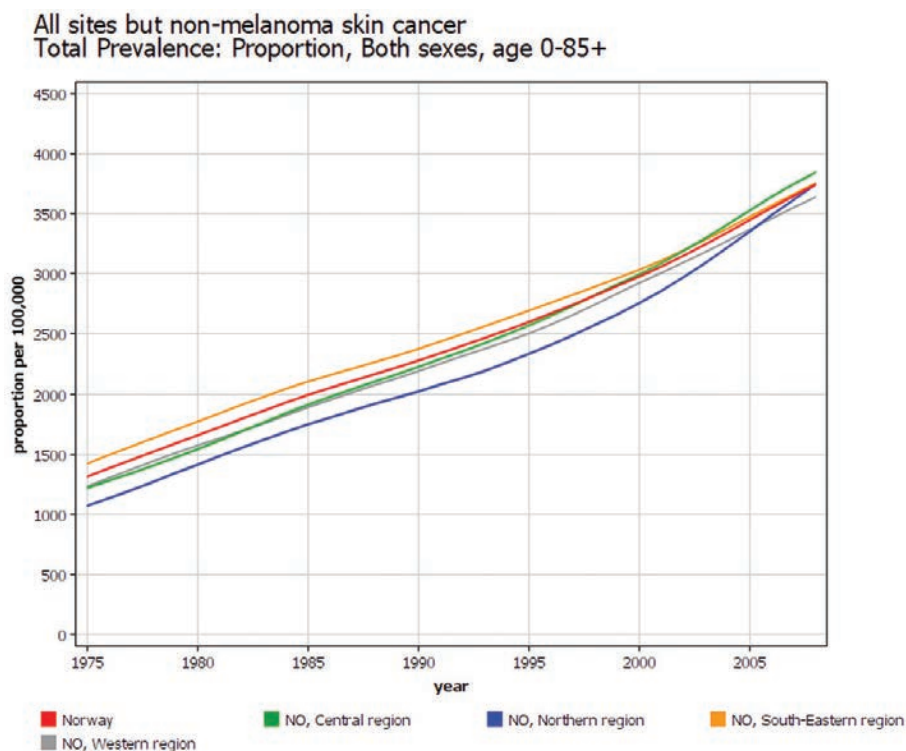
Options: ☒ Add grid lines ☐ Add trend lines ☐ Add symbols

Line style: ☐ Thin ☒ Medium ☐ Thick

Smoothing: 5 years

<Check curves> Execute

* Multiple selection is possible using the 'Ctrl' key.
1. You can select up to 12 curves (use the 'Check curves' button if necessary).
2. Smoothing (simple moving average): for each year, the statistic is calculated using the numbers and the corresponding population numbers for 1 (no smoothing), 3 or 5 years.



SURVIVAL

Definitions³

Relative survival is defined as the ratio of the observed survival in the group of patients to the survival expected in a group of people in the general population, who are similar to the patients with respect to sex, age and calendar time at the time of diagnosis. It can be interpreted as the probability of patient survival in the absence of other causes of death. NORDCAN generally use cohort methods, following up patients for death for 1 and 5 years after diagnosis, and also 10 years for breast and prostate cancers. For the later periods not all patients can be followed up for 5 or 10 years, and calculations are supplemented with survival experience for patients diagnosed earlier years, so-called hybrid methods. Age-standardisation uses the International Cancer Survival Standards (ICSS).

RELATIVE SURVIVAL BY PERIOD AND CANCER

Survival by period and cancer is a way of capturing the relative survival in different time periods for most cancer sites. During the last decades, a gradual improvement of survival has been observed for the majority of sites, and except for Hodgkin lymphoma in males, all sites have also improved survival in the last period (2004-2008) compared to the previous five-year period (1999-2003). The wide differential in prognosis according to the type of cancer diagnosed is strikingly illustrated by the differences between five-year survival in cancers with good prognosis (ex. Hodgkin lymphoma, prostate, breast, lip, or testicular cancer) and poor prognosis (liver, lung, pancreas or pleura). The national rates of lung cancer patients that receive surgery have increased (Strand & al 2012), and this might have influenced the positive trends of increasing survival that is observed for lung cancer in the last period.

An output example of these tables is not shown, but some of the cancer sites will be covered under time trends of relative survival in “survival/graphs”.

An output example for survival by country and cancer is not shown in this chapter.

Relative survival by country and period

Output example: five-year age-standardised relative survival of colon cancer in the Nordic countries, 1964-2008

The relative survival of colon cancer has increased markedly since the beginning of the 1960's. The probability of being alive five years after the diagnosis (in the absence of other causes of death) was about 30% for these patients in the period 1964-68, compared to over 60% in the period 2004-08. There is little difference in relative survival of colon cancer between the Nordic countries, except for Denmark, which has had the lowest survival of colon cancer during most of the observation period.

Tables by:

- ▶ Period and cancer
- ▶ Country and cancer
- ▶ Country and period

Graphs:

Line graphs

- ▶ Time trends
- ▶ Age-specific survival by Countries
- Periods
- Country and period

Bar charts by

- ▶ Periods
- ▶ Countries

Table by country and period (Survival)

Cancer

Colon

Survival time

5-year

Output

☐ Text file

The output file (text) will be available with a click on the icon that will appear at the bottom of the table.

³ Extracted from the glossary of terms in the NORDCAN project <http://www.ancr.nu>



5-year age-standardised relative survival in percent [95% CI] Colon, age at diagnosis 0-89

	Denmark	Finland	Iceland	Norway	Sweden
Male					
1964-1968	31 [29;34]	25 [21;29]	43 [30;63]	32 [30;35]	35 [33;37]
1969-1973	30 [29;33]	36 [32;40]	41 [28;60]	38 [35;41]	36 [35;38]
1974-1978	35 [33;36]	38 [34;42]	50 [40;64]	42 [40;45]	39 [37;41]
1979-1983	37 [35;39]	48 [45;52]	46 [38;56]	48 [45;50]	46 [45;48]
1984-1988	39 [38;41]	47 [44;50]	42 [34;53]	46 [44;48]	49 [47;50]
1989-1993	43 [41;45]	51 [49;54]	58 [49;69]	49 [47;51]	52 [50;53]
1994-1998	45 [43;47]	57 [55;60]	50 [42;59]	53 [51;55]	55 [54;57]
1999-2003	50 [48;52]	57 [55;60]	54 [47;61]	56 [54;58]	56 [55;58]
2004-2008	53 [52;54]	60 [58;61]	57 [52;63]	61 [60;63]	63 [62;64]
Female					
1964-1968	33 [31;35]	32 [29;35]	33 [22;49]	34 [32;37]	38 [37;40]
1969-1973	35 [33;37]	36 [33;39]	39 [30;52]	40 [37;42]	39 [37;40]
1974-1978	36 [34;37]	40 [38;43]	55 [46;67]	42 [40;45]	42 [40;43]
1979-1983	41 [40;43]	46 [44;48]	54 [45;66]	47 [45;49]	49 [48;51]
1984-1988	43 [41;44]	51 [49;53]	49 [40;60]	51 [49;53]	52 [51;54]
1989-1993	46 [45;48]	54 [52;56]	61 [52;71]	53 [52;55]	54 [53;56]
1994-1998	49 [47;50]	58 [56;60]	49 [41;58]	57 [55;58]	56 [55;58]
1999-2003	54 [52;56]	63 [61;65]	60 [53;69]	59 [57;61]	61 [60;63]
2004-2008	56 [55;57]	64 [63;66]	64 [59;70]	64 [63;65]	66 [65;67]

Follow-up of patients for death is made through 2010. five-year relative survival 1964-2003 originally stems from the project "The survival of cancer patients diagnosed 1964-2003 in the Nordic countries" originally published in Acta Oncologica 2010 issue 5.

TIME TRENDS OF RELATIVE SURVIVAL

Output example: Trends of relative survival for the most common cancers, males and females, Norway, 1964-2008

Gradual improvement of survival has been observed for most of the common cancers, except for lung cancer where the five-year relative survival has not changed substantively, although a slightly but steadily increase in survival has been observed since the 1990s. In the last period of observation (2004-2008) the relative survival for the most common cancers varied from 13% for lung cancer to 88% for prostate cancer in men. In women, the lowest survival is observed for lung cancer (17%), and malignant melanoma ranks highest with 91% five-year relative survival. In general, women have better survival than men, and for the most common cancers striking differences are seen for malignant melanoma and for cancers in the central nervous system (data not shown). The marked increase in five-year relative survival for prostate cancer partly reflects earlier detection of tumours due to PSA testing.

Tables by:

- ▶ Period and cancer
- ▶ Country and cancer
- ▶ Country and period

Graphs:

Line graphs

- ▶ Time trends
- ▶ Age-specific survival by Countries
- Periods
- Country and period

Bar charts by

- ▶ Periods
- ▶ Countries

Time trends (Survival)

Cancer/Sex

Pharynx
Pleura
Prostate
Rectum and anus
Salivary glands

Male ☒ Female ☐

Country

Denmark ☐
Finland ☐
Iceland ☐
Norway ☒
Sweden ☐

Survival time

5-year

Graphic

Orientation

Portrait ☐
Landscape ☒

Options

Add grid lines ☒
Add trend lines ☐
Add symbols ☐

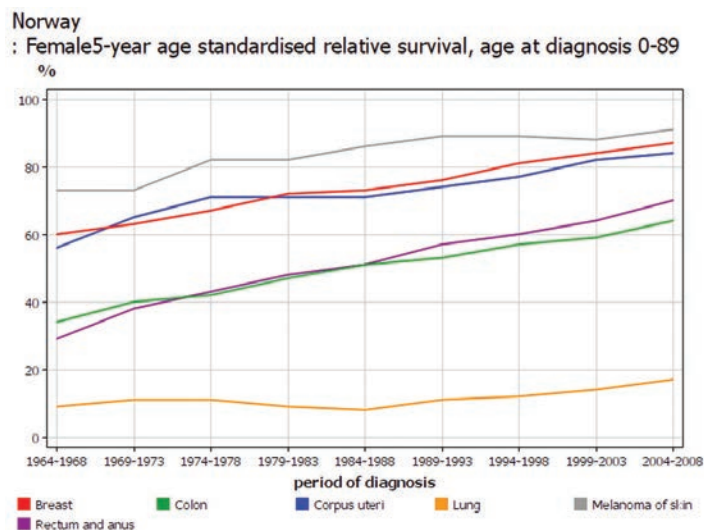
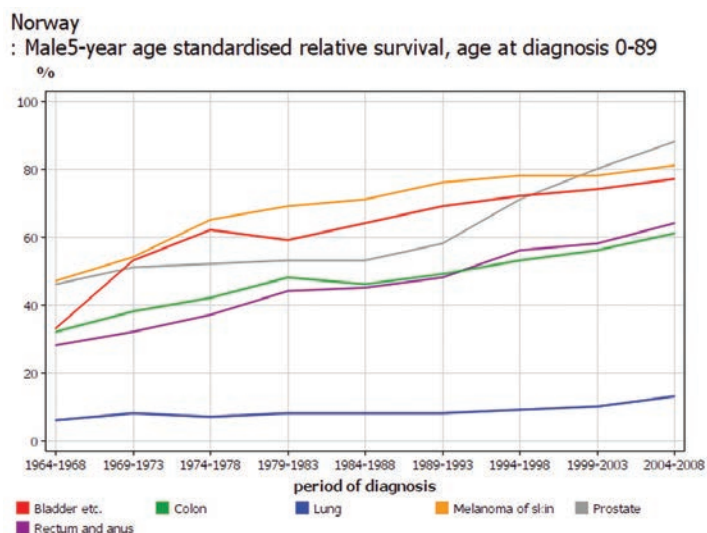
Line style

Thin ☐
Medium ☒
Thick ☐

<Check curves>

Execute

* Multiple selection is possible using the 'Ctrl' key.
You can select up to 12 curves (use the 'Check curves' button if necessary).



AGE-SPECIFIC SURVIVAL BY COUNTRIES

Output example: Age-specific relative survival for cervical cancer in females, Nordic countries, 2004-2008

The relative five-year survival for cervical cancer decreases with age. The greatest variation in survival between age groups is observed in Iceland with 96% in the youngest age group (0-49 years) and 18% among the oldest patients (80-89 years). Large variations are also found in the other Nordic countries, and in Norway the range of survival varies twofold (88 - 41). Difference in survival between the countries might reflect differences in the target age range of the national screening programs, as this is an important determinant of risk reduction.

Tables by:

- Period and cancer
- Country and cancer
- Country and period

Graphs:

Line graphs

- Time trends
- Age-specific survival by Countries
- Periods
- Country and period

Bar charts by

- Periods
- Countries

Age-specific survival by countries

Cancer/Sex

Cervix uteri ☐ Male ☒ Female

Period

2004-2008

survival time

5-year

Graphic

Options

☒ Add grid lines

☐ Add trend lines

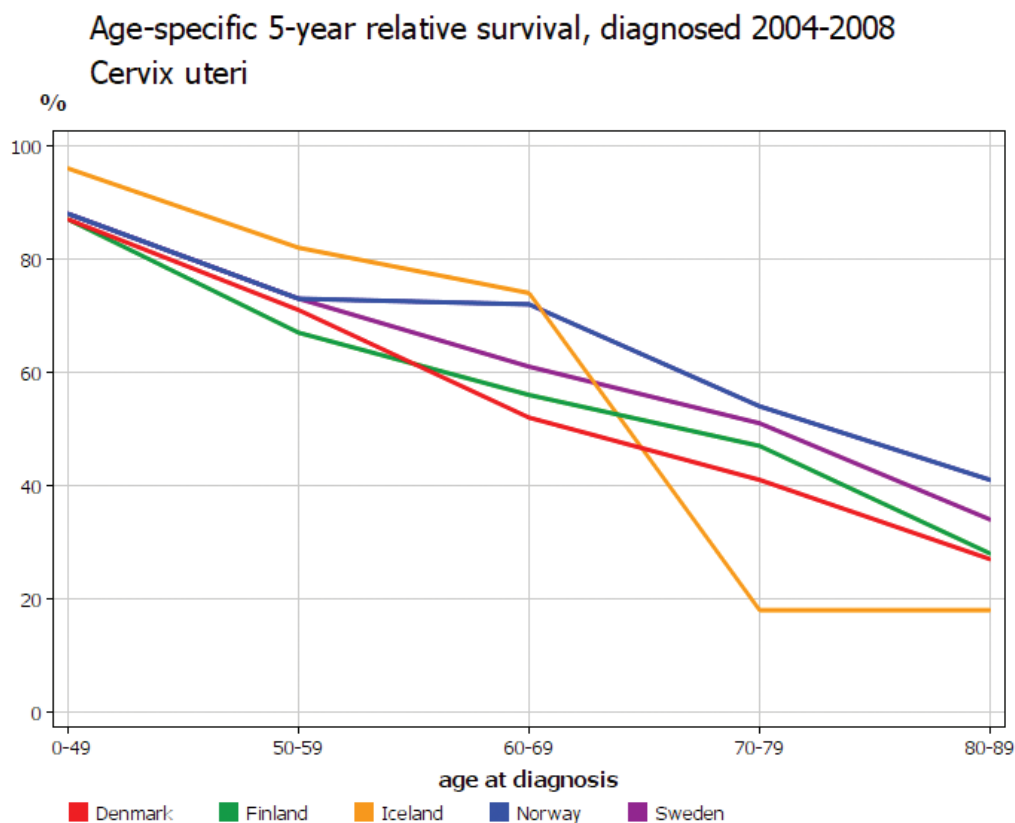
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Line style

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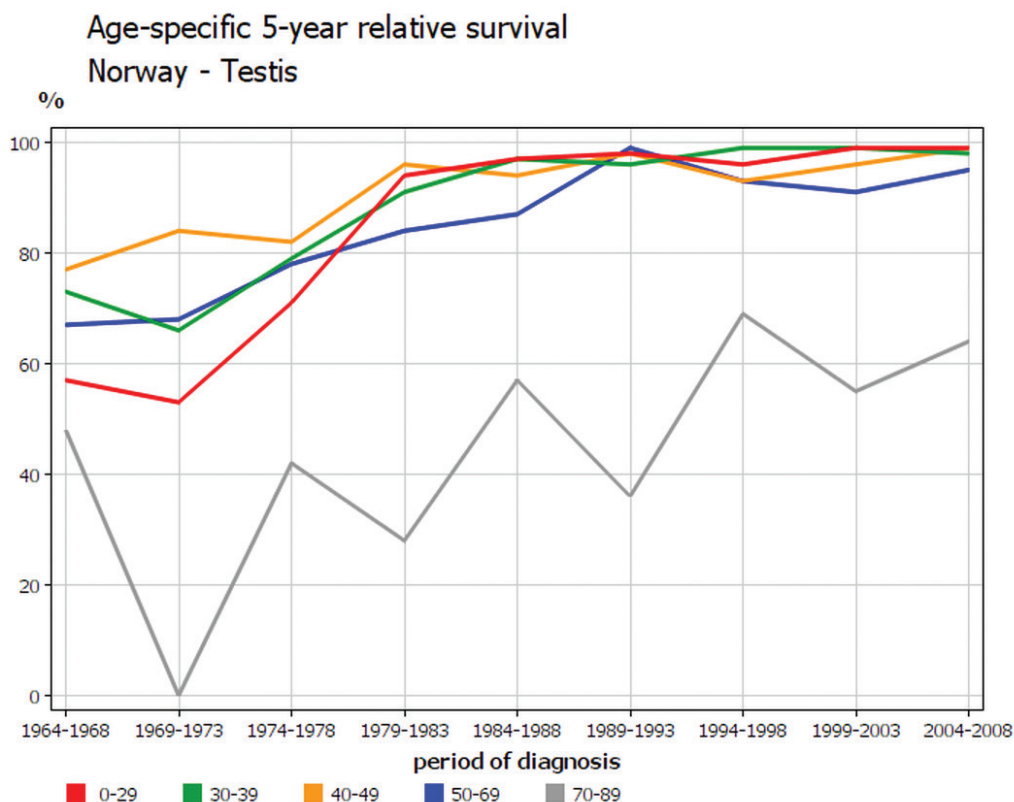
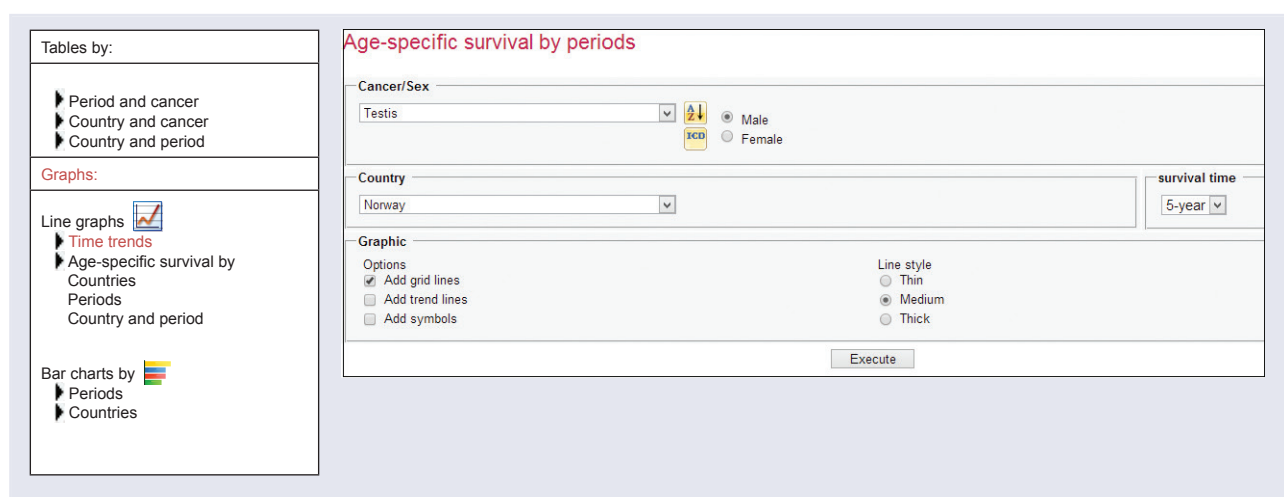
☐ Thick



AGE-SPECIFIC SURVIVAL CURVES BY PERIODS

Output example: Age-specific relative survival trends for testicular cancer in males, Norway, 1964-2008

There was a rapid increase in survival of testicular cancer during the late 1970s and early 1980s particularly for the youngest age groups (0-29 and 30-39 years). This was largely due to the introduction of Cisplatin, which was approved for cancer therapy in 1978, and cured many young men that otherwise would have suffered from a lethal nonseminoma cancer.



AGE-SPECIFIC SURVIVAL CURVES BY COUNTRY AND PERIOD

Output example: Age-specific relative survival trends for all cancer sites but non melanoma skin cancer, males and females, Nordic countries 0-49 and 80-89 years, 1964-2008

Analysis on age-specific survival trends also allows stratification on both country and period. This analysis gives results for specific age groups. In the example below we have chosen to present the results for the youngest (0-49 years) and oldest (80-89 years) age groups. There are smaller differences in age-specific survival between younger age groups compared to the oldest groups. This might reflect that the treatment regime is more similar in the Nordic countries for the young patients, whereas larger variation in treatment of older patients occurs between the countries.

Tables by:

► Period and cancer

► Country and cancer

► Country and period

Graphs:

Line graphs 

► Time trends

► Age-specific survival by Countries

Periods

Country and period

Bar charts by 

► Periods

► Countries

Age-specific survival by country and period

Cancer/Sex

All sites but non-melanoma skin cancer

A

Z

↓

ICD

☒ Male

☐ Female

Age-group

0-49

▼

survival time

5-year

▼

Graphic

Options

☒ Add grid lines

☐ Add trend lines

☐ Add symbols

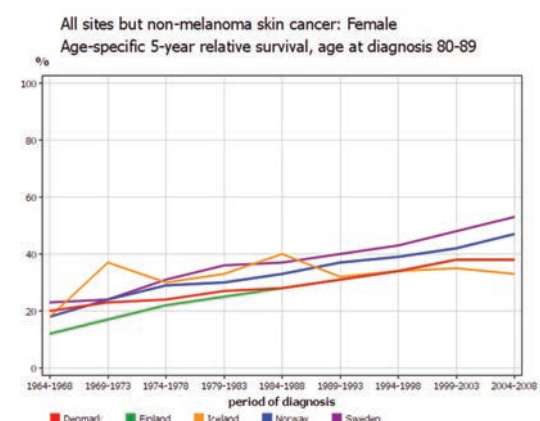
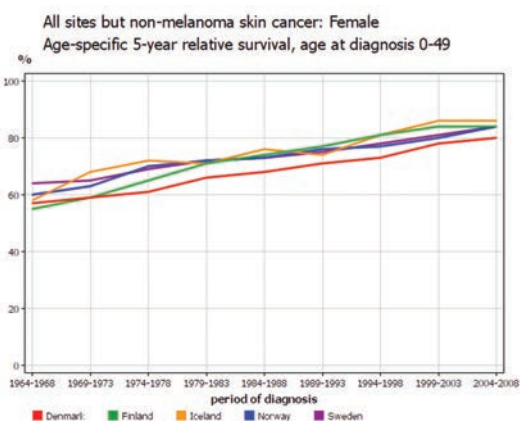
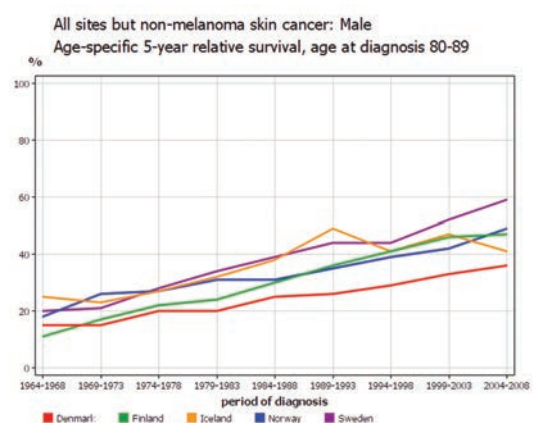
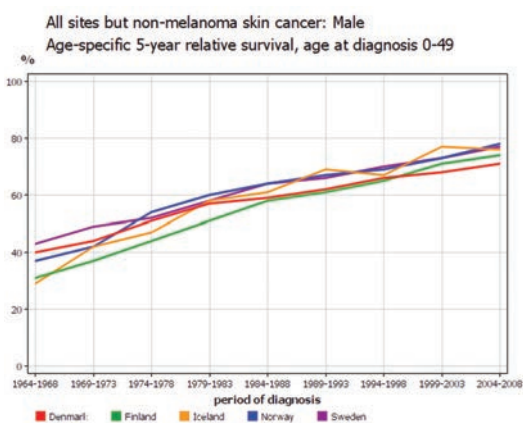
Line style

☐ Thin

☒ Medium

☐ Thick

Execute



BAR CHARTS OF RELATIVE SURVIVAL BY PERIODS OR COUNTRIES

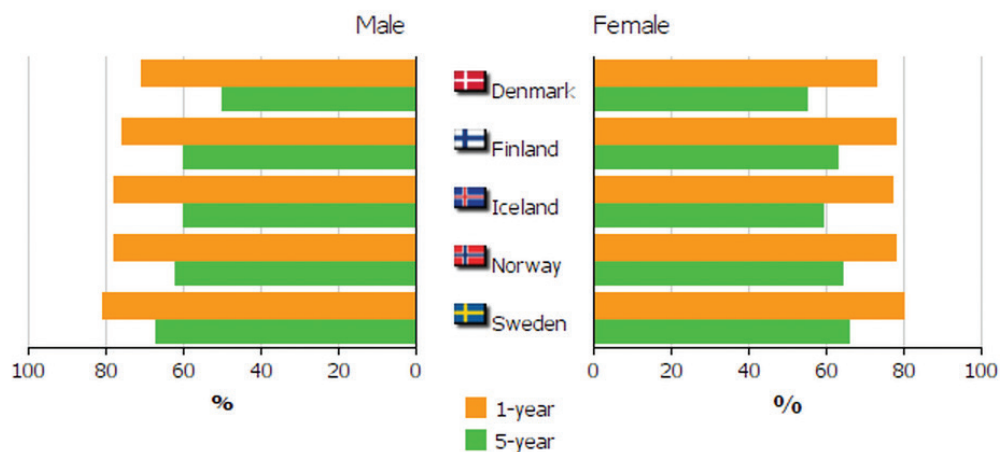
The bar charts express the 1- and five-year relative survival by cancer site.

Output example: Age standardised relative survival of all cancers but non-melanoma skin, males and females, all ages, Nordic countries, 2004-2008

Denmark has the lowest 1- and 5- year survival for both men and women, and Sweden ranks on top with a 1-year relative survival of about 80% for both sexes, and a five-year relative survival of 66% for men and 67% for women. There might be several reasons for differences in survival across the countries, especially the gap between Denmark and the other countries. Possible explanations are changes or differences regarded to diagnostic procedures, time for introduction of screening and age range of the screening population, lifestyle factors related to co-morbidity, or differences in treatment (Storm & al 2010).



All sites but non-melanoma skin cancer: period of diagnosis 2004-2008
Age-standardised relative survival, age at diagnosis 0-89



An output example of bar charts of relative survival by periods is not shown in this chapter.

References

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4 Cancer in the Nordic countries

A comparison of cancer incidence, mortality and survival of cancer in the Nordic countries by using the NORDCAN data

In this section, we will present an overview of the cancer burden in the Nordic countries by utilizing the NORDCAN data. The most common cancers in the Nordic countries for males are prostate, colorectal, and lung cancer, whereas breast, colorectal and lung cancer are the most common cancers in females.

Prostate cancer

The incidence rates of prostate cancer have been increasing steadily in all the Nordic countries up until around 1990, followed by a rapid increase in the early 1990s. In Denmark, the rates have been lower than the other Nordic countries, and an increase occurred some years later. The rapid increase in the 1990s coincided with the introduction of the prostate-specific antigen (PSA) test (Kvale & al 2007). Similarly to the incidence rates, the mortality rates increased steadily up to the 1990s, but in contrast to the incidence rates, the mortality rates started to decline towards the end of the 1990s. The decline was smaller and less marked in Denmark compared to the other Nordic countries. The decline in the mortality rates probably reflect a combination of treatment of early diagnosed prostate cancers and improved treatment of advanced disease. The five-year relative survival mirrors the shape of the incidence rates, with a steady increase up to around 1990, followed by a rapid improvement the last 20 years. For cancers affected by changes in early detection practice, like prostate cancer and the introduction of PSA-testing, it is difficult to interpret changes in patient survival due to lead time bias. This means that the survival increases because some cancers have been detected earlier (giving the patient a longer survival time), also when the time of death is not changed. Prostate cancers initiated by elevated PSA values alone might not give clinical symptoms within the lifetime of the patient.

Breast cancer

The incidence rates of breast cancer have increased during the last 50 years in all the Nordic countries. The introduction of mammographic screening programmes strongly influences the incidence rate (Moller & al 2005), and this has been found to explain half of the recent increase in the incidence rates in Norway (Weedon-Fekjaer & al 2012). The mortality rates however, have been fairly stable up to the late 1990s, when the rates started to decline in all of the Nordic countries. The decline in the mortality rates in recent years is likely due to both improved treatment of breast cancer and treatment of early (screening detected) diagnosed cancers. The five-year relative survival have improved steadily for many decades, but the interpretations is hampered by the lead time bias resulting from introducing an early detection program (see comment on survival trends for prostate above for elaboration).

Colorectal cancer

The incidence rates for colorectal cancer have increased for both men and women in all the Nordic countries the past 50 years, but the increase has been much larger in Norway compared to the other countries. In the 1950s and 60s, the rates in Norway were among the lowest of the Nordic countries with the highest rates found in Denmark. Due to the rapid increase in the rates, Norway has now surpassed Denmark, and has the highest rates in Europe for women (Bray & al 2007). The reason for this rapid increase in the rates in Norway is not known, but is probably partly due to changes in lifestyle, including dietary habits. The mortality rates for women have been declining for decades in all the countries except Norway. In Norway the rates have been steadily increasing up to the 1990s, after which a distinct decline similar to the other countries can be observed. A similar pattern is observed for men, with the exception of Finland where the rates have been fairly stable since the 1970s. The five-year relative survival has increased steadily for all the Nordic countries, both for cancers of the colon and rectum, but at a lower level for Denmark. The improvements in treatment of rectum cancer with the introduction in the mid-1990s of a new surgical technic, total mesorectal excision, and operation of rectum cancer in fewer hospitals have likely contributed to the decline in mortality rates and the corresponding increase in the survival in the past decade (Wibe & al 2002).

Lung cancer

The incidence rates for lung cancer have changed dramatically during the past 50 years, albeit very different for men and women. In Finland, Denmark and Sweden, the rates for men peaked some 30 years ago followed by a steady decline up to present day. In Iceland and Norway, the rates levelled off in the 1980s (Iceland) and 1990s (Norway), but with no marked sign of the age standardised rates to decline. An analysis of the cohort specific patterns however, indicates that the rates are likely to start declining in the coming years (data not shown, see chapters on incidence rates by birth cohort and on incidence predictions earlier in this issue). For women, the rates have been lower than for men, but except for a levelling off in Iceland during the 1990s, the rates have continued to rise in all countries. Smoking is the predominant risk factor for lung cancer, and accounts for about 85% of all lung cancers (Olsen & al 1997). The pattern of lung cancer can to a great extent be explained by the differences in smoking habits between men and women, and between the different countries (Engeland & al 1993). The trends in mortality rates mirror the trends in incidence rates, due to the low survival of lung cancer. The five-year relative survival has been fairly stable between 5-15% in the whole period. A possible slight improvement in the most recent period might be related to an increase in the proportion of patients receiving surgery (Strand & al 2012).

POPULATION PYRAMIDS

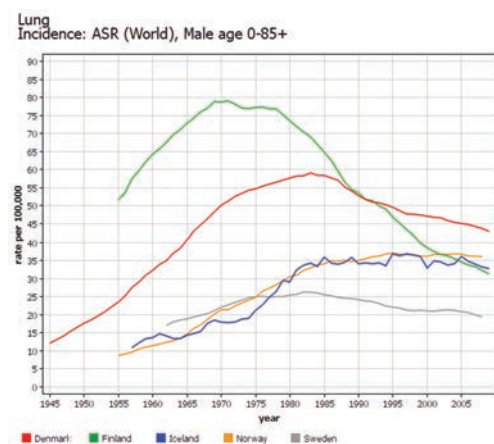
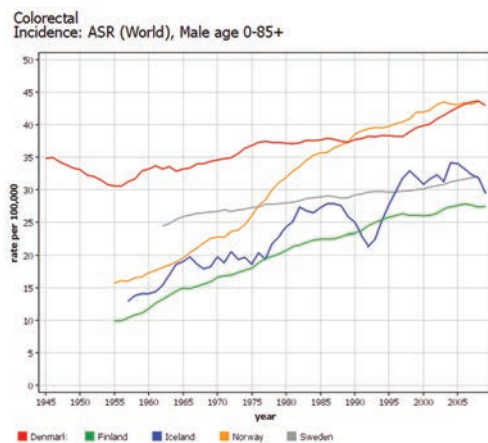
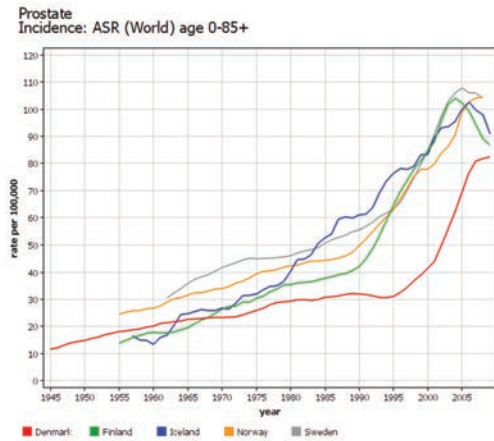
Population pyramids for the Nordic countries, 2010



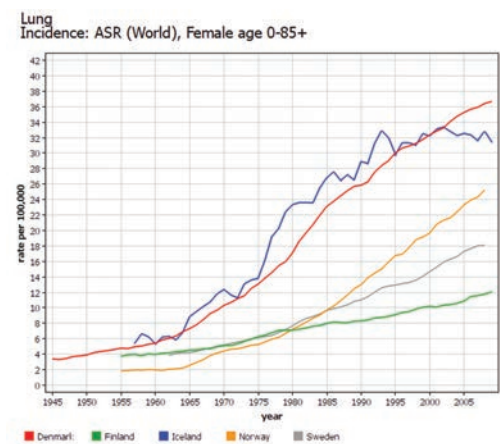
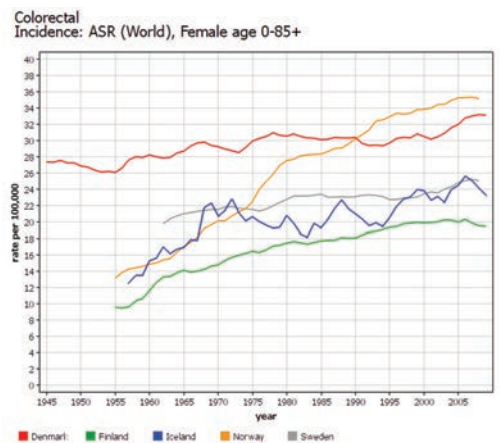
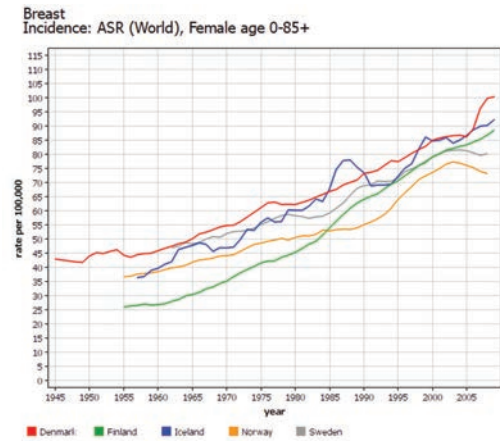
STANDARDISED INCIDENCE TRENDS (WORLD)

Standardised incidence trends (world) for the most common cancers in the Nordic countries, 2006-2010

MALES



FEMALES

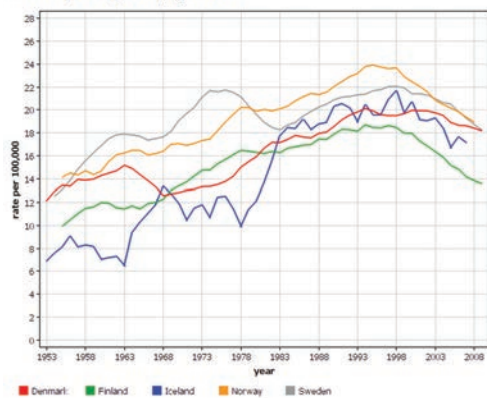


STANDARDISED MORTALITY TRENDS (WORLD)

Standardised mortality trends (world) for the most common cancers in the Nordic countries, 2006-2010

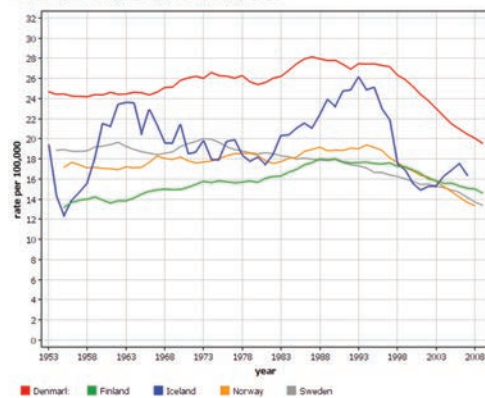
MALES

Prostate
Mortality: ASR (World) age 0-85+

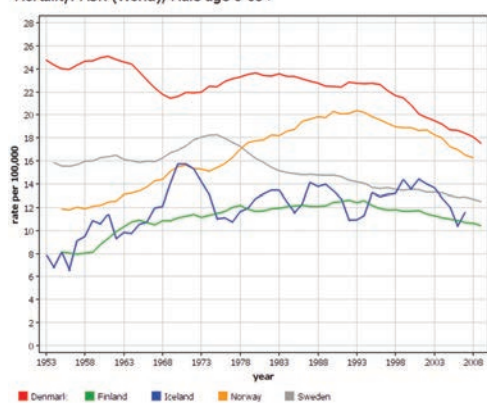


FEMALES

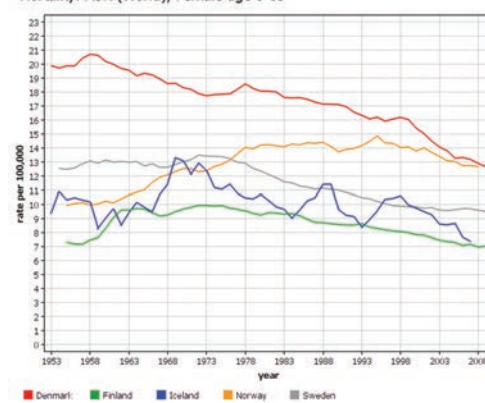
Breast
Mortality: ASR (World), Female age 0-85+



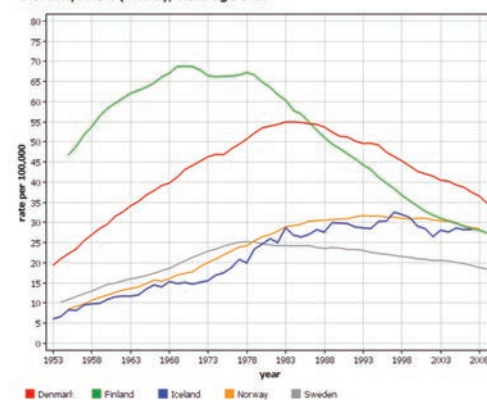
Colorectal
Mortality: ASR (World), Male age 0-85+



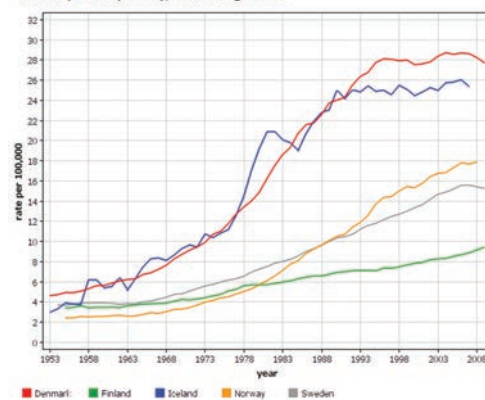
Colorectal
Mortality: ASR (World), Female age 0-85+



Lung
Mortality: ASR (World), Male age 0-85+



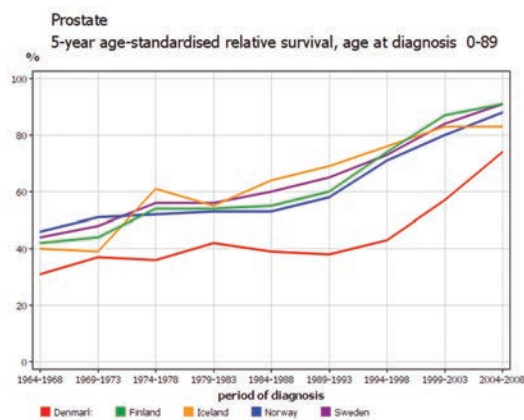
Lung
Mortality: ASR (World), Female age 0-85+



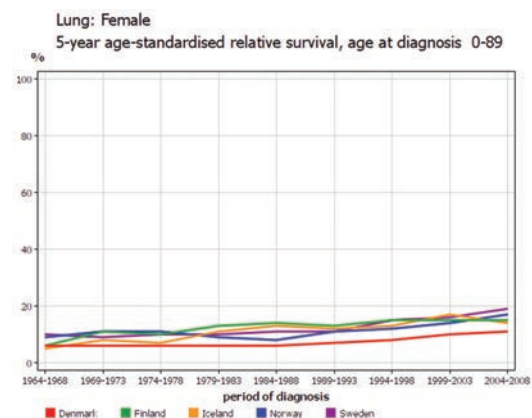
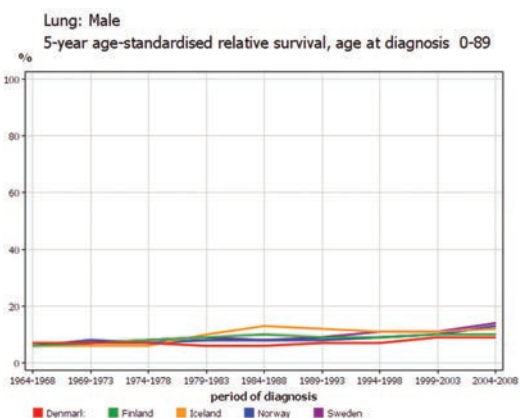
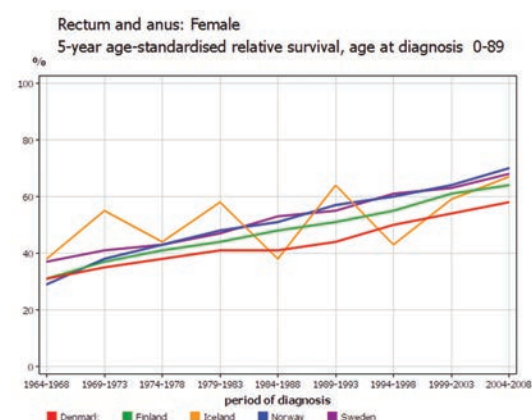
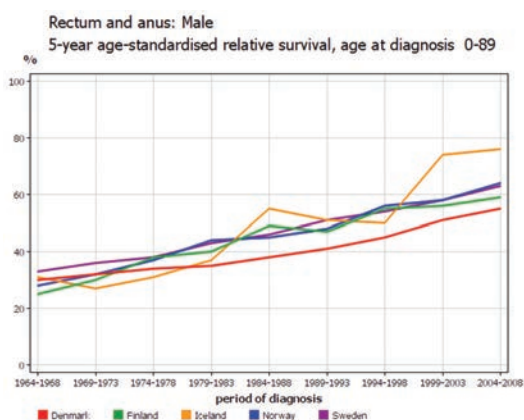
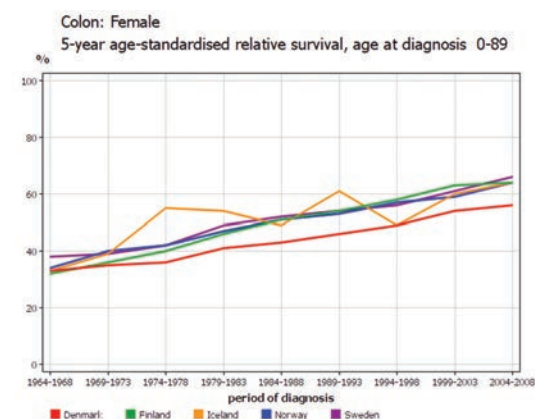
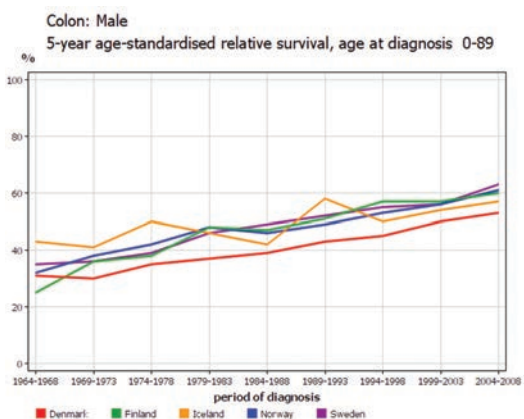
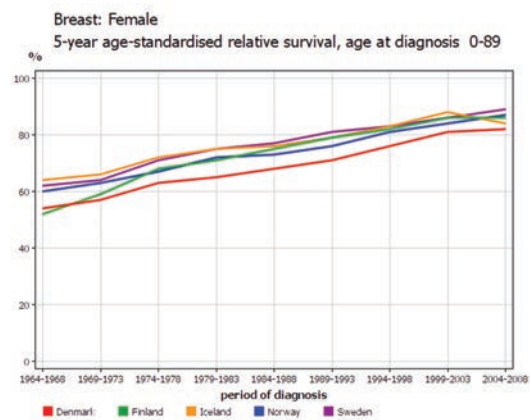
TIME TRENDS OF SURVIVAL

Five-year age-standardised relative survival of the most common cancers, males and females

MALES



FEMALES

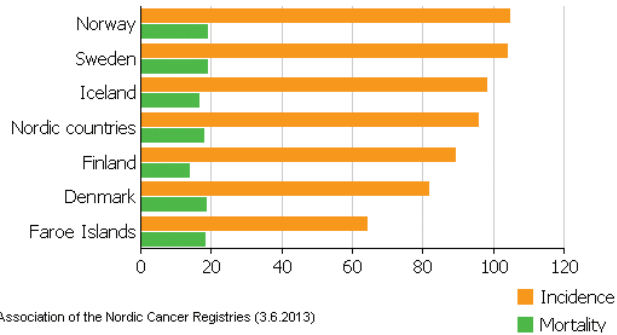


BAR CHARTS BY COUNTRIES

Incidence and mortality trends for the most common cancers, males and females, 2006-2010

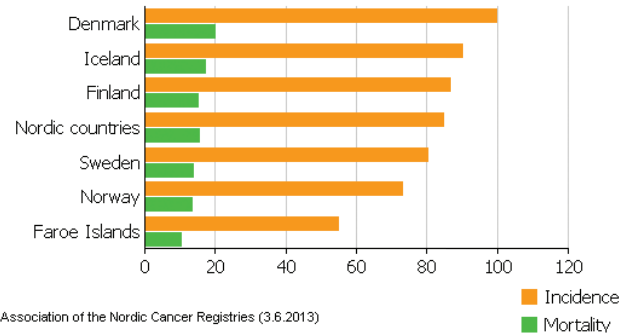
Prostate (2006-2010)

Male: ASR (World) age 0-85+



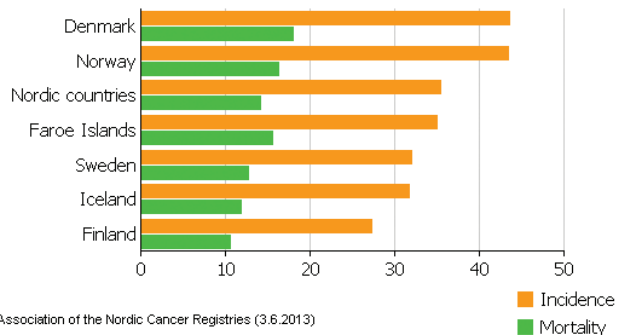
Breast (2006-2010)

Female: ASR (World) age 0-85+



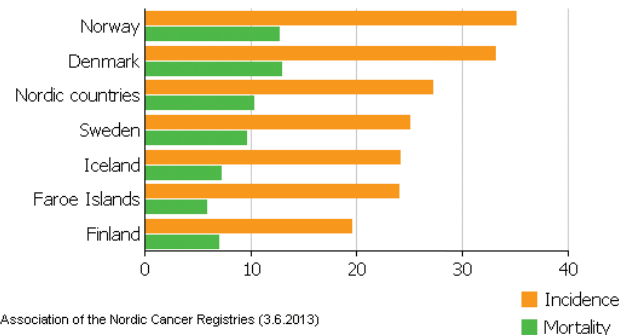
Colorectal (2006-2010)

Male: ASR (World) age 0-85+



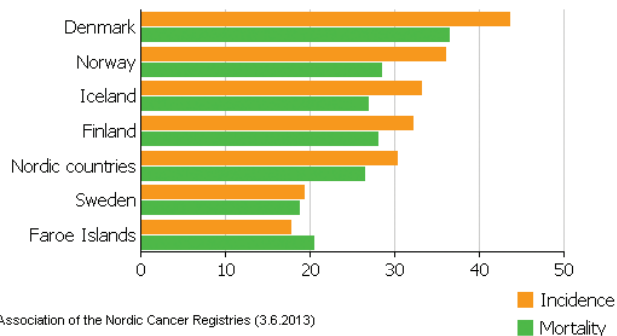
Colorectal (2006-2010)

Female: ASR (World) age 0-85+



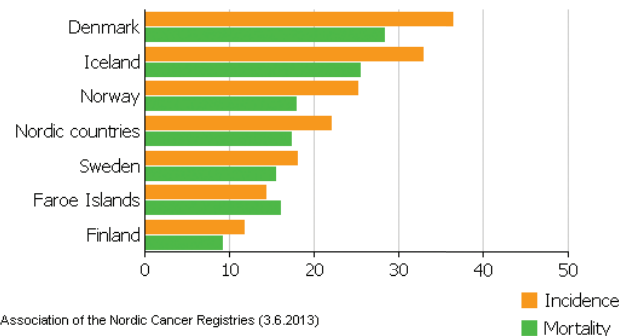
Lung (2006-2010)

Male: ASR (World) age 0-85+



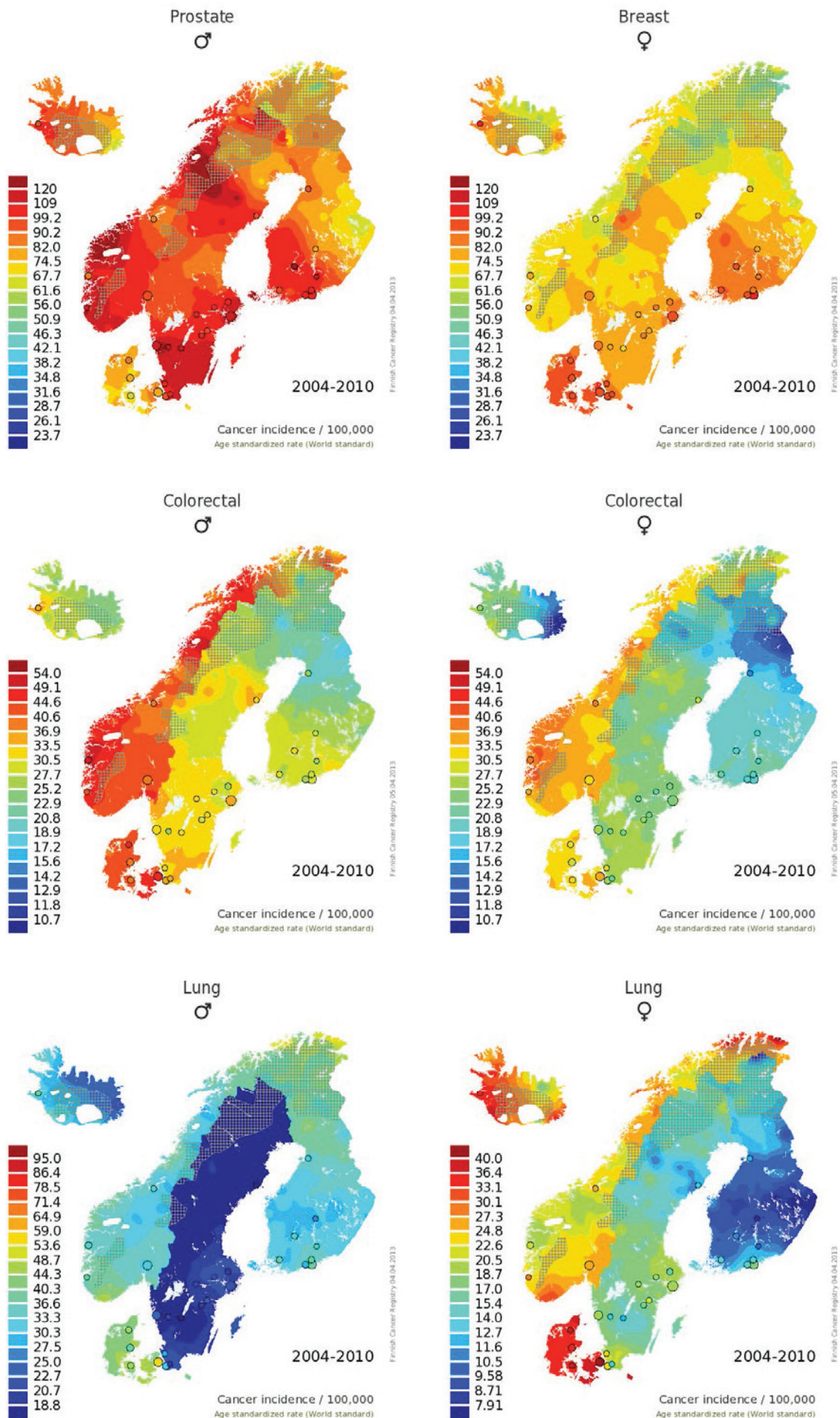
Lung (2006-2010)

Female: ASR (World) age 0-85+



CANCER MAPS

Incidence of the most common cancers, males and females, 2004-2010



Note that the scale and coloring of the different rates differ between the lung cancer map for men and the lung cancer map for women.

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5 The future of NORDCAN

The aim of NORDCAN has, since the start in 2002, been to serve as a research tool for cancer information, planning, quality control and research. We want to provide a cancer database with complete, comparable and timely data from each of the Nordic countries in a user-friendly way to satisfy most of the needs of policy makers, cancer societies, medical professionals, journalists and the general public. The development of new facilities has been driven by the requests from all these groups. NORDCAN is updated twice a year and besides the update, additional new facilities have been included each time.

The completeness of registration and comparability between countries has been a basic quality requirement of further development of NORDCAN. The NORDCAN group, with a representative from each Nordic country, meets twice a year to agree on the further development and studies to elucidate if new facilities are appropriate and the quality is sufficient.

Presently, each of the Nordic cancer registries yearly delivers individual data on incidence, mortality and follow-up to the NORDCAN secretariat for recoding to the NORDCAN entities according to common international rules, followed by tabulation for the web-version of NORDCAN where only tabulated data are included. After recoding, the delivered data is returned to the national cancer registry supplemented with the entity code and a variable that explain the background for a cancer case not being included. This enables delivery of data for research from each cancer registry while researchers still can compare their results with NORDCAN data. It also facilitates Nordic projects like linkage of the national twin registers with cancer registers and use of biobanks.

The individual records delivered to the NORDCAN secretariat is not used for other purposes unless explicitly decided in the NORDCAN group, for instance as preparation of tables and calculations to evaluate possible future facilities.

The focus on continuous development of comparable Nordic cancer statistics and regular meetings in the NORDCAN group has made it possible for NORDCAN to be used as a model for presentation of international cancer statistics like in GLOBOCAN (<http://globocan.iarc.fr/>) and ECO (European Cancer Observatory, <http://eco.iarc.fr/>), and in Italy a database for the regional cancer registers, ITACAN (<http://itacan.ispo.toscana.it>), directly uses the NORDCAN setup.

International Agency for Research on Cancer
World Health Organization

European Cancer Observatory (ECO) is a project developed at the International Agency for Research on Cancer (IARC) in partnership with the European Network of Cancer Registries (ENCR) in the framework of the EUROCOURSE project supported by the European Commission. The ECO platform provides a comprehensive system of information on cancer burden in Europe across three web sites: [EUCAN national estimates](#), [EUREG registry data](#) and [EUROCIM downloadable data](#).

EUCAN
national estimates

EUREG
registry data

EUREG permits the exploration of geographical patterns and temporal trends of incidence, mortality and survival observed in European population-based cancer registries for 35 major cancer entities in about 100 registration areas.

EUROCIM
downloadable data

EUROCOURSE

European Commission
Research & Innovation

ENCR
EUROPEAN NETWORK
OF CANCER REGISTRIES

[Image Credits](#)

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New facilities in the pipeline

- A new all cancer group including non-melanoma skin.
- Three new groups for cancers only included in the all cancers groups and presently not in a specific cancer entity: unknown primary cancer, other ill-defined cancers and other specified cancers. The all cancer group can then be constructed as the sum of the entities. This will also make it possible to make prediction of the all cancer group as the sum of the predictions of the cancer sites instead of the only present possibility of predicting the all cancer by predicting sum of all cancers.
- Animated cancer mortality maps based on municipality data like the present facility for incidence.
- More detailed subgroups of leukemia as ALL, CLL, AML and CML.
- Update of national relative survival for each cancer site.

Other ideas considered or worked on

- Tables of the distribution of morphology for specific cancer entities.
- Stage distribution using the TNM-system are now included in the Danish and Swedish cancer registers and Iceland and Norway work on inclusion of TNM for some cancer sites. A comparison of the stage distribution and the stage specific survival would be useful.
- Avoidable cancers, how many cancers of specific types could be avoided if the cancer risk was as in the Nordic country with the lowest risk or as a consequence of a scenario changing the distribution of risk factors.
- Avoidable cancer deaths, how many cancer deaths could be avoided if the survival after specific cancers were as in the Nordic country with the highest survival.

Future plans also include collaboration with and between the national clinical cancer quality databases in the Nordic countries; quality databases that contain details of the diagnostics, primary and follow-up treatment and quality of life of the patients. Validation between cancer registers and these clinical databases would improve quality. Collaboration will give more detailed knowledge based on larger patient groups than on the national level, and it will make it possible to improve priorities in cancer diagnostics and treatment and to target cancer prevention activities.

6 Scientific literature and websites using NORDCAN

The statistics and data of NORDCAN have been used for several studies and projects.. The following is a list of all studies and websites that have used or are using NORDCAN-data per June 2013. The list is updated continuously at the NORDCAN website.

Studies using NORDCAN as a primary data source

Storm HH, Engholm G, Hakulinen T, Tryggvadóttir L, Klint A, Gislum M, Kejs AM, Bray F. Survival of patients diagnosed with cancer in the Nordic countries up to 1999-2003 followed to the end of 2006. A critical over-view of the results. *Acta Oncol.* 2010 Jun;49(5):532-44.

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Other studies using NORDCAN

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Websites using NORDCAN

<http://www.cancer.dk/Hjaelp+viden/kraeftformer/kraeftsygdomme/> (look under statistics for each of the cancer sites)

www.cancerregistry.fi (Box "Cancer facts in short" in the low-left corner of the main page + a link to NORDCAN in Statistics section). All these are also part www.cancer.fi pages of the Cancer Society of Finland.