Cancer Registry of Norway
INSTITUTE OF POPULATION-BASED CANCER RESEARCH

Cancer in Norway 2018

Cancer incidence, mortality, survival and prevalence in Norway

Special issue:

Sosial ulikhet, innvandring og kreft

En rapport om kreftforekomst etter landbakgrunn, utdanning, inntekt og bosted

Cancer in Norway 2018

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Recommended reference:
Cancer Registry of Norway. Cancer in Norway 2018 - Cancer incidence, mortality, survival and prevalence in Norway. Oslo: Cancer Registry of Norway, 2019.

ISSN: 0806-3621

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

Cancer in Norway 2018

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Foreword

The large increase in incidence of cancer we saw over the past four-five decades has leveled off the past few years. There is still some increase in numbers, but they are modest and predominantly due to an increasing and aging population.

In order to understand how cancer changes over time in the population, we examine rates over five-year periods. Skin cancer has been increasing over decades. When comparing rates from the previous five-year period to the most recent one, the rates for skin cancer (melanoma and non-melanoma) still show the largest increase in both genders.

In men, the rates for all cancers combined have been stable. Rates for prostate and lung cancer are decreasing, and so are the rates for rectum cancer, while the trend for colon cancer points slightly upwards.

There has been a 5.6% increase in the rates among women from the previous five-year period to the most recent one. This reflects increased rates of breast, colon, lung and skin cancer. Last year, the report Cancer in Norway for 2017 showed optimistic signs of a levelling off in the lung cancer rate for women. This year, the 2018 rate for lung cancer in women reached an all-time high! Thus, we may not yet have seen the peak. The age-standardised rate (but still not the numbers) for lung cancer has passed that for colon cancer – the latter being the second most common in women for decades. Additionally, the breast cancer rate is increasing in women, and so is that for colon cancer.

At the beginning of 2019, immigrants represented 14.3% of the Norwegian population. According to Statistics Norway, about 48% of our immigrants are from Europe, 14% from Africa and 34% from Asia, leaving another 4% from the rest of the world. Immigrants from outside Europe tend to have lower cancer rates than people born in Norway. Cancer is predominantly a disease caused by western lifestyle and environment, and many immigrants bring with them a healthier lifestyle associated with lower cancer rates. We may all profit from learning and adapting to a healthier lifestyle.

However, to identify the most relevant and most important challenges, we must monitor rates in all population groups. This year, we present for the first time cancer rates by immigrant group. Although long-term trends among immigrants tend to be favourable, there are some noteworthy exceptions. Immigrants from countries with high a smoking prevalence, such as a number of the Eastern European countries, sadly have higher rates of lung cancer.

In this year´s special issue, we go into depth on rates both among immigrants, but also rates by socioeconomic factors. We know that socioeconomic status plays a role for several cancers, and a key question is whether there are independent effects linked to income, education and immigrant status. We therefore examine all three factors. We found that a number of cancers are more common among those who have short education or low income. However, we found that the differences between immigrant groups remain after adjustment for socioeconomic factors.

How do we use this information to reduce cancer risk? We know for sure that one size does not fit all in terms of prevention. We need a more targeted approach if we are to prevent cancer in all population subgroups at higher risk of cancer.

Thank you to everyone who has contributed to this report, both in the Cancer Registry, and to all physicians and clinical staff across Norway who have submitted reports on cancer diagnosis and treatment.

Oslo, October 2019

Giske Ursin, MD, PhD
Director

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Chapter 1 Definitions

Incidence The number of new cases of a 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 metric that combines persons and time (in years) as the denominator in rates.

Crude rate Unadjusted rates, often estimated for the entire population, with no standardisation by age.

Age-specific rate A rate calculated by age strata, often with five-year intervals.

Age-standardisation A procedure for adjusting rates, e.g. incidence rates, designed to minimize the effects of differences in age composition when comparing rates for different populations. Referred to as age-standardised (or age-adjusted) rates. For this report, we use the Norwegian mid-year population in 2014 (referred to in the text as Norwegian standard).

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 that can be defined as the number of living individuals having ever been diagnosed with cancer.

Relative survival The observed survival after a given period of time 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 observation. Relative survival is thus determined by the mortality experienced by the patients regardless of whether an 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 time from diagnosis lengthens, this 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.

Most definitions are based on Last & al, 2001[1].

Chapter 2 Summary

The aim of the annual publication of Cancer in Norway is to provide detailed cancer statistics. This publication should help health professionals, policy-makers and researchers to identify and make decisions about areas that need more attention and investigation. This publication may also be valuable for the media, educators and members of the public with an interest in cancer.

Due to random variation in incidence rates from one year to another, cancer trends should be interpreted by examining the rates over the past several years. Further, the numbers for 2018 might be slightly under-reported due to delayed notification of cancer cases. The present report is published before the complete numbers of deaths in 2018 was received from the Cause of Death Registry. Thus, the possible under-reporting might be slightly higher for cancers with the highest percentage of cases based on a death certificate only (DCO). However, we expect this underreporting to be lower than for CIN 2016 and CIN 2017, as we currently have received a higher number of notifications from the Cause of Death Registry now than we had for the two previous issues.

The report is available online at:

https://www.kreftregisteret.no/

Incidence

A total of 34 190 new cancer cases were reported in 2018: 53.6% were among men and 46.4% were among women. The most frequent types of cancer in men in 2014–2018 were prostate, lung, colon and bladder (including the urinary tract), whereas breast, colon, lung cancer and melanoma of the skin were the most frequent cancers in women.

Among children (0–14 years of age), leukaemia and cancer in the central nervous system are the most common. These represents nearly 60% of all cancer cases in boys and girls. In men aged 15–49 years, testicular cancer is the most common cancer, whereas prostate cancer is the most common cancer in middle aged and older men (50+). Among young women (15–24 years of age), cancer in the central nervous system and melanoma of the skin are the most common cancer types, whereas breast cancer is the most common cancer type among women aged 25–69 years old. Colon cancer is slightly more common than breast cancer among the oldest women (70+).

The incidence rate for all sites combined has been relatively stable in men (increased by 0.3%) and increased by 5.6% in women when comparing the last five-year period (2014–2018) with the previous one (2009–2013).

For the most common cancers in men, the largest incidence increase in rates was observed for melanoma of the skin, non-melanoma skin cancer and urinary tract. On the positive side, the rates for lung and prostate cancer were reduced.

For the most common cancers in women, the strongest increase in incidence rate occurred for non-melanoma skin cancer, melanoma of the skin, lung and breast cancer. A reduction in rates was seen for cancer in ovary and corpus uteri.

A notable decrease is observed for cancer of the central nervous system in both men and women. We have previously suggested that this has been due to underreporting. Preliminary analyses suggest that the reduction is limited to benign cases and in all ages above 30 years.

The probability of being diagnosed with a cancer before the age of 75 is the same as in the previous issue of Cancer in Norway: 36% in men, and 30% in women.

Prevalence

At the end of 2018 a total of 283 894 Norwegians were alive after having had at least one cancer diagnosis at an earlier point in time.

Mortality

There were 11 016 deaths from cancer in Norway in 2017[1]. Cancer of the lung accounts for 19% of the cancer mortality, followed by colorectal cancer (14%), prostate cancer (8%) and female breast cancer (5%). Together these cancer sites account for nearly 50% of the cancer mortality.

[1] The mortality data from the Cause of Death Registry for 2018 was not complete when this report was published, and therefore the figures reports for 2017

Survival

There has been a slight increase in the five-year relative survival for most cancers when comparing the five-year period (2014–2018) with the previous one:

Prostate cancer: Increased from 93.3% to 94.5%.
Breast cancer: Increased from 89.3% to 90.7%.

Lung cancer (M): Increased from 15.1% to 19.4%.
Lung cancer (F): Increased from 20.6% to 26.2%.

Colon cancer (M): Increased from 61.7% to 65.4%.
Colon cancer (F): Increased from 64.6% to 68.6%.

Rectum cancer (M): Increased from 67.9% to 69.8%.
Rectum cancer (F): Increased from 68.3% to 69.4%.

Table 2.1: Summary of cancer statistics for selected cancers

ICD-10	Site	Sex	Incidence cases, 2018[1]	Incidence rate, 2014–18[2]	Change in rate (%)[3]	Mortality rate, 2017[4]	Five-year relative survival (%)	
							2009–13	2014–18
C00–96	All sites	M	18 321	729.8	0.3	246.6	70.9	74.1
		F	15 869	555.3	5.6	173.2	70.6	73.5
C18	Colon	M	1 490	59.1	1.3	24.5	61.7	65.4
		F	1 578	53.8	5.2	20.0	64.6	68.6
C19–20	Rectum, rectosigmoid	M	834	32.6	-3.1	9.7	67.9	69.8
		F	526	19.5	-3.5	5.5	68.3	69.4
C33–34	Lung, trachea	M	1 677	67.8	-6.3	47.1	15.1	19.4
		F	1 674	54.5	10.8	33.1	20.6	26.2
C43	Melanoma of the skin	M	1 169	43.7	22.2	6.6	81.8	85.5
		F	1 156	38.6	17.3	4.1	89.4	91.7
C44	Skin, non-melanoma	M	1 342	51.5	20.1	...	...	...
		F	1 119	32.6	22.4	...	...	...
C50	Breast	F	3 568	128.2	8.9	20.0	89.3	90.7
C53	Cervix uteri	F	355	13.9	13.9	2.7	80.1	82.0
C54	Corpus uteri	F	797	27.3	-4.3	2.4	83.2	84.4
C56, C57.0–4, C48.2	Ovary etc.	F	444	18.5	-4.9	11.8	44.9	48.9
C61	Prostate	M	4 848	199.8	-5.5	43.8	93.3	94.5
C62	Testis	M	316	11.3	-6.3	0.1	97.9	98.8
C65–68	Urinary tract	M	1 239	52.0	9.2	12.8	75.1	78.0
		F	509	16.2	7.9	3.5	69.0	71.9
C70–72	Central nervous system	M	440	18.5	-14.0	8.1	61.8	60.2
		F	445	19.8	-17.7	6.3	77.7	75.3
C73	Thyroid gland	M	114	4.7	30.5	0.8	88.1	87.5
		F	294	10.8	22.9	0.8	93.5	93.4
C82–86, C96	Non-Hodgkin lymphoma	M	599	23.0	-0.8	6.8	71.5	75.2
		F	479	16.1	-2.2	4.9	74.1	76.1
C91–95	Leukaemia	M	681	26.9	0.1	10.5	62.7	65.0
		F	524	19.2	9.2	5.9	67.1	71.0

[1] Number of new cases.
[2] Age-standardised (Norwegian std.) incidence rates per 100 000 person-years.
[3] Percent change in age-standardised incidence rate from 2009–13 to 2014–18.
[4] Age-standardised (Norwegian std.) mortality rates per 100 000 person-years. The mortality rates are presented for 2017 as complete numbers for 2018 is not yet received from the Cause of Death Registry.
... Not estimated in this report.

Chapter 3 Data and data sources

3.1 The population of Norway

By January 1st 2019 the total number of inhabitants in Norway was 5 328 212 (Source: Statistics Norway

www.ssb.no/befolkning)

Table 3.1 shows the age structure by sex for the Norwegian mid-year population in 2018. When the first census in Norway took place in 1769, the number of inhabitants was 739 180. The population has increased remarkably since then, and the growth is expected to continue the next few decades. The total number of inhabitants in Norway has increased by 59% from 1953 to 2019, largely because of rising life expectancy and, more recently, due to increase in net immigration. By 2040, the size of the population is expected to have reached 6 million, and by 2060 it have reached 6.5 million[1] [2].

The elderly will represent an increasing proportion of the population of Norway over the next decades. Recent updates from Statistics Norway estimate that the proportion of persons 70 years or older will increase from 12%, in 2018, to 18% in 2040[2].

The immigrant population

The immigrant population is heterogeneous with respect to length of stay, country of birth and reason for immigration. The first-generation immigrants constitutes of persons from over 200 countries and comprises 14.3% of the total population. An additional 3.4% of the Norwegian population are second-generation immigrants (born in Norway with two foreign born parents). Today, immigrants from Poland are the largest immigrant group with about 98 700 persons. Immigrants from Lithuania (39 300) and Sweden (35 600) are the second and third largest immigrant groups, when classifying immigrants by country of birth. In total, 52% of the first-generation immigrants are born in Europe (excluding Turkey), 13% are born in Africa, 31% are born in Asia, 1% are born in North-America, 3% are born in South- and Latin-America and less than 1% are born in Oceania[3].

Table 3.1: Norwegian mid-year population 2018 by five-year age group and sex

Age group	Males	Females	Total
0–4	152 885	144 337	297 222
5–9	165 140	156 723	321 863
10–14	162 829	155 034	317 863
15–19	165 670	155 559	321 229
20–24	176 658	165 143	341 801
25–29	189 582	181 800	371 382
30–34	184 970	176 712	361 682
35–39	180 890	170 305	351 195
40–44	180 974	171 329	352 303
45–49	194 637	184 914	379 551
50–54	186 015	176 279	362 294
55–59	165 268	158 673	323 941
60–64	151 577	150 384	301 961
65–69	136 113	136 461	272 574
70–74	122 842	128 090	250 932
75–79	74 409	85 345	159 754
80–84	46 155	61 324	107 479
85+	40 112	76 785	116 897

[1] Considered the scenario of medium national growth

3.2 The Cancer Registry of Norway

The Cancer Registry of Norway (CRN) has, since 1952, systematically collected notifications on cancer occurrence for the Norwegian population. The registration is considered to be close to complete from 1953, and a comprehensive study on data quality estimates the completeness to be 98.8% for the registration period 2001–2005[4]. The reporting of neoplasms has been mandatory since the implementation of a directive from the Ministry of Health and Social Affairs in January 1952. The Regulations for the collection and processing of data in the CRN (CRN Regulations (*Kreftregisterforskriften*)) came into force in 2002[5]. In 2018, the CRN Regulations were revised to allow the Registry to collect and process data on country of birth. Thus, we can now for the first time present data on cancer incidence among immigrants. These numbers are presented in the Special Issue of this report.

Main objectives

The main objectives of the Cancer Registry of Norway can be summarized as the following:

- Collect data on cancer occurrence and describe the distribution of cancer and changes over time.
- Provide a basis for research on the aetiology, diagnostic procedures, natural course of the disease, and 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 public about preventive measures.
- Perform epidemiological research of high international standard.

Data items registered

The following are mandatory to report to the CRN:

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

The incidence registry

The incidence registry contains basic data items collected from clinicians and pathologists, as well as data from the Norwegian Patient Registry (NPR) and the Cause of Death Registry. As of September 23rd 2019, the incidence registry contained information registered since 1953 on 1 984 415 cancer cases (including premalignant and some benign conditions) in 1 574 700 persons. The incidence registry is updated continuously with information on both new cases and cases diagnosed previous years. A total of 5 132 996 notifications have been registered since 1969 (single notifications were not registered earlier).

The clinical registries

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

Several clinical registries are now established, and the ongoing and expanding activities of these clinical registries are a major focus for CRN. Each clinical registry has a advisory board consisting of multi-disciplinary experts from clinical and research milieus in Norway. These experts advise on the contents and activities of each clinical registry and its strategic direction. Registries are integrated in the CRN coding and registration activities. Table 3.2 shows the status of the clinical registries as of October 2019. Recent reports (in Norwegian) from these registries are found here:

https://www.kreftregisteret.no/Generelt/Rapporter/Arsrapport-fra-kvalitetsregistrene/.

Table 3.2: Status of the clinical registries, October 2019

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	2009
Prostate cancer	Yes	Yes	Yes	Yes	2009
Breast cancer	Yes	Yes	Yes	Yes	2013
Childhood cancer	Yes	Yes	Yes	Yes	2013
Gynecological cancer**	Yes	Yes	Yes	Yes	2013
Lung cancer	Yes	Yes	Yes	Yes	2013
Lymphomas and lymphoid leukaemias	Yes	Yes	Yes	Yes	2013
Melanoma of the skin	Yes	Yes	Yes	Yes	2013
Oesophagus and stomach cancer	Yes	Yes	Yes	Yes	***
Sarcoma	Yes	Yes	Yes	Yes	***
Central nervous system	Yes	No	No	No	***
Urinary tract	Yes	No	Yes	No	***
Hematological cancer	Yes	No	No	No	***
Pancreatic cancer	Yes	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 ovarian cancer, will be extended to include all gynecological cancers.
*** It has been applied for funding.

3.3 Sources of information

The sources of information and the notification process are illustrated in Figure 3.1. Information from clinical notifications, pathology reports and death certificates are the main sources that enables the CRN to code and store data on cancer patients in Norway. Information from the Norwegian Patient Registry (NPR) is an important additional source for identifying cancer cases. The information is identified and linked by the personal identification number system that was established in Norway in 1964.

Clinical and pathological notifications

The CRN Regulations, as issued by the Ministry of Health and Social Affairs, require all health institutions in Norway involved in cancer diagnostics, treatment and follow-up to report to the CRN. Reporting should be done as soon as possible after end of diagnostics or treatment. The clinical registries use specific forms with extended information relevant for each cancer site. In addition, there are two generic forms for reporting solid or non-solid tumours not yet included in a clinical registry. These forms provide information on primary site, stage of disease, the basis for the diagnosis and primary treatment given to the patient. Clinical notifications are sent using the CRN electronical reporting service (KREMT) at the Norwegian Health Network. More information about KREMT can be found at:

https://www.kreftregisteret.no/Registrene/Innrapportering/KREMT---Kreftregisterets-elektroniske-meldetjeneste/

Pathology reports from hospitals and independent laboratories provide histological, cytological or autopsy information. More than half of the pathology reports received in the CRN are now sent electronically. The aim is to further reduce the amount of paper copies over the next couple of years by having even more pathology departments report electronically.

Death certificates

The CRN receives monthly updates on patients' vital status from the National Population Registry. In addition, the Cause of Death Registry, run by the Norwegian Institute of Public Health, send death certificates and information on cause of death throughout the 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 are not previously reported, or where the diagnosis differs. Cancer cases first identified from death certificates are traced back to the health institution responsible for the treatment of the patient to verify the diagnosis and, if possible, get clinical information about the case.

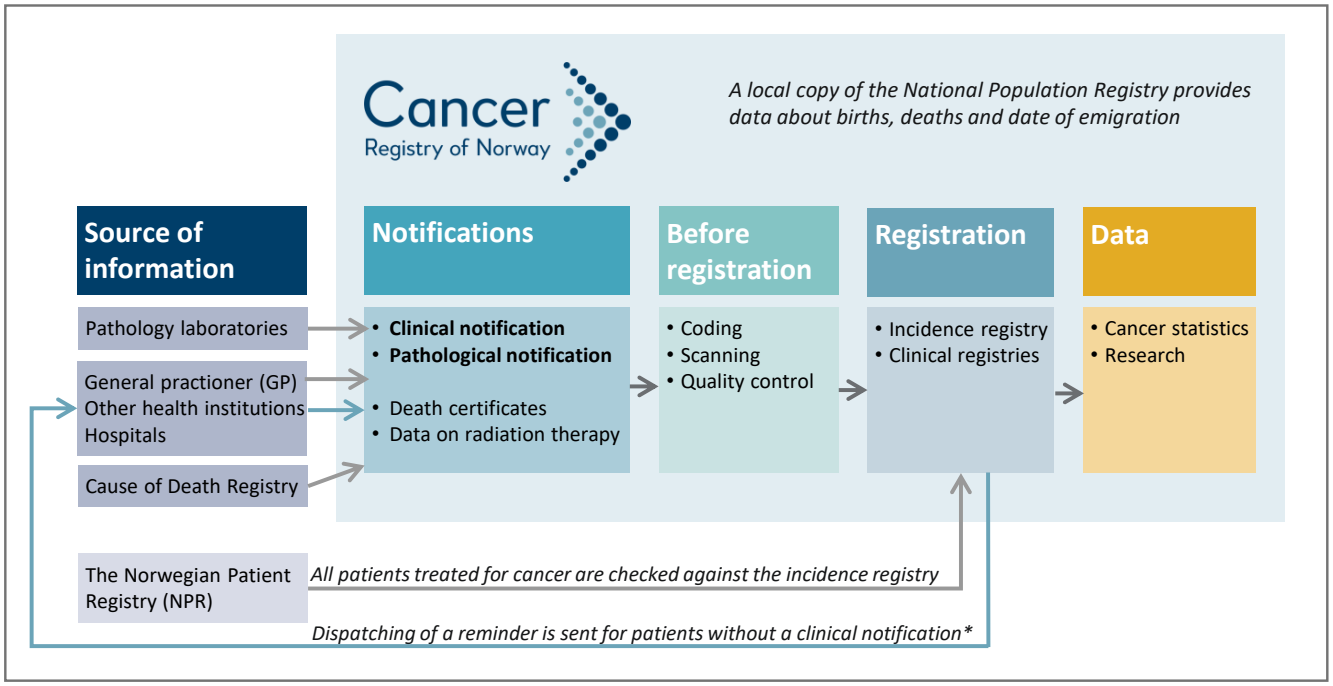
The Norwegian Patient Registry

Since 2002, the CRN has received data from the Patient Administrative Data System (PAS) used in all Norwegian hospitals. Information was first sent directly from the hospitals, and from 2010 it has been provided by the NPR. The data contain information regarding patients who have been treated for premalignant and malignant conditions, and reminders are sent to clinicians for all cancer cases not previously registered in the CRN. The NPR is a key source in finding information on unreported cases (Figure 3.1).

Dispatching of reminders to clinicians

It is mandatory to report clinical information on all new cases of cancer, except those diagnosed at autopsy. Thus, at least one clinical notification should be registered for each cancer case. In those cases where the clinical notification is missing, a reminder is sent via the KREMT-portal to the hospital/ward/physician responsible for the treatment. The procedure for cancer registration and the dispatching of reminders are illustrated in Figure 3.1.

Figure 3.1: Sources of information and the process of cancer registration at the Cancer Registry of Norway



**Dispatching of reminders for clinical notifications are sent for cases that are only notified from the NPR, pathology laboratories, Cause of death registry or radiation therapy data.*

3.4 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 September 23rd 2019. The tables and figures in general represent either the latest year of complete incidence (2018) or the latest five-year period (2014–2018). Population data, stratified by year, sex and age, are provided by Statistics Norway.

Registered codes from ICD-7, ICD-O-2 and ICD-O-3 are converted to ICD-10 using a combination of topography and morphology. The main cancer types are tabulated according to their ICD-10 categories.

Table 3.3 gives a detailed description of specific morphologies that are included or excluded in all cancer statistics presented in the present report. The "All sites" figure comprises all malignant neoplasms (ICD-10 C00–96) and the D-diagnoses listed in Table 3.3. Corresponding mortality data coded in ICD-10 were obtained from the Cause of Death Registry and are presented in the same ICD-10 categories as for the rest of this report. Of notice is that in the subsequent tables and figures the D-codes are not shown in labels due to lack of space.

Table 3.3: Description of ICD-10 codes

ICD-10	Site	Comments
C00–96	All sites	Includes the following D-diagnoses: D32–33, D35.2–35.4, D42–43, D44.3–44.5 and D45–47. Excludes all basal cell carcinomas of all topographies
C00	Lip	Includes the following ICD-10 codes: C00.0–2, C00.6, C00.8 (only included if Lip NOS), C00.9
C02–06	Oral cavity	Includes the following ICD-10 codes: C00.3–5, C00.8 (if the tumor is in mucosa of upper or lower lip), C02.0–4, C02.8–9, C03.0–9, C04.0–9, C05.0, C05.8, C05.9, C06.0–9
C07–08	Salivary glands	Includes the following ICD-10 codes: C07.9, C08.0–9
C09–10, C01, C14	Oropharynx	Includes the following ICD-10 codes: C01.9, C05.1–2, C09.0–9, C10.0–9, C14.0–8
C11	Nasopharynx	Includes the following ICD-10 codes: C11.0–9
C12–13	Hypopharynx	Includes the following ICD-10 codes: C12.9, C13.0–9
C38	Heart, mediastinum and pleura	Excludes mesotheliomas (which are included in C45)
C48–49	Soft tissues etc.	Includes retroperitoneum and peritoneum (C48). In women, cases in peritoneum (C48.2) are excluded, as these are included in ovary etc. (C56, C57.0–4, C48.2)
C50	Breast	Excludes Pagets disease
C56, C57.0–4, C48.2	Ovary etc.	Excludes borderline tumours. Includes the following sites: Neoplasms in peritoneum (C48.2, epithelial tumours), fallopian tube (C57.0), broad ligament (C57.1), round ligament (C57.2), parametrium (C57.3) and uterine adnexa, unspecified (C57.4)
C64	Kidney (excl. renal pelvis)	Excludes non-invasive tumours
C65	Renal pelvis	Includes non-invasive papillary tumours, dysplasia and carcinoma in situ
C66	Ureter	Includes non-invasive papillary tumours, dysplasia and carcinoma in situ
C67	Bladder	Includes non-invasive papillary tumours, dysplasia and carcinoma in situ
C68	Other and unspecified urinary organs	Includes non-invasive papillary tumours, dysplasia and carcinoma in situ
C70	Meninges	Includes benign tumours (D32–33, D42–43)
C71	Brain	Includes benign tumours (D32–33, D42–43)
C72	Spinal cord, cranial nerves and other parts of central nervous system	Includes benign tumours (D32–33, D42–43)
C75	Other endocrine glands and related structures	Includes benign tumours (D35.2–35.4, D44.3–44.5)
C90	Multiple myeloma	Includes plasmacytomas (C90.2–3)
C92	Myeloid leukaemia	Includes myelodysplastic syndrome (D46)
C95	Leukaemia of unspecified cell type	Includes polycythaemia vera (D45) and other unspecified tumours in lymphatic or hematopoietic tissue (D47)

Multiple primary neoplasms

In general, multiple primaries occur where two or more primary cancers develop within the same organ (or a pair of organs), as opposed to a recurrence or progression of an existing cancer. They may occur at the same time (synchronous), or in sequences (metachronous).

The rules of multiple primary neoplasms states that when counting cases, only one tumour is recognized as arising in an organ or a pair of organs or tissue. This means that for this report, only the first invasive tumour of a defined histological type is counted within one two-digit topography code (ICD-O-3) (for example breast C50). A new cancer of the same histological group many years later in the same organ will thus not be counted. If there are different histological diagnoses, for example an adenocarcinoma and a sarcoma in the same organ, these will be counted as two cancer cases. Some organs are considered as only one organ in this respect (for example trachea C33 and lung C34). The recommendations for counting multiple primary neoplasms were outlined by the IARC/WHO/ENCR/IACR Working group in 2004, available at:

http://www.iacr.com.fr/images/doc/MPrules_july2004.pdf.

Multifocal tumours are counted only once. This is also the case for the systemic cancers like lymphomas, leukaemias, kaposi's sarcomas and mesotheliomas.

The rules are followed with the following exceptions: For metachronous cases within the same histological group, i.e. cancer cases not considered to be histological different, the case with the first date of diagnosis is reported. For synchronous cases the case with the most severe metastasis status is reported. If the metastasis status is equal, the case that was registered first is reported. This differs from the IARC rules where the numerically highest ICD-O morphology code is included, even if it occurs at a later point of time or if it has a less severe metastasis status at the same point of time. Non-specific groups are considered as separate morphology groups. We thus might report a slightly higher number of cases than if the IARC rules had been followed strictly (as described in Table 25, page 26, World health Organization International Classification of Diseases for Oncology, third edition, first revision, 2013)[6].

Extent of disease

In the present report we have classified stage as follows:

Localised stage: All cases where the tumor is confined to the primary organ.

Regional stage: All cases where the tumor has invaded neighbouring tissue outside of the primary organ or metastasised to regional lymph nodes.

Distant stage: All cases where the tumor has metastasised to other organs or distant lymph nodes.

Unknown: All cases where the primary origin of the tumor is not known and cases with insufficient information to set stage.

For some cases, the Cancer Registry of Norway only receive histological reports and no clinical notifications. A large proportion of these cases lack verified information on metastases at the time of diagnosis.

The following rules are used to set a specific stage for these patients: If a patient has major surgery and there is no clinical or pathological information that indicates metastasis, the patient is considered to have localised disease. If only a cytology or biopsy exist for the case, and there is no information about extent of disease, the patient is registered with an unknown stage.

3.5 Data quality

A comprehensive assessment of the data quality in the CRN was conducted in 2007[4]. 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 were reviewed in 2009[7]. Methods for the evaluation of registry completeness were also assessed the same year[8].

Two indicators of accuracy are shown in Table 3.4, namely the percentage of cases morphologically verified (MV%), and the percentage of death certificate only registrations (DCO%).

3.6 Completeness and timeliness

Table 3.5 shows the number of cancer cases diagnosed in 2017as extracted on October 8th 2018(for CIN 2017), and on September 23rd 2019.

The number of cancer cases diagnosed in 2017reported and appearing in this issue (CIN 2018) are 532 (1.6%) higher than reported in the previous Cancer in Norway (CIN 2017). In the last three years, the report has been published before we received the complete numbers of deaths from the Cause of Death Registry (CDR). In CIN 2017we have received about 85% of the expected numbers of deaths from the CDR. Incomplete numbers from the CDR at publication mostly affect cancers with high mortality rates and/or a high percentage of cases based on a death certificate only (DCO-cases), such as liver, pancreas, and lung cancers(see Table 3.4).

Table 3.4: Percentage distribution of morphologically verified (MV) and death certificate only (DCO) cases by primary site, 2014–2018

ICD-10	Site	Cases	MV (%)	DCO (%)
C00–96	**All sites**	**168 402**	**92.8**	**1.5**
C00–14	**Mouth, pharynx**	**3 197**	**98.9**	**0.3**
C00	Lip	469	100.0	0.0
C02–06	Oral cavity	1 099	99.1	0.2
C07–08	Salivary glands	363	98.3	0.3
C09–10, C01, C14	Oropharynx	1 059	98.5	0.8
C11	Nasopharynx	78	97.4	0.0
C12–13	Hypoharynx	129	100.0	0.0
C15–26	**Digestive organs**	**34 263**	**90.0**	**1.9**
C15	Oesophagus	1 492	94.6	1.1
C16	Stomach	2 281	94.3	2.0
C17	Small intestine	933	95.3	1.5
C18	Colon	15 029	94.8	1.2
C19–20	Rectum, rectosigmoid	6 837	97.6	0.4
C21	Anus	480	94.0	0.4
C22	Liver	1 442	66.0	4.4
C23–24	Gallbladder, bile ducts	794	73.8	5.9
C25	Pancreas	4 209	67.2	3.4
C26	Other digestive organs	766	82.4	14.1
C30–34, C38	**Respiratory organs**	**16 990**	**86.6**	**2.6**
C30–31	Nose, sinuses	201	98.5	0.5
C32	Larynx, epiglottis	563	97.0	0.7
C33–34	Lung, trachea	16 143	86.2	2.6
C38	Heart, mediastinum and pleura	83	66.3	14.5
C40–41	**Bone**	**289**	**97.9**	**1.0**
C43	**Melanoma of the skin**	**10 773**	**99.8**	**0.1**
C44	**Skin, non-melanoma**	**10 754**	**99.7**	**0.1**
C45	**Mesothelioma**	**380**	**93.9**	**0.5**
C47	**Autonomic nervous system**	**50**	**98.0**	**2.0**
C48–49	**Soft tissues**	**579**	**97.4**	**0.3**
C50	**Breast**	**17 456**	**99.2**	**0.4**
C51–58	**Female genital organs**	**8 861**	**97.4**	**0.9**
C51–52, C57.7–9	Other female genital	631	95.1	2.7
C53	Cervix uteri	1 802	99.2	0.4
C54	Corpus uteri	3 808	99.1	0.4
C55	Uterus, other	53	69.8	22.6
C56, C57.0–4, C48.2	Ovary etc.	2 556	94.8	1.0
C58	Placenta	11	90.9	0.0
C60–63	**Male genital organs**	**27 174**	**95.8**	**1.0**
C61	Prostate	25 328	95.5	1.1
C62	Testis	1 512	99.8	0.0
C60, C63	Other male genital	334	98.8	0.9
C64–68	**Urinary organs**	**13 015**	**96.3**	**1.2**
C64	Kidney (excl. renal pelvis)	4 386	93.0	2.1
C65–68	Urinary tract	8 629	98.0	0.7
C69	**Eye**	**411**	**57.2**	**0.0**
C70–72	**Central nervous system**	**5 055**	**70.0**	**2.4**
C73	**Thyroid gland**	**2 038**	**98.9**	**0.4**
C37, C74–75	**Other endocrine glands**	**973**	**62.3**	**1.5**
C39, C76, C80	**Other or unspecified**	**1 559**	**54.7**	**31.7**
C81–96	**Lymphoid/haematopoietic tissue**	**14 585**	**90.0**	**1.3**
C81	Hodgkin lymphoma	775	99.6	0.1
C82–86, C96	Non-Hodgkin lymphoma	5 167	97.7	0.7
C88	Immunoproliferative disease	349	97.7	0.9
C90	Multiple myeloma	2 241	90.9	1.0
C91–95	Leukaemia	6 053	81.4	2.1

Table 3.5: Registered cancer cases in Norway 2017, as obtained from the incidence registry October 8th 2018 and September 23rd 2019

		Cases diagnosed 2017 as of			
ICD-10	**Site**	**8.10.2018**	**23.9.2019**	**Difference**	**%**
C00–96	**All sites**	**33 564**	**34 096**	**532**	**1.6**
C00–14*	**Mouth, pharynx**	**645**	**646**	**1**	**0.2**
C15–26	**Digestive organs**	**6 790**	**6 894**	**104**	**1.5**
C15	Oesophagus	285	294	9	3.2
C16	Stomach	470	473	3	0.6
C17	Small intestine	216	219	3	1.4
C18	Colon	3 007	3 015	8	0.3
C19–20	Rectum, rectosigmoid	1 325	1 345	20	1.5
C21	Anus	88	89	1	1.1
C22	Liver	282	298	16	5.7
C23–24	Gallbladder, bile ducts	144	148	4	2.8
C25	Pancreas	808	852	44	5.4
C26	Other digestive organs	165	161	-4	-2.4
C30–34, C38	**Respiratory organs**	**3 356**	**3 432**	**76**	**2.3**
C30–31	Nose, sinuses	36	37	1	2.8
C32	Larynx, epiglottis	87	88	1	1.1
C33–34	Lung, trachea	3 214	3 288	74	2.3
C38	Heart, mediastinum and pleura	19	19	0	0.0
C40–41	**Bone**	**58**	**56**	**-2**	**-3.4**
C43	**Melanoma of the skin**	**2 222**	**2 230**	**8**	**0.4**
C44	**Skin, non-melanoma**	**2 306**	**2 315**	**9**	**0.4**
C45	**Mesothelioma**	**87**	**89**	**2**	**2.3**
C47	**Autonomic nervous system**	**12**	**12**	**0**	**0.0**
C48–49	**Soft tissues**	**116**	**117**	**1**	**0.9**
C50	**Breast**	**3 623**	**3 629**	**6**	**0.2**
C51–58	**Female genital organs**	**1 677**	**1 707**	**30**	**1.8**
C51–52, C57.7–9	Other female genital	128	126	-2	-1.6
C53	Cervix uteri	316	333	17	5.4
C54	Corpus uteri	702	708	6	0.9
C55	Uterus, other	10	9	-1	-10.0
C56, C57.0–4, C48.2	Ovary etc.	520	530	10	1.9
C58	Placenta	1	1	0	0.0
C60–63	**Male genital organs**	**5 337**	**5 425**	**88**	**1.6**
C61	Prostate	4 983	5 071	88	1.8
C62	Testis	289	289	0	0.0
C60, C63	Other male genital	65	65	0	0.0
C64–68	**Urinary organs**	**2 614**	**2 624**	**10**	**0.4**
C64	Kidney (excl. renal pelvis)	869	875	6	0.7
C65–68	Urinary tract	1 745	1 749	4	0.2
C69	**Eye**	**79**	**80**	**1**	**1.3**
C70–72	**Central nervous system**	**1 026**	**1 058**	**32**	**3.1**
C73	**Thyroid gland**	**419**	**427**	**8**	**1.9**
C37, C74–75	**Other endocrine glands**	**156**	**165**	**9**	**5.8**
C39, C76, C80	**Other or unspecified**	**280**	**278**	**-2**	**-0.7**
C81–96	**Lymphoid/haematopoietic tissue**	**2 761**	**2 912**	**151**	**5.5**
C81	Hodgkin lymphoma	139	141	2	1.4
C82–86, C96	Non-Hodgkin lymphoma	927	973	46	5.0
C88	Immunoproliferative disease	66	73	7	10.6
C90	Multiple myeloma	459	469	10	2.2
C91–95	Leukaemia	1 170	1 256	86	7.4

* The categorisation of subgroups for C00–14 Mouth, pharynx have been changed, and differences in case numbers are therefore not shown in the table.

Chapter 4 Statistical methods

In this report, we use four measures to describe the burden and risk of cancer: *incidence*, *mortality*, *prevalence* and *survival*.

4.1 Incidence and mortality

Incidence and mortality refer to the number of new cases and deaths, 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 a group over time. The denominator is the underlying person-time at risk in which the new cases or deaths in the numerator arise. Cancer incidence and mortality are presented in this report both as numbers and rates. Several different types of rates are also used in this report. We use the mid-year population (calculated as the mean of the population as obtained by January 1st and December 31st) as the denominator in the calculation of rates. For periods with several years, we use the sum of mid-year populations.

Age-specific rates

There are compelling reasons for adjusting for the distribution of age when comparing cancer risk in populations. Age is a strong determinant of cancer risk. The crude rate, is a rate based on the frequency of cancer in the entire population irrespective of age. Although this measure is useful as an indicator of the total cancer burden, it's utility in comparing cancer risk between different populations is severely limited when the age distribution differs between the groups, or where demographic changes in the size and age structure of a population have occurred over time.

To obtain a more accurate picture of the true risk of cancer, rates can be calculated for specific age strata, usually grouped in five-year intervals. The age-specific rate for age group i, denoted as r_i, is obtained by dividing the number of events, d_i, by the corresponding person-years, Y_i. As rates are most often given per 100 000 person-years we multiply by 100 000:

$$r_i = \frac{d_i}{Y_i} \cdot 100000$$

Usually, 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 derived 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 and over time. The calculation of the ASR is an example of direct standardisation, whereby the observed age-specific rates are applied to a standard population. The population size or proportion in each age group of the standard population are known as the weights to be used in the standardisation process. The ASR is calculated as:

$$\text{ASR} = \frac{\sum_i r_i w_i}{\sum_i w_i}$$

where w_i is a weight given a reference population.

The World Standard Population[9,10] has been used as reference population in several previous report of Cancer in Norway. Since Cancer in Norway 2014 we have used the Norwegian mid-year population in 2014 as the reference population. This standard is referred to as the *Norwegian standard*.

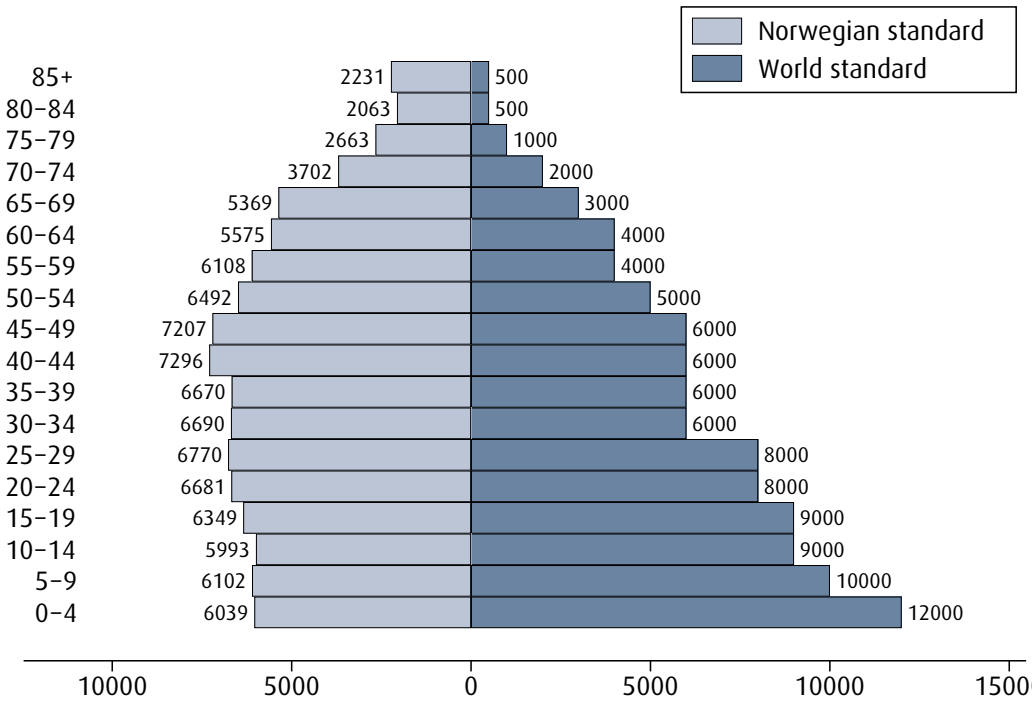
The two standards, using 18 age groups, are shown in Figure 4.1, and it clearly illustrates the difference between them: The Norwegian standard has higher weights for the oldest age groups.

The main advantage of using the Norwegian standard as the reference population is that we are getting age-standardised rates that resemble the crude rates for the Norwegian population. The main disadvantage is that the rates are not comparable with national rates from other countries. Table 5.1 shows the ASR in 2018 with the two different standards.

Of notice is that, in general, the ASRs with Norwegian standard gives twice as high rates as the ASRs with World standard. This is because the World standard has lower weights for the oldest age groups. Cancers that have the highest incidence rates in the youngest age groups (e.g. testicular cancer) are less affected by the choice of reference population.

Age-standardised incidence rates (World standard) are available at: https://sb.kreftregisteret.no/insidens

Figure 4.1: Comparison of population weights



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[11]. 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. This 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:

$$\text{Cumulative rate} = 5 \sum_i r_i$$

The cumulative rate has several advantages compared to age-standardised rates. Firstly, as a form of direct standardisation, 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:

$$\text{Cumulative risk} = 1 - e^{-\text{Cumulative rate}}$$

4.2 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, there may be special needs and disabilities subsequent to cancer disease and treatment, thus it is likely that the number of prevalent cancer cases also represents a useful measure.

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 data, given the registration of cases and complete follow up over many years. We provide additional estimates that may be useful for quantifying care burden. Therefore, this report shows the numbers of persons alive on December 31st 2018 who were previously diagnosed with cancer during the last year, one to four years, five to nine years, and 10 or more years.

We also show the number of patients who have been diagnosed with metastatic disease or local recurrence with metastasis and who were alive at various specific time points. This is another estimate of how the cancer burden has increased over time.

4.3 Survival

The survival time of a cancer patient is defined as the time that elapses between a cancer diagnosis and subsequent death, emigration or end of follow-up. A common measure of survival is five-year observed survival, which represents the percentage of patients still alive five years after their date of diagnosis.

Follow-up data

To estimate long-term survival patterns and trends, vital statistics of patients diagnosed with cancer during 1965–2018 were obtained from the National Population Registry and Statistics Norway through to December 31st 2018.

The 23 most common cancers were selected for analysis, grouped according to their respective ICD-10 categories. About 3% of cases were excluded as they were either registered on death certificate only (DCO), 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 artificially elevate estimates of survival[12]. Therefore patients with previous cancer diagnoses were included in each site-specific analysis. However, 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. In Norway , the effect of their inclusion has been shown to reduce five-year survival by less than a percentage point[13].

Survival results should be interpreted with caution. Survival of prostate cancer and breast cancer has been affected by PSA testing and mammographic screening, respectively.

Relative survival (net survival)

Not all deaths among cancer patients are due to the 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* the survival in a hypotetical world were the cancer is the only possible cause of death.

Relative survival is calculated 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:

$$R(t) = \frac{S_O(t)}{S_E(t)}$$

where $S_O(t)$ is the *observed survival* of cancer patients, the *expected survival*, $S_E(t)$, is based on the general population survival using national population life tables from Statistics Norway by sex, one-year age-group and calendar year. Expected survival is calculated using the Ederer II method[14], and the relative survival estimates are age-standardised applying the age distribution of the cancer patients diagnosed during the most recent five-year period.

For patient cohorts with complete five-year follow-up the *cohort* method is used.

With traditional cohort-based analyses, the most up-to-date estimates of long-term survival pertains to patients diagnosed in the distant past, with corresponding profiles of prognosis. A more up-to date picture of the current survival is obtained using the period method. In this report we used a five-year period window (2014–2018) to *predict* relative survival up to 15 years for patients diagnosed in 2014–2018 (Table 8.3 and Figure 8.1). The period approach consists of the pieces of survival experience observed in the period 2014–2018 for patients diagnosed up to 15 years ago. Thus, patients diagnosed in 2013–2018 contribute with (part of) their survival experience the first year of follow up, patients diagnosed in 2012–2017 contribute to the second year of follow-up, patients diagnosed in 2011–2016 contribute to the third year of follow-up and so on.

When analyzing time trends in five-year relative survival (Figure 9.1) a rolling five-year window was used to obtain smoother curves. For patients with (potential) five-year obserervation the cohort approach was used. Thus, estimates for e.g. 2013 is based on patients diagnosed in 2009–2013. Estimates for 2018 were obtained using the most recent five-year period window, while

estimates for the years where only part of the cohort had complete follow-up (2014–2017) were obtained using a combination of the cohort and period approach to ensure that minimal survival experience from patients diagnosed in the past was used.

Estimates were not presented if there were < 50 patients diagnosed or < 5 patients still alive at start of any subsequent year of follow-up.

A detailed description of the methods can be found in supplement:

https://www.kreftregisteret.no/globalassets/cancer-in-norway/2018/cin-2018supmeth.pdf

Conditional relative survival

Cancer survivors want information on their current prognosis, once they have survived a certain period of time. Conditional survival is a key indicator in this respect, estimating survival proportions given that patients have already survived a certain duration of time[15,16].

The time at which five-year relative survival reaches 100% is the point from which there is no excess mortality among the cancer patients, and their survial is equivalent to survival in the general population. We present estimates of sex-specific five-year relative survival conditional on being alive 1 to 10 years after diagnosis in Figure 8.1.

Estimates were not plotted when there were less than twenty patients alive ($n < 20$).

Chapter 5 Incidence

5.1 New cancer cases

In 2018, there were 34 190 new cases of cancer (in 33 352 individuals) recorded in Norway, of which 18 321 cases were diagnosed in men and 15 869 in women (Table 5.1). Cancers of the prostate, female breast, lung and colon were the most common cancers and accounted for 43% of the new cancer cases in 2018.

In men, prostate cancer continued to be the leading site for cancer incidence, with 4848 new cases; followed by lung (1677 cases) and colon cancer (1490 cases). Breast cancer remained the most frequent cancer site in women, with 3568 new cases; followed by lung cancer (1674 cases) and colon cancer(1578 cases).

When this report was completed (October 2019) we had received information on 98% of the expected number of deaths for 2018 from the Cause of Death Registry. We thus expect the numbers to be close to complete, but some cancers, especially for those with poor survival (e.g. liver, pancreas and lung cancer) might be slightly under-reported.

When comparing the rates in the most recent five-year period (2014–2018) with the previous one (2009–2013) (Tables 5.15 and 5.16) we observe that:

- The rates for all cancers combined have been fairly stable for men (increased by 0.3%), while the rates increased by 5.6% for women.
- The rate of prostate cancer has decreased by -5.5%
- The rate of breast cancer has increased by 8.9%.
- The rate of lung cancer for women is 10.8% higher in the last five-year period compared to the previous one. The rate of lung cancer in men has declined by -6.3%.
- The rates of colon cancer have increased by 1.3% in men, and 5.2% in women, while the rates for rectum cancer have declined by -3.1% in men and -3.5% in women.
- The rates of skin melanoma have increased by 22.2% in men and 17.3% in women.
- For non-melanoma skin cancer, the rates have increased with more than 20% in both genders.
- Among more uncommon cancers, there has been a notable increase in the rates for liver and thyroid cancer in both genders.
- We are aware of a reduction in CNS cases. We have previously suggested that this has been due to under-reporting. Preliminary analyses (not shown in this report) suggest that the reduction is limited to benign cases and all ages above 30 years.

Table 5.1: Number and age-standardised rates of new cases by primary site and sex, 2018

		Cases			Age-standardised rates			
					Norwegian std.		World std.	
ICD-10	Site	Males	Females	Total	Males	Females	Males	Females
C00–96	**All sites**	**18 321**	**15 869**	**34 190**	**700.0**	**548.8**	**359.9**	**311.1**
C00–14	**Mouth, pharynx**	**427**	**228**	**655**	**16.1**	**7.8**	**9.3**	**4.3**
C00	Lip	49	30	79	2.0	1.0	0.9	0.4
C02–06	Oral cavity	136	108	244	5.1	3.7	3.0	2.0
C07–08	Salivary glands	46	27	73	1.7	0.9	1.0	0.5
C09–10, C01, C14	Oropharynx	172	54	226	6.3	1.9	3.9	1.2
C11	Nasopharynx	12	3	15	0.5	0.1	0.3	0.1
C12–13	Hypoharynx	12	6	18	0.4	0.2	0.3	0.1
C15–26	**Digestive organs**	**3 789**	**3 157**	**6 946**	**145.8**	**105.8**	**70.9**	**51.8**
C15	Oesophagus	239	79	318	9.2	2.6	4.7	1.4
C16	Stomach	235	157	392	9.2	5.3	4.3	2.7
C17	Small intestine	102	72	174	3.8	2.5	2.1	1.3
C18	Colon	1 490	1 578	3 068	57.5	52.4	27.2	24.7
C19–20	Rectum, rectosigmoid	834	526	1 360	31.6	18.0	16.1	9.5
C21	Anus	27	63	90	1.0	2.2	0.6	1.3
C22	Liver	211	110	321	8.1	3.8	4.0	1.9
C23–24	Gallbladder, bile ducts	79	66	145	3.0	2.2	1.5	1.0
C25	Pancreas	479	430	909	18.5	14.4	8.7	6.9
C26	Other digestive organs	93	76	169	3.7	2.5	1.6	1.2
C30–34, C38	**Respiratory organs**	**1 813**	**1 716**	**3 529**	**68.9**	**57.7**	**32.9**	**29.6**
C30–31	Nose, sinuses	22	16	38	0.8	0.6	0.4	0.4
C32	Larynx, epiglottis	104	23	127	4.0	0.8	2.1	0.5
C33–34	Lung, trachea	1 677	1 674	3 351	63.7	56.2	30.2	28.7
C38	Heart, mediastinum and pleura	10	3	13	0.4	0.1	0.2	0.1
C40–41	**Bone**	**33**	**25**	**58**	**1.2**	**0.9**	**1.0**	**0.8**
C43	**Melanoma of the skin**	**1 169**	**1 156**	**2 325**	**44.8**	**40.9**	**24.3**	**25.1**
C44	**Skin, non-melanoma**	**1 342**	**1 119**	**2 461**	**56.5**	**35.7**	**20.6**	**13.9**
C45	**Mesothelioma**	**52**	**14**	**66**	**1.9**	**0.5**	**0.9**	**0.3**
C47	**Autonomic nervous system**	**7**	**2**	**9**	**0.3**	**0.1**	**0.5**	**0.1**
C48–49	**Soft tissues**	**61**	**49**	**110**	**2.3**	**1.7**	**1.4**	**1.2**
C50	**Breast**	**28**	**3 568**	**3 596**	**1.1**	**128.6**	**0.5**	**81.6**
C51–58	**Female genital organs**		**1 747**	**1 747**		**61.9**		**38.2**
C51–52, C57.7–9	Other female genital		135	135		4.6		2.4
C53	Cervix uteri		355	355		13.5		10.8
C54	Corpus uteri		797	797		27.7		15.4
C55	Uterus, other		13	13		0.4		0.2
C56, C57.0–4, C48.2	Ovary etc.		444	444		15.6		9.3
C58	Placenta		3	3		0.1		0.1
C60–63	**Male genital organs**	**5 229**		**5 229**	**194.4**		**105.2**	
C61	Prostate	4 848		4 848	180.2		93.2	
C62	Testis	316		316	11.7		10.8	
C60, C63	Other male genital	65		65	2.5		1.3	
C64–68	**Urinary organs**	**1 862**	**783**	**2 645**	**71.1**	**26.4**	**35.3**	**13.4**
C64	Kidney (excl. renal pelvis)	623	274	897	23.0	9.6	13.3	5.6
C65–68	Urinary tract	1 239	509	1 748	48.1	16.8	22.1	7.8
C69	**Eye**	**41**	**41**	**82**	**1.6**	**1.5**	**1.1**	**0.9**
C70–72	**Central nervous system**	**440**	**445**	**885**	**16.5**	**16.1**	**11.8**	**11.3**
C73	**Thyroid gland**	**114**	**294**	**408**	**4.2**	**10.9**	**2.9**	**8.3**
C37, C74–75	**Other endocrine glands**	**81**	**82**	**163**	**3.0**	**3.0**	**2.0**	**2.2**
C39, C76, C80	**Other or unspecified**	**148**	**171**	**319**	**6.2**	**5.6**	**2.6**	**2.5**
C81–96	**Lymphoid/haematopoietic tissue**	**1 685**	**1 272**	**2 957**	**64.4**	**43.8**	**36.5**	**25.7**
C81	Hodgkin lymphoma	92	62	154	3.4	2.3	2.8	2.0
C82–86, C96	Non-Hodgkin lymphoma	599	479	1 078	22.7	16.4	12.4	9.0
C88	Immunoproliferative disease	41	24	65	1.6	0.8	0.7	0.4
C90	Multiple myeloma	272	183	455	10.6	6.3	5.1	3.3
C91–95	Leukaemia	681	524	1 205	26.1	18.0	15.4	10.9

5.2 Incidence by age

The vast majority of cancers in Norway, over 90% in men and 85% in women, are diagnosed among people aged 50 years or more (Figure 5.1). In men, 50% of all new cases occur in men 70 years old or more, while 42% of the cases are diagnosed in men aged 50 to 69 years. In women, 46% of all cases are diagnosed at age 70 years or older, and 39% are diagnosed in the age group 50 to 69 years. In the age group 25 to 49 years, a larger proportion of the cancers are diagnosed in women (13%) than men (7%). About 1% of all cancers occurs in children and young adults (younger than 25 years), with equal frequencies in boys and girls.

Table 5.2 shows the median age at diagnosis at different time periods. For all sites combined, the median age at diagnosis is 69 years, and this has been quite stable over the last decades. However, there is some variation between the sites. Cancer in the autonomic nervous system, a very rare cancer, has the lowest median age at diagnosis (25.5 years). Among the more commons cancers, testis has the lowest median age at diagnosis (36 years). Non-melanoma skin cancer, on the other hand, has the highest median age (79 years). Among the most common cancers, the median age at diagnosis is 62 years for breast and 69 years for prostate cancer. For these to cancer sites there has been a reduction in median age at diagnosis with 4 and 5 years, respectively, in the latest period 2014–2018 compared to the mid 1980s. For lung cancers and melanoma of the skin, the median age at diagnosis has increased. Changes in median age at diagnosis may be influenced by changes in the age distribution of the population, by diagnostic intensity and by the age-specific incidence rates at different periods. Thus, it might be difficult to interpret patterns and trends without information on these topics.

Figure 5.2 shows the most common cancer types by gender and age at diagnosis. The most commonly occurring cancers in boys and girls (0–14 years old) were tumours in the central nervous system and leukaemia. For young women (15–24 years), tumours in the central nervous system and melanoma of the skin were the most common types, while testicular cancer was by far the most common cancer in young men (15–24 years). Prostate cancer was the most frequent cancer in men above 50, while breast cancer was the lead in women aged 25 through 69. Colon cancer was slightly more common than breast cancer in women above 70.

Figure 5.1: Percentage distribution of cancer incidence by age, 2014–2018

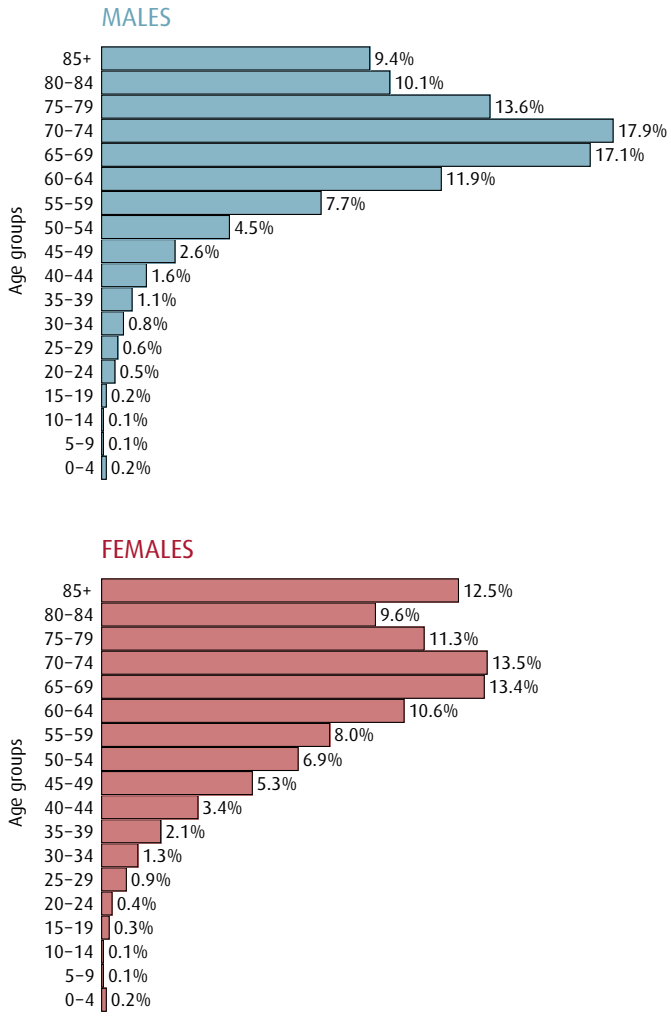


Table 5.2: Median age at diagnosis at different time periods by primary site

		Median age in			
ICD-10	**Site**	**1984–88**	**1994–98**	**2004–08**	**2014–18**
C00–96	**All sites**	**69.0**	**70.0**	**69.0**	**69.0**
C00–14	**Mouth, pharynx**	**68.0**	**67.0**	**65.0**	**67.0**
C00	Lip	72.0	71.0	73.0	75.0
C02–06	Oral cavity	68.0	67.0	66.0	68.0
C07–08	Salivary glands	66.5	69.0	65.0	66.0
C09–10, C01, C14	Oropharynx	63.0	61.0	61.0	63.0
C11	Nasopharynx	60.5	61.5	61.0	58.5
C12–13	Hypoharynx	66.0	68.0	65.0	69.0
C15–26	**Digestive organs**	**72.0**	**73.0**	**73.0**	**72.0**
C15	Oesophagus	69.0	71.0	70.0	70.0
C16	Stomach	73.0	74.0	74.0	72.0
C17	Small intestine	69.0	71.0	68.0	69.0
C18	Colon	72.0	74.0	74.0	73.0
C19–20	Rectum, rectosigmoid	71.0	72.0	71.0	69.0
C21	Anus	68.0	69.0	65.0	66.0
C22	Liver	71.0	72.0	71.0	71.0
C23–24	Gallbladder, bile ducts	73.5	75.0	74.0	73.0
C25	Pancreas	73.0	74.0	74.0	72.0
C26	Other digestive organs	80.0	80.0	78.0	73.0
C30–34, C38	**Respiratory organs**	**68.0**	**69.0**	**70.0**	**71.0**
C30–31	Nose, sinuses	68.0	70.0	67.5	68.0
C32	Larynx, epiglottis	66.0	67.0	66.0	69.0
C33–34	Lung, trachea	68.0	69.0	70.0	71.0
C38	Heart, mediastinum and pleura	65.0	72.5	75.0	74.0
C40–41	**Bone**	**35.0**	**38.0**	**47.0**	**48.0**
C43	**Melanoma of the skin**	**56.0**	**58.0**	**62.0**	**66.0**
C44	**Skin, non-melanoma**	**76.0**	**76.0**	**79.0**	**79.0**
C45	**Mesothelioma**	**67.0**	**70.0**	**73.0**	**73.0**
C47	**Autonomic nervous system**	**24.5**	**37.0**	**38.5**	**25.5**
C48–49	**Soft tissues**	**64.0**	**64.0**	**60.0**	**62.0**
C50	**Breast**	**66.0**	**63.0**	**60.0**	**62.0**
C51–58	**Female genital organs**	**63.0**	**63.0**	**64.0**	**65.0**
C51–52, C57.7–9	Other female genital	73.0	74.0	75.0	72.0
C53	Cervix uteri	53.0	49.0	48.0	45.0
C54	Corpus uteri	65.0	66.0	66.0	68.0
C55	Uterus, other	80.5	79.0	78.5	78.0
C56, C57.0–4, C48.2	Ovary etc.	65.0	65.0	65.0	66.0
C58	Placenta	27.0	29.5	29.0	35.0
C60–63	**Male genital organs**	**73.0**	**73.0**	**69.0**	**69.0**
C61	Prostate	74.0	74.0	70.0	69.0
C62	Testis	31.0	32.0	34.0	36.0
C60, C63	Other male genital	68.0	71.0	69.0	71.0
C64–68	**Urinary organs**	**71.0**	**72.0**	**72.0**	**71.0**
C64	Kidney (excl. renal pelvis)	68.0	70.0	68.0	67.0
C65–68	Urinary tract	71.0	73.0	74.0	73.0
C69	**Eye**	**65.0**	**63.5**	**63.0**	**64.0**
C70–72	**Central nervous system**	**58.0**	**58.0**	**59.0**	**60.0**
C73	**Thyroid gland**	**54.0**	**53.0**	**55.0**	**54.0**
C37, C74–75	**Other endocrine glands**	**45.0**	**51.0**	**53.0**	**57.0**
C39, C76, C80	**Other or unspecified**	**73.0**	**75.0**	**77.0**	**78.0**
C81–96	**Lymphoid/haematopoietic tissue**	**68.0**	**69.0**	**68.0**	**69.0**
C81	Hodgkin lymphoma	39.0	32.0	38.0	44.0
C82–86, C96	Non-Hodgkin lymphoma	66.0	67.0	66.0	69.0
C88	Immunoproliferative disease	72.0	74.0	73.0	73.0
C90	Multiple myeloma	72.0	74.0	72.0	71.0
C91–95	Leukaemia	69.0	69.0	70.0	70.0

Figure 5.2: The most frequent types of cancer by age and sex, 2014–2018

Figure 5.2–A: All ages

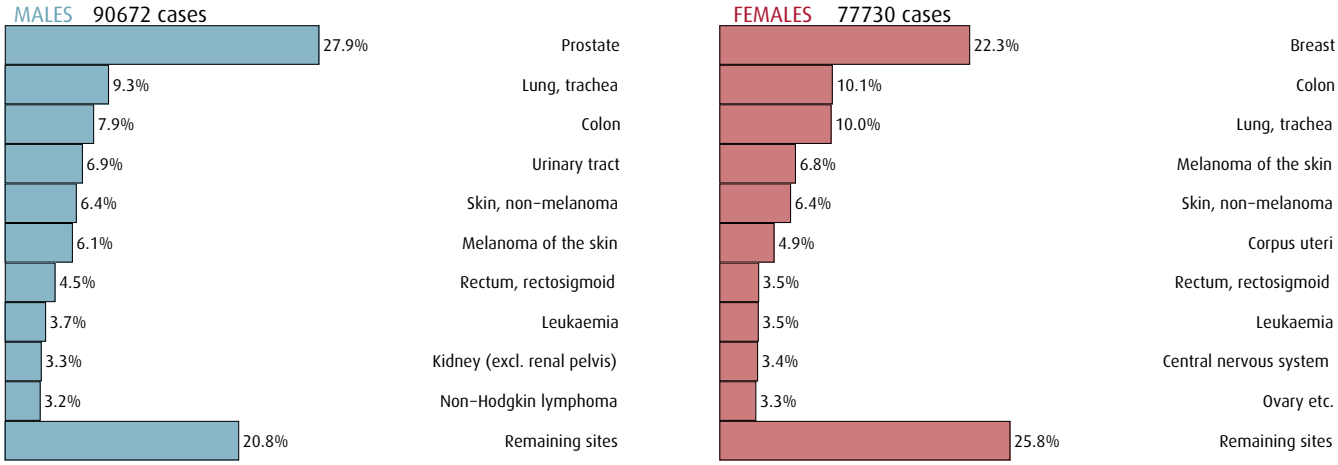


Figure 5.2–B: 0–14 years

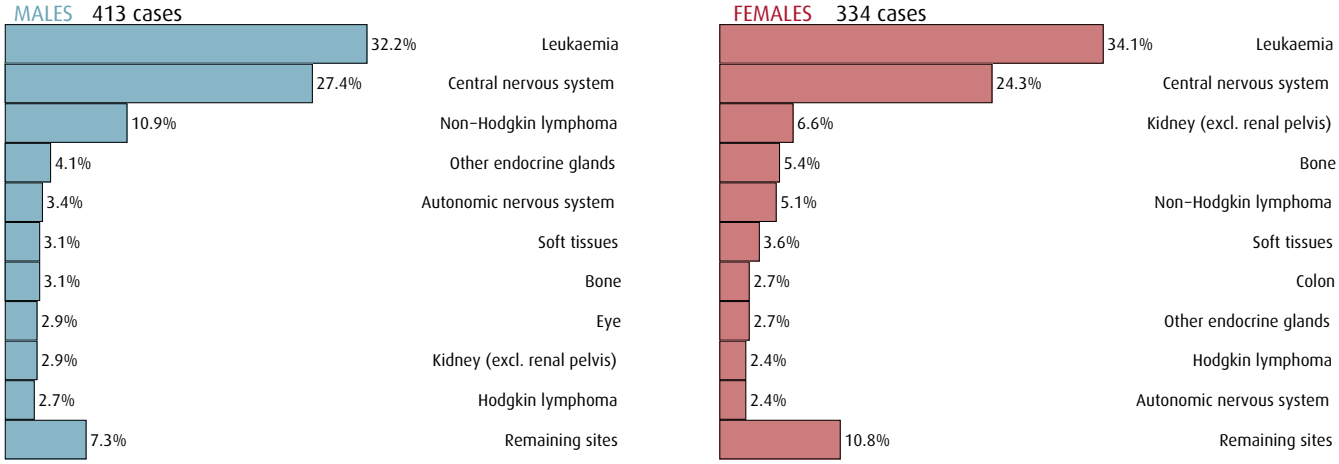


Figure 5.2–C: 15–24 years

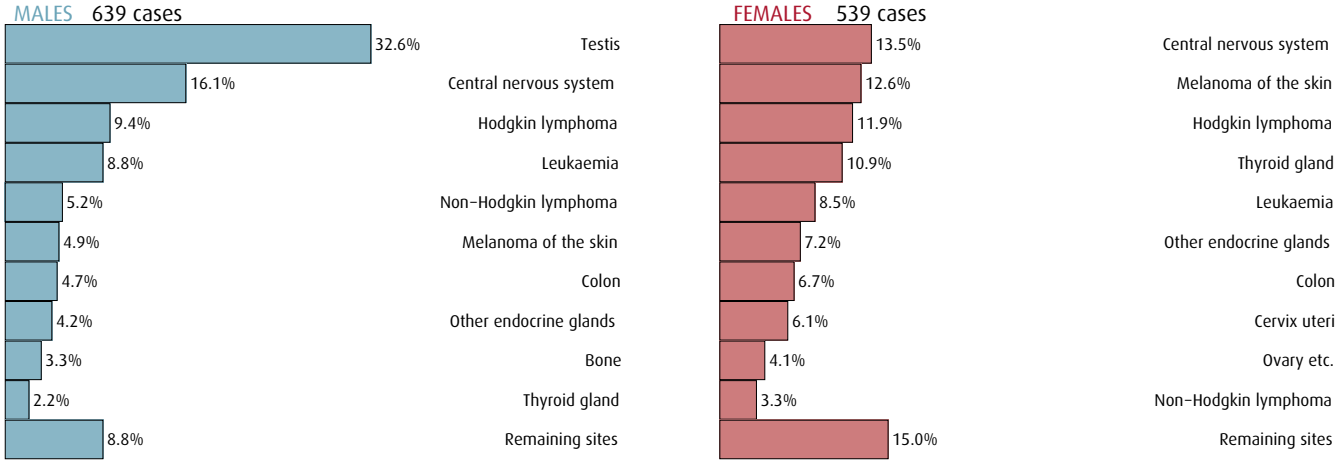


Figure 5.2: The most frequent types of cancer by age and sex, 2014–2018

Figure 5.2–D: 25–49 years

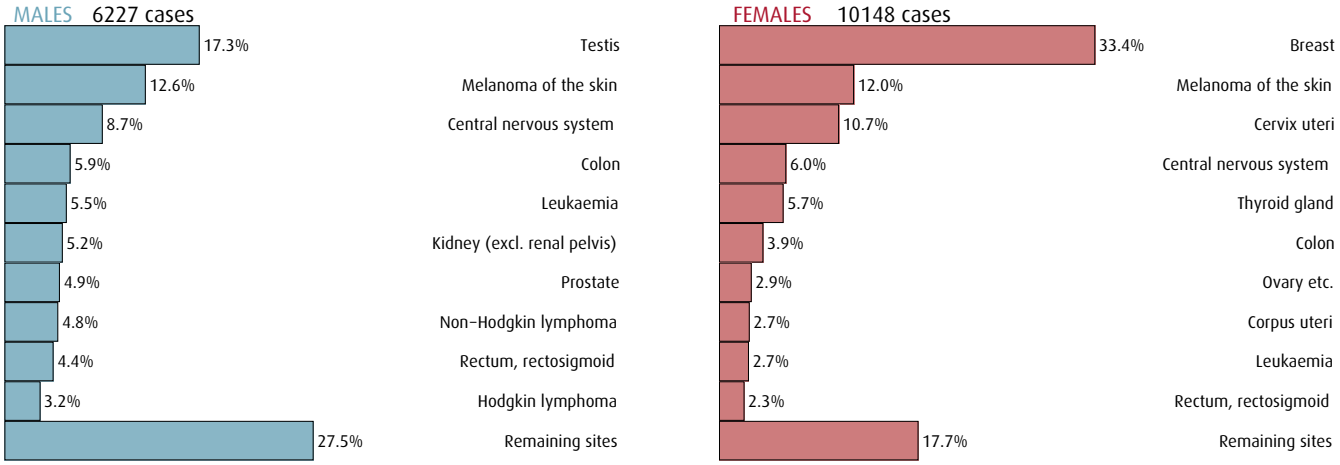


Figure 5.2–E: 50–69 years

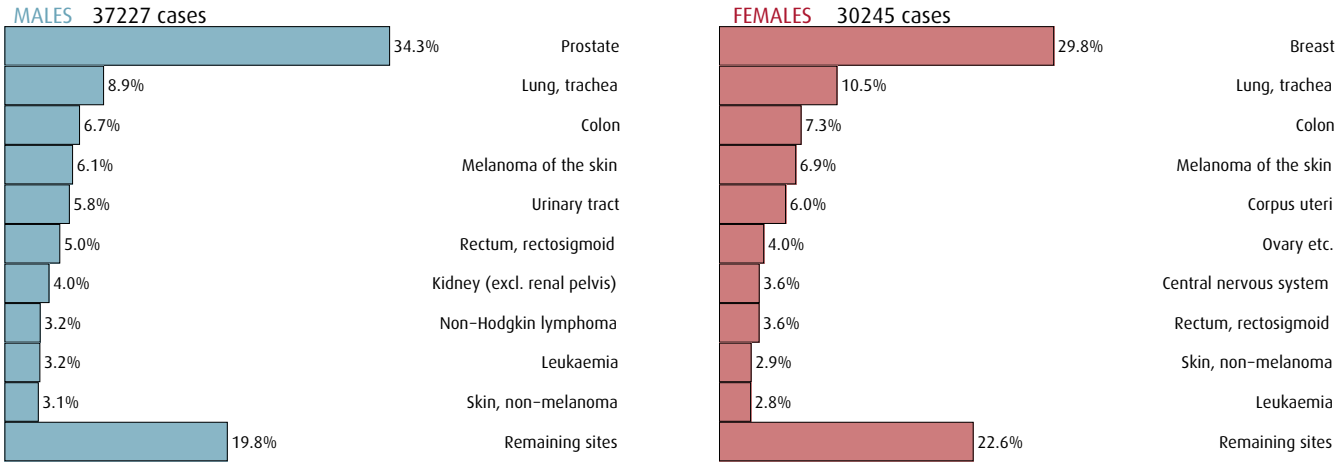
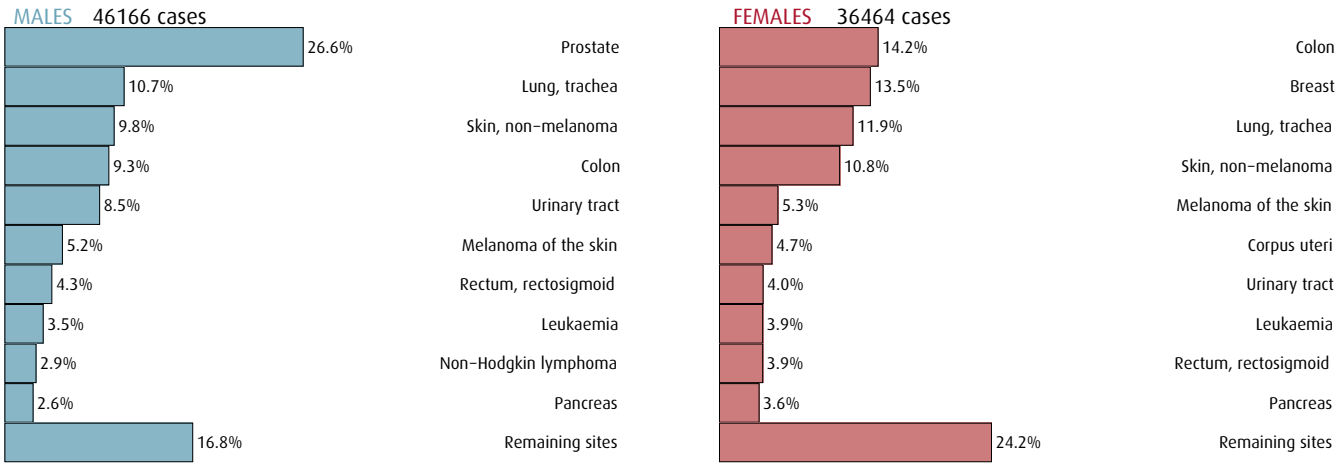


Figure 5.2–F: 70+ years



5.3 Male to female ratios

The age-standardised rates and male to female ratio (M:F) for selected cancer types in 1983–1987 and 2014–2018 are shown in Table 5.3. Men tend to have higher incidence rates for most cancer types in both time periods, except for cancer of anus and thyroid gland. The highest M:F ratios were observed for mesothelioma, several sites of the head and neck, and for cancers in the urinary tract.

Some cancers, including cancer of the head and neck, urinary tract, kidney, liver, stomach, rectum and leukaemia, are consistently more common in men. The decline in the M:F ratios for several cancers over the last 30 years is largely a result of a more rapid increase in the incidence rates in women.

For lung cancer, the increase in rate in women has been accompanied by a levelling off and a slight decline in the rate in men, and the M:F ratio is now at 1.2 compared to 3.7 in the mid 1980s.

Table 5.3: Sex ratio (male:female) of age-adjusted rates (Norwegian standard) in 1984–1988 and 2014–2018 for selected cancers, sorted in descending order in last period

		1984–88			2014–18		
ICD-10	**Site**	**M**	**F**	**M:F ratio**	**M**	**F**	**M:F ratio**
C00–96	**All sites**	**519.0**	**382.3**	**1.4**	**729.8**	**555.3**	**1.3**
C45	Mesothelioma	1.9	0.3	5.7	2.6	0.5	5.5
C32	Larynx, epiglottis	6.2	0.5	12.1	3.7	0.7	5.0
C12–13	Hypoharynx	1.4	0.2	5.7	0.8	0.2	4.9
C15	Oesophagus	5.3	1.6	3.2	8.9	2.6	3.4
C65–68	Urinary tract	42.6	11.6	3.7	52.0	16.2	3.2
C09–10, C01, C14	Oropharynx	1.8	0.7	2.5	6.1	1.9	3.1
C38	Heart, mediastinum and pleura	0.4	0.2	2.3	0.5	0.2	3.1
C64	Kidney (excl. renal pelvis)	14.3	7.6	1.9	23.1	10.1	2.3
C16	Stomach	32.7	16.3	2.0	11.7	5.9	2.0
C88	Immunoproliferative disease	0.5	0.3	1.9	1.8	0.9	2.0
C22	Liver	3.9	2.0	1.9	7.4	3.7	2.0
C00	Lip	5.6	0.7	8.3	2.3	1.4	1.7
C19–20	Rectum, rectosigmoid	30.2	18.1	1.7	32.6	19.5	1.7
C11	Nasopharynx	0.6	0.2	3.0	0.4	0.2	1.7
C44	Skin, non-melanoma	21.6	11.4	1.9	51.5	32.6	1.6
C30–31	Nose, sinuses	1.3	0.7	1.8	0.9	0.6	1.6
C90	Multiple myeloma	9.4	6.1	1.5	10.3	6.8	1.5
C81	Hodgkin lymphoma	2.4	1.5	1.6	3.6	2.3	1.5
C17	Small intestine	1.6	1.3	1.3	4.2	2.9	1.5
C91–95	Leukaemia	13.8	8.4	1.6	26.9	19.2	1.4
C82–86, C96	Non-Hodgkin lymphoma	13.9	10.2	1.4	23.0	16.1	1.4
C07–08	Salivary glands	0.7	0.6	1.3	1.6	1.2	1.4
C02–06	Oral cavity	4.9	2.8	1.8	4.8	3.4	1.4
C48–49	Soft tissues	2.3	2.1	1.1	2.5	1.9	1.3
C47	Autonomic nervous system	0.3	0.3	1.1	0.2	0.2	1.3
C39, C76, C80	Other or unspecified	15.6	10.9	1.4	6.4	5.5	1.2
C33–34	Lung, trachea	63.7	17.2	3.7	67.8	54.5	1.2
C25	Pancreas	17.7	12.8	1.4	17.4	14.2	1.2
C69	Eye	1.3	1.0	1.3	1.7	1.4	1.2
C40–41	Bone	1.0	0.7	1.5	1.2	1.0	1.2
C18	Colon	41.9	37.6	1.1	59.1	53.8	1.1
C23–24	Gallbladder, bile ducts	2.9	3.7	0.8	3.0	2.9	1.1
C43	Melanoma of the skin	16.6	19.4	0.9	43.7	38.6	1.1
C26	Other digestive organs	3.4	3.7	0.9	3.0	2.8	1.1
C37, C74–75	Other endocrine glands	2.2	1.9	1.2	3.7	3.7	1.0
C70–72	Central nervous system	12.7	11.6	1.1	18.5	19.8	0.9
C21	Anus	0.8	1.1	0.7	1.2	2.4	0.5
C73	Thyroid gland	2.4	6.6	0.4	4.7	10.8	0.4

5.4 Incidence trends

Figure 5.3: Time trends in age-standardised (Norwegian standard) incidence rates for selected cancers, 1959–2018

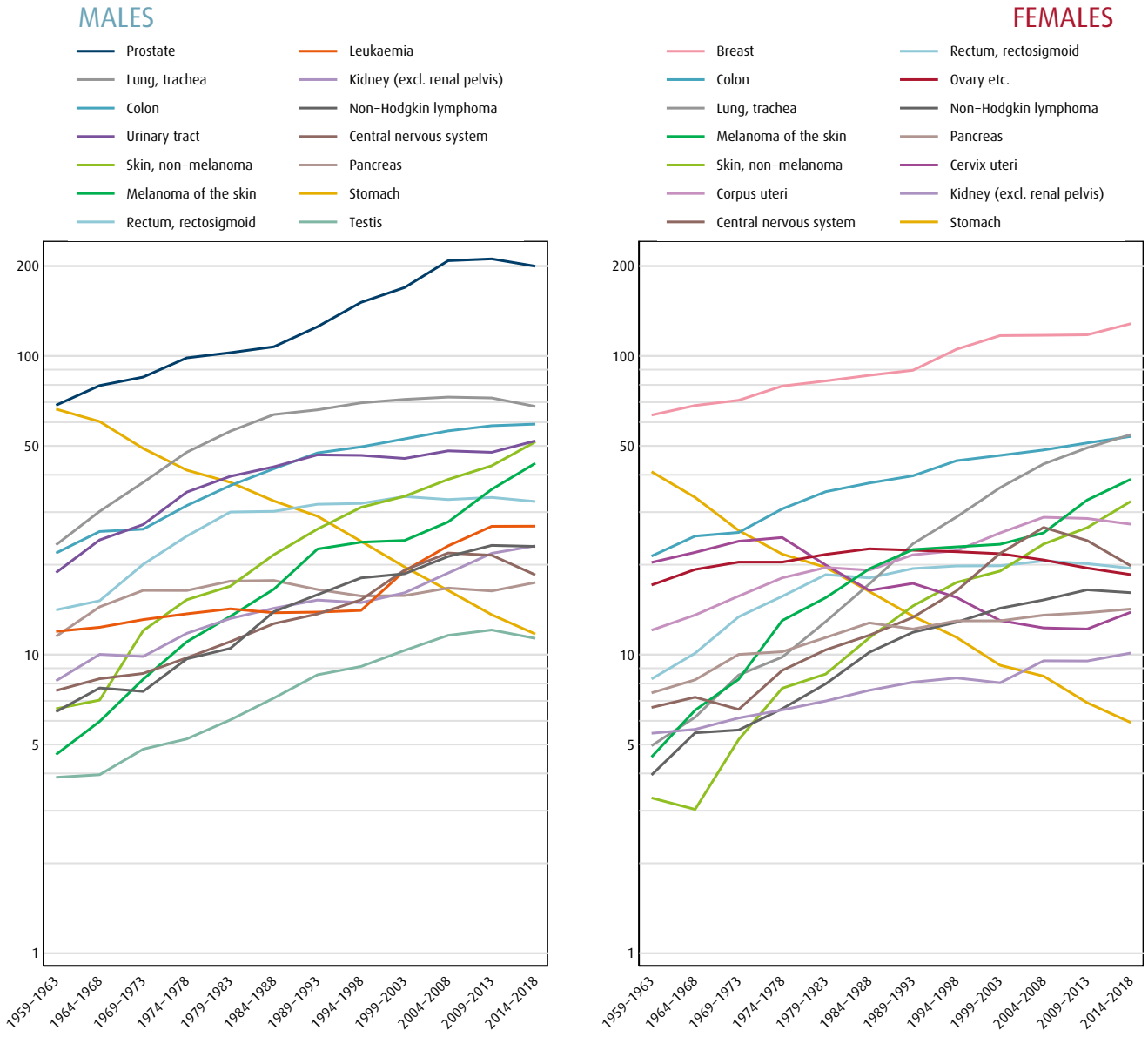


Figure 5.3 depicts time trends in incidence over six decades for selected cancers. The incidence rates have increased in Norway for most cancer types since the first observation period. The upward trends have been most pronounced for lung cancer among women and skin cancer (both melanoma and non-melanoma) in both genders. Stomach cancer is the only cancer that has had a steady decline in incidence since early 1950s. For cervix cancer, the rate declined from mid 1970s to late 1990s, but has stabilised, and even had a small increase in the most recent years.

For most cancers, it is difficult to give a proper explanation of the incidence trends over time, even for cancers with known risk factors. Rates may also be influenced by diagnostic methods, screening activities, and changes in life expectancy or age distribution. Below we have given a short description of the trends for selected sites, and listed some known factors that most possibly have influenced the trends.

Stomach cancer is one of the few cancers that demonstrates a sharp and consistent decline. In the first observation period, stomach cancer was the most common cancer in men and second most common cancer in women, in line with observations of cancer mortality reported by Norwegian general practitioners one hundred years ago[17]. The monotonous drop in incidence over six decades reflects improvement in hygiene and environmental exposures. Changes in the prevalence of *Helicobacter pylori* infection and in dietary habits (refrigerators) are likely contributors to this trend. The decline illustrates the vast potential for prevention worldwide. Interestingly, the causes of stomach cancer were not adequately known until the 1980s, and the waning of the rates has been a chance phenomenon rather than an intended one.

Prostate cancer has been the most common cancer in men for many decades, and the age-standardised incidence rate has tripled since registration started in the early 1950s. A dramatic upsurge came from around 1990 with changes in diagnostic practice with unorganised screening and testing in the primary health care system. The introduction and subsequent widespread use of the Prostate Specific Antigen (PSA) test, followed by biopsies, are considered the main explanation for the increased rate. The rate is now stable with around 200 new cases per 100 000 person-years annualy.

Breast cancer has been the most common cancer in women since the establishment of the Cancer Registry of Norway, and the incidence rate has doubled. There has been a monotonous increase in the rate up to 1990s with a steeper increase in the mid-1990s followed by an slight decline between 2005 and 2009. The Norwegian Breast Cancer Screening Programme started in 1996, and gradually expanded to become nationwide by 2005. The programme invites women aged 50–69 years to biennial mammography. The implementation of the screening programme explains much of the increasing incidence trend from the mid-1990s to 2005. The figures for recent years indicate that there is again an increase in incidence. The age-specific rates (not shown) indicate that the increase is primarily limited to the age group 70–79 years.

Lung cancer in women has almost had a tenfolded incidence increase since early 1950s. The last few years we have observed signs of a levelling off in the rates, but the rate for 2018 is the highest rate observed ever (details are shown in Table 5.8). It is worth noting that the lung cancer rate in women recently passed the level of another increasing cancer type, that of the colon. The age-specific indcidence trends for women show that the increase in rates is limited to the the oldest age groups (above 70 years), and that there has been a levelling off in the rates for women below 70 years (data not shown). In men, the incidence has been levelling off over the last two decades, and a slight overall decline is now observed (Table 5.7).

Colon and rectum cancer are often referred to as colorectal cancer and discussed together. They share most risk factors, and there is strong evidence that high consumption of red and processed meat, alcoholic drinks, smoking and increased body fat increase the risk for these cancers. A protective effect of physical activity has been proven only for colon cancer. The incidence trends for these cancers also differ — colon cancer has increased steadily throughout the period of registration, while the incidence of rectal cancer has levelled off, remaining relatively stable over the last three decades.

Skin cancer i.e. skin melanoma and non-melanoma are cancers of concern. From being rare in 1953, they now rank among the leading cancers in men and women alike. The rates have had a remarkable increase over the last two decades, and are still rising, (Table 5.7 and 5.8), most probably caused by new suntanning habits among those who enter the highest age group.

Cervical cancer has had a downward incidence trend since the beginning of the 1970s. This is probably a result of identification and treatment of premalignant conditions as part of an organised screening programme. In 2009, vaccination against human papilloma virus (HPV) was introduced as part of the Norwegian Childhood Immunisation Programme for girls born in 1997 and after. A catch-up program was implemented in November 2016. In 2018, the programme also offered vaccination to boys. Still, we do not expect this primary prevention to affect the incidence rate for another 15 to 20 years. Furthermore, it is of concern that we have observed a slight increase in the incidence in the last five-year period.

For **testicular cancer** and **non-Hodgkin lymphoma**, for example, genetic factors play a role, while other determinants are largely unknown.

Even if rates were to remain stable over the next 15 years, the number of new cases would increase as a result of the joint effects of population growth and aging. The NORDCAN project (`http://www-dep.iarc.fr/nordcan.htm`) provides online access to predictions of incidence and mortality in the Nordic countries. More detailed trends in incidence, mortality and survival for 23 cancers are provided in Chapter 9.

5.5 Cumulative risk

Figure 5.4 and Table 5.4 show the cumulative risk of cancer in men and women. One in three Norwegians will develop a cancer before the age of 75. The risk of prostate cancer is the highest in men, as one in eight will have a diagnosis by the age of 75. The risk of breast cancer is the highest in women, with 8.9%, indicating that one in eleven Norwegian women will diagnosed the disease before turning 75. In both gender, lung and colon cancer rank second and third.

5.6 Incidence tables

Tables 5.5–5.24 provide further information on 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.

Figure 5.4: Cumulative risk of developing cancer (%) by the age of 75 for selected cancers, 2014–2018

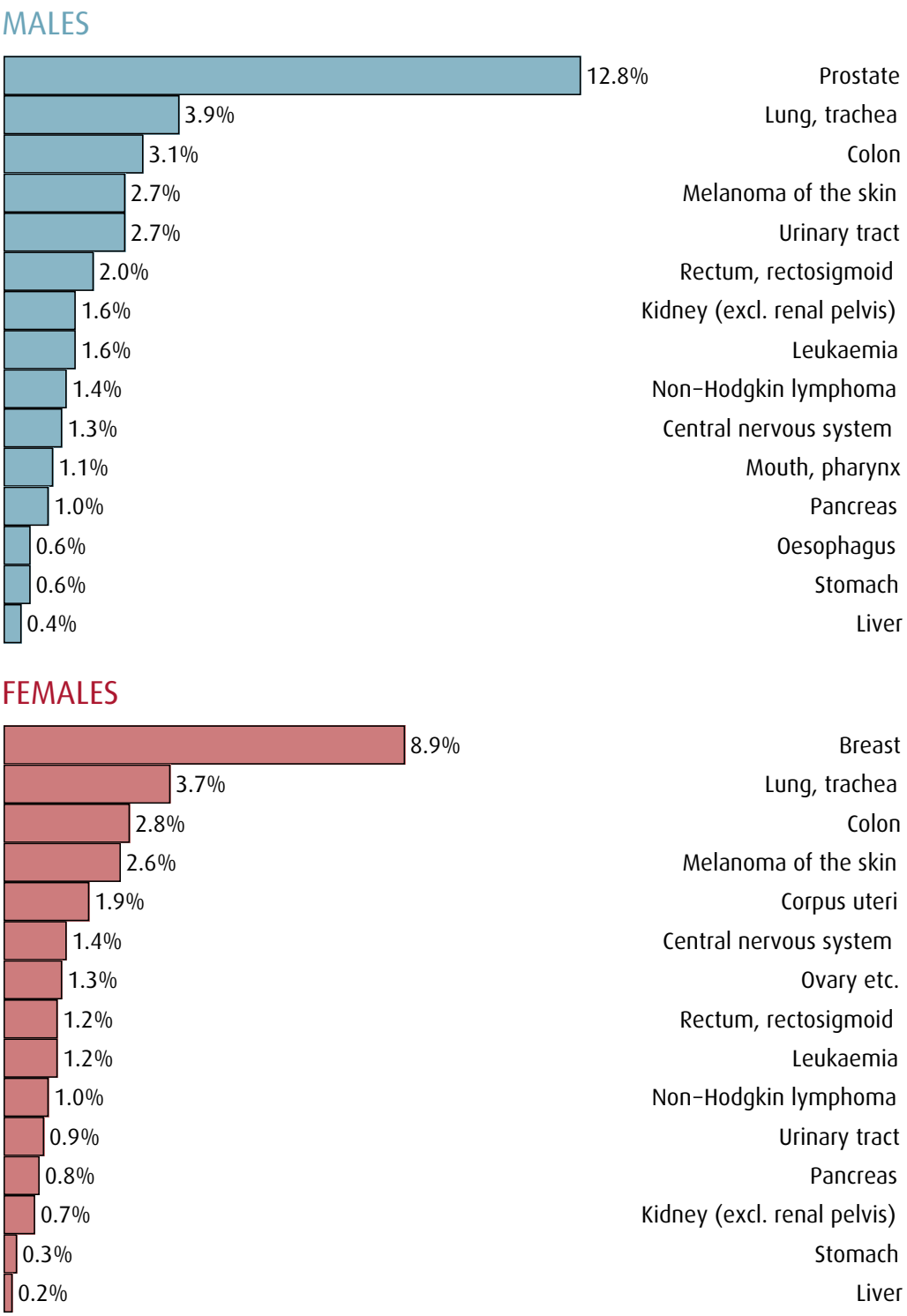


Table 5.4: Cumulative risk of developing cancer (%) by age of 75 by primary site and sex, 2014–2018

ICD-10	Site	Males	Females
C00–96	**All sites**	**35.7**	**30.1**
C00–14	**Mouth, pharynx**	**1.1**	**0.5**
C00	Lip	0.1	0.1
C02–06	Oral cavity	0.3	0.2
C07–08	Salivary glands	0.1	0.1
C09–10, C01, C14	Oropharynx	0.5	0.1
C11	Nasopharynx	0.0	0.0
C12–13	Hypoharynx	0.1	0.0
C15–26	**Digestive organs**	**8.2**	**6.1**
C15	Oesophagus	0.6	0.2
C16	Stomach	0.6	0.3
C17	Small intestine	0.3	0.2
C18	Colon	3.1	2.8
C19–20	Rectum, rectosigmoid	2.0	1.2
C21	Anus	0.1	0.2
C22	Liver	0.4	0.2
C23–24	Gallbladder, bile ducts	0.2	0.1
C25	Pancreas	1.0	0.8
C26	Other digestive organs	0.2	0.2
C30–34, C38	**Respiratory organs**	**4.2**	**3.8**
C30–31	Nose, sinuses	0.1	0.0
C32	Larynx, epiglottis	0.2	0.1
C33–34	Lung, trachea	3.9	3.7
C38	Heart, mediastinum and pleura	0.0	0.0
C40–41	**Bone**	**0.1**	**0.1**
C43	**Melanoma of the skin**	**2.7**	**2.6**
C44	**Skin, non-melanoma**	**1.7**	**1.2**
C45	**Mesothelioma**	**0.1**	**0.0**
C47	**Autonomic nervous system**	**0.0**	**0.0**
C48–49	**Soft tissues**	**0.2**	**0.1**
C50	**Breast**	**0.1**	**8.9**
C51–58	**Female genital organs**		**4.4**
C51–52, C57.7–9	Other female genital		0.2
C53	Cervix uteri		1.0
C54	Corpus uteri		1.9
C55	Uterus, other		0.0
C56, C57.0–4, C48.2	Ovary etc.		1.3
C58	Placenta		0.0
C60–63	**Male genital organs**	**13.7**	
C61	Prostate	12.8	
C62	Testis	0.8	
C60, C63	Other male genital	0.1	
C64–68	**Urinary organs**	**4.2**	**1.6**
C64	Kidney (excl. renal pelvis)	1.6	0.7
C65–68	Urinary tract	2.7	0.9
C69	**Eye**	**0.1**	**0.1**
C70–72	**Central nervous system**	**1.3**	**1.4**
C73	**Thyroid gland**	**0.3**	**0.8**
C37, C74–75	**Other endocrine glands**	**0.3**	**0.3**
C39, C76, C80	**Other or unspecified**	**0.3**	**0.2**
C81–96	**Lymphoid/haematopoietic tissue**	**3.9**	**2.8**
C81	Hodgkin lymphoma	0.3	0.2
C82–86, C96	Non-Hodgkin lymphoma	1.4	1.0
C88	Immunoproliferative disease	0.1	0.0
C90	Multiple myeloma	0.6	0.4
C91–95	Leukaemia	1.6	1.2

Table 5.5: Number of new cases by primary site and year, 2009–2018, **males**

		Year									
ICD-10	**Site**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
C00–96	**All sites**	**15 151**	**15 282**	**16 406**	**16 768**	**16 806**	**17 442**	**18 054**	**18 438**	**18 417**	**18 321**
C00–14	**Mouth, pharynx**	**343**	**314**	**328**	**361**	**335**	**405**	**402**	**407**	**393**	**427**
C00	Lip	73	61	72	62	48	62	58	49	51	49
C02–06	Oral cavity	113	93	83	108	112	115	119	122	123	136
C07–08	Salivary glands	23	28	18	30	28	45	36	43	29	46
C09–10, C01, C14	Oropharynx	106	109	121	131	124	149	159	162	155	172
C11	Nasopharynx	12	8	12	14	8	11	8	7	11	12
C12–13	Hypoharynx	16	15	22	16	15	23	22	24	24	12
C15–26	**Digestive organs**	**2 954**	**3 234**	**3 141**	**3 327**	**3 443**	**3 486**	**3 642**	**3 708**	**3 678**	**3 789**
C15	Oesophagus	149	187	181	175	200	224	221	215	218	239
C16	Stomach	264	300	324	285	306	307	295	308	280	235
C17	Small intestine	82	73	88	104	89	96	102	117	115	102
C18	Colon	1 123	1 299	1 230	1 301	1 338	1 365	1 434	1 450	1 461	1 490
C19–20	Rectum, rectosigmoid	730	745	699	751	803	813	794	842	803	834
C21	Anus	20	33	21	24	16	28	22	35	35	27
C22	Liver	98	127	130	137	178	145	185	191	185	211
C23–24	Gallbladder, bile ducts	74	88	60	86	96	70	80	83	65	79
C25	Pancreas	360	319	337	403	362	382	441	402	441	479
C26	Other digestive organs	54	63	71	61	55	56	68	65	75	93
C30–34, C38	**Respiratory organs**	**1 660**	**1 682**	**1 769**	**1 785**	**1 719**	**1 785**	**1 749**	**1 834**	**1 856**	**1 813**
C30–31	Nose, sinuses	23	19	23	32	34	30	15	25	27	22
C32	Larynx, epiglottis	90	106	100	98	105	114	87	85	72	104
C33–34	Lung, trachea	1 539	1 547	1 636	1 644	1 572	1 631	1 640	1 707	1 742	1 677
C38	Heart, mediastinum and pleura	8	10	10	11	8	10	7	17	15	10
C40–41	**Bone**	**37**	**27**	**29**	**33**	**18**	**29**	**34**	**31**	**28**	**33**
C43	**Melanoma of the skin**	**703**	**747**	**873**	**895**	**849**	**1 038**	**1 038**	**1 072**	**1 170**	**1 169**
C44	**Skin, non-melanoma**	**855**	**821**	**863**	**893**	**914**	**1 013**	**1 061**	**1 118**	**1 267**	**1 342**
C45	**Mesothelioma**	**69**	**79**	**64**	**66**	**78**	**58**	**67**	**62**	**74**	**52**
C47	**Autonomic nervous system**	**7**	**6**	**5**	**5**	**6**	**7**	**4**	**2**	**9**	**7**
C48–49	**Soft tissues**	**71**	**52**	**67**	**82**	**79**	**63**	**67**	**56**	**72**	**61**
C50	**Breast**	**15**	**13**	**27**	**28**	**35**	**24**	**24**	**31**	**34**	**28**
C60–63	**Male genital organs**	**4 753**	**4 572**	**5 315**	**5 283**	**5 260**	**5 342**	**5 526**	**5 652**	**5 425**	**5 229**
C61	Prostate	4 391	4 259	4 990	4 919	4 880	4 959	5 174	5 276	5 071	4 848
C62	Testis	314	267	286	321	332	325	292	290	289	316
C60, C63	Other male genital	48	46	39	43	48	58	60	86	65	65
C64–68	**Urinary organs**	**1 410**	**1 444**	**1 528**	**1 602**	**1 628**	**1 761**	**1 845**	**1 911**	**1 891**	**1 862**
C64	Kidney (excl. renal pelvis)	427	486	520	532	537	580	582	605	586	623
C65–68	Urinary tract	983	958	1 008	1 070	1 091	1 181	1 263	1 306	1 305	1 239
C69	**Eye**	**26**	**38**	**26**	**29**	**34**	**49**	**44**	**40**	**42**	**41**
C70–72	**Central nervous system**	**482**	**490**	**513**	**538**	**510**	**535**	**501**	**427**	**475**	**440**
C73	**Thyroid gland**	**73**	**80**	**77**	**92**	**106**	**116**	**105**	**141**	**135**	**114**
C37, C74–75	**Other endocrine glands**	**148**	**110**	**126**	**147**	**117**	**127**	**94**	**103**	**80**	**81**
C39, C76, C80	**Other or unspecified**	**169**	**146**	**165**	**124**	**148**	**154**	**154**	**145**	**129**	**148**
C81–96	**Lymphoid/haematopoietic tissue**	**1 376**	**1 427**	**1 490**	**1 478**	**1 527**	**1 450**	**1 696**	**1 698**	**1 659**	**1 685**
C81	Hodgkin lymphoma	83	82	69	89	73	81	110	94	95	92
C82–86, C96	Non-Hodgkin lymphoma	488	553	506	525	546	536	610	602	544	599
C88	Immunoproliferative disease	28	34	36	52	37	42	49	46	43	41
C90	Multiple myeloma	220	207	243	209	236	208	254	260	277	272
C91–95	Leukaemia	557	551	636	603	635	583	673	696	700	681

Table 5.6: Number of new cases by primary site and year, 2009–2018, **females**

		Year									
ICD-10	**Site**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
C00–96	**All sites**	**13 067**	**13 355**	**13 908**	**13 807**	**14 245**	**15 039**	**15 521**	**15 622**	**15 679**	**15 869**
C00–14	**Mouth, pharynx**	**167**	**208**	**198**	**185**	**191**	**215**	**225**	**242**	**253**	**228**
C00	Lip	30	43	33	37	41	31	45	45	49	30
C02–06	Oral cavity	73	74	78	66	83	97	80	108	91	108
C07–08	Salivary glands	17	32	29	17	18	27	40	29	41	27
C09–10, C01, C14	Oropharynx	42	50	45	52	38	43	55	50	60	54
C11	Nasopharynx	4	5	5	6	6	8	3	6	9	3
C12–13	Hypoharynx	1	4	8	7	5	9	2	4	3	6
C15–26	**Digestive organs**	**2 854**	**2 741**	**2 882**	**2 948**	**3 036**	**3 135**	**3 256**	**3 196**	**3 216**	**3 157**
C15	Oesophagus	54	65	60	72	63	71	77	72	76	79
C16	Stomach	223	175	199	182	165	189	166	151	193	157
C17	Small intestine	76	63	67	60	49	76	75	74	104	72
C18	Colon	1 358	1 268	1 396	1 424	1 464	1 473	1 578	1 646	1 554	1 578
C19–20	Rectum, rectosigmoid	519	527	528	500	579	575	577	531	542	526
C21	Anus	50	54	40	49	61	69	66	81	54	63
C22	Liver	65	77	81	81	82	87	103	112	113	110
C23–24	Gallbladder, bile ducts	85	91	87	104	104	109	82	77	83	66
C25	Pancreas	363	349	365	395	391	397	448	378	411	430
C26	Other digestive organs	61	72	59	81	78	89	84	74	86	76
C30–34, C38	**Respiratory organs**	**1 202**	**1 320**	**1 281**	**1 363**	**1 383**	**1 509**	**1 582**	**1 570**	**1 576**	**1 716**
C30–31	Nose, sinuses	12	20	20	18	20	19	22	15	10	16
C32	Larynx, epiglottis	20	19	16	19	21	20	19	23	16	23
C33–34	Lung, trachea	1 162	1 273	1 237	1 322	1 337	1 465	1 535	1 526	1 546	1 674
C38	Heart, mediastinum and pleura	8	8	8	4	5	5	6	6	4	3
C40–41	**Bone**	**28**	**25**	**23**	**15**	**25**	**28**	**25**	**28**	**28**	**25**
C43	**Melanoma of the skin**	**729**	**797**	**878**	**890**	**898**	**1 009**	**1 002**	**1 059**	**1 060**	**1 156**
C44	**Skin, non-melanoma**	**744**	**709**	**783**	**780**	**811**	**928**	**846**	**1 012**	**1 048**	**1 119**
C45	**Mesothelioma**	**12**	**14**	**13**	**16**	**11**	**11**	**13**	**14**	**15**	**14**
C47	**Autonomic nervous system**	**5**	**5**	**1**	**0**	**6**	**8**	**7**	**1**	**3**	**2**
C48–49	**Soft tissues**	**72**	**63**	**59**	**55**	**54**	**50**	**58**	**58**	**45**	**49**
C50	**Breast**	**2 736**	**2 849**	**3 089**	**2 946**	**3 202**	**3 331**	**3 430**	**3 391**	**3 595**	**3 568**
C51–58	**Female genital organs**	**1 618**	**1 696**	**1 701**	**1 575**	**1 636**	**1 753**	**1 842**	**1 811**	**1 707**	**1 747**
C51–52, C57.7–9	Other female genital	111	116	105	107	102	126	120	124	126	135
C53	Cervix uteri	298	311	297	313	289	358	387	369	333	355
C54	Corpus uteri	714	758	749	652	766	733	785	785	708	797
C55	Uterus, other	11	6	5	6	8	13	8	10	9	13
C56, C57.0–4, C48.2	Ovary etc.	482	502	540	493	469	521	541	519	530	444
C58	Placenta	2	3	5	4	2	2	1	4	1	3
C64–68	**Urinary organs**	**607**	**641**	**653**	**666**	**681**	**659**	**783**	**787**	**733**	**783**
C64	Kidney (excl. renal pelvis)	238	242	260	258	231	237	313	297	289	274
C65–68	Urinary tract	369	399	393	408	450	422	470	490	444	509
C69	**Eye**	**38**	**31**	**34**	**31**	**45**	**45**	**41**	**30**	**38**	**41**
C70–72	**Central nervous system**	**660**	**607**	**607**	**607**	**563**	**576**	**555**	**518**	**583**	**445**
C73	**Thyroid gland**	**186**	**204**	**220**	**228**	**249**	**251**	**266**	**324**	**292**	**294**
C37, C74–75	**Other endocrine glands**	**132**	**123**	**141**	**118**	**141**	**116**	**113**	**92**	**85**	**82**
C39, C76, C80	**Other or unspecified**	**200**	**183**	**168**	**156**	**170**	**171**	**155**	**183**	**149**	**171**
C81–96	**Lymphoid/haematopoietic tissue**	**1 077**	**1 139**	**1 177**	**1 228**	**1 143**	**1 244**	**1 322**	**1 306**	**1 253**	**1 272**
C81	Hodgkin lymphoma	50	57	73	64	57	63	56	76	46	62
C82–86, C96	Non-Hodgkin lymphoma	398	407	451	460	418	453	460	455	429	479
C88	Immunoproliferative disease	28	27	28	33	35	36	20	18	30	24
C90	Multiple myeloma	164	181	144	184	179	193	208	194	192	183
C91–95	Leukaemia	437	467	481	487	454	499	578	563	556	524

Table 5.7: Age-standardised (Norwegian standard) incidence rates per 100 000 person-years by primary site and year, 2009–2018, **males**

		Year									
ICD-10	**Site**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
C00–96	**All sites**	**719.1**	**708.8**	**742.8**	**741.3**	**724.7**	**736.4**	**744.9**	**743.8**	**724.9**	**700.0**
C00–14	**Mouth, pharynx**	**15.7**	**14.1**	**14.5**	**15.4**	**14.0**	**16.5**	**16.0**	**16.1**	**15.0**	**16.1**
C00	Lip	3.6	2.9	3.3	2.9	2.1	2.7	2.5	2.1	2.0	2.0
C02–06	Oral cavity	5.2	4.2	3.8	4.7	4.7	4.7	4.7	4.9	4.7	5.1
C07–08	Salivary glands	1.1	1.3	0.8	1.3	1.2	1.9	1.5	1.8	1.1	1.7
C09–10, C01, C14	Oropharynx	4.7	4.7	5.1	5.4	5.0	5.9	6.2	6.2	5.8	6.3
C11	Nasopharynx	0.5	0.3	0.5	0.6	0.3	0.4	0.3	0.3	0.4	0.5
C12–13	Hypoharynx	0.7	0.7	0.9	0.7	0.6	0.9	0.9	0.9	0.9	0.4
C15–26	**Digestive organs**	**142.5**	**151.8**	**144.1**	**148.9**	**150.0**	**148.9**	**151.8**	**150.2**	**146.0**	**145.8**
C15	Oesophagus	7.0	8.7	8.1	7.6	8.7	9.4	9.0	8.6	8.5	9.2
C16	Stomach	13.0	14.0	14.9	12.8	13.4	13.2	12.6	12.5	11.3	9.2
C17	Small intestine	3.7	3.3	3.9	4.5	3.8	4.0	4.1	4.6	4.5	3.8
C18	Colon	55.0	61.8	57.4	58.8	59.2	59.5	60.4	59.5	58.9	57.5
C19–20	Rectum, rectosigmoid	34.6	34.3	31.6	33.5	34.2	34.0	32.7	33.5	31.0	31.6
C21	Anus	0.9	1.5	0.9	1.1	0.7	1.2	0.9	1.4	1.3	1.0
C22	Liver	4.7	6.0	5.8	5.9	7.6	6.0	7.6	7.7	7.3	8.1
C23–24	Gallbladder, bile ducts	3.7	4.1	2.7	3.9	4.2	2.9	3.3	3.3	2.6	3.0
C25	Pancreas	17.4	15.2	15.4	18.0	15.8	16.2	18.3	16.4	17.6	18.5
C26	Other digestive organs	2.6	3.0	3.4	2.8	2.4	2.5	2.9	2.7	3.0	3.7
C30–34, C38	**Respiratory organs**	**78.9**	**78.3**	**80.6**	**79.8**	**74.6**	**76.2**	**72.5**	**74.4**	**72.9**	**68.9**
C30–31	Nose, sinuses	1.1	0.8	1.0	1.4	1.4	1.3	0.6	1.0	1.0	0.8
C32	Larynx, epiglottis	4.2	4.9	4.4	4.3	4.5	4.8	3.5	3.4	2.8	4.0
C33–34	Lung, trachea	73.3	72.1	74.7	73.5	68.4	69.8	68.1	69.2	68.5	63.7
C38	Heart, mediastinum and pleura	0.4	0.4	0.5	0.5	0.3	0.4	0.3	0.8	0.6	0.4
C40–41	**Bone**	**1.6**	**1.1**	**1.2**	**1.3**	**0.7**	**1.1**	**1.4**	**1.2**	**1.1**	**1.2**
C43	**Melanoma of the skin**	**32.1**	**33.3**	**38.3**	**38.8**	**36.0**	**43.2**	**42.0**	**42.5**	**45.8**	**44.8**
C44	**Skin, non-melanoma**	**43.9**	**41.4**	**42.7**	**43.1**	**43.5**	**47.0**	**48.2**	**50.4**	**55.0**	**56.5**
C45	**Mesothelioma**	**3.2**	**3.9**	**3.0**	**3.0**	**3.5**	**2.5**	**2.9**	**2.5**	**3.0**	**1.9**
C47	**Autonomic nervous system**	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**	**0.3**	**0.2**	**0.1**	**0.3**	**0.3**
C48–49	**Soft tissues**	**3.4**	**2.3**	**2.8**	**3.5**	**3.3**	**2.6**	**2.8**	**2.2**	**2.7**	**2.3**
C50	**Breast**	**0.7**	**0.6**	**1.2**	**1.3**	**1.5**	**1.0**	**1.1**	**1.3**	**1.3**	**1.1**
C60–63	**Male genital organs**	**224.7**	**210.8**	**238.4**	**229.9**	**223.3**	**221.6**	**222.9**	**223.0**	**208.5**	**194.4**
C61	Prostate	209.6	197.8	225.3	215.6	208.3	206.7	209.5	208.7	195.1	180.2
C62	Testis	12.8	10.8	11.4	12.5	12.8	12.4	11.0	10.9	10.8	11.7
C60, C63	Other male genital	2.3	2.1	1.7	1.8	2.1	2.5	2.4	3.5	2.7	2.5
C64–68	**Urinary organs**	**67.3**	**67.7**	**69.6**	**71.4**	**70.7**	**75.0**	**77.2**	**77.8**	**74.9**	**71.1**
C64	Kidney (excl. renal pelvis)	19.7	21.7	22.8	22.6	22.3	23.5	23.3	23.5	22.4	23.0
C65–68	Urinary tract	47.7	46.0	46.8	48.9	48.4	51.5	53.8	54.2	52.5	48.1
C69	**Eye**	**1.2**	**1.7**	**1.2**	**1.2**	**1.4**	**2.0**	**1.8**	**1.6**	**1.6**	**1.6**
C70–72	**Central nervous system**	**21.3**	**21.5**	**21.7**	**22.5**	**20.7**	**21.5**	**19.8**	**16.6**	**18.2**	**16.5**
C73	**Thyroid gland**	**3.2**	**3.4**	**3.2**	**3.8**	**4.3**	**4.6**	**4.1**	**5.5**	**5.1**	**4.2**
C37, C74–75	**Other endocrine glands**	**6.4**	**4.7**	**5.3**	**6.0**	**4.8**	**5.0**	**3.6**	**4.0**	**3.0**	**3.0**
C39, C76, C80	**Other or unspecified**	**8.6**	**7.1**	**7.9**	**5.9**	**7.0**	**6.9**	**6.9**	**6.4**	**5.5**	**6.2**
C81–96	**Lymphoid/haematopoietic tissue**	**64.0**	**65.0**	**66.8**	**65.2**	**65.3**	**60.5**	**69.8**	**68.1**	**65.0**	**64.4**
C81	Hodgkin lymphoma	3.5	3.5	2.8	3.6	2.9	3.2	4.2	3.6	3.5	3.4
C82–86, C96	Non-Hodgkin lymphoma	22.7	25.0	22.5	23.0	23.0	22.4	24.9	23.8	21.2	22.7
C88	Immunoproliferative disease	1.3	1.6	1.7	2.3	1.6	1.7	2.0	1.9	1.7	1.6
C90	Multiple myeloma	10.4	9.6	11.0	9.5	10.5	8.7	10.7	10.5	11.0	10.6
C91–95	Leukaemia	26.0	25.3	28.9	26.7	27.4	24.6	27.9	28.3	27.5	26.1

Table 5.8: Age-standardised (Norwegian standard) incidence rates per 100 000 person-years by primary site and year, 2009–2018, **females**

		Year									
ICD-10	**Site**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
C00–96	**All sites**	**515.4**	**521.9**	**534.9**	**524.5**	**533.0**	**554.6**	**563.8**	**557.7**	**551.1**	**548.8**
C00–14	**Mouth, pharynx**	**6.6**	**8.2**	**7.7**	**6.9**	**7.1**	**7.9**	**8.1**	**8.7**	**8.7**	**7.8**
C00	Lip	1.1	1.6	1.2	1.3	1.5	1.1	1.5	1.5	1.6	1.0
C02–06	Oral cavity	2.9	2.9	3.0	2.4	3.1	3.6	2.8	3.9	3.1	3.7
C07–08	Salivary glands	0.7	1.3	1.2	0.6	0.7	1.0	1.5	1.0	1.4	0.9
C09–10, C01, C14	Oropharynx	1.8	2.1	1.8	2.0	1.5	1.7	2.1	1.9	2.2	1.9
C11	Nasopharynx	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.3	0.1
C12–13	Hypoharynx	0.0	0.2	0.3	0.3	0.2	0.3	0.1	0.1	0.1	0.2
C15–26	**Digestive organs**	**108.5**	**103.1**	**107.5**	**108.8**	**110.4**	**112.4**	**114.7**	**110.8**	**109.6**	**105.8**
C15	Oesophagus	2.1	2.4	2.3	2.7	2.3	2.6	2.7	2.5	2.6	2.6
C16	Stomach	8.3	6.4	7.2	6.7	6.0	6.8	5.8	5.2	6.6	5.3
C17	Small intestine	3.0	2.5	2.6	2.3	1.8	2.7	2.7	2.6	3.6	2.5
C18	Colon	51.1	47.5	51.9	52.5	52.6	52.5	55.2	56.5	52.5	52.4
C19–20	Rectum, rectosigmoid	20.2	20.1	20.1	18.7	21.5	21.0	20.8	18.8	18.8	18.0
C21	Anus	2.1	2.1	1.5	1.9	2.3	2.6	2.5	3.0	1.9	2.2
C22	Liver	2.5	2.9	2.9	2.9	3.0	3.1	3.6	3.9	3.9	3.8
C23–24	Gallbladder, bile ducts	3.2	3.5	3.2	3.9	3.8	3.9	2.9	2.7	2.8	2.2
C25	Pancreas	13.8	13.0	13.5	14.4	14.2	14.2	15.6	13.0	14.0	14.4
C26	Other digestive organs	2.3	2.6	2.2	2.9	2.8	3.0	3.0	2.6	2.9	2.5
C30–34, C38	**Respiratory organs**	**47.8**	**52.4**	**49.9**	**52.1**	**52.0**	**55.6**	**57.1**	**55.2**	**54.2**	**57.7**
C30–31	Nose, sinuses	0.5	0.8	0.8	0.7	0.7	0.7	0.8	0.5	0.4	0.6
C32	Larynx, epiglottis	0.8	0.8	0.6	0.7	0.8	0.7	0.7	0.8	0.6	0.8
C33–34	Lung, trachea	46.2	50.5	48.1	50.6	50.3	54.0	55.4	53.7	53.2	56.2
C38	Heart, mediastinum and pleura	0.3	0.3	0.3	0.1	0.2	0.2	0.2	0.2	0.1	0.1
C40–41	**Bone**	**1.1**	**1.0**	**0.9**	**0.6**	**0.9**	**1.1**	**1.0**	**1.1**	**1.1**	**0.9**
C43	**Melanoma of the skin**	**29.5**	**31.8**	**34.3**	**34.7**	**34.3**	**37.9**	**37.2**	**38.7**	**38.4**	**40.9**
C44	**Skin, non-melanoma**	**26.2**	**25.0**	**27.0**	**27.1**	**27.6**	**31.4**	**28.3**	**33.2**	**34.3**	**35.7**
C45	**Mesothelioma**	**0.5**	**0.5**	**0.5**	**0.6**	**0.4**	**0.4**	**0.5**	**0.5**	**0.5**	**0.5**
C47	**Autonomic nervous system**	**0.2**	**0.2**	**0.0**	**0.0**	**0.2**	**0.3**	**0.3**	**0.0**	**0.1**	**0.1**
C48–49	**Soft tissues**	**2.9**	**2.4**	**2.3**	**2.1**	**2.1**	**1.9**	**2.1**	**2.1**	**1.6**	**1.7**
C50	**Breast**	**112.2**	**115.1**	**123.0**	**115.2**	**123.5**	**126.7**	**128.5**	**125.9**	**131.2**	**128.6**
C51–58	**Female genital organs**	**65.4**	**67.8**	**66.7**	**61.0**	**62.6**	**65.8**	**68.5**	**65.8**	**61.1**	**61.9**
C51–52, C57.7–9	Other female genital	4.3	4.3	3.9	4.0	3.6	4.4	4.3	4.3	4.4	4.6
C53	Cervix uteri	12.3	12.7	12.0	12.5	11.4	14.1	15.0	14.2	12.6	13.5
C54	Corpus uteri	29.1	30.3	29.3	25.1	29.2	27.3	28.9	28.0	24.9	27.7
C55	Uterus, other	0.4	0.3	0.2	0.2	0.3	0.4	0.3	0.3	0.3	0.4
C56, C57.0–4, C48.2	Ovary etc.	19.3	20.2	21.1	19.0	17.9	19.6	20.0	18.7	18.9	15.6
C58	Placenta	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.2	0.0	0.1
C64–68	**Urinary organs**	**23.7**	**24.5**	**24.6**	**24.7**	**25.0**	**24.1**	**28.0**	**27.5**	**25.4**	**26.4**
C64	Kidney (excl. renal pelvis)	9.6	9.5	10.0	9.9	8.7	8.8	11.4	10.6	10.3	9.6
C65–68	Urinary tract	14.1	15.1	14.5	14.8	16.3	15.2	16.6	16.9	15.1	16.8
C69	**Eye**	**1.5**	**1.3**	**1.3**	**1.2**	**1.7**	**1.7**	**1.6**	**1.1**	**1.4**	**1.5**
C70–72	**Central nervous system**	**26.8**	**24.3**	**24.0**	**23.8**	**21.7**	**21.9**	**20.8**	**19.2**	**21.2**	**16.1**
C73	**Thyroid gland**	**7.7**	**8.3**	**8.9**	**9.2**	**9.8**	**9.7**	**10.1**	**12.3**	**11.0**	**10.9**
C37, C74–75	**Other endocrine glands**	**5.5**	**5.1**	**5.7**	**4.7**	**5.6**	**4.5**	**4.3**	**3.4**	**3.2**	**3.0**
C39, C76, C80	**Other or unspecified**	**7.1**	**6.5**	**5.6**	**5.4**	**5.8**	**5.7**	**5.2**	**6.0**	**4.8**	**5.6**
C81–96	**Lymphoid/haematopoietic tissue**	**42.2**	**44.2**	**45.1**	**46.5**	**42.4**	**45.5**	**47.7**	**46.3**	**43.3**	**43.8**
C81	Hodgkin lymphoma	2.1	2.4	3.0	2.6	2.3	2.4	2.2	2.9	1.7	2.3
C82–86, C96	Non-Hodgkin lymphoma	15.8	15.9	17.4	17.6	15.6	16.6	16.6	16.1	14.8	16.4
C88	Immunoproliferative disease	1.0	1.1	1.1	1.2	1.3	1.3	0.7	0.6	1.0	0.8
C90	Multiple myeloma	6.4	6.9	5.4	6.9	6.5	6.9	7.4	6.8	6.5	6.3
C91–95	Leukaemia	16.8	18.0	18.2	18.3	16.7	18.1	20.8	19.9	19.2	18.0

Table 5.9: Average annual number of new cases by primary site and five-year age group, 2014–2018, **males**

ICD-10	Site	0–4	5–9	10–14	15–19	20–24	25–29	30–34
C00–96	**All sites**	**35**	**24**	**24**	**43**	**85**	**117**	**152**
C00–14	**Mouth, pharynx**	**0**	**0**	**0**	**0**	**2**	**1**	**3**
C00	Lip	0	0	0	0	0	0	0
C02–06	Oral cavity	0	0	0	0	0	0	2
C07–08	Salivary glands	0	0	0	0	0	0	1
C09–10, C01, C14	Oropharynx	0	0	0	0	1	0	0
C11	Nasopharynx	0	0	0	0	0	0	0
C12–13	Hypoharynx	0	0	0	0	0	0	0
C15–26	**Digestive organs**	**0**	**0**	**1**	**2**	**5**	**7**	**18**
C15	Oesophagus	0	0	0	0	0	0	1
C16	Stomach	0	0	0	0	0	1	2
C17	Small intestine	0	0	0	0	0	0	1
C18	Colon	0	0	0	2	4	3	6
C19–20	Rectum, rectosigmoid	0	0	0	0	0	2	6
C21	Anus	0	0	0	0	0	0	0
C22	Liver	0	0	0	0	0	1	1
C23–24	Gallbladder, bile ducts	0	0	0	0	0	0	0
C25	Pancreas	0	0	0	0	0	0	1
C26	Other digestive organs	0	0	0	0	0	0	0
C30–34, C38	**Respiratory organs**	**1**	**0**	**0**	**1**	**0**	**1**	**1**
C30–31	Nose, sinuses	0	0	0	0	0	0	0
C32	Larynx, epiglottis	0	0	0	0	0	0	0
C33–34	Lung, trachea	1	0	0	0	0	0	1
C38	Heart, mediastinum and pleura	0	0	0	0	0	0	0
C40–41	**Bone**	**0**	**1**	**2**	**2**	**3**	**2**	**3**
C43	**Melanoma of the skin**	**0**	**0**	**0**	**1**	**5**	**10**	**13**
C44	**Skin, non-melanoma**	**1**	**1**	**0**	**1**	**1**	**1**	**3**
C45	**Mesothelioma**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
C47	**Autonomic nervous system**	**2**	**0**	**0**	**0**	**0**	**0**	**0**
C48–49	**Soft tissues**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
C50	**Breast**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
C60–63	**Male genital organs**	**0**	**0**	**0**	**9**	**33**	**45**	**50**
C61	Prostate	0	0	0	0	0	0	0
C62	Testis	0	0	0	9	33	45	50
C60, C63	Other male genital	0	0	0	0	0	0	0
C64–68	**Urinary organs**	**2**	**1**	**0**	**1**	**1**	**3**	**7**
C64	Kidney (excl. renal pelvis)	2	1	0	0	1	2	5
C65–68	Urinary tract	0	0	0	1	1	1	2
C69	**Eye**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
C70–72	**Central nervous system**	**8**	**7**	**7**	**10**	**11**	**16**	**18**
C73	**Thyroid gland**	**0**	**0**	**0**	**1**	**2**	**4**	**5**
C37, C74–75	**Other endocrine glands**	**2**	**0**	**1**	**2**	**3**	**1**	**4**
C39, C76, C80	**Other or unspecified**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
C81–96	**Lymphoid/haematopoietic tissue**	**15**	**12**	**11**	**13**	**17**	**24**	**26**
C81	Hodgkin lymphoma	0	1	1	3	9	12	6
C82–86, C96	Non-Hodgkin lymphoma	2	4	3	2	5	4	7
C88	Immunoproliferative disease	0	0	0	0	0	0	0
C90	Multiple myeloma	0	0	0	0	0	0	1
C91–95	Leukaemia	13	7	6	8	4	8	12

35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
202	**298**	**477**	**808**	**1 391**	**2 149**	**3 097**	**3 238**	**2 469**	**1 826**	**1 700**
5	**10**	**20**	**36**	**50**	**61**	**76**	**57**	**38**	**27**	**22**
0	1	1	2	2	5	8	9	10	8	8
2	3	5	10	13	18	26	17	13	8	6
1	3	2	3	3	4	5	6	4	4	4
1	3	10	19	28	31	30	19	10	4	3
0	0	2	1	1	1	1	1	1	1	0
0	0	0	1	2	2	6	6	2	1	1
30	**52**	**97**	**168**	**280**	**419**	**586**	**662**	**530**	**423**	**380**
1	2	8	12	17	29	46	40	26	22	19
2	4	7	14	23	27	39	53	41	34	38
3	3	6	6	10	13	17	18	12	9	7
12	21	31	48	91	148	213	268	227	192	174
7	13	26	50	72	109	139	139	113	80	61
0	1	2	2	3	5	6	3	4	0	3
1	2	4	10	22	26	26	30	24	21	15
1	1	1	4	7	7	13	15	12	7	7
2	4	11	18	31	50	74	84	59	49	47
1	1	1	3	4	6	12	12	11	9	10
3	**12**	**27**	**53**	**107**	**209**	**345**	**380**	**290**	**213**	**165**
0	1	1	1	3	3	4	3	3	1	2
1	1	2	3	6	15	18	17	14	10	6
2	9	23	49	98	191	321	358	272	200	155
0	1	0	0	1	0	1	1	1	2	3
2	**1**	**2**	**1**	**2**	**2**	**3**	**3**	**2**	**1**	**1**
26	**50**	**56**	**79**	**107**	**118**	**150**	**171**	**123**	**96**	**89**
5	**7**	**11**	**17**	**30**	**64**	**116**	**181**	**201**	**220**	**302**
0	**0**	**0**	**1**	**3**	**6**	**10**	**13**	**15**	**9**	**7**
0	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1	**3**	**5**	**4**	**7**	**7**	**6**	**10**	**5**	**4**	**5**
0	**1**	**0**	**2**	**2**	**3**	**5**	**5**	**4**	**3**	**3**
52	**51**	**85**	**193**	**466**	**793**	**1 162**	**1 061**	**707**	**398**	**330**
1	10	50	169	449	781	1 151	1 048	695	389	322
50	39	32	17	11	7	3	3	1	1	1
1	2	3	6	6	5	8	10	11	8	7
14	**27**	**54**	**95**	**147**	**201**	**287**	**339**	**271**	**218**	**187**
10	17	31	52	67	83	95	99	66	38	26
4	10	23	43	80	117	192	240	205	180	161
2	**1**	**2**	**5**	**5**	**5**	**7**	**5**	**3**	**2**	**3**
18	**24**	**34**	**41**	**40**	**49**	**53**	**53**	**37**	**29**	**21**
9	**9**	**11**	**11**	**12**	**13**	**16**	**12**	**8**	**5**	**4**
5	**5**	**7**	**9**	**11**	**11**	**11**	**10**	**8**	**4**	**3**
1	**2**	**2**	**6**	**7**	**13**	**19**	**20**	**20**	**22**	**35**
29	**44**	**64**	**85**	**115**	**175**	**246**	**255**	**208**	**154**	**143**
6	7	9	6	7	7	7	7	4	1	1
9	16	23	34	42	68	96	92	76	52	44
0	1	1	1	3	3	9	8	7	7	4
2	4	10	10	20	29	42	44	37	28	26
12	16	21	34	43	68	93	105	84	66	68

Table 5.10: Average annual number of new cases by primary site and five-year age group, 2014–2018, **females**

ICD-10	Site	0–4	5–9	10–14	15–19	20–24	25–29	30–34
C00–96	**All sites**	**30**	**18**	**19**	**41**	**67**	**143**	**207**
C00–14	**Mouth, pharynx**	**0**	**0**	**1**	**1**	**1**	**2**	**3**
C00	Lip	0	0	0	0	0	0	0
C02–06	Oral cavity	0	0	0	0	0	1	1
C07–08	Salivary glands	0	0	0	0	0	1	2
C09–10, C01, C14	Oropharynx	0	0	0	0	0	0	0
C11	Nasopharynx	0	0	0	0	0	0	0
C12–13	Hypoharynx	0	0	0	0	0	0	0
C15–26	**Digestive organs**	**0**	**0**	**2**	**4**	**5**	**9**	**14**
C15	Oesophagus	0	0	0	0	0	0	0
C16	Stomach	0	0	0	0	0	1	1
C17	Small intestine	0	0	0	0	0	0	1
C18	Colon	0	0	2	4	4	6	6
C19–20	Rectum, rectosigmoid	0	0	0	0	0	1	4
C21	Anus	0	0	0	0	0	0	0
C22	Liver	0	0	0	0	0	0	0
C23–24	Gallbladder, bile ducts	0	0	0	0	0	0	0
C25	Pancreas	0	0	0	0	0	1	1
C26	Other digestive organs	0	0	0	0	0	0	0
C30–34, C38	**Respiratory organs**	**1**	**0**	**0**	**0**	**0**	**1**	**3**
C30–31	Nose, sinuses	0	0	0	0	0	0	0
C32	Larynx, epiglottis	0	0	0	0	0	0	0
C33–34	Lung, trachea	1	0	0	0	0	1	3
C38	Heart, mediastinum and pleura	0	0	0	0	0	0	0
C40–41	**Bone**	**0**	**2**	**1**	**1**	**2**	**1**	**1**
C43	**Melanoma of the skin**	**0**	**0**	**1**	**3**	**10**	**19**	**25**
C44	**Skin, non-melanoma**	**0**	**0**	**0**	**1**	**2**	**1**	**2**
C45	**Mesothelioma**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
C47	**Autonomic nervous system**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
C48–49	**Soft tissues**	**1**	**1**	**1**	**1**	**1**	**2**	**2**
C50	**Breast**	**0**	**0**	**0**	**0**	**1**	**19**	**44**
C51–58	**Female genital organs**	**0**	**0**	**1**	**3**	**8**	**38**	**49**
C51–52, C57.7–9	Other female genital	0	0	0	0	0	0	2
C53	Cervix uteri	0	0	0	0	6	32	38
C54	Corpus uteri	0	0	0	0	0	1	3
C55	Uterus, other	0	0	0	0	0	0	0
C56, C57.0–4, C48.2	Ovary etc.	0	0	0	2	2	4	6
C58	Placenta	0	0	0	0	0	0	1
C64–68	**Urinary organs**	**4**	**0**	**0**	**0**	**2**	**2**	**3**
C64	Kidney (excl. renal pelvis)	4	0	0	0	0	1	2
C65–68	Urinary tract	0	0	0	0	2	1	1
C69	**Eye**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
C70–72	**Central nervous system**	**6**	**6**	**5**	**7**	**8**	**12**	**17**
C73	**Thyroid gland**	**0**	**0**	**0**	**3**	**9**	**14**	**19**
C37, C74–75	**Other endocrine glands**	**1**	**0**	**1**	**3**	**5**	**6**	**6**
C39, C76, C80	**Other or unspecified**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
C81–96	**Lymphoid/haematopoietic tissue**	**15**	**6**	**7**	**13**	**13**	**18**	**16**
C81	Hodgkin lymphoma	0	0	1	6	6	6	5
C82–86, C96	Non-Hodgkin lymphoma	2	1	1	2	2	3	5
C88	Immunoproliferative disease	0	0	0	0	0	0	0
C90	Multiple myeloma	0	0	0	0	0	0	0
C91–95	Leukaemia	12	5	5	5	4	8	6

35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
334	**528**	**817**	**1 073**	**1 246**	**1 645**	**2 085**	**2 097**	**1 753**	**1 499**	**1 944**
5	**6**	**9**	**14**	**20**	**30**	**28**	**28**	**27**	**24**	**34**
0	0	1	1	2	4	5	5	6	7	9
2	3	2	5	7	12	12	12	12	11	16
2	1	2	4	1	3	3	3	4	2	5
0	1	4	5	8	10	8	6	5	3	3
0	1	1	0	1	1	0	1	0	0	0
0	0	0	0	1	1	0	1	1	0	1
31	**49**	**87**	**140**	**183**	**281**	**421**	**504**	**464**	**448**	**550**
0	1	2	3	4	7	10	15	13	8	12
3	4	5	10	9	14	21	23	20	24	35
2	2	4	4	6	8	13	12	9	10	9
12	19	36	56	74	121	194	252	247	246	288
8	13	20	38	42	64	74	86	69	60	70
1	3	5	5	8	8	13	9	6	5	5
0	2	3	4	8	9	15	17	16	13	17
1	0	1	4	4	5	13	12	12	15	16
2	3	8	16	25	36	58	66	62	55	79
0	1	3	3	3	9	11	12	10	11	18
4	**9**	**26**	**58**	**113**	**190**	**293**	**335**	**244**	**170**	**141**
1	0	1	1	1	2	2	3	1	2	2
0	0	1	2	3	3	4	3	2	1	1
3	9	25	55	109	185	286	329	240	166	136
0	0	0	0	0	1	1	0	0	0	2
2	**2**	**2**	**1**	**1**	**2**	**3**	**2**	**1**	**1**	**1**
40	**71**	**87**	**94**	**97**	**105**	**118**	**119**	**91**	**75**	**99**
3	**7**	**15**	**17**	**31**	**50**	**77**	**122**	**141**	**168**	**354**
0	**0**	**0**	**1**	**1**	**1**	**2**	**3**	**2**	**2**	**2**
0	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2	**3**	**4**	**4**	**4**	**4**	**4**	**7**	**4**	**4**	**4**
94	**192**	**329**	**426**	**398**	**471**	**506**	**319**	**250**	**180**	**235**
75	**84**	**104**	**133**	**164**	**204**	**238**	**231**	**173**	**125**	**142**
2	5	5	7	9	13	14	13	14	13	29
53	48	45	25	24	21	22	18	10	9	9
8	16	28	55	77	107	120	125	94	66	60
0	0	1	1	0	1	1	1	1	1	4
10	14	25	46	54	62	80	73	55	37	40
1	0	0	0	0	0	0	0	0	0	0
7	**12**	**21**	**36**	**56**	**77**	**109**	**124**	**104**	**83**	**106**
5	9	15	19	20	31	46	50	31	22	26
2	4	6	17	36	46	63	74	73	61	80
1	**1**	**3**	**3**	**3**	**4**	**9**	**5**	**3**	**2**	**2**
20	**27**	**46**	**47**	**50**	**59**	**62**	**60**	**42**	**35**	**29**
26	**28**	**30**	**28**	**22**	**22**	**27**	**26**	**12**	**10**	**10**
5	**7**	**9**	**8**	**9**	**8**	**9**	**10**	**6**	**4**	**4**
1	**0**	**2**	**4**	**7**	**10**	**14**	**16**	**22**	**25**	**63**
18	**30**	**42**	**59**	**87**	**126**	**166**	**185**	**167**	**143**	**170**
4	3	3	2	3	3	5	3	3	4	2
6	11	13	23	34	49	65	76	63	50	51
0	0	1	1	1	4	3	4	5	3	3
1	2	6	9	16	21	27	28	27	24	32
7	13	19	24	33	49	67	74	68	62	82

Table 5.11: Age-specific incidence rates per 100 000 person-years by primary site and five-year age group, 2014–2018, **males**

ICD-10	Site	0–4	5–9	10–14	15–19	20–24	25–29	30–34
C00–96	**All sites**	**22.4**	**14.6**	**14.8**	**25.6**	**48.1**	**63.3**	**83.9**
C00–14	**Mouth, pharynx**	**0.1**	**0.0**	**0.1**	**0.0**	**1.0**	**0.4**	**1.4**
C00	Lip	0.0	0.0	0.0	0.0	0.1	0.0	0.0
C02–06	Oral cavity	0.0	0.0	0.1	0.0	0.2	0.2	1.0
C07–08	Salivary glands	0.1	0.0	0.0	0.0	0.1	0.2	0.3
C09–10, C01, C14	Oropharynx	0.0	0.0	0.0	0.0	0.3	0.0	0.1
C11	Nasopharynx	0.0	0.0	0.0	0.0	0.2	0.0	0.0
C12–13	Hypoharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C15–26	**Digestive organs**	**0.3**	**0.1**	**0.4**	**1.3**	**2.9**	**3.6**	**9.7**
C15	Oesophagus	0.0	0.0	0.0	0.0	0.1	0.1	0.6
C16	Stomach	0.0	0.0	0.0	0.1	0.1	0.3	0.9
C17	Small intestine	0.0	0.0	0.0	0.0	0.1	0.0	0.7
C18	Colon	0.0	0.0	0.3	1.1	2.4	1.5	3.4
C19–20	Rectum, rectosigmoid	0.0	0.0	0.0	0.0	0.1	1.2	3.3
C21	Anus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C22	Liver	0.3	0.1	0.1	0.0	0.1	0.3	0.3
C23–24	Gallbladder, bile ducts	0.0	0.0	0.0	0.0	0.0	0.0	0.1
C25	Pancreas	0.0	0.0	0.0	0.1	0.0	0.0	0.3
C26	Other digestive organs	0.0	0.0	0.0	0.0	0.0	0.1	0.1
C30–34, C38	**Respiratory organs**	**0.4**	**0.0**	**0.1**	**0.5**	**0.2**	**0.4**	**0.6**
C30–31	Nose, sinuses	0.0	0.0	0.1	0.0	0.1	0.1	0.0
C32	Larynx, epiglottis	0.0	0.0	0.0	0.0	0.0	0.0	0.1
C33–34	Lung, trachea	0.4	0.0	0.0	0.2	0.0	0.2	0.4
C38	Heart, mediastinum and pleura	0.0	0.0	0.0	0.2	0.1	0.1	0.0
C40–41	**Bone**	**0.1**	**0.4**	**1.1**	**1.0**	**1.5**	**1.0**	**1.5**
C43	**Melanoma of the skin**	**0.1**	**0.2**	**0.3**	**0.6**	**2.9**	**5.6**	**7.3**
C44	**Skin, non-melanoma**	**0.4**	**0.4**	**0.0**	**0.4**	**0.5**	**0.8**	**1.4**
C45	**Mesothelioma**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
C47	**Autonomic nervous system**	**1.5**	**0.1**	**0.1**	**0.1**	**0.2**	**0.1**	**0.1**
C48–49	**Soft tissues**	**0.8**	**0.4**	**0.5**	**0.4**	**0.6**	**0.8**	**0.8**
C50	**Breast**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
C60–63	**Male genital organs**	**0.3**	**0.1**	**0.0**	**5.4**	**18.5**	**24.3**	**27.8**
C61	Prostate	0.0	0.0	0.0	0.1	0.0	0.0	0.0
C62	Testis	0.1	0.0	0.0	5.3	18.5	24.3	27.7
C60, C63	Other male genital	0.1	0.1	0.0	0.0	0.0	0.0	0.1
C64–68	**Urinary organs**	**1.3**	**0.4**	**0.1**	**0.6**	**0.7**	**1.5**	**3.6**
C64	Kidney (excl. renal pelvis)	1.2	0.4	0.0	0.2	0.3	1.1	2.5
C65–68	Urinary tract	0.1	0.0	0.1	0.4	0.3	0.4	1.1
C69	**Eye**	**0.8**	**0.5**	**0.3**	**0.0**	**0.1**	**0.1**	**0.2**
C70–72	**Central nervous system**	**5.3**	**4.5**	**4.4**	**5.9**	**6.1**	**8.5**	**9.7**
C73	**Thyroid gland**	**0.0**	**0.0**	**0.1**	**0.5**	**1.1**	**2.3**	**2.8**
C37, C74–75	**Other endocrine glands**	**1.5**	**0.2**	**0.4**	**1.2**	**1.9**	**0.8**	**2.2**
C39, C76, C80	**Other or unspecified**	**0.0**	**0.0**	**0.1**	**0.2**	**0.1**	**0.1**	**0.1**
C81–96	**Lymphoid/haematopoietic tissue**	**9.6**	**7.3**	**6.8**	**7.6**	**9.6**	**13.1**	**14.6**
C81	Hodgkin lymphoma	0.0	0.5	0.9	2.0	4.9	6.7	3.5
C82–86, C96	Non-Hodgkin lymphoma	1.3	2.3	2.0	1.1	2.7	2.3	4.0
C88	Immunoproliferative disease	0.0	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	0.6
C91–95	Leukaemia	8.3	4.5	3.9	4.5	2.0	4.1	6.5

35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
113.0	**158.6**	**246.6**	**452.5**	**857.4**	**1 453.7**	**2 254.4**	**3 012.2**	**3 647.1**	**4 099.6**	**4 394.7**
2.7	**5.1**	**10.1**	**20.3**	**30.6**	**41.4**	**55.3**	**53.2**	**56.4**	**59.7**	**57.4**
0.1	0.4	0.4	1.0	1.2	3.1	5.8	8.7	14.5	18.4	20.7
1.1	1.6	2.4	5.7	7.9	11.9	19.1	15.4	18.6	18.9	16.0
0.7	1.5	0.9	1.8	1.8	2.7	3.5	5.4	5.3	9.4	10.3
0.6	1.4	5.4	10.9	17.4	21.2	21.5	17.5	14.8	8.5	8.8
0.2	0.2	0.9	0.3	0.7	0.9	1.0	0.7	0.9	1.8	0.0
0.0	0.0	0.1	0.6	1.5	1.5	4.4	5.4	2.4	2.7	1.6
16.9	**27.9**	**50.3**	**94.0**	**172.3**	**283.6**	**426.4**	**615.8**	**782.4**	**950.0**	**983.2**
0.6	1.0	4.1	6.9	10.4	19.9	33.6	36.8	39.0	48.5	48.6
1.2	2.2	3.4	7.9	14.1	18.3	28.5	49.3	60.9	76.3	98.2
1.5	1.6	3.2	3.5	6.4	8.7	12.2	16.9	18.3	20.7	18.6
6.6	11.4	16.0	27.0	56.1	99.9	155.2	249.1	335.4	431.0	448.7
4.0	7.0	13.3	27.8	44.6	73.6	101.0	129.3	167.5	179.6	156.6
0.2	0.5	0.9	1.1	1.8	3.2	4.4	3.2	5.6	0.9	7.2
0.8	1.1	2.3	5.7	13.3	17.3	18.9	28.1	35.2	46.7	39.3
0.4	0.5	0.7	2.2	4.1	4.9	9.8	13.8	17.4	15.3	19.1
1.2	1.9	5.6	10.0	18.9	33.8	54.0	78.3	86.9	110.0	121.5
0.3	0.6	0.7	1.9	2.7	4.1	8.7	11.0	16.3	21.1	25.3
1.6	**6.2**	**13.9**	**29.9**	**65.9**	**141.5**	**250.8**	**353.5**	**428.4**	**477.7**	**427.5**
0.1	0.5	0.7	0.6	1.6	2.2	3.2	3.0	4.1	3.1	5.2
0.4	0.5	1.1	1.7	3.5	10.1	13.0	16.0	20.7	22.0	15.0
0.9	4.6	11.8	27.4	60.4	128.9	234.0	333.4	402.1	448.1	400.6
0.1	0.5	0.2	0.2	0.5	0.3	0.7	1.1	1.5	4.5	6.7
1.0	**0.4**	**0.9**	**0.8**	**1.2**	**1.2**	**2.2**	**2.8**	**3.0**	**2.2**	**2.6**
14.8	**26.7**	**29.0**	**44.3**	**65.8**	**80.0**	**109.0**	**159.5**	**182.3**	**215.1**	**230.5**
2.8	**3.5**	**5.7**	**9.7**	**18.7**	**43.3**	**84.2**	**168.2**	**296.4**	**494.3**	**780.5**
0.0	**0.0**	**0.1**	**0.6**	**1.7**	**3.8**	**7.3**	**12.1**	**21.6**	**19.8**	**17.1**
0.0	**0.3**	**0.0**	**0.2**	**0.0**	**0.1**	**0.3**	**0.4**	**0.0**	**0.0**	**0.0**
0.6	**1.6**	**2.4**	**2.4**	**4.4**	**4.7**	**4.4**	**9.1**	**8.0**	**8.5**	**12.4**
0.1	**0.6**	**0.2**	**0.9**	**1.1**	**2.2**	**3.6**	**4.7**	**5.6**	**6.3**	**8.3**
29.0	**27.2**	**44.1**	**107.8**	**287.1**	**536.8**	**845.7**	**986.7**	**1 044.2**	**893.0**	**853.4**
0.7	5.2	26.0	94.8	276.6	528.6	837.6	974.9	1 027.1	872.4	832.2
27.8	20.9	16.6	9.6	7.0	4.6	2.5	2.6	1.5	2.7	2.1
0.6	1.1	1.4	3.4	3.5	3.5	5.7	9.1	15.7	18.0	19.1
7.6	**14.3**	**28.0**	**53.4**	**90.7**	**135.8**	**209.1**	**315.2**	**400.4**	**489.4**	**482.3**
5.6	9.1	16.0	29.2	41.2	56.4	69.4	92.3	97.8	85.3	67.2
2.0	5.2	12.0	24.2	49.6	79.4	139.6	222.9	302.6	404.1	415.1
1.0	**0.7**	**0.9**	**2.7**	**3.1**	**3.7**	**5.1**	**4.8**	**4.1**	**4.5**	**7.2**
10.3	**12.6**	**17.4**	**22.9**	**24.9**	**32.9**	**38.4**	**49.5**	**55.0**	**65.1**	**55.3**
5.0	**4.6**	**5.6**	**6.3**	**7.6**	**8.9**	**11.4**	**11.5**	**11.5**	**10.3**	**11.4**
2.7	**2.4**	**3.8**	**4.9**	**6.7**	**7.2**	**8.2**	**9.7**	**11.5**	**8.5**	**6.7**
0.3	**1.0**	**0.9**	**3.5**	**4.3**	**8.5**	**13.7**	**18.2**	**29.5**	**48.9**	**89.4**
16.5	**23.4**	**33.2**	**47.8**	**71.1**	**118.1**	**179.4**	**237.4**	**306.7**	**346.2**	**369.6**
3.4	3.5	4.4	3.6	4.3	4.6	4.8	6.1	5.9	3.1	3.6
5.3	8.6	11.7	18.9	26.0	45.9	69.9	85.2	111.7	117.2	113.2
0.0	0.3	0.7	0.4	1.8	2.3	6.3	7.8	10.9	15.3	9.8
1.1	2.3	5.3	5.7	12.4	19.5	30.9	40.6	54.7	62.9	68.2
6.7	8.6	11.1	19.1	26.5	45.9	67.6	97.7	123.5	147.7	174.7

Table 5.12: Age-specific incidence rates per 100 000 person-years by primary site and five-year age group, 2014–2018, **females**

ICD-10	Site	0–4	5–9	10–14	15–19	20–24	25–29	30–34
C00–96	**All sites**	**20.3**	**11.4**	**12.5**	**26.2**	**40.1**	**80.3**	**120.8**
C00–14	**Mouth, pharynx**	**0.1**	**0.0**	**0.4**	**0.5**	**0.4**	**0.9**	**2.0**
C00	Lip	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C02–06	Oral cavity	0.0	0.0	0.0	0.1	0.2	0.3	0.8
C07–08	Salivary glands	0.0	0.0	0.3	0.1	0.1	0.3	1.1
C09–10, C01, C14	Oropharynx	0.0	0.0	0.1	0.1	0.0	0.0	0.1
C11	Nasopharynx	0.1	0.0	0.0	0.1	0.0	0.2	0.0
C12–13	Hypoharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C15–26	**Digestive organs**	**0.3**	**0.3**	**1.1**	**2.5**	**2.8**	**5.3**	**8.1**
C15	Oesophagus	0.0	0.0	0.0	0.0	0.0	0.0	0.1
C16	Stomach	0.0	0.0	0.0	0.1	0.0	0.3	0.8
C17	Small intestine	0.0	0.0	0.0	0.0	0.0	0.0	0.7
C18	Colon	0.0	0.1	1.1	2.3	2.2	3.3	3.6
C19–20	Rectum, rectosigmoid	0.0	0.0	0.0	0.0	0.2	0.7	2.2
C21	Anus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C22	Liver	0.3	0.1	0.0	0.0	0.1	0.2	0.0
C23–24	Gallbladder, bile ducts	0.0	0.0	0.0	0.0	0.0	0.0	0.1
C25	Pancreas	0.0	0.0	0.0	0.1	0.2	0.7	0.5
C26	Other digestive organs	0.0	0.0	0.0	0.0	0.0	0.1	0.0
C30–34, C38	**Respiratory organs**	**0.5**	**0.1**	**0.0**	**0.3**	**0.1**	**0.6**	**2.0**
C30–31	Nose, sinuses	0.1	0.0	0.0	0.1	0.0	0.0	0.2
C32	Larynx, epiglottis	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C33–34	Lung, trachea	0.4	0.1	0.0	0.1	0.1	0.4	1.6
C38	Heart, mediastinum and pleura	0.0	0.0	0.0	0.0	0.0	0.1	0.1
C40–41	**Bone**	**0.3**	**1.2**	**0.9**	**0.8**	**1.1**	**0.3**	**0.8**
C43	**Melanoma of the skin**	**0.0**	**0.1**	**0.7**	**2.2**	**6.1**	**10.7**	**14.8**
C44	**Skin, non-melanoma**	**0.1**	**0.3**	**0.0**	**0.5**	**1.3**	**0.7**	**1.1**
C45	**Mesothelioma**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.2**
C47	**Autonomic nervous system**	**0.8**	**0.3**	**0.0**	**0.0**	**0.0**	**0.1**	**0.2**
C48–49	**Soft tissues**	**0.5**	**0.4**	**0.7**	**0.6**	**0.7**	**0.9**	**1.1**
C50	**Breast**	**0.0**	**0.0**	**0.0**	**0.0**	**0.8**	**10.7**	**25.6**
C51–58	**Female genital organs**	**0.1**	**0.1**	**0.5**	**1.8**	**5.1**	**21.2**	**28.6**
C51–52, C57.7–9	Other female genital	0.0	0.0	0.1	0.0	0.1	0.2	1.1
C53	Cervix uteri	0.0	0.0	0.1	0.3	3.7	18.0	22.3
C54	Corpus uteri	0.0	0.0	0.0	0.0	0.0	0.8	1.5
C55	Uterus, other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C56, C57.0–4, C48.2	Ovary etc.	0.1	0.1	0.3	1.5	1.2	2.1	3.3
C58	Placenta	0.0	0.0	0.0	0.0	0.0	0.1	0.5
C64–68	**Urinary organs**	**2.8**	**0.3**	**0.0**	**0.1**	**1.2**	**1.2**	**1.9**
C64	Kidney (excl. renal pelvis)	2.7	0.3	0.0	0.1	0.2	0.4	1.3
C65–68	Urinary tract	0.1	0.0	0.0	0.0	1.0	0.8	0.6
C69	**Eye**	**0.5**	**0.3**	**0.0**	**0.1**	**0.1**	**0.1**	**0.7**
C70–72	**Central nervous system**	**3.8**	**3.9**	**3.0**	**4.5**	**4.6**	**6.6**	**9.8**
C73	**Thyroid gland**	**0.0**	**0.1**	**0.1**	**2.0**	**5.2**	**7.8**	**10.9**
C37, C74–75	**Other endocrine glands**	**0.4**	**0.3**	**0.5**	**1.9**	**2.9**	**3.1**	**3.3**
C39, C76, C80	**Other or unspecified**	**0.0**	**0.0**	**0.0**	**0.1**	**0.1**	**0.0**	**0.5**
C81–96	**Lymphoid/haematopoietic tissue**	**9.9**	**4.0**	**4.6**	**8.3**	**7.6**	**10.0**	**9.5**
C81	Hodgkin lymphoma	0.1	0.0	0.9	4.1	3.9	3.4	2.8
C82–86, C96	Non-Hodgkin lymphoma	1.4	0.5	0.4	1.0	1.2	1.9	2.7
C88	Immunoproliferative disease	0.0	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	0.2	0.2
C91–95	Leukaemia	8.4	3.5	3.3	3.2	2.5	4.5	3.7

35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
199.9	**298.2**	**447.0**	**634.3**	**796.6**	**1 124.4**	**1 513.0**	**1 845.5**	**2 198.1**	**2 455.0**	**2 517.6**
2.8	**3.2**	**5.1**	**8.5**	**12.8**	**20.8**	**20.5**	**24.8**	**33.9**	**39.0**	**43.8**
0.0	0.2	0.3	0.4	1.2	2.6	3.8	4.2	7.5	12.1	12.2
1.3	1.5	1.3	2.8	4.6	8.5	8.9	10.6	14.8	18.0	20.2
1.1	0.6	1.0	2.4	0.8	1.9	1.9	3.0	4.8	3.6	6.5
0.2	0.6	2.0	2.7	5.4	6.8	5.5	5.5	5.8	4.6	3.4
0.1	0.3	0.4	0.2	0.5	0.4	0.3	0.7	0.0	0.3	0.3
0.0	0.0	0.1	0.0	0.4	0.5	0.1	0.9	1.0	0.3	1.3
18.3	**27.6**	**47.7**	**83.0**	**116.8**	**192.2**	**305.7**	**443.6**	**581.5**	**733.6**	**711.9**
0.0	0.6	1.3	1.5	2.7	5.1	7.4	12.9	16.0	12.5	15.5
1.7	2.1	2.8	6.0	5.8	9.4	15.4	20.6	25.3	39.6	45.6
1.2	1.4	2.0	2.2	4.0	5.5	9.6	10.2	11.0	17.0	11.7
7.4	10.8	19.9	32.9	47.0	82.4	140.6	221.8	309.7	403.0	373.2
4.9	7.5	10.7	22.2	26.8	44.0	53.7	76.0	86.3	98.9	90.9
0.8	1.6	2.6	2.8	4.9	5.2	9.1	8.1	7.5	7.5	6.7
0.1	1.0	1.6	2.4	5.4	6.2	10.6	15.1	20.1	21.3	21.5
0.6	0.2	0.8	2.1	2.6	3.7	9.1	10.2	15.0	24.9	20.7
1.4	1.8	4.3	9.2	15.7	24.3	42.4	58.1	78.0	90.8	102.3
0.1	0.6	1.6	1.5	2.0	6.4	7.8	10.6	12.5	18.0	23.8
2.6	**5.2**	**14.4**	**34.4**	**72.4**	**130.2**	**212.4**	**294.7**	**305.7**	**278.8**	**182.8**
0.4	0.2	0.3	0.5	0.5	1.4	1.2	2.5	1.5	3.9	3.1
0.2	0.0	0.3	1.2	1.8	1.9	2.8	2.8	3.0	2.0	1.3
2.0	5.0	13.8	32.8	69.9	126.5	207.8	289.2	300.7	272.3	176.3
0.0	0.0	0.0	0.0	0.1	0.4	0.7	0.2	0.5	0.7	2.1
1.0	**0.9**	**1.1**	**0.6**	**0.5**	**1.4**	**2.3**	**2.1**	**1.8**	**2.3**	**1.0**
24.2	**40.2**	**47.8**	**55.6**	**62.3**	**71.8**	**85.6**	**104.9**	**113.6**	**123.5**	**128.7**
1.6	**3.7**	**8.4**	**10.2**	**19.9**	**33.9**	**56.0**	**107.2**	**176.8**	**274.9**	**457.8**
0.1	**0.0**	**0.0**	**0.4**	**0.8**	**0.7**	**1.3**	**2.8**	**2.0**	**2.9**	**2.1**
0.0	**0.7**	**0.0**	**0.0**	**0.0**	**0.1**	**0.1**	**0.2**	**0.0**	**0.0**	**0.3**
1.3	**1.6**	**2.1**	**2.2**	**2.7**	**2.6**	**3.2**	**6.3**	**5.5**	**6.2**	**4.7**
56.1	**108.5**	**180.1**	**251.7**	**254.5**	**321.7**	**367.0**	**280.6**	**313.7**	**294.2**	**303.8**
44.6	**47.3**	**56.8**	**78.8**	**105.0**	**139.3**	**172.8**	**203.3**	**217.2**	**204.8**	**183.9**
1.4	2.9	2.8	4.1	5.6	8.6	10.3	11.4	17.1	21.0	37.3
31.9	27.2	24.4	14.8	15.2	14.1	16.1	15.7	12.0	14.4	12.2
4.5	8.9	15.3	32.5	49.3	73.4	87.4	110.4	118.1	108.4	78.2
0.1	0.1	0.3	0.4	0.1	0.5	0.7	1.2	1.5	1.0	4.9
6.1	7.9	13.9	27.0	34.6	42.7	58.3	64.6	68.5	60.0	51.3
0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.3	**7.0**	**11.7**	**21.4**	**35.5**	**52.9**	**78.9**	**109.3**	**130.7**	**136.3**	**137.5**
3.0	4.9	8.3	11.1	12.7	21.3	33.5	44.2	38.6	36.7	33.4
1.3	2.1	3.4	10.3	22.9	31.6	45.4	65.1	92.0	99.6	104.1
0.7	**0.6**	**1.5**	**1.7**	**2.0**	**2.7**	**6.2**	**4.4**	**4.0**	**3.6**	**2.6**
12.1	**15.0**	**25.0**	**27.9**	**32.1**	**40.5**	**45.0**	**52.6**	**52.4**	**56.7**	**37.0**
15.5	**15.9**	**16.3**	**16.6**	**13.8**	**15.3**	**19.6**	**22.5**	**15.0**	**16.1**	**13.5**
3.2	**3.8**	**4.7**	**4.6**	**5.5**	**5.2**	**6.2**	**9.0**	**7.0**	**6.2**	**4.9**
0.7	**0.2**	**1.2**	**2.1**	**4.6**	**6.8**	**9.9**	**13.9**	**28.1**	**41.0**	**81.8**
10.9	**16.7**	**23.0**	**34.7**	**55.4**	**86.3**	**120.1**	**163.2**	**209.1**	**234.9**	**219.6**
2.5	1.9	1.6	1.4	1.7	2.3	3.3	3.0	4.0	5.9	2.1
3.5	6.1	7.0	13.6	21.9	33.6	46.9	66.5	79.0	82.6	65.8
0.0	0.0	0.7	0.5	0.5	2.6	1.9	3.9	6.8	5.2	4.4
0.6	1.2	3.2	5.1	10.5	14.5	19.3	25.0	34.4	39.3	40.9
4.3	7.5	10.5	14.1	20.8	33.2	48.8	64.8	85.0	101.9	106.4

Table 5.13: Average annual number of new cases by primary site and five-year period, 1959–2018, **males**

ICD-10	Site	1959–63	1964–68	1969–73	1974–78	1979–83
C00–96	**All sites**	**4 300**	**5 090**	**5 895**	**7 048**	**8 019**
C00–14	**Mouth, pharynx**	**190**	**191**	**234**	**238**	**243**
C00	Lip	91	92	116	108	95
C02–06	Oral cavity	41	41	54	57	77
C07–08	Salivary glands	12	12	15	16	13
C09–10, C01, C14	Oropharynx	21	21	20	25	29
C11	Nasopharynx	7	10	11	10	10
C12–13	Hypoharynx	18	15	18	22	20
C15–26	**Digestive organs**	**1 675**	**1 820**	**1 902**	**2 076**	**2 283**
C15	Oesophagus	82	76	79	89	88
C16	Stomach	806	794	694	626	599
C17	Small intestine	9	15	17	19	24
C18	Colon	266	347	371	472	591
C19–20	Rectum, rectosigmoid	172	204	292	381	485
C21	Anus	8	6	5	8	9
C22	Liver	22	32	45	54	56
C23–24	Gallbladder, bile ducts	20	25	27	37	37
C25	Pancreas	152	202	244	258	284
C26	Other digestive organs	138	118	129	132	109
C30–34, C38	**Respiratory organs**	**404**	**553**	**720**	**928**	**1 117**
C30–31	Nose, sinuses	19	21	23	25	22
C32	Larynx, epiglottis	40	59	70	81	98
C33–34	Lung, trachea	334	462	612	804	978
C38	Heart, mediastinum and pleura	11	11	16	18	19
C40–41	**Bone**	**12**	**18**	**16**	**25**	**22**
C43	**Melanoma of the skin**	**67**	**92**	**133**	**185**	**235**
C44	**Skin, non-melanoma**	**72**	**76**	**147**	**201**	**248**
C45	**Mesothelioma**	**1**	**2**	**6**	**15**	**22**
C47	**Autonomic nervous system**	**16**	**17**	**12**	**10**	**8**
C48–49	**Soft tissues**	**26**	**34**	**44**	**54**	**53**
C50	**Breast**	**7**	**9**	**8**	**10**	**12**
C60–63	**Male genital organs**	**830**	**1 039**	**1 235**	**1 530**	**1 737**
C61	Prostate	745	952	1 126	1 407	1 590
C62	Testis	65	65	86	98	123
C60, C63	Other male genital	20	22	24	25	25
C64–68	**Urinary organs**	**352**	**477**	**564**	**751**	**879**
C64	Kidney (excl. renal pelvis)	113	144	158	196	224
C65–68	Urinary tract	238	332	406	554	654
C69	**Eye**	**18**	**20**	**22**	**20**	**27**
C70–72	**Central nervous system**	**127**	**145**	**155**	**179**	**205**
C73	**Thyroid gland**	**24**	**29**	**37**	**39**	**49**
C37, C74–75	**Other endocrine glands**	**7**	**11**	**25**	**27**	**39**
C39, C76, C80	**Other or unspecified**	**72**	**109**	**135**	**169**	**203**
C81–96	**Lymphoid/haematopoietic tissue**	**398**	**450**	**499**	**592**	**638**
C81	Hodgkin lymphoma	51	60	63	65	59
C82–86, C96	Non-Hodgkin lymphoma	95	116	119	158	180
C88	Immunoproliferative disease	0	1	3	8	8
C90	Multiple myeloma	77	86	107	138	153
C91–95	Leukaemia	174	188	207	223	237

1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18
8 835	**9 866**	**10 848**	**11 835**	**13 952**	**16 083**	**18 134**
257	**257**	**257**	**257**	**266**	**336**	**407**
93	79	57	49	46	63	54
83	85	92	84	81	102	123
14	22	18	22	19	25	40
31	36	54	66	89	118	159
11	10	11	10	8	11	10
25	25	25	24	22	17	21
2 346	**2 446**	**2 498**	**2 608**	**2 819**	**3 220**	**3 661**
89	106	112	124	145	178	223
541	497	424	359	318	296	285
27	29	39	52	58	87	106
699	816	882	969	1 100	1 258	1 440
514	554	573	624	657	746	817
13	14	20	16	20	23	29
66	62	56	79	89	134	183
51	50	57	58	67	81	75
297	284	280	290	329	356	429
50	36	55	38	36	61	71
1 272	**1 329**	**1 407**	**1 497**	**1 595**	**1 723**	**1 807**
22	23	20	23	23	26	24
110	103	103	111	101	100	92
1 132	1 190	1 270	1 347	1 458	1 588	1 679
8	13	14	17	12	9	12
22	**20**	**22**	**22**	**24**	**29**	**31**
296	**412**	**453**	**475**	**579**	**813**	**1 097**
330	**431**	**526**	**596**	**719**	**869**	**1 160**
34	**38**	**50**	**60**	**66**	**71**	**63**
7	**8**	**5**	**6**	**6**	**6**	**6**
41	**44**	**52**	**52**	**57**	**70**	**64**
12	**13**	**14**	**15**	**17**	**24**	**28**
1 953	**2 360**	**2 887**	**3 323**	**4 386**	**5 037**	**5 435**
1 771	2 142	2 638	3 047	4 069	4 688	5 066
155	193	212	243	273	304	302
28	26	37	32	44	45	67
963	**1 079**	**1 103**	**1 141**	**1 332**	**1 522**	**1 854**
248	271	275	308	386	500	595
715	808	828	833	946	1 022	1 259
23	**27**	**28**	**31**	**33**	**31**	**43**
239	**259**	**303**	**395**	**474**	**507**	**476**
43	**46**	**46**	**51**	**65**	**86**	**122**
42	**45**	**61**	**81**	**111**	**130**	**97**
257	**287**	**295**	**251**	**193**	**150**	**146**
697	**765**	**841**	**973**	**1 210**	**1 460**	**1 638**
48	54	54	64	72	79	94
244	292	338	360	441	524	578
9	13	20	27	33	37	44
156	159	169	164	195	223	254
241	247	260	358	469	596	667

Table 5.14: Average annual number of new cases by primary site and five-year period, 1959–2018, **females**

ICD-10	Site	1959–63	1964–68	1969–73	1974–78	1979–83
C00–96	**All sites**	**4 379**	**5 011**	**5 652**	**6 641**	**7 433**
C00–14	**Mouth, pharynx**	**60**	**74**	**77**	**80**	**95**
C00	Lip	4	7	6	7	11
C02–06	Oral cavity	21	28	35	36	46
C07–08	Salivary glands	9	16	14	11	15
C09–10, C01, C14	Oropharynx	12	11	10	15	11
C11	Nasopharynx	5	4	6	5	5
C12–13	Hypoharynx	10	9	6	6	6
C15–26	**Digestive organs**	**1 417**	**1 506**	**1 644**	**1 860**	**2 097**
C15	Oesophagus	25	30	29	34	31
C16	Stomach	563	515	455	411	410
C17	Small intestine	9	12	17	19	25
C18	Colon	308	395	454	592	729
C19–20	Rectum, rectosigmoid	122	165	236	302	382
C21	Anus	10	11	12	16	23
C22	Liver	14	15	27	29	37
C23–24	Gallbladder, bile ducts	51	54	56	59	78
C25	Pancreas	112	136	178	201	241
C26	Other digestive organs	204	173	180	197	141
C30–34, C38	**Respiratory organs**	**98**	**130**	**182**	**220**	**291**
C30–31	Nose, sinuses	12	14	14	13	12
C32	Larynx, epiglottis	3	6	7	8	12
C33–34	Lung, trachea	77	104	156	192	262
C38	Heart, mediastinum and pleura	6	7	6	7	5
C40–41	**Bone**	**10**	**12**	**13**	**13**	**14**
C43	**Melanoma of the skin**	**74**	**108**	**145**	**237**	**297**
C44	**Skin, non-melanoma**	**45**	**44**	**84**	**136**	**170**
C45	**Mesothelioma**	**1**	**1**	**2**	**3**	**1**
C47	**Autonomic nervous system**	**14**	**11**	**15**	**6**	**6**
C48–49	**Soft tissues**	**23**	**27**	**34**	**44**	**47**
C50	**Breast**	**999**	**1 151**	**1 266**	**1 480**	**1 606**
C51–58	**Female genital organs**	**909**	**1 033**	**1 164**	**1 266**	**1 283**
C51–52, C57.7–9	Other female genital	64	60	63	80	82
C53	Cervix uteri	342	378	419	443	380
C54	Corpus uteri	199	239	292	347	382
C55	Uterus, other	22	15	13	6	8
C56, C57.0–4, C48.2	Ovary etc.	279	336	373	389	427
C58	Placenta	2	4	3	1	4
C64–68	**Urinary organs**	**205**	**239**	**295**	**348**	**403**
C64	Kidney (excl. renal pelvis)	87	96	116	128	147
C65–68	Urinary tract	118	144	179	220	256
C69	**Eye**	**17**	**18**	**17**	**21**	**22**
C70–72	**Central nervous system**	**115**	**129**	**123**	**172**	**206**
C73	**Thyroid gland**	**56**	**71**	**97**	**119**	**145**
C37, C74–75	**Other endocrine glands**	**5**	**9**	**12**	**23**	**43**
C39, C76, C80	**Other or unspecified**	**61**	**83**	**98**	**144**	**189**
C81–96	**Lymphoid/haematopoietic tissue**	**272**	**366**	**386**	**469**	**519**
C81	Hodgkin lymphoma	33	46	42	43	40
C82–86, C96	Non-Hodgkin lymphoma	63	93	101	128	164
C88	Immunoproliferative disease	0	0	2	3	5
C90	Multiple myeloma	44	77	89	118	127
C91–95	Leukaemia	132	149	152	176	184

1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18
8 119	**9 004**	**9 980**	**11 053**	**12 380**	**13 676**	**15 546**
112	**110**	**130**	**131**	**170**	**190**	**233**
15	22	19	15	30	37	40
61	55	62	60	75	75	97
12	15	19	21	22	23	33
14	10	23	24	33	45	52
4	3	2	4	4	5	6
5	6	6	7	6	5	5
2 186	**2 256**	**2 431**	**2 509**	**2 662**	**2 892**	**3 192**
36	38	46	52	55	63	75
365	319	283	232	220	189	171
28	32	33	49	48	63	80
836	920	1 072	1 149	1 243	1 382	1 566
399	445	463	479	514	531	550
24	34	38	37	46	51	67
45	48	36	50	53	77	105
83	73	77	80	79	94	83
290	290	317	328	352	373	413
81	57	66	54	53	70	82
395	**536**	**674**	**853**	**1 082**	**1 310**	**1 591**
16	15	16	14	22	18	16
11	14	21	19	17	19	20
365	502	629	812	1 036	1 266	1 549
4	5	7	7	8	7	5
15	**15**	**16**	**22**	**20**	**23**	**27**
387	**472**	**500**	**532**	**612**	**838**	**1 057**
251	**344**	**434**	**498**	**641**	**765**	**991**
7	**8**	**9**	**11**	**13**	**13**	**13**
7	**9**	**8**	**3**	**5**	**3**	**4**
45	**45**	**45**	**56**	**63**	**61**	**52**
1 762	**1 908**	**2 264**	**2 591**	**2 759**	**2 964**	**3 463**
1 268	**1 375**	**1 404**	**1 469**	**1 584**	**1 645**	**1 772**
83	89	100	91	103	108	126
330	362	335	297	293	302	360
387	443	476	574	682	728	762
5	7	9	10	7	7	11
461	468	481	495	497	497	511
3	7	3	3	3	3	2
425	**465**	**494**	**519**	**579**	**650**	**749**
166	184	195	194	235	246	282
259	281	299	325	344	404	467
21	**28**	**30**	**30**	**31**	**36**	**39**
236	**282**	**358**	**493**	**631**	**609**	**535**
137	**139**	**121**	**135**	**165**	**217**	**285**
39	**47**	**55**	**77**	**126**	**131**	**98**
244	**315**	**308**	**301**	**243**	**175**	**166**
583	**648**	**700**	**822**	**993**	**1 153**	**1 279**
35	34	36	47	48	60	61
219	263	291	335	371	427	455
6	12	11	15	21	30	26
137	139	141	153	158	170	194
186	200	221	272	395	465	544

Table 5.15: Age-standardised (Norwegian standard) incidence rates per 100 000 person-years by primary site and five-year period, 1959–2018, **males**

ICD-10	Site	1959–63	1964–68	1969–73	1974–78	1979–83
C00–96	**All sites**	**341.5**	**374.8**	**402.6**	**454.7**	**490.1**
C00–14	**Mouth, pharynx**	**15.2**	**14.3**	**15.8**	**15.2**	**14.8**
C00	Lip	7.6	7.2	8.1	6.9	6.0
C02–06	Oral cavity	3.2	3.2	3.6	3.8	4.7
C07–08	Salivary glands	0.8	0.8	1.0	1.1	0.8
C09–10, C01, C14	Oropharynx	1.6	1.4	1.3	1.6	1.7
C11	Nasopharynx	0.5	0.6	0.6	0.6	0.5
C12–13	Hypoharynx	1.4	1.1	1.2	1.3	1.2
C15–26	**Digestive organs**	**137.3**	**136.5**	**133.2**	**137.0**	**143.1**
C15	Oesophagus	7.0	5.7	5.5	5.8	5.5
C16	Stomach	66.4	60.3	49.0	41.5	37.8
C17	Small intestine	0.7	1.0	1.1	1.2	1.5
C18	Colon	21.9	25.8	26.3	31.6	36.8
C19–20	Rectum, rectosigmoid	14.1	15.1	20.1	24.9	30.0
C21	Anus	0.6	0.5	0.3	0.5	0.6
C22	Liver	1.6	2.3	2.9	3.3	3.3
C23–24	Gallbladder, bile ducts	1.6	1.8	1.9	2.5	2.3
C25	Pancreas	11.5	14.4	16.4	16.4	17.6
C26	Other digestive organs	11.9	9.5	9.6	9.4	7.7
C30–34, C38	**Respiratory organs**	**28.4**	**36.3**	**44.5**	**55.0**	**64.1**
C30–31	Nose, sinuses	1.6	1.5	1.5	1.5	1.4
C32	Larynx, epiglottis	2.8	3.8	4.4	4.8	5.6
C33–34	Lung, trachea	23.3	30.2	37.7	47.6	56.0
C38	Heart, mediastinum and pleura	0.8	0.8	1.0	1.1	1.1
C40–41	**Bone**	**0.7**	**1.0**	**0.9**	**1.4**	**1.1**
C43	**Melanoma of the skin**	**4.6**	**6.0**	**8.3**	**11.0**	**13.4**
C44	**Skin, non-melanoma**	**6.6**	**7.0**	**12.0**	**15.3**	**17.0**
C45	**Mesothelioma**	**0.1**	**0.1**	**0.4**	**0.9**	**1.2**
C47	**Autonomic nervous system**	**1.0**	**1.0**	**0.7**	**0.5**	**0.4**
C48–49	**Soft tissues**	**1.9**	**2.3**	**2.9**	**3.4**	**3.2**
C50	**Breast**	**0.6**	**0.8**	**0.6**	**0.6**	**0.8**
C60–63	**Male genital organs**	**74.0**	**85.4**	**91.5**	**105.4**	**110.2**
C61	Prostate	68.4	79.6	85.0	98.5	102.6
C62	Testis	3.9	4.0	4.8	5.2	6.0
C60, C63	Other male genital	1.7	1.8	1.7	1.7	1.6
C64–68	**Urinary organs**	**27.0**	**34.2**	**37.1**	**46.8**	**52.7**
C64	Kidney (excl. renal pelvis)	8.2	10.0	9.9	11.8	13.2
C65–68	Urinary tract	18.8	24.2	27.3	35.0	39.5
C69	**Eye**	**1.3**	**1.2**	**1.3**	**1.2**	**1.6**
C70–72	**Central nervous system**	**7.6**	**8.3**	**8.6**	**9.8**	**11.1**
C73	**Thyroid gland**	**1.7**	**1.9**	**2.3**	**2.4**	**2.8**
C37, C74–75	**Other endocrine glands**	**0.4**	**0.6**	**1.4**	**1.4**	**2.1**
C39, C76, C80	**Other or unspecified**	**5.4**	**7.9**	**9.6**	**10.9**	**12.8**
C81–96	**Lymphoid/haematopoietic tissue**	**27.6**	**30.0**	**31.6**	**36.5**	**37.7**
C81	Hodgkin lymphoma	3.3	3.6	3.6	3.7	3.1
C82–86, C96	Non-Hodgkin lymphoma	6.4	7.7	7.5	9.7	10.5
C88	Immunoproliferative disease	0.0	0.1	0.2	0.5	0.5
C90	Multiple myeloma	5.9	6.2	7.2	9.0	9.4
C91–95	Leukaemia	12.0	12.3	13.1	13.7	14.2

1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18
519.0	**562.1**	**602.6**	**636.3**	**700.0**	**727.4**	**729.8**
15.1	**14.6**	**14.3**	**13.5**	**12.9**	**14.7**	**15.9**
5.6	4.5	3.2	2.7	2.4	3.0	2.3
4.9	4.8	5.1	4.4	3.9	4.5	4.8
0.7	1.2	1.0	1.2	0.9	1.1	1.6
1.8	2.0	2.9	3.4	4.2	5.0	6.1
0.6	0.5	0.6	0.5	0.4	0.4	0.4
1.4	1.4	1.4	1.3	1.1	0.7	0.8
140.3	**142.0**	**140.6**	**142.0**	**143.1**	**147.4**	**148.5**
5.3	6.1	6.4	6.7	7.3	8.0	8.9
32.7	29.1	24.0	19.7	16.4	13.6	11.7
1.6	1.6	2.1	2.8	2.8	3.9	4.2
41.9	47.4	49.6	52.8	56.1	58.4	59.1
30.2	31.9	32.1	33.8	33.1	33.6	32.6
0.8	0.8	1.2	0.8	0.9	1.0	1.2
3.9	3.5	3.0	4.2	4.4	6.0	7.4
2.9	2.9	3.2	3.2	3.4	3.7	3.0
17.7	16.5	15.7	15.8	16.7	16.3	17.4
3.4	2.3	3.4	2.2	1.9	2.8	3.0
71.7	**73.7**	**77.3**	**79.4**	**79.5**	**78.4**	**72.9**
1.3	1.3	1.1	1.2	1.2	1.2	0.9
6.2	5.7	5.7	5.9	4.9	4.5	3.7
63.7	66.0	69.7	71.5	72.8	72.3	67.8
0.4	0.7	0.8	0.9	0.6	0.4	0.5
1.0	**1.0**	**1.0**	**1.1**	**1.1**	**1.2**	**1.2**
16.6	**22.6**	**23.8**	**24.1**	**27.8**	**35.8**	**43.7**
21.6	**26.3**	**31.1**	**33.9**	**38.6**	**42.9**	**51.5**
1.9	**2.1**	**2.7**	**3.2**	**3.4**	**3.3**	**2.6**
0.3	**0.4**	**0.2**	**0.3**	**0.3**	**0.2**	**0.2**
2.3	**2.3**	**2.7**	**2.6**	**2.6**	**3.1**	**2.5**
0.7	**0.8**	**0.8**	**0.9**	**0.8**	**1.1**	**1.1**
116.2	**135.4**	**162.3**	**181.7**	**222.3**	**225.5**	**213.9**
107.4	125.3	151.2	169.5	208.5	211.4	199.8
7.2	8.6	9.1	10.3	11.6	12.1	11.3
1.7	1.5	2.0	1.8	2.2	2.0	2.7
56.8	**61.9**	**61.4**	**61.5**	**66.9**	**69.4**	**75.1**
14.3	15.2	14.9	16.1	18.8	21.8	23.1
42.6	46.6	46.5	45.4	48.1	47.6	52.0
1.3	**1.4**	**1.5**	**1.6**	**1.6**	**1.3**	**1.7**
12.7	**13.7**	**15.3**	**19.2**	**21.9**	**21.5**	**18.5**
2.4	**2.4**	**2.4**	**2.5**	**2.9**	**3.6**	**4.7**
2.2	**2.3**	**3.0**	**3.9**	**5.1**	**5.4**	**3.7**
15.6	**17.0**	**17.0**	**14.0**	**10.2**	**7.3**	**6.4**
40.1	**42.4**	**45.1**	**51.0**	**59.0**	**65.3**	**65.6**
2.4	2.5	2.5	3.0	3.2	3.2	3.6
13.9	15.9	18.1	18.7	21.3	23.2	23.0
0.5	0.7	1.1	1.5	1.7	1.7	1.8
9.4	9.3	9.5	8.8	9.7	10.2	10.3
13.8	13.9	14.1	19.1	23.1	26.9	26.9

Table 5.16: Age-standardised (Norwegian standard) incidence rates per 100 000 person-years by primary site and five-year period, 1959–2018, **females**

ICD-10	Site	1959–63	1964–68	1969–73	1974–78	1979–83
C00–96	**All sites**	**287.2**	**303.3**	**317.2**	**350.8**	**369.8**
C00–14	**Mouth, pharynx**	**4.2**	**4.7**	**4.4**	**4.2**	**4.8**
C00	Lip	0.3	0.5	0.3	0.4	0.6
C02–06	Oral cavity	1.5	1.9	2.0	1.9	2.3
C07–08	Salivary glands	0.6	0.9	0.8	0.6	0.8
C09–10, C01, C14	Oropharynx	0.9	0.7	0.6	0.8	0.6
C11	Nasopharynx	0.3	0.2	0.3	0.2	0.3
C12–13	Hypoharynx	0.6	0.5	0.3	0.3	0.3
C15–26	**Digestive organs**	**100.8**	**96.4**	**93.8**	**97.4**	**101.0**
C15	Oesophagus	1.8	2.1	1.7	1.7	1.5
C16	Stomach	41.0	33.6	26.0	21.7	19.6
C17	Small intestine	0.5	0.7	1.0	1.0	1.2
C18	Colon	21.4	24.9	25.7	30.8	35.1
C19–20	Rectum, rectosigmoid	8.3	10.1	13.4	15.7	18.5
C21	Anus	0.6	0.7	0.6	0.8	1.1
C22	Liver	0.9	1.0	1.5	1.5	1.8
C23–24	Gallbladder, bile ducts	3.4	3.4	3.1	3.0	3.7
C25	Pancreas	7.4	8.2	10.0	10.2	11.4
C26	Other digestive organs	15.5	11.7	10.8	11.0	7.0
C30–34, C38	**Respiratory organs**	**6.4**	**7.8**	**10.0**	**11.3**	**14.3**
C30–31	Nose, sinuses	0.9	0.9	0.8	0.7	0.6
C32	Larynx, epiglottis	0.2	0.3	0.4	0.4	0.6
C33–34	Lung, trachea	5.0	6.2	8.5	9.8	12.9
C38	Heart, mediastinum and pleura	0.4	0.4	0.3	0.4	0.2
C40–41	**Bone**	**0.5**	**0.6**	**0.6**	**0.6**	**0.7**
C43	**Melanoma of the skin**	**4.5**	**6.5**	**8.3**	**13.0**	**15.5**
C44	**Skin, non-melanoma**	**3.3**	**3.0**	**5.2**	**7.7**	**8.6**
C45	**Mesothelioma**	**0.1**	**0.1**	**0.1**	**0.2**	**0.1**
C47	**Autonomic nervous system**	**0.8**	**0.6**	**0.8**	**0.3**	**0.3**
C48–49	**Soft tissues**	**1.4**	**1.6**	**1.9**	**2.3**	**2.3**
C50	**Breast**	**63.4**	**68.3**	**71.1**	**79.3**	**82.5**
C51–58	**Female genital organs**	**55.6**	**59.8**	**64.6**	**67.7**	**65.8**
C51–52, C57.7–9	Other female genital	4.3	3.7	3.5	4.2	4.0
C53	Cervix uteri	20.4	22.0	24.0	24.7	19.9
C54	Corpus uteri	12.1	13.6	15.7	18.1	19.6
C55	Uterus, other	1.6	1.1	0.9	0.3	0.4
C56, C57.0–4, C48.2	Ovary etc.	17.1	19.3	20.4	20.4	21.7
C58	Placenta	0.1	0.3	0.1	0.1	0.2
C64–68	**Urinary organs**	**13.7**	**14.5**	**16.3**	**17.8**	**19.2**
C64	Kidney (excl. renal pelvis)	5.5	5.6	6.1	6.5	7.0
C65–68	Urinary tract	8.2	8.9	10.1	11.3	12.2
C69	**Eye**	**1.0**	**1.0**	**0.9**	**1.1**	**1.1**
C70–72	**Central nervous system**	**6.7**	**7.2**	**6.6**	**8.9**	**10.4**
C73	**Thyroid gland**	**3.5**	**4.3**	**5.5**	**6.4**	**7.3**
C37, C74–75	**Other endocrine glands**	**0.3**	**0.5**	**0.7**	**1.2**	**2.2**
C39, C76, C80	**Other or unspecified**	**4.1**	**5.1**	**5.6**	**7.5**	**9.0**
C81–96	**Lymphoid/haematopoietic tissue**	**16.8**	**21.2**	**21.0**	**24.0**	**24.7**
C81	Hodgkin lymphoma	2.0	2.6	2.2	2.2	1.9
C82–86, C96	Non-Hodgkin lymphoma	4.0	5.5	5.6	6.6	8.0
C88	Immunoproliferative disease	0.0	0.0	0.1	0.2	0.2
C90	Multiple myeloma	2.8	4.6	4.8	5.9	6.0
C91–95	Leukaemia	8.0	8.5	8.2	9.1	8.6

1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18
382.3	**408.4**	**440.3**	**472.5**	**505.6**	**526.0**	**555.3**
5.2	**5.1**	**5.7**	**5.7**	**6.9**	**7.3**	**8.3**
0.7	1.0	0.8	0.6	1.2	1.3	1.4
2.8	2.5	2.7	2.5	3.0	2.9	3.4
0.6	0.7	0.8	0.9	0.9	0.9	1.2
0.7	0.5	1.1	1.1	1.4	1.8	1.9
0.2	0.1	0.1	0.2	0.2	0.2	0.2
0.2	0.3	0.3	0.3	0.3	0.2	0.2
98.0	**96.9**	**101.1**	**101.5**	**104.1**	**107.7**	**110.6**
1.6	1.6	1.9	2.1	2.1	2.4	2.6
16.3	13.5	11.4	9.2	8.5	6.9	5.9
1.3	1.4	1.4	2.1	2.0	2.4	2.9
37.6	39.7	44.6	46.5	48.4	51.1	53.8
18.1	19.4	19.8	19.8	20.6	20.2	19.5
1.1	1.6	1.7	1.6	1.9	2.0	2.4
2.0	2.0	1.6	2.0	2.0	2.9	3.7
3.7	3.1	3.1	3.2	3.0	3.5	2.9
12.8	12.2	13.0	13.0	13.6	13.8	14.2
3.7	2.4	2.6	2.0	1.9	2.5	2.8
18.7	**25.1**	**30.9**	**38.0**	**45.4**	**50.9**	**56.0**
0.7	0.7	0.7	0.6	0.9	0.7	0.6
0.5	0.6	1.0	0.9	0.7	0.7	0.7
17.2	23.5	28.9	36.2	43.5	49.2	54.5
0.2	0.2	0.3	0.3	0.3	0.3	0.2
0.7	**0.7**	**0.7**	**0.9**	**0.9**	**0.9**	**1.0**
19.4	**22.5**	**22.9**	**23.4**	**25.6**	**32.9**	**38.6**
11.4	**14.5**	**17.4**	**19.0**	**23.5**	**26.6**	**32.6**
0.3	**0.3**	**0.4**	**0.5**	**0.5**	**0.5**	**0.5**
0.3	**0.4**	**0.3**	**0.1**	**0.2**	**0.1**	**0.2**
2.1	**2.1**	**1.9**	**2.4**	**2.6**	**2.4**	**1.9**
86.1	**89.5**	**105.3**	**117.0**	**117.3**	**117.8**	**128.2**
62.3	**65.8**	**64.6**	**64.5**	**66.2**	**64.6**	**64.6**
3.8	3.9	4.1	3.6	4.0	4.0	4.4
16.4	17.3	15.5	13.0	12.3	12.2	13.9
19.2	21.6	22.3	25.6	28.8	28.6	27.3
0.2	0.3	0.4	0.4	0.2	0.3	0.4
22.6	22.4	22.1	21.8	20.7	19.5	18.5
0.1	0.3	0.1	0.1	0.1	0.1	0.1
19.2	**20.2**	**20.7**	**21.4**	**23.1**	**24.5**	**26.3**
7.6	8.1	8.4	8.0	9.5	9.5	10.1
11.6	12.1	12.4	13.3	13.5	15.0	16.2
1.0	**1.3**	**1.3**	**1.2**	**1.3**	**1.4**	**1.4**
11.6	**13.3**	**16.3**	**21.8**	**26.7**	**24.1**	**19.8**
6.6	**6.6**	**5.4**	**5.9**	**7.0**	**8.8**	**10.8**
1.9	**2.3**	**2.5**	**3.4**	**5.4**	**5.3**	**3.7**
10.9	**13.4**	**12.5**	**11.5**	**9.0**	**6.1**	**5.5**
26.6	**28.5**	**30.1**	**34.3**	**40.0**	**44.1**	**45.3**
1.5	1.5	1.6	2.0	2.1	2.5	2.3
10.2	11.9	12.8	14.3	15.2	16.5	16.1
0.3	0.5	0.5	0.6	0.8	1.2	0.9
6.1	5.9	5.8	6.2	6.2	6.4	6.8
8.4	8.7	9.4	11.2	15.7	17.6	19.2

Table 5.17: Average annual number of new cases by primary site and county, 2014–2018, **males**

ICD-10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud	Vestfold
C00–96	**All sites**	**18 134**	**1 195**	**1 943**	**1 643**	**782**	**702**	**979**	**981**
C00–14	**Mouth, pharynx**	**407**	**26**	**44**	**43**	**16**	**16**	**23**	**23**
C00	Lip	54	3	4	3	3	2	2	2
C02–06	Oral cavity	123	7	16	12	4	5	7	10
C07–08	Salivary glands	40	3	5	3	2	2	3	1
C09–10, C01, C14	Oropharynx	159	11	17	20	6	6	10	8
C11	Nasopharynx	10	0	0	1	1	0	1	0
C12–13	Hypoharynx	21	2	2	3	0	1	1	2
C15–26	**Digestive organs**	**3 661**	**220**	**392**	**329**	**169**	**145**	**201**	**194**
C15	Oesophagus	223	14	24	19	10	12	13	11
C16	Stomach	285	17	27	22	11	10	16	13
C17	Small intestine	106	6	14	9	4	3	4	4
C18	Colon	1 440	93	159	120	64	56	76	79
C19–20	Rectum, rectosigmoid	817	43	89	74	38	36	47	41
C21	Anus	29	3	3	5	1	1	1	1
C22	Liver	183	9	20	21	10	6	11	11
C23–24	Gallbladder, bile ducts	75	6	7	9	5	2	2	3
C25	Pancreas	429	24	42	42	21	16	26	25
C26	Other digestive organs	71	4	7	9	4	2	5	6
C30–34, C38	**Respiratory organs**	**1 807**	**121**	**159**	**148**	**83**	**68**	**96**	**93**
C30–31	Nose, sinuses	24	1	1	3	2	1	1	1
C32	Larynx, epiglottis	92	3	8	10	4	3	5	4
C33–34	Lung, trachea	1 679	115	147	134	77	63	90	86
C38	Heart, mediastinum and pleura	12	1	2	1	0	0	0	1
C40–41	**Bone**	**31**	**2**	**2**	**4**	**1**	**2**	**1**	**2**
C43	**Melanoma of the skin**	**1 097**	**71**	**137**	**105**	**44**	**39**	**65**	**77**
C44	**Skin, non-melanoma**	**1 160**	**83**	**119**	**90**	**45**	**34**	**65**	**71**
C45	**Mesothelioma**	**63**	**3**	**7**	**5**	**2**	**2**	**4**	**5**
C47	**Autonomic nervous system**	**6**	**1**	**0**	**1**	**0**	**0**	**1**	**1**
C48–49	**Soft tissues**	**64**	**2**	**6**	**7**	**3**	**3**	**4**	**4**
C50	**Breast**	**28**	**2**	**4**	**3**	**1**	**1**	**0**	**1**
C60–63	**Male genital organs**	**5 435**	**403**	**610**	**470**	**231**	**226**	**282**	**273**
C61	Prostate	5 066	378	573	424	218	213	267	253
C62	Testis	302	20	30	40	11	11	12	16
C60, C63	Other male genital	67	5	7	6	2	2	3	4
C64–68	**Urinary organs**	**1 854**	**111**	**200**	**168**	**82**	**69**	**99**	**109**
C64	Kidney (excl. renal pelvis)	595	38	63	56	26	22	32	35
C65–68	Urinary tract	1 259	73	137	112	56	48	67	74
C69	**Eye**	**43**	**5**	**4**	**4**	**2**	**1**	**2**	**2**
C70–72	**Central nervous system**	**476**	**26**	**50**	**52**	**17**	**17**	**30**	**23**
C73	**Thyroid gland**	**122**	**6**	**9**	**18**	**5**	**3**	**5**	**6**
C37, C74–75	**Other endocrine glands**	**97**	**7**	**12**	**8**	**3**	**3**	**5**	**6**
C39, C76, C80	**Other or unspecified**	**146**	**8**	**16**	**11**	**5**	**6**	**10**	**7**
C81–96	**Lymphoid/haematopoietic tissue**	**1 638**	**99**	**173**	**178**	**71**	**67**	**85**	**84**
C81	Hodgkin lymphoma	94	6	9	12	5	4	4	4
C82–86, C96	Non-Hodgkin lymphoma	578	36	59	59	26	24	28	27
C88	Immunoproliferative disease	44	1	7	5	1	1	2	5
C90	Multiple myeloma	254	15	29	28	14	12	12	14
C91–95	Leukaemia	667	42	70	74	25	26	39	35

Telemark	Aust-Agder	Vest-Agder	Rogaland	Hordaland	Sogn og Fjordane	Møre og Romsdal	Trøndelag	Nordland	Troms	Finnmark
683	**430**	**645**	**1 624**	**1 796**	**420**	**1 024**	**1 522**	**906**	**609**	**251**
17	**10**	**12**	**32**	**41**	**8**	**23**	**31**	**22**	**14**	**7**
3	2	2	7	6	1	4	5	3	2	0
4	3	5	9	12	2	7	7	6	4	2
2	1	1	2	4	0	3	4	2	1	0
7	4	4	11	15	3	8	12	10	6	3
0	0	0	1	1	0	1	1	0	0	1
1	0	0	2	3	1	1	2	1	0	0
126	**76**	**116**	**292**	**373**	**94**	**215**	**325**	**211**	**129**	**54**
9	5	8	20	19	5	12	18	14	8	4
9	5	10	19	32	10	20	29	16	14	6
4	2	4	9	13	3	5	13	5	3	1
50	28	45	117	150	35	89	132	87	44	16
27	18	21	69	89	22	47	69	47	29	12
1	0	0	3	3	1	1	2	1	1	0
6	3	5	16	13	4	11	16	9	9	3
3	2	1	6	8	1	5	8	3	4	1
17	10	19	30	40	12	23	35	25	14	9
1	3	2	5	6	1	3	4	4	3	1
69	**50**	**73**	**170**	**184**	**44**	**103**	**139**	**105**	**67**	**36**
1	0	1	3	3	0	1	1	2	1	1
4	3	3	9	11	3	6	7	6	3	1
64	47	68	158	170	42	96	130	96	63	34
0	0	1	1	1	0	1	0	1	0	0
1	**1**	**0**	**2**	**4**	**1**	**1**	**4**	**1**	**1**	**1**
42	**28**	**38**	**101**	**117**	**20**	**37**	**104**	**35**	**28**	**8**
59	**37**	**63**	**104**	**135**	**30**	**47**	**82**	**52**	**33**	**11**
3	**2**	**5**	**6**	**9**	**0**	**2**	**4**	**3**	**1**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2	**2**	**3**	**5**	**4**	**1**	**4**	**6**	**4**	**3**	**1**
1	**1**	**2**	**3**	**4**	**0**	**1**	**2**	**1**	**1**	**0**
198	**130**	**193**	**534**	**503**	**118**	**333**	**452**	**235**	**174**	**70**
187	123	177	498	463	112	315	423	218	161	63
8	5	14	30	31	5	16	24	13	11	4
3	1	2	5	9	0	2	5	4	2	2
70	**42**	**62**	**138**	**167**	**43**	**123**	**156**	**112**	**79**	**25**
22	16	24	42	54	16	34	56	31	20	9
48	26	38	96	113	27	88	100	81	58	16
2	**1**	**1**	**4**	**3**	**1**	**2**	**4**	**3**	**2**	**1**
19	**10**	**17**	**48**	**46**	**10**	**21**	**41**	**25**	**17**	**7**
4	**2**	**3**	**10**	**14**	**3**	**6**	**10**	**6**	**8**	**3**
4	**2**	**3**	**12**	**13**	**5**	**1**	**6**	**4**	**2**	**1**
6	**5**	**5**	**10**	**15**	**4**	**9**	**12**	**9**	**5**	**3**
61	**32**	**47**	**154**	**161**	**38**	**95**	**144**	**77**	**45**	**24**
4	2	3	7	10	1	7	8	6	3	2
20	12	18	53	55	14	38	51	30	20	8
1	1	0	2	3	1	5	5	2	1	1
11	4	5	21	26	10	12	20	13	4	5
25	13	21	71	66	12	34	60	26	18	8

Table 5.18: Average annual number of new cases by primary site and county, 2014–2018, **females**

ICD-10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud	Vestfold
C00–96	**All sites**	**15 546**	**997**	**1 716**	**1 636**	**651**	**625**	**863**	**841**
C00–14	**Mouth, pharynx**	**233**	**13**	**25**	**29**	**8**	**11**	**12**	**13**
C00	Lip	40	2	2	4	1	1	2	2
C02–06	Oral cavity	97	4	11	12	3	4	6	6
C07–08	Salivary glands	33	1	5	4	1	2	2	2
C09–10, C01, C14	Oropharynx	52	4	6	7	2	3	2	4
C11	Nasopharynx	6	0	1	1	0	0	0	0
C12–13	Hypoharynx	5	1	1	1	0	0	0	1
C15–26	**Digestive organs**	**3 192**	**206**	**339**	**312**	**136**	**134**	**168**	**169**
C15	Oesophagus	75	4	8	10	3	5	4	5
C16	Stomach	171	9	15	18	6	7	9	9
C17	Small intestine	80	5	8	8	4	4	4	3
C18	Colon	1 566	103	170	139	62	64	84	82
C19–20	Rectum, rectosigmoid	550	35	58	57	23	23	27	32
C21	Anus	67	4	8	9	3	3	3	4
C22	Liver	105	6	9	12	9	3	4	5
C23–24	Gallbladder, bile ducts	83	4	10	9	5	5	5	4
C25	Pancreas	413	28	46	41	16	16	22	22
C26	Other digestive organs	82	6	8	10	4	3	5	3
C30–34, C38	**Respiratory organs**	**1 591**	**117**	**161**	**155**	**69**	**64**	**82**	**89**
C30–31	Nose, sinuses	16	1	2	2	1	1	2	1
C32	Larynx, epiglottis	20	2	1	2	0	1	1	1
C33–34	Lung, trachea	1 549	114	157	150	68	61	79	87
C38	Heart, mediastinum and pleura	5	0	1	1	0	0	0	0
C40–41	**Bone**	**27**	**2**	**3**	**4**	**1**	**1**	**1**	**1**
C43	**Melanoma of the skin**	**1 057**	**61**	**128**	**108**	**43**	**37**	**58**	**70**
C44	**Skin, non-melanoma**	**991**	**69**	**102**	**83**	**32**	**27**	**61**	**52**
C45	**Mesothelioma**	**13**	**1**	**2**	**1**	**1**	**2**	**1**	**0**
C47	**Autonomic nervous system**	**4**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
C48–49	**Soft tissues**	**52**	**3**	**5**	**7**	**3**	**2**	**4**	**2**
C50	**Breast**	**3 463**	**215**	**429**	**403**	**133**	**131**	**198**	**179**
C51–58	**Female genital organs**	**1 772**	**122**	**193**	**197**	**85**	**88**	**101**	**86**
C51–52, C57.7–9	Other female genital	126	6	12	13	7	5	7	7
C53	Cervix uteri	360	27	40	50	16	17	17	19
C54	Corpus uteri	762	54	78	77	39	38	52	34
C55	Uterus, other	11	1	1	0	0	0	1	0
C56, C57.0–4, C48.2	Ovary etc.	511	34	62	56	23	27	24	26
C58	Placenta	2	0	0	0	0	0	1	0
C64–68	**Urinary organs**	**749**	**49**	**72**	**70**	**34**	**31**	**42**	**46**
C64	Kidney (excl. renal pelvis)	282	20	30	24	11	11	17	17
C65–68	Urinary tract	467	29	42	47	23	20	24	29
C69	**Eye**	**39**	**2**	**5**	**5**	**3**	**1**	**2**	**2**
C70–72	**Central nervous system**	**535**	**31**	**57**	**50**	**20**	**26**	**28**	**34**
C73	**Thyroid gland**	**285**	**19**	**27**	**45**	**9**	**8**	**11**	**13**
C37, C74–75	**Other endocrine glands**	**98**	**5**	**12**	**12**	**4**	**4**	**6**	**6**
C39, C76, C80	**Other or unspecified**	**166**	**11**	**14**	**15**	**11**	**8**	**10**	**7**
C81–96	**Lymphoid/haematopoietic tissue**	**1 279**	**71**	**143**	**140**	**58**	**52**	**78**	**69**
C81	Hodgkin lymphoma	61	3	6	8	3	1	4	2
C82–86, C96	Non-Hodgkin lymphoma	455	28	47	43	24	16	25	25
C88	Immunoproliferative disease	26	0	3	3	1	1	1	1
C90	Multiple myeloma	194	9	24	19	10	10	11	12
C91–95	Leukaemia	544	31	62	66	20	24	36	30

Telemark	Aust-Agder	Vest-Agder	Rogaland	Hordaland	Sogn og Fjordane	Møre og Romsdal	Trøndelag	Nordland	Troms	Finnmark
585	**370**	**564**	**1 281**	**1 520**	**331**	**777**	**1 288**	**779**	**514**	**208**
9	**5**	**6**	**19**	**23**	**4**	**11**	**19**	**13**	**8**	**4**
2	1	2	4	6	1	2	5	1	1	0
3	2	3	8	9	1	6	6	7	4	2
2	1	1	2	3	0	2	1	1	2	0
2	1	1	4	4	1	1	7	3	2	1
0	0	0	1	1	0	0	1	0	0	0
0	0	0	0	0	0	0	0	0	0	0
111	**72**	**117**	**244**	**317**	**82**	**182**	**277**	**179**	**111**	**38**
2	2	3	3	5	1	3	6	6	3	1
5	3	8	12	18	6	12	14	10	6	3
2	2	4	6	8	2	4	10	4	1	1
55	38	59	122	163	42	96	129	86	54	16
21	8	18	44	57	12	31	52	32	17	5
2	2	1	5	6	1	3	4	4	3	1
3	3	3	8	9	2	4	12	7	4	2
3	1	3	9	7	2	3	9	4	2	1
14	10	15	31	36	12	22	33	22	17	7
2	3	3	4	7	2	4	7	5	4	1
58	**43**	**64**	**131**	**141**	**34**	**78**	**131**	**90**	**52**	**31**
1	0	0	1	0	1	0	1	1	1	0
1	0	0	2	1	0	1	2	1	1	1
57	43	63	128	138	32	76	128	88	50	30
0	0	0	0	1	1	0	0	0	0	0
1	**0**	**2**	**2**	**2**	**1**	**2**	**2**	**2**	**1**	**0**
45	**28**	**42**	**99**	**116**	**20**	**32**	**100**	**32**	**28**	**8**
46	**33**	**62**	**93**	**130**	**25**	**38**	**56**	**43**	**27**	**11**
0	**0**	**1**	**1**	**1**	**0**	**1**	**1**	**1**	**0**	**0**
0	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**
2	**1**	**2**	**3**	**4**	**1**	**3**	**6**	**2**	**2**	**1**
129	**80**	**109**	**280**	**323**	**70**	**191**	**288**	**161**	**102**	**41**
67	**41**	**57**	**146**	**167**	**31**	**79**	**141**	**86**	**59**	**27**
5	3	5	10	14	2	6	10	9	3	2
12	8	9	29	36	6	14	26	16	12	6
30	18	28	59	70	14	32	68	36	25	11
1	1	0	1	1	0	1	0	1	0	0
19	11	15	46	46	9	27	36	24	18	8
0	0	0	0	0	0	0	0	0	0	0
25	**15**	**26**	**56**	**61**	**14**	**43**	**65**	**48**	**37**	**15**
8	7	10	20	25	6	14	28	18	11	5
16	8	16	35	37	8	29	37	30	26	10
1	**1**	**1**	**3**	**3**	**1**	**1**	**3**	**2**	**2**	**1**
17	**12**	**16**	**51**	**58**	**10**	**22**	**42**	**31**	**22**	**6**
15	**5**	**9**	**16**	**29**	**5**	**15**	**26**	**16**	**14**	**5**
3	**3**	**3**	**9**	**14**	**3**	**3**	**5**	**3**	**2**	**1**
8	**5**	**4**	**15**	**15**	**3**	**8**	**10**	**11**	**7**	**3**
48	**26**	**42**	**113**	**114**	**28**	**68**	**114**	**61**	**40**	**16**
2	2	2	6	6	1	4	5	2	3	0
16	9	16	39	42	9	26	41	25	16	8
1	0	1	3	4	0	1	3	2	0	0
7	4	4	14	16	6	10	17	12	5	2
22	11	19	51	45	12	26	48	20	16	6

Table 5.19: Age-standardised (Norwegian standard) incidence rates per 100 000 person-years by primary site and county, 2014–2018, **males**

ICD-10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud	Vestfold
C00–96	**All sites**	**729.8**	**797.4**	**721.2**	**686.1**	**688.3**	**654.5**	**707.5**	**781.7**
C00–14	**Mouth, pharynx**	**15.9**	**16.9**	**15.2**	**16.9**	**14.0**	**14.7**	**16.3**	**17.8**
C00	Lip	2.3	2.1	1.5	1.4	2.3	2.3	1.6	1.6
C02–06	Oral cavity	4.8	5.0	5.5	4.8	3.5	4.7	4.9	7.6
C07–08	Salivary glands	1.6	1.8	1.9	1.2	1.5	1.5	2.1	1.0
C09–10, C01, C14	Oropharynx	6.1	6.7	5.5	8.1	5.5	5.6	6.8	5.8
C11	Nasopharynx	0.4	0.3	0.1	0.4	0.9	0.0	0.4	0.3
C12–13	Hypoharynx	0.8	1.0	0.7	1.1	0.3	0.6	0.4	1.5
C15–26	**Digestive organs**	**148.5**	**147.4**	**145.6**	**140.3**	**147.7**	**135.5**	**145.6**	**155.1**
C15	Oesophagus	8.9	9.1	8.7	8.1	8.6	11.6	8.6	8.7
C16	Stomach	11.7	11.2	10.2	9.2	9.4	9.3	12.0	11.0
C17	Small intestine	4.2	3.9	4.7	3.5	4.1	3.1	3.1	3.2
C18	Colon	59.1	63.4	60.4	52.2	56.3	52.4	55.4	62.9
C19–20	Rectum, rectosigmoid	32.6	28.3	32.2	30.5	32.7	32.8	33.8	33.2
C21	Anus	1.2	2.0	1.1	1.9	1.0	1.2	0.6	1.1
C22	Liver	7.4	6.3	7.4	8.6	9.3	5.8	7.5	8.5
C23–24	Gallbladder, bile ducts	3.0	4.1	2.7	3.9	4.0	2.1	1.5	2.4
C25	Pancreas	17.4	16.1	15.3	18.6	18.4	14.8	19.0	19.4
C26	Other digestive organs	3.0	3.1	2.9	3.7	3.9	2.5	4.0	4.8
C30–34, C38	**Respiratory organs**	**72.9**	**80.2**	**59.6**	**64.1**	**71.2**	**61.2**	**68.7**	**72.8**
C30–31	Nose, sinuses	0.9	0.7	0.5	1.2	1.5	0.5	0.5	1.1
C32	Larynx, epiglottis	3.7	2.3	3.1	4.2	3.3	3.1	3.6	3.4
C33–34	Lung, trachea	67.8	76.3	55.1	58.2	66.1	57.2	64.6	67.4
C38	Heart, mediastinum and pleura	0.5	0.9	0.8	0.6	0.3	0.4	0.0	0.9
C40–41	**Bone**	**1.2**	**1.3**	**0.7**	**1.2**	**1.1**	**1.9**	**0.9**	**1.6**
C43	**Melanoma of the skin**	**43.7**	**48.0**	**50.4**	**42.3**	**40.1**	**36.7**	**46.3**	**61.2**
C44	**Skin, non-melanoma**	**51.5**	**60.5**	**50.1**	**45.4**	**41.1**	**33.1**	**51.8**	**62.3**
C45	**Mesothelioma**	**2.6**	**2.3**	**2.4**	**2.2**	**2.1**	**1.5**	**3.1**	**3.7**
C47	**Autonomic nervous system**	**0.2**	**0.4**	**0.1**	**0.2**	**0.0**	**0.0**	**0.7**	**0.5**
C48–49	**Soft tissues**	**2.5**	**1.6**	**2.0**	**2.4**	**3.4**	**2.8**	**2.7**	**2.9**
C50	**Breast**	**1.1**	**1.2**	**1.4**	**1.1**	**0.9**	**0.5**	**0.1**	**0.9**
C60–63	**Male genital organs**	**213.9**	**263.4**	**222.7**	**192.8**	**200.9**	**208.7**	**198.7**	**213.1**
C61	Prostate	199.8	245.7	209.6	179.8	186.9	193.9	188.0	196.4
C62	Testis	11.3	14.3	10.2	10.1	11.9	12.8	8.6	13.4
C60, C63	Other male genital	2.7	3.5	2.8	2.9	2.1	2.0	2.1	3.3
C64–68	**Urinary organs**	**75.1**	**74.1**	**74.7**	**71.1**	**71.8**	**64.3**	**72.6**	**86.3**
C64	Kidney (excl. renal pelvis)	23.1	25.0	22.3	21.9	22.5	20.2	22.5	27.3
C65–68	Urinary tract	52.0	49.1	52.5	49.2	49.3	44.1	50.1	59.0
C69	**Eye**	**1.7**	**3.1**	**1.3**	**1.5**	**2.0**	**1.3**	**1.3**	**1.9**
C70–72	**Central nervous system**	**18.5**	**17.4**	**17.4**	**18.3**	**16.1**	**16.8**	**21.1**	**17.9**
C73	**Thyroid gland**	**4.7**	**3.9**	**3.1**	**6.2**	**4.5**	**3.1**	**3.7**	**4.6**
C37, C74–75	**Other endocrine glands**	**3.7**	**4.3**	**4.1**	**3.0**	**3.1**	**3.1**	**3.9**	**4.9**
C39, C76, C80	**Other or unspecified**	**6.4**	**6.0**	**6.4**	**4.8**	**5.0**	**6.0**	**7.8**	**5.9**
C81–96	**Lymphoid/haematopoietic tissue**	**65.6**	**65.4**	**63.8**	**72.3**	**63.5**	**63.2**	**62.3**	**68.0**
C81	Hodgkin lymphoma	3.6	3.9	2.9	3.6	4.7	3.8	3.2	3.0
C82–86, C96	Non-Hodgkin lymphoma	23.0	23.8	21.4	24.2	23.1	22.5	20.5	21.6
C88	Immunoproliferative disease	1.8	0.4	2.7	2.0	0.8	0.8	1.2	4.1
C90	Multiple myeloma	10.3	9.7	10.8	11.9	12.3	11.0	8.9	11.3
C91–95	Leukaemia	26.9	27.6	26.1	30.6	22.6	25.0	28.5	28.0

Telemark	Aust-Agder	Vest-Agder	Rogaland	Hordaland	Sogn og Fjordane	Møre og Romsdal	Trøndelag	Nordland	Troms	Finnmark
730.8	**732.8**	**772.3**	**829.3**	**763.4**	**700.1**	**731.8**	**692.2**	**681.5**	**745.6**	**656.8**
17.8	**17.9**	**14.4**	**15.7**	**17.0**	**12.5**	**16.2**	**14.0**	**16.2**	**16.7**	**17.1**
3.3	2.8	2.1	4.1	2.7	1.9	2.6	2.2	2.0	2.8	1.1
4.4	5.7	5.8	4.1	5.0	3.9	4.7	3.4	4.4	5.3	5.2
1.8	2.3	0.9	1.0	1.8	0.7	2.4	2.0	1.8	1.1	0.5
6.8	6.5	4.8	5.1	6.0	4.4	5.4	5.2	7.0	6.8	8.5
0.2	0.0	0.2	0.4	0.3	0.0	0.7	0.5	0.3	0.5	1.4
1.3	0.6	0.5	0.9	1.2	1.5	0.4	0.7	0.7	0.2	0.5
135.1	**128.1**	**140.6**	**152.6**	**160.0**	**156.9**	**155.3**	**149.9**	**156.7**	**160.1**	**141.4**
9.2	7.4	9.2	9.8	8.1	9.3	8.3	8.5	10.5	9.2	10.3
10.0	7.3	11.9	10.0	13.9	17.7	14.6	13.2	12.1	17.3	15.5
3.9	3.7	4.6	4.7	5.5	4.6	3.4	5.8	4.0	3.8	4.8
54.1	47.1	56.1	62.7	64.9	58.9	64.6	61.5	64.6	55.3	41.6
28.5	30.6	24.9	35.0	37.5	36.1	33.7	31.0	34.3	35.2	30.1
1.3	0.9	0.4	1.3	1.3	1.3	0.9	0.9	1.0	0.9	0.5
6.0	5.5	6.3	7.9	5.4	7.1	7.7	7.4	6.5	12.2	8.6
2.7	3.5	1.5	3.0	3.4	1.7	3.6	3.5	2.2	4.2	2.9
18.2	17.3	22.7	15.7	17.3	19.1	16.3	16.2	18.9	18.1	25.2
1.3	4.9	2.9	2.4	2.6	1.3	2.2	2.0	2.7	3.9	2.1
72.8	**85.3**	**87.3**	**88.9**	**78.7**	**73.1**	**73.3**	**62.8**	**78.2**	**83.2**	**91.3**
1.2	0.3	1.3	1.3	1.1	0.4	0.6	0.4	1.3	1.8	2.0
3.7	4.5	3.4	4.4	4.6	4.2	4.1	3.1	4.5	3.0	2.8
67.6	80.2	81.4	82.8	72.5	68.5	68.0	59.1	71.9	78.0	85.4
0.2	0.3	1.1	0.4	0.4	0.0	0.6	0.1	0.5	0.5	1.1
1.1	**0.9**	**0.4**	**0.8**	**1.5**	**1.1**	**1.0**	**1.7**	**1.1**	**1.3**	**2.2**
44.2	**50.2**	**44.8**	**50.7**	**49.5**	**34.0**	**26.2**	**46.5**	**26.0**	**33.2**	**20.1**
67.0	**68.2**	**83.0**	**60.3**	**63.1**	**51.8**	**37.1**	**40.9**	**41.4**	**42.9**	**32.1**
2.9	**3.3**	**5.9**	**3.2**	**4.0**	**0.3**	**1.1**	**1.8**	**2.5**	**0.7**	**0.9**
0.5	**0.0**	**0.0**	**0.2**	**0.2**	**0.8**	**0.1**	**0.1**	**0.3**	**0.0**	**0.0**
2.5	**2.9**	**3.1**	**2.2**	**1.7**	**1.0**	**2.9**	**2.8**	**2.9**	**4.3**	**3.7**
0.9	**1.6**	**2.8**	**1.5**	**1.8**	**0.7**	**1.0**	**1.0**	**0.9**	**0.9**	**0.5**
206.1	**213.0**	**224.0**	**263.8**	**209.2**	**193.3**	**232.4**	**200.8**	**174.3**	**205.6**	**180.6**
193.6	201.4	206.6	248.6	193.6	182.6	218.7	188.2	159.7	190.0	162.3
9.9	9.2	15.5	12.4	11.6	9.9	12.0	10.5	11.2	13.3	11.3
2.6	2.4	1.9	2.8	4.0	0.7	1.7	2.1	3.4	2.4	6.9
74.5	**73.8**	**74.6**	**72.0**	**71.3**	**71.7**	**87.7**	**71.3**	**85.7**	**98.8**	**69.2**
23.0	26.5	27.2	20.3	21.8	26.9	24.3	24.7	23.8	24.0	21.3
51.5	47.4	47.4	51.7	49.5	44.8	63.4	46.6	61.9	74.8	47.9
1.8	**1.0**	**1.5**	**2.1**	**1.1**	**1.2**	**1.3**	**1.9**	**2.2**	**3.0**	**1.5**
21.6	**16.2**	**19.0**	**22.2**	**18.8**	**17.2**	**14.7**	**18.5**	**19.4**	**20.7**	**16.9**
4.3	**4.2**	**3.9**	**4.8**	**5.6**	**5.3**	**4.6**	**4.5**	**4.7**	**9.3**	**7.7**
4.0	**2.9**	**3.0**	**5.2**	**5.2**	**8.4**	**1.0**	**2.6**	**3.1**	**2.9**	**1.4**
7.4	**9.1**	**7.5**	**5.8**	**7.0**	**6.2**	**6.8**	**5.8**	**7.2**	**7.1**	**8.5**
66.3	**54.1**	**56.5**	**77.4**	**67.8**	**64.7**	**69.0**	**65.4**	**58.8**	**54.8**	**61.7**
4.2	4.3	3.4	2.8	3.8	2.0	4.9	3.3	4.6	3.0	5.7
21.4	19.7	22.1	25.7	23.2	23.0	27.1	23.2	22.5	24.3	20.6
1.3	0.9	0.5	1.2	1.5	2.3	3.6	2.4	1.7	0.7	2.6
11.8	7.4	5.6	10.8	11.4	16.0	8.8	9.0	10.2	5.7	11.6
27.6	21.7	24.9	36.8	27.9	21.5	24.6	27.5	19.9	21.1	21.1

Table 5.20: Age-standardised (Norwegian standard) incidence rates per 100 000 person-years by primary site and county, 2014–2018, **females**

ICD-10	Site	Norway	Østfold	Akershus	Oslo	Hedmark	Oppland	Buskerud	Vestfold
C00–96	**All sites**	**555.3**	**585.3**	**555.4**	**554.5**	**520.7**	**533.9**	**551.0**	**579.7**
C00–14	**Mouth, pharynx**	**8.3**	**7.3**	**8.2**	**10.0**	**6.4**	**8.7**	**7.7**	**9.2**
C00	Lip	1.4	1.3	0.8	1.3	0.7	1.0	0.9	1.1
C02–06	Oral cavity	3.4	2.3	3.6	4.1	2.6	3.6	3.9	4.0
C07–08	Salivary glands	1.2	0.8	1.5	1.3	1.2	1.5	1.2	1.0
C09–10, C01, C14	Oropharynx	1.9	2.3	1.9	2.4	1.8	2.1	1.4	2.5
C11	Nasopharynx	0.2	0.1	0.3	0.4	0.0	0.2	0.3	0.1
C12–13	Hypoharynx	0.2	0.4	0.2	0.4	0.1	0.2	0.0	0.4
C15–26	**Digestive organs**	**110.6**	**116.5**	**108.8**	**106.6**	**102.5**	**107.9**	**104.2**	**111.7**
C15	Oesophagus	2.6	2.3	2.6	3.4	2.4	4.0	2.6	3.4
C16	Stomach	5.9	5.3	4.8	6.1	4.7	5.5	5.7	5.9
C17	Small intestine	2.9	3.0	2.6	2.5	3.5	3.2	2.6	1.9
C18	Colon	53.8	57.8	54.4	47.4	46.2	50.3	51.4	53.9
C19–20	Rectum, rectosigmoid	19.5	20.4	18.6	19.4	18.4	19.4	17.1	21.5
C21	Anus	2.4	2.5	2.7	3.0	2.6	2.5	2.3	2.5
C22	Liver	3.7	3.5	2.9	4.0	6.7	2.9	2.6	3.4
C23–24	Gallbladder, bile ducts	2.9	2.0	3.1	3.1	3.4	4.3	3.0	2.5
C25	Pancreas	14.2	16.2	14.7	14.3	11.5	13.0	13.7	14.5
C26	Other digestive organs	2.8	3.6	2.6	3.5	2.9	2.9	3.3	2.2
C30–34, C38	**Respiratory organs**	**56.0**	**66.7**	**51.9**	**54.3**	**53.1**	**51.6**	**51.4**	**59.5**
C30–31	Nose, sinuses	0.6	0.5	0.6	0.6	1.0	1.1	1.0	0.9
C32	Larynx, epiglottis	0.7	1.3	0.5	0.9	0.3	0.8	0.6	0.8
C33–34	Lung, trachea	54.5	64.9	50.6	52.7	51.8	49.4	49.7	57.7
C38	Heart, mediastinum and pleura	0.2	0.0	0.2	0.2	0.0	0.4	0.1	0.1
C40–41	**Bone**	**1.0**	**1.1**	**0.9**	**1.2**	**1.3**	**0.9**	**0.7**	**0.6**
C43	**Melanoma of the skin**	**38.6**	**37.3**	**41.4**	**35.6**	**36.6**	**33.5**	**38.1**	**50.6**
C44	**Skin, non-melanoma**	**32.6**	**37.3**	**32.2**	**26.8**	**22.1**	**19.5**	**35.6**	**32.0**
C45	**Mesothelioma**	**0.5**	**0.3**	**0.5**	**0.5**	**0.6**	**1.4**	**0.5**	**0.3**
C47	**Autonomic nervous system**	**0.2**	**0.0**	**0.3**	**0.1**	**0.0**	**0.0**	**0.3**	**0.0**
C48–49	**Soft tissues**	**1.9**	**1.7**	**1.7**	**2.2**	**2.6**	**1.5**	**2.7**	**1.8**
C50	**Breast**	**128.2**	**131.2**	**139.5**	**138.8**	**112.6**	**119.6**	**131.0**	**128.5**
C51–58	**Female genital organs**	**64.6**	**74.1**	**62.9**	**65.8**	**71.4**	**78.7**	**65.7**	**61.1**
C51–52, C57.7–9	Other female genital	4.4	3.4	4.0	4.5	5.3	4.5	4.2	4.7
C53	Cervix uteri	13.9	18.5	13.3	14.6	15.6	18.9	12.1	15.5
C54	Corpus uteri	27.3	31.5	25.2	27.1	31.5	31.9	32.8	23.0
C55	Uterus, other	0.4	0.5	0.3	0.1	0.1	0.0	0.4	0.2
C56, C57.0–4, C48.2	Ovary etc.	18.5	20.3	20.1	19.4	18.9	23.0	15.7	17.6
C58	Placenta	0.1	0.0	0.0	0.0	0.0	0.2	0.5	0.0
C64–68	**Urinary organs**	**26.3**	**28.0**	**23.2**	**24.2**	**25.7**	**25.3**	**26.3**	**31.0**
C64	Kidney (excl. renal pelvis)	10.1	11.5	9.6	8.0	8.6	9.3	11.3	11.7
C65–68	Urinary tract	16.2	16.5	13.6	16.2	17.1	16.0	15.0	19.3
C69	**Eye**	**1.4**	**1.5**	**1.5**	**1.7**	**2.7**	**0.6**	**1.4**	**1.3**
C70–72	**Central nervous system**	**19.8**	**19.2**	**18.8**	**16.8**	**16.3**	**24.1**	**19.1**	**25.3**
C73	**Thyroid gland**	**10.8**	**12.3**	**9.0**	**13.8**	**9.4**	**8.2**	**7.2**	**10.2**
C37, C74–75	**Other endocrine glands**	**3.7**	**3.4**	**4.0**	**3.8**	**3.9**	**3.3**	**3.9**	**4.7**
C39, C76, C80	**Other or unspecified**	**5.5**	**6.1**	**4.4**	**4.7**	**7.8**	**6.2**	**5.9**	**4.8**
C81–96	**Lymphoid/haematopoietic tissue**	**45.3**	**41.3**	**46.2**	**47.5**	**45.6**	**42.9**	**49.4**	**47.0**
C81	Hodgkin lymphoma	2.3	1.7	2.2	2.7	3.1	1.4	2.8	1.4
C82–86, C96	Non-Hodgkin lymphoma	16.1	16.2	15.0	14.9	18.5	13.4	16.0	16.5
C88	Immunoproliferative disease	0.9	0.1	1.1	1.1	0.4	0.5	0.7	0.8
C90	Multiple myeloma	6.8	5.5	7.8	6.5	7.6	7.5	6.7	8.0
C91–95	Leukaemia	19.2	17.9	20.1	22.3	15.9	20.2	23.1	20.2

Telemark	Aust-Agder	Vest-Agder	Rogaland	Hordaland	Sogn og Fjordane	Møre og Romsdal	Trøndelag	Nordland	Troms	Finnmark
559.2	**578.3**	**585.2**	**581.2**	**570.1**	**516.5**	**516.1**	**534.1**	**541.9**	**581.2**	**520.2**
8.4	**7.0**	**6.8**	**8.7**	**8.6**	**5.7**	**7.2**	**8.0**	**8.5**	**9.4**	**10.0**
1.8	1.8	2.1	2.0	2.2	1.7	0.9	1.7	0.8	0.6	0.9
3.1	2.9	2.9	3.6	3.2	2.0	3.6	2.4	4.6	4.1	5.0
1.8	1.1	0.6	0.9	1.4	0.2	1.8	0.6	0.8	2.0	1.0
1.6	1.2	0.9	1.9	1.4	1.4	0.8	2.9	2.0	2.7	3.0
0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.3	0.1	0.0	0.0
0.1	0.0	0.2	0.0	0.1	0.0	0.1	0.1	0.2	0.0	0.0
100.2	**109.1**	**117.7**	**110.0**	**115.4**	**119.2**	**114.1**	**110.2**	**117.7**	**120.6**	**92.1**
2.1	2.7	2.8	1.5	1.9	1.8	2.2	2.5	3.6	2.9	1.9
4.7	4.5	8.4	5.5	6.6	8.6	7.3	5.8	6.5	6.4	8.4
2.0	3.1	4.2	2.9	3.1	3.1	2.7	4.3	2.6	0.8	2.9
49.4	57.4	59.3	54.7	58.9	60.4	59.4	50.7	56.3	58.5	39.6
18.8	13.0	17.7	20.0	21.2	18.4	20.3	21.0	21.7	19.2	11.6
2.6	2.5	1.5	2.4	2.5	1.3	1.9	1.7	2.9	3.3	2.0
2.8	4.2	2.8	3.4	3.3	2.9	2.6	4.9	4.4	4.6	5.2
2.7	1.2	2.8	3.8	2.5	2.7	1.6	3.6	2.5	2.4	1.5
13.0	16.0	15.3	13.9	13.1	17.3	13.9	13.0	14.1	18.8	16.9
2.1	4.6	2.9	2.0	2.4	2.7	2.1	2.7	3.1	3.7	1.9
54.3	**66.2**	**66.0**	**60.4**	**52.4**	**52.4**	**50.8**	**52.8**	**60.5**	**56.9**	**75.2**
0.5	0.4	0.4	0.5	0.1	1.4	0.2	0.5	0.4	0.9	0.5
0.6	0.0	0.4	0.9	0.6	0.8	0.6	0.7	0.9	1.4	1.4
53.2	65.8	65.2	58.8	51.3	49.4	49.9	51.6	59.1	54.4	73.2
0.0	0.0	0.0	0.1	0.4	0.8	0.2	0.0	0.1	0.2	0.0
1.1	**0.6**	**2.2**	**0.7**	**0.9**	**1.2**	**1.4**	**0.8**	**1.5**	**1.3**	**0.0**
45.5	**45.7**	**45.3**	**45.2**	**44.3**	**33.7**	**22.2**	**43.3**	**23.5**	**32.7**	**20.3**
39.5	**48.7**	**60.3**	**40.7**	**44.3**	**34.2**	**21.9**	**21.4**	**26.8**	**28.9**	**27.6**
0.4	**0.0**	**0.6**	**0.3**	**0.3**	**0.0**	**0.7**	**0.4**	**0.6**	**0.5**	**0.0**
0.5	**0.0**	**0.2**	**0.1**	**0.3**	**0.0**	**0.3**	**0.3**	**0.0**	**0.0**	**0.0**
2.1	**0.9**	**2.1**	**1.2**	**1.7**	**1.3**	**1.9**	**2.8**	**1.2**	**2.1**	**1.6**
128.9	**129.8**	**118.1**	**128.3**	**127.3**	**118.5**	**134.5**	**124.1**	**119.2**	**119.9**	**104.5**
67.6	**64.9**	**60.6**	**66.5**	**64.3**	**50.4**	**54.4**	**59.8**	**62.7**	**67.9**	**69.7**
4.3	4.3	4.7	4.5	5.3	2.6	3.4	4.1	5.9	3.8	5.5
13.9	13.1	10.9	12.9	14.3	11.0	11.1	11.9	13.8	15.4	16.6
29.1	27.7	28.8	27.2	26.7	21.9	21.2	28.3	25.1	28.2	26.8
0.7	1.9	0.0	0.5	0.5	0.5	0.3	0.2	0.6	0.2	0.5
19.3	17.9	16.0	21.5	17.5	14.3	18.3	15.1	17.2	20.2	19.6
0.3	0.0	0.2	0.0	0.0	0.0	0.2	0.2	0.2	0.0	0.7
22.7	**23.0**	**26.1**	**25.5**	**22.6**	**20.0**	**27.4**	**26.5**	**31.9**	**41.5**	**37.9**
8.3	11.0	10.5	9.3	9.3	9.7	9.4	11.8	12.2	12.7	12.8
14.4	12.0	15.7	16.2	13.4	10.3	18.0	14.6	19.6	28.9	25.1
0.8	**1.6**	**0.9**	**1.3**	**1.4**	**0.8**	**0.9**	**1.5**	**1.6**	**1.9**	**2.2**
17.2	**19.9**	**17.4**	**23.4**	**22.4**	**17.0**	**15.9**	**18.3**	**23.2**	**26.2**	**16.4**
15.6	**7.8**	**9.5**	**7.2**	**11.4**	**8.8**	**11.1**	**11.4**	**12.7**	**17.4**	**12.5**
2.7	**5.4**	**3.6**	**4.2**	**5.3**	**6.2**	**2.3**	**2.2**	**2.4**	**2.3**	**2.1**
6.8	**7.9**	**4.1**	**6.7**	**5.2**	**4.0**	**4.7**	**3.9**	**6.2**	**7.1**	**7.1**
45.0	**39.9**	**43.8**	**50.9**	**42.0**	**43.2**	**44.4**	**46.7**	**41.4**	**44.5**	**40.9**
2.4	3.1	2.3	2.5	2.5	1.3	3.2	2.2	1.5	3.4	1.1
15.1	14.3	16.8	17.7	15.8	13.0	17.4	16.7	17.1	18.2	19.0
0.8	0.0	0.6	1.5	1.3	0.6	0.7	1.3	1.0	0.2	0.0
6.4	6.2	4.4	6.3	5.9	10.0	6.5	6.9	8.1	5.1	5.9
20.3	16.3	19.7	22.9	16.5	18.3	16.6	19.6	13.8	17.6	15.1

Table 5.21: Average annual number of new cases for selected cancers by stage and period of diagnosis, 1959–2018, **males**

ICD-10	Site	Stage	1959–63	1964–68	1969–73	1974–78
C00–14	Mouth, pharynx	**Total**	**190**	**191**	**234**	**238**
		Localised	130	133	150	155
		Regional	45	43	56	65
		Distant	6	7	10	9
		Unknown	9	8	17	8
C15	Oesophagus	**Total**	**82**	**76**	**79**	**89**
		Localised	50	47	36	43
		Regional	11	9	16	19
		Distant	16	17	21	22
		Unknown	5	4	7	5
C16	Stomach	**Total**	**806**	**794**	**694**	**626**
		Localised	218	216	163	178
		Regional	166	164	159	139
		Distant	356	340	312	270
		Unknown	67	74	60	39
C18	Colon	**Total**	**266**	**347**	**371**	**472**
		Localised	107	138	130	151
		Regional	68	82	96	160
		Distant	78	112	126	145
		Unknown	14	15	20	16
C19–20	Rectum, rectosigmoid	**Total**	**172**	**204**	**292**	**381**
		Localised	83	98	132	178
		Regional	41	58	80	114
		Distant	36	42	67	79
		Unknown	11	7	13	9
C22	Liver	**Total**	**22**	**32**	**45**	**54**
		Localised	10	17	19	24
		Regional	1	1	2	6
		Distant	9	13	18	21
		Unknown	2	1	5	2
C23–24	Gallbladder, bile ducts	**Total**	**20**	**25**	**27**	**37**
		Localised	7	9	8	11
		Regional	4	4	4	9
		Distant	8	11	12	16
		Unknown	1	1	2	1
C25	Pancreas	**Total**	**152**	**202**	**244**	**258**
		Localised	46	57	48	44
		Regional	17	26	32	34
		Distant	79	109	139	156
		Unknown	10	9	24	24
C33–34	Lung, trachea	**Total**	**334**	**462**	**612**	**804**
		Localised	101	161	195	260
		Regional	71	94	116	145
		Distant	139	188	254	344
		Unknown	23	19	47	55
C43	Melanoma of the skin	**Total**	**67**	**92**	**133**	**185**
		Localised	43	60	90	152
		Regional	9	12	16	16
		Distant	13	16	17	14
		Unknown	1	3	10	4
C61	Prostate	**Total**	**745**	**952**	**1 126**	**1 407**
		Localised	445	637	719	947
		Regional	34	31	52	76
		Distant	200	218	246	293
		Unknown	67	66	108	91

1979–83	1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18	2014–18 (%)
243	**257**	**257**	**257**	**257**	**266**	**336**	**407**	***100.0***
146	151	135	110	84	84	133	141	*34.6*
86	82	91	91	104	128	159	200	*49.2*
7	7	10	12	12	13	15	13	*3.1*
4	16	21	43	57	40	29	53	*13.1*
88	**89**	**106**	**112**	**124**	**145**	**178**	**223**	***100.0***
43	32	27	19	21	27	29	26	*11.7*
19	23	25	21	29	42	50	65	*29.3*
22	25	31	30	39	43	55	53	*23.6*
5	10	23	42	35	32	44	79	*35.4*
599	**541**	**497**	**424**	**359**	**318**	**296**	**285**	***100.0***
181	144	128	68	54	60	64	41	*14.5*
162	153	136	129	107	93	86	83	*29.1*
223	190	162	138	129	110	96	82	*28.8*
33	55	72	88	69	57	49	79	*27.6*
591	**699**	**816**	**882**	**969**	**1 100**	**1 258**	**1 440**	***100.0***
168	203	267	180	162	185	194	272	*18.9*
249	278	290	416	471	567	662	727	*50.5*
153	190	214	235	253	281	345	342	*23.7*
21	27	45	50	83	68	58	100	*6.9*
485	**514**	**554**	**573**	**624**	**657**	**746**	**817**	***100.0***
217	200	231	182	151	149	148	207	*25.3*
168	197	190	225	257	307	383	379	*46.4*
90	91	100	109	127	133	157	147	*18.0*
11	26	33	57	88	68	58	84	*10.3*
56	**66**	**62**	**56**	**79**	**89**	**134**	**183**	***100.0***
30	30	28	16	26	29	50	44	*24.1*
4	5	4	3	5	11	16	17	*9.4*
15	19	10	12	18	21	33	39	*21.2*
8	12	20	26	29	29	36	83	*45.4*
37	**51**	**50**	**57**	**58**	**67**	**81**	**75**	***100.0***
12	18	15	8	11	11	13	10	*13.5*
8	10	9	12	13	24	36	34	*45.4*
14	15	15	16	15	18	24	15	*19.9*
3	8	11	20	18	14	8	16	*21.2*
284	**297**	**284**	**280**	**290**	**329**	**356**	**429**	***100.0***
54	56	55	19	20	24	31	30	*6.9*
37	38	26	35	48	79	77	92	*21.4*
159	156	144	130	152	180	194	198	*46.2*
34	46	59	96	70	45	54	109	*25.5*
978	**1 132**	**1 190**	**1 270**	**1 347**	**1 458**	**1 588**	**1 679**	***100.0***
328	327	343	216	185	184	275	288	*17.2*
171	243	218	300	351	433	456	472	*28.1*
410	442	463	512	629	678	724	666	*39.7*
68	120	166	242	182	162	132	252	*15.0*
235	**296**	**412**	**453**	**475**	**579**	**813**	**1 097**	***100.0***
192	253	346	353	271	271	696	916	*83.5*
16	16	19	14	19	26	48	90	*8.2*
18	17	26	24	34	30	31	41	*3.7*
9	11	22	62	152	252	38	51	*4.6*
1 590	**1 771**	**2 142**	**2 638**	**3 047**	**4 069**	**4 688**	**5 066**	***100.0***
1 070	1 097	1 255	964	1 020	1 826	2 339	2 043	*40.3*
62	60	78	107	151	368	1 243	1 358	*26.8*
358	486	438	409	391	415	409	348	*6.9*
100	128	371	1 159	1 486	1 459	697	1 316	*26.0*

Continued on next page

Table 5.21: Average annual number of new cases for selected cancers by stage and period of diagnosis, 1959–2018, **males** (Continued)

ICD-10	Site	Stage	1959–63	1964–68	1969–73	1974–78
C62	Testis	**Total**	**65**	**65**	**86**	**98**
		Localised	43	44	48	56
		Regional	3	4	11	20
		Distant	16	16	24	21
		Unknown	2	1	3	1
C64	Kidney (excl. renal pelvis)	**Total**	**113**	**144**	**158**	**196**
		Localised	59	76	68	80
		Regional	13	19	29	46
		Distant	37	45	57	67
		Unknown	5	4	4	4
C65–68	Urinary tract	**Total**	**238**	**332**	**406**	**554**
		Localised	195	278	313	442
		Regional	20	30	48	64
		Distant	16	19	27	36
		Unknown	7	5	18	13
C70–72	Central nervous system	**Total**	**127**	**145**	**155**	**179**
		Non-malignant	39	37	47	52
		Malignant	88	108	107	127
C73	Thyroid gland	**Total**	**24**	**29**	**37**	**39**
		Localised	6	7	15	19
		Regional	12	14	13	14
		Distant	6	7	8	5
		Unknown	1	0	1	1

1979–83	1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18	2014–18 (%)
123	**155**	**193**	**212**	**243**	**273**	**304**	**302**	***100.0***
63	97	130	134	134	161	245	244	*80.6*
33	34	35	35	37	47	31	41	*13.6*
23	23	24	27	29	29	26	16	*5.4*
3	1	4	15	43	36	3	1	*0.5*
224	**248**	**271**	**275**	**308**	**386**	**500**	**595**	***100.0***
93	108	133	120	121	171	341	406	*68.2*
46	52	38	43	42	38	43	62	*10.3*
78	78	78	70	74	89	88	72	*12.1*
8	10	22	42	70	88	29	56	*9.4*
654	**715**	**808**	**828**	**833**	**946**	**1 022**	**1 259**	***100.0***
542	572	670	540	430	508	865	1 106	*87.9*
66	60	49	47	55	80	74	82	*6.5*
33	31	32	32	39	43	42	41	*3.3*
14	52	57	208	309	315	41	30	*2.4*
205	**239**	**259**	**303**	**395**	**474**	**507**	**476**	***100.0***
63	73	98	140	197	263	268	220	*46.3*
141	167	161	163	199	210	238	255	*53.7*
49	**43**	**46**	**46**	**51**	**65**	**86**	**122**	***100.0***
22	21	23	19	18	19	39	48	*39.6*
19	14	13	15	20	30	36	49	*40.1*
7	7	8	9	7	9	5	8	*6.2*
1	1	2	3	7	8	6	17	*14.1*

Table 5.22: Average annual number of new cases for selected cancers by stage and period of diagnosis, 1959–2018, **females**

ICD-10	Site	Stage	1959–63	1964–68	1969–73	1974–78
C00–14	Mouth, pharynx	**Total**	**60**	**74**	**77**	**80**
		Localised	34	44	40	44
		Regional	19	27	27	28
		Distant	4	2	5	4
		Unknown	4	1	5	5
C15	Oesophagus	**Total**	**25**	**30**	**29**	**34**
		Localised	17	20	15	20
		Regional	4	3	5	7
		Distant	3	5	7	5
		Unknown	2	2	3	2
C16	Stomach	**Total**	**563**	**515**	**455**	**411**
		Localised	151	141	100	106
		Regional	97	93	89	91
		Distant	235	220	217	178
		Unknown	79	61	48	36
C18	Colon	**Total**	**308**	**395**	**454**	**592**
		Localised	124	158	160	190
		Regional	75	94	131	204
		Distant	89	124	138	175
		Unknown	20	19	25	22
C19–20	Rectum, rectosigmoid	**Total**	**122**	**165**	**236**	**302**
		Localised	57	76	108	139
		Regional	30	44	67	87
		Distant	28	37	53	67
		Unknown	8	8	8	10
C22	Liver	**Total**	**14**	**15**	**27**	**29**
		Localised	6	7	11	15
		Regional	0	1	2	1
		Distant	6	7	12	12
		Unknown	2	1	3	1
C23–24	Gallbladder, bile ducts	**Total**	**51**	**54**	**56**	**59**
		Localised	14	15	13	16
		Regional	10	8	9	10
		Distant	25	30	30	30
		Unknown	3	1	3	4
C25	Pancreas	**Total**	**112**	**136**	**178**	**201**
		Localised	32	44	41	42
		Regional	10	14	21	25
		Distant	60	70	95	116
		Unknown	10	8	21	19
C33–34	Lung, trachea	**Total**	**77**	**104**	**156**	**192**
		Localised	20	33	50	55
		Regional	9	14	23	30
		Distant	40	52	71	92
		Unknown	7	6	11	14
C43	Melanoma of the skin	**Total**	**74**	**108**	**145**	**237**
		Localised	59	85	110	212
		Regional	7	6	11	9
		Distant	6	11	11	13
		Unknown	2	6	13	3

1979–83	1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18	2014–18 (%)
95	**112**	**110**	**130**	**131**	**170**	**190**	**233**	***100.0***
54	61	67	64	46	63	89	104	*44.9*
34	40	30	37	45	66	77	90	*38.5*
3	4	4	5	6	5	6	5	*2.1*
4	7	10	24	35	36	18	34	*14.5*
31	**36**	**38**	**46**	**52**	**55**	**63**	**75**	***100.0***
14	16	12	8	11	11	17	10	*13.6*
7	9	6	8	9	14	15	17	*22.1*
7	5	8	9	12	12	13	13	*17.3*
3	6	11	20	20	19	17	35	*46.9*
410	**365**	**319**	**283**	**232**	**220**	**189**	**171**	***100.0***
125	106	92	53	41	42	41	24	*14.1*
108	94	77	73	61	56	43	39	*22.8*
141	120	102	89	80	79	65	47	*27.3*
35	45	47	68	51	43	40	61	*35.7*
729	**836**	**920**	**1 072**	**1 149**	**1 243**	**1 382**	**1 566**	***100.0***
207	232	313	219	199	217	215	274	*17.5*
300	356	341	510	563	651	755	818	*52.2*
188	208	212	256	272	297	336	343	*21.9*
34	39	54	87	114	77	76	131	*8.4*
382	**399**	**445**	**463**	**479**	**514**	**531**	**550**	***100.0***
172	159	196	147	128	121	120	144	*26.2*
129	142	139	177	190	234	254	242	*43.9*
68	71	75	82	88	98	105	98	*17.8*
12	27	36	57	72	61	52	66	*12.0*
37	**45**	**48**	**36**	**50**	**53**	**77**	**105**	***100.0***
16	19	18	8	12	14	29	22	*21.0*
1	3	3	2	6	8	10	12	*11.8*
16	12	10	8	10	12	18	22	*20.8*
4	10	17	19	22	19	20	49	*46.5*
78	**83**	**73**	**77**	**80**	**79**	**94**	**83**	***100.0***
24	26	20	14	9	15	11	11	*12.7*
15	17	13	14	16	20	33	32	*37.9*
34	26	25	23	28	27	38	23	*27.3*
6	13	16	26	27	17	12	18	*22.1*
241	**290**	**290**	**317**	**328**	**352**	**373**	**413**	***100.0***
48	66	64	24	26	37	40	36	*8.7*
31	38	27	35	46	78	79	88	*21.2*
129	139	122	138	155	171	187	169	*41.0*
32	47	78	120	101	66	66	120	*29.1*
262	**365**	**502**	**629**	**812**	**1 036**	**1 266**	**1 549**	***100.0***
75	95	125	104	117	156	260	309	*19.9*
38	66	99	134	194	276	329	405	*26.1*
125	162	205	259	389	493	566	599	*38.7*
24	42	72	132	112	110	112	237	*15.3*
297	**387**	**472**	**500**	**532**	**612**	**838**	**1 057**	***100.0***
263	353	427	399	324	305	753	936	*88.5*
13	12	12	10	14	17	33	58	*5.5*
11	12	14	19	21	19	17	23	*2.2*
9	10	19	73	173	272	35	40	*3.8*

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Table 5.22: Average annual number of new cases for selected cancers by stage and period of diagnosis, 1959–2018, **females** (Continued)

ICD-10	Site	Stage	1959–63	1964–68	1969–73	1974–78
C50	Breast	**Total**	**999**	**1 151**	**1 266**	**1 480**
		I	456	551	608	773
		II	354	368	404	426
		III	64	92	85	113
		IV	96	109	112	117
		Unknown	30	31	57	50
C53	Cervix uteri [1]	**Total**	**342**	**378**	**419**	**443**
		I	~~141~~	~~177~~	~~220~~	~~246~~
		II	~~116~~	~~134~~	~~119~~	~~107~~
		III	~~52~~	~~42~~	~~55~~	~~60~~
		IV	~~24~~	~~21~~	~~21~~	~~24~~
		Unknown	~~8~~	~~5~~	~~6~~	~~6~~
C54	Corpus uteri	**Total**	**199**	**239**	**292**	**347**
		Localised	163	194	239	282
		Regional	10	14	15	32
		Distant	20	30	33	30
		Unknown	6	2	5	3
C56, C57.0–4, C48.2	Ovary etc.	**Total**	**279**	**336**	**373**	**389**
		Localised	88	108	130	114
		Regional	18	17	26	25
		Distant	157	205	207	240
		Unknown	15	6	10	10
C64	Kidney (excl. renal pelvis)	**Total**	**87**	**96**	**116**	**128**
		Localised	49	53	58	63
		Regional	10	10	20	24
		Distant	24	30	33	37
		Unknown	4	3	5	3
C65–68	Urinary tract	**Total**	**118**	**144**	**179**	**220**
		Localised	75	96	113	152
		Regional	14	22	30	31
		Distant	19	20	25	27
		Unknown	10	6	11	11
C70–72	Central nervous system	**Total**	**115**	**129**	**123**	**172**
		Non-malignant	50	61	53	73
		Malignant	64	67	70	99
C73	Thyroid gland	**Total**	**56**	**71**	**97**	**119**
		Localised	23	38	52	74
		Regional	19	23	29	30
		Distant	12	10	11	13
		Unknown	2	1	5	2

1 The Cancer in Norway reports from 2015 to 2018 contained an error in staging of cervical cancer, and the numbers given in this table are incorrect. For more details see: https://www.kreftregisteret.no/Generelt/Rapporter/Cancer-in-Norway/erratum-for-cancer-in-norway/

1979–83	1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18	2014–18 (%)
1 606	**1 762**	**1 908**	**2 264**	**2 591**	**2 759**	**2 964**	**3 463**	***100.0***
874	573	294	640	853	1 101	1 192	1 458	*42.1*
467	617	714	842	1 037	1 117	1 013	1 185	*34.2*
85	122	104	139	162	199	351	390	*11.3*
105	116	130	128	133	119	105	134	*3.9*
77	334	667	515	406	223	304	296	*8.6*
380	**330**	**362**	**335**	**297**	**293**	**302**	**360**	***100.0***
~~219~~	~~182~~	~~216~~	~~202~~	~~176~~	~~160~~	~~182~~	~~220~~	~~*61.2*~~
~~76~~	~~73~~	~~67~~	~~65~~	~~52~~	~~64~~	~~66~~	~~24~~	~~*6.7*~~
~~53~~	~~48~~	~~45~~	~~37~~	~~35~~	~~27~~	~~23~~	~~36~~	~~*9.9*~~
~~22~~	~~23~~	~~30~~	~~27~~	~~26~~	~~30~~	~~30~~	~~45~~	~~*12.5*~~
~~10~~	~~4~~	~~5~~	~~5~~	~~8~~	~~12~~	~~2~~	~~35~~	~~*9.7*~~
382	**387**	**443**	**476**	**574**	**682**	**728**	**762**	***100.0***
283	290	320	330	337	432	548	553	*72.7*
51	44	48	49	67	77	50	53	*7.0*
36	41	56	61	74	92	95	92	*12.1*
12	12	19	36	95	82	35	63	*8.3*
427	**461**	**468**	**481**	**495**	**497**	**497**	**511**	***100.0***
106	123	133	109	84	86	97	108	*21.2*
44	26	18	15	15	12	18	55	*10.8*
263	297	299	316	330	353	349	314	*61.5*
15	15	18	42	66	45	32	33	*6.5*
147	**166**	**184**	**195**	**194**	**235**	**246**	**282**	***100.0***
68	74	100	92	74	111	168	194	*68.9*
33	30	23	22	20	22	19	23	*8.2*
40	52	44	48	48	39	40	30	*10.6*
6	9	18	33	52	63	19	35	*12.3*
256	**259**	**281**	**299**	**325**	**344**	**404**	**467**	***100.0***
188	196	211	169	147	174	320	373	*79.8*
31	27	20	24	29	36	34	45	*9.6*
23	15	21	19	29	23	24	22	*4.8*
14	22	29	88	121	111	25	27	*5.8*
206	**236**	**282**	**358**	**493**	**631**	**609**	**535**	***100.0***
89	116	160	222	343	467	436	359	*67.0*
116	120	123	137	150	164	173	177	*33.0*
145	**137**	**139**	**121**	**135**	**165**	**217**	**285**	***100.0***
96	92	89	65	63	69	133	152	*53.3*
32	32	33	38	41	52	69	81	*28.4*
12	9	11	9	10	11	7	8	*2.9*
4	4	6	9	22	33	8	44	*15.4*

Table 5.23: Age-standardised (Norwegian standard) incidence rates per 100 000 person-years for selected cancers by stage and period of diagnosis, 1959–2018, **males**

ICD-10	Site	Stage	1959–63	1964–68	1969–73	1974–78
C00–14	Mouth, pharynx	**Total**	**15.2**	**14.3**	**15.8**	**15.2**
		Localised	10.5	10.1	10.2	9.9
		Regional	3.4	3.1	3.8	4.1
		Distant	0.5	0.4	0.7	0.6
		Unknown	0.8	0.6	1.2	0.6
C15	Oesophagus	**Total**	**7.0**	**5.7**	**5.5**	**5.8**
		Localised	4.5	3.6	2.6	3.0
		Regional	0.8	0.6	1.0	1.2
		Distant	1.1	1.1	1.4	1.4
		Unknown	0.6	0.4	0.5	0.3
C16	Stomach	**Total**	**66.4**	**60.3**	**49.0**	**41.5**
		Localised	18.9	17.8	12.3	12.4
		Regional	12.1	11.3	10.3	8.8
		Distant	28.1	24.3	20.8	17.1
		Unknown	7.3	6.9	5.6	3.2
C18	Colon	**Total**	**21.9**	**25.8**	**26.3**	**31.6**
		Localised	9.1	10.5	9.5	10.2
		Regional	5.0	5.8	6.4	10.4
		Distant	6.3	8.1	8.6	9.6
		Unknown	1.5	1.5	1.7	1.3
C19–20	Rectum, rectosigmoid	**Total**	**14.1**	**15.1**	**20.1**	**24.9**
		Localised	7.1	7.4	9.2	12.0
		Regional	3.2	4.0	5.3	7.1
		Distant	2.7	3.0	4.5	5.1
		Unknown	1.1	0.7	1.1	0.8
C22	Liver	**Total**	**1.6**	**2.3**	**2.9**	**3.3**
		Localised	0.8	1.2	1.3	1.5
		Regional	0.0	0.1	0.1	0.4
		Distant	0.7	0.9	1.1	1.3
		Unknown	0.1	0.1	0.3	0.1
C23–24	Gallbladder, bile ducts	**Total**	**1.6**	**1.8**	**1.9**	**2.5**
		Localised	0.5	0.6	0.6	0.8
		Regional	0.3	0.3	0.3	0.6
		Distant	0.6	0.9	0.9	1.1
		Unknown	0.1	0.1	0.2	0.0
C25	Pancreas	**Total**	**11.5**	**14.4**	**16.4**	**16.4**
		Localised	3.6	4.2	3.3	2.9
		Regional	1.3	1.9	2.2	2.1
		Distant	5.8	7.6	9.3	9.8
		Unknown	0.8	0.7	1.7	1.6
C33–34	Lung, trachea	**Total**	**23.3**	**30.2**	**37.7**	**47.6**
		Localised	7.0	10.7	12.0	15.5
		Regional	4.8	5.8	6.9	8.3
		Distant	9.6	12.3	15.7	20.2
		Unknown	1.9	1.4	3.1	3.6
C43	Melanoma of the skin	**Total**	**4.6**	**6.0**	**8.3**	**11.0**
		Localised	3.1	3.9	5.7	9.0
		Regional	0.6	0.7	0.9	1.0
		Distant	0.9	1.1	1.1	0.8
		Unknown	0.1	0.3	0.6	0.3

1979–83	1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18
14.8	**15.1**	**14.6**	**14.3**	**13.5**	**12.9**	**14.7**	**15.9**
9.1	9.0	7.7	6.1	4.4	4.2	6.0	5.6
5.1	4.7	5.1	5.0	5.4	6.0	6.8	7.7
0.4	0.4	0.5	0.7	0.6	0.7	0.6	0.5
0.2	1.0	1.3	2.5	3.1	2.0	1.3	2.2
5.5	**5.3**	**6.1**	**6.4**	**6.7**	**7.3**	**8.0**	**8.9**
2.8	1.9	1.6	1.1	1.2	1.4	1.4	1.1
1.1	1.3	1.4	1.2	1.5	2.0	2.2	2.6
1.2	1.4	1.7	1.6	2.1	2.2	2.4	2.1
0.4	0.6	1.3	2.5	1.9	1.7	2.0	3.3
37.8	**32.7**	**29.1**	**24.0**	**19.7**	**16.4**	**13.6**	**11.7**
12.3	9.3	7.7	3.9	3.0	3.2	3.0	1.7
9.7	8.7	7.4	7.1	5.7	4.7	3.9	3.3
13.4	11.0	9.2	7.6	6.9	5.5	4.4	3.3
2.4	3.6	4.7	5.4	4.1	3.1	2.3	3.4
36.8	**41.9**	**47.4**	**49.6**	**52.8**	**56.1**	**58.4**	**59.1**
10.7	12.2	15.3	9.9	8.9	9.4	8.9	11.0
15.1	16.5	16.8	23.4	25.4	29.0	30.7	29.8
9.4	11.3	12.2	13.0	13.7	14.1	15.8	13.8
1.6	1.9	3.0	3.2	4.8	3.6	3.0	4.6
30.0	**30.2**	**31.9**	**32.1**	**33.8**	**33.1**	**33.6**	**32.6**
13.9	11.9	13.2	10.1	8.2	7.5	6.7	8.2
9.9	11.2	10.7	12.4	13.8	15.3	17.2	15.0
5.4	5.3	5.7	6.1	6.9	6.7	7.0	5.8
0.9	1.7	2.2	3.6	5.0	3.5	2.8	3.6
3.3	**3.9**	**3.5**	**3.0**	**4.2**	**4.4**	**6.0**	**7.4**
1.7	1.7	1.6	0.8	1.4	1.4	2.2	1.7
0.2	0.3	0.2	0.2	0.3	0.5	0.7	0.7
0.9	1.1	0.6	0.6	1.0	1.0	1.4	1.5
0.5	0.7	1.2	1.4	1.5	1.5	1.7	3.4
2.3	**2.9**	**2.9**	**3.2**	**3.2**	**3.4**	**3.7**	**3.0**
0.8	1.1	0.9	0.4	0.6	0.6	0.6	0.4
0.5	0.6	0.5	0.7	0.7	1.2	1.6	1.3
0.9	0.8	0.8	0.9	0.9	0.9	1.1	0.6
0.2	0.5	0.7	1.3	1.1	0.7	0.4	0.7
17.6	**17.7**	**16.5**	**15.7**	**15.8**	**16.7**	**16.3**	**17.4**
3.7	3.6	3.3	1.1	1.1	1.3	1.4	1.2
2.2	2.2	1.5	1.9	2.6	4.0	3.5	3.6
9.4	9.0	8.1	7.1	8.2	9.0	8.8	7.9
2.3	2.9	3.6	5.7	3.9	2.5	2.6	4.8
56.0	**63.7**	**66.0**	**69.7**	**71.5**	**72.8**	**72.3**	**67.8**
19.0	18.3	19.0	11.7	9.8	9.2	12.5	11.5
9.5	13.5	11.9	16.1	18.4	21.6	20.6	18.6
23.2	24.8	25.6	28.1	33.2	33.7	32.8	26.6
4.3	7.0	9.4	13.8	10.1	8.3	6.4	11.0
13.4	**16.6**	**22.6**	**23.8**	**24.1**	**27.8**	**35.8**	**43.7**
11.0	14.0	18.8	18.4	13.7	12.9	30.5	36.4
0.9	0.9	1.1	0.7	1.0	1.2	2.2	3.6
1.0	1.0	1.5	1.4	1.8	1.5	1.4	1.6
0.5	0.6	1.2	3.3	7.7	12.2	1.7	2.1

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Table 5.23: Age-standardised (Norwegian standard) incidence rates per 100 000 person-years for selected cancers by stage and period of diagnosis, 1959–2018, **males** (Continued)

ICD-10	Site	Stage	1959–63	1964–68	1969–73	1974–78
C61	Prostate	**Total**	**68.4**	**79.6**	**85.0**	**98.5**
		Localised	40.6	53.1	53.7	65.4
		Regional	3.4	2.7	4.1	5.2
		Distant	17.8	17.7	18.2	20.6
		Unknown	6.6	6.1	9.0	7.3
C62	Testis	**Total**	**3.9**	**4.0**	**4.8**	**5.2**
		Localised	2.6	2.6	2.7	3.0
		Regional	0.2	0.3	0.6	1.1
		Distant	1.0	1.0	1.3	1.1
		Unknown	0.1	0.1	0.2	0.0
C64	Kidney (excl. renal pelvis)	**Total**	**8.2**	**10.0**	**9.9**	**11.8**
		Localised	4.2	5.4	4.4	4.8
		Regional	0.9	1.2	1.7	2.7
		Distant	2.7	3.0	3.5	4.0
		Unknown	0.4	0.3	0.3	0.2
C65–68	Urinary tract	**Total**	**18.8**	**24.2**	**27.3**	**35.0**
		Localised	15.3	20.1	20.8	27.7
		Regional	1.5	2.2	3.2	3.9
		Distant	1.3	1.4	1.9	2.4
		Unknown	0.7	0.4	1.3	1.0
C70–72	Central nervous system	**Total**	**7.6**	**8.3**	**8.6**	**9.8**
		Non-malignant	2.4	2.2	2.8	2.9
		Malignant	5.2	6.1	5.9	6.9
C73	Thyroid gland	**Total**	**1.7**	**1.9**	**2.3**	**2.4**
		Localised	0.4	0.5	0.9	1.2
		Regional	0.8	0.9	0.8	0.8
		Distant	0.5	0.5	0.5	0.3
		Unknown	0.0	0.0	0.1	0.0

1979–83	1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18
102.6	**107.4**	**125.3**	**151.2**	**169.5**	**208.5**	**211.4**	**199.8**
68.0	66.0	73.0	54.3	56.0	92.2	102.9	78.5
3.9	3.6	4.5	6.3	8.4	18.9	56.6	53.2
23.3	29.5	25.5	23.4	21.9	21.8	19.7	14.8
7.4	8.3	22.3	67.1	83.2	75.6	32.2	53.3
6.0	**7.2**	**8.6**	**9.1**	**10.3**	**11.6**	**12.1**	**11.3**
3.2	4.4	5.8	5.7	5.7	6.8	9.7	9.1
1.6	1.6	1.6	1.5	1.6	2.0	1.2	1.5
1.1	1.1	1.0	1.2	1.2	1.2	1.0	0.6
0.2	0.1	0.2	0.7	1.8	1.5	0.1	0.1
13.2	**14.3**	**15.2**	**14.9**	**16.1**	**18.8**	**21.8**	**23.1**
5.5	6.2	7.4	6.4	6.2	8.2	14.7	15.5
2.7	3.0	2.2	2.3	2.2	1.8	1.9	2.4
4.5	4.5	4.4	3.8	3.8	4.4	3.9	2.9
0.5	0.6	1.3	2.4	3.9	4.3	1.4	2.4
39.5	**42.6**	**46.6**	**46.5**	**45.4**	**48.1**	**47.6**	**52.0**
32.7	34.2	38.6	30.2	23.3	25.6	40.2	45.6
3.9	3.4	2.8	2.6	2.9	4.0	3.4	3.3
2.0	1.8	1.9	1.8	2.1	2.2	2.0	1.7
1.0	3.2	3.5	11.9	17.1	16.4	2.0	1.4
11.1	**12.7**	**13.7**	**15.3**	**19.2**	**21.9**	**21.5**	**18.5**
3.6	4.0	5.3	7.0	9.4	12.1	11.3	8.6
7.5	8.7	8.4	8.3	9.7	9.8	10.2	9.9
2.8	**2.4**	**2.4**	**2.4**	**2.5**	**2.9**	**3.6**	**4.7**
1.2	1.2	1.2	1.0	0.8	0.8	1.6	1.8
1.0	0.7	0.7	0.8	0.9	1.3	1.5	1.9
0.5	0.4	0.4	0.5	0.4	0.4	0.3	0.3
0.1	0.0	0.1	0.2	0.3	0.4	0.2	0.7

Table 5.24: Age-standardised (Norwegian standard) incidence rates per 100 000 person-years for selected cancers by stage and period of diagnosis, 1959–2018, **females**

ICD-10	Site	Stage	1959–63	1964–68	1969–73	1974–78
C00–14	Mouth, pharynx	**Total**	**4.2**	**4.7**	**4.4**	**4.2**
		Localised	2.3	2.8	2.3	2.3
		Regional	1.4	1.8	1.5	1.4
		Distant	0.2	0.1	0.3	0.2
		Unknown	0.3	0.0	0.3	0.3
C15	Oesophagus	**Total**	**1.8**	**2.1**	**1.7**	**1.7**
		Localised	1.2	1.3	0.8	1.0
		Regional	0.2	0.2	0.3	0.3
		Distant	0.2	0.3	0.4	0.3
		Unknown	0.2	0.2	0.2	0.1
C16	Stomach	**Total**	**41.0**	**33.6**	**26.0**	**21.7**
		Localised	11.4	9.6	6.0	5.9
		Regional	6.1	5.4	4.8	4.5
		Distant	16.3	13.7	12.1	9.2
		Unknown	7.2	4.9	3.2	2.1
C18	Colon	**Total**	**21.4**	**24.9**	**25.7**	**30.8**
		Localised	8.6	10.2	9.2	10.0
		Regional	4.9	5.6	7.0	10.4
		Distant	6.0	7.6	7.7	9.0
		Unknown	1.9	1.6	1.8	1.4
C19–20	Rectum, rectosigmoid	**Total**	**8.3**	**10.1**	**13.4**	**15.7**
		Localised	3.9	4.8	6.2	7.2
		Regional	1.9	2.6	3.7	4.4
		Distant	1.9	2.2	2.9	3.4
		Unknown	0.6	0.6	0.5	0.6
C22	Liver	**Total**	**0.9**	**1.0**	**1.5**	**1.5**
		Localised	0.3	0.4	0.6	0.8
		Regional	0.0	0.0	0.1	0.1
		Distant	0.4	0.4	0.6	0.6
		Unknown	0.1	0.0	0.1	0.1
C23–24	Gallbladder, bile ducts	**Total**	**3.4**	**3.4**	**3.1**	**3.0**
		Localised	0.9	1.0	0.8	0.8
		Regional	0.6	0.5	0.5	0.5
		Distant	1.7	1.8	1.7	1.5
		Unknown	0.2	0.1	0.2	0.2
C25	Pancreas	**Total**	**7.4**	**8.2**	**10.0**	**10.2**
		Localised	2.2	2.7	2.3	2.2
		Regional	0.6	0.8	1.1	1.2
		Distant	3.9	4.2	5.3	5.8
		Unknown	0.7	0.5	1.3	1.0
C33–34	Lung, trachea	**Total**	**5.0**	**6.2**	**8.5**	**9.8**
		Localised	1.3	2.0	2.8	2.8
		Regional	0.6	0.8	1.2	1.5
		Distant	2.6	3.0	3.9	4.7
		Unknown	0.5	0.4	0.7	0.8
C43	Melanoma of the skin	**Total**	**4.5**	**6.5**	**8.3**	**13.0**
		Localised	3.6	5.1	6.3	11.7
		Regional	0.5	0.3	0.6	0.5
		Distant	0.4	0.7	0.6	0.7
		Unknown	0.1	0.4	0.7	0.1

1979–83	1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18
4.8	**5.2**	**5.1**	**5.7**	**5.7**	**6.9**	**7.3**	**8.3**
2.8	2.8	3.0	2.8	2.0	2.6	3.4	3.7
1.7	1.9	1.4	1.6	2.0	2.7	3.0	3.2
0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2
0.2	0.4	0.5	1.0	1.4	1.4	0.6	1.1
1.5	**1.6**	**1.6**	**1.9**	**2.1**	**2.1**	**2.4**	**2.6**
0.7	0.7	0.5	0.3	0.4	0.4	0.6	0.4
0.3	0.4	0.3	0.4	0.4	0.5	0.6	0.6
0.3	0.2	0.4	0.4	0.5	0.5	0.5	0.5
0.2	0.3	0.5	0.8	0.8	0.7	0.6	1.2
19.6	**16.3**	**13.5**	**11.4**	**9.2**	**8.5**	**6.9**	**5.9**
6.1	4.7	3.9	2.1	1.6	1.6	1.5	0.8
5.0	4.2	3.3	3.0	2.5	2.2	1.5	1.4
6.6	5.4	4.3	3.7	3.3	3.1	2.5	1.7
1.9	2.0	2.0	2.6	1.8	1.6	1.4	2.0
35.1	**37.6**	**39.7**	**44.6**	**46.5**	**48.4**	**51.1**	**53.8**
10.0	10.4	13.4	9.1	8.0	8.4	8.0	9.5
14.4	15.9	14.7	21.3	22.8	25.5	28.0	28.1
9.0	9.5	9.3	10.8	11.2	11.8	12.6	12.0
1.8	1.8	2.2	3.4	4.4	2.8	2.4	4.2
18.5	**18.1**	**19.4**	**19.8**	**19.8**	**20.6**	**20.2**	**19.5**
8.5	7.3	8.5	6.3	5.4	4.9	4.6	5.1
6.1	6.4	6.2	7.8	8.0	9.4	9.7	8.6
3.3	3.2	3.3	3.5	3.7	4.0	4.0	3.5
0.6	1.2	1.5	2.3	2.8	2.3	1.8	2.2
1.8	**2.0**	**2.0**	**1.6**	**2.0**	**2.0**	**2.9**	**3.7**
0.8	0.9	0.7	0.4	0.5	0.5	1.1	0.8
0.1	0.2	0.1	0.1	0.2	0.3	0.4	0.4
0.7	0.5	0.4	0.3	0.4	0.5	0.7	0.8
0.2	0.5	0.7	0.8	0.9	0.7	0.7	1.7
3.7	**3.7**	**3.1**	**3.1**	**3.2**	**3.0**	**3.5**	**2.9**
1.1	1.2	0.9	0.6	0.4	0.6	0.4	0.4
0.7	0.8	0.5	0.6	0.7	0.8	1.3	1.1
1.6	1.1	1.1	1.0	1.2	1.1	1.5	0.8
0.3	0.6	0.6	1.0	1.0	0.6	0.4	0.6
11.4	**12.8**	**12.2**	**13.0**	**13.0**	**13.6**	**13.8**	**14.2**
2.3	2.9	2.6	1.0	1.0	1.3	1.5	1.2
1.5	1.7	1.2	1.5	1.9	3.1	3.0	3.1
6.1	6.2	5.3	5.9	6.4	6.8	7.0	5.9
1.6	2.0	3.1	4.6	3.7	2.3	2.3	3.9
12.9	**17.2**	**23.5**	**28.9**	**36.2**	**43.5**	**49.2**	**54.5**
3.6	4.4	5.8	4.8	5.2	6.6	10.2	10.9
1.9	3.3	4.8	6.2	8.7	11.7	12.9	14.4
6.2	7.7	9.9	12.2	17.6	20.8	22.1	21.2
1.2	1.9	3.1	5.6	4.7	4.4	4.0	8.0
15.5	**19.4**	**22.5**	**22.9**	**23.4**	**25.6**	**32.9**	**38.6**
13.8	17.7	20.4	18.3	14.4	12.8	29.7	34.4
0.6	0.5	0.5	0.5	0.6	0.6	1.2	2.1
0.6	0.6	0.6	0.8	1.0	0.8	0.7	0.8
0.5	0.5	0.9	3.4	7.5	11.3	1.3	1.4

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Table 5.24: Age-standardised (Norwegian standard) incidence rates per 100 000 person-years for selected cancers by stage and period of diagnosis, 1959–2018, **females** (Continued)

ICD-10	Site	Stage	1959–63	1964–68	1969–73	1974–78
C50	Breast	**Total**	**63.4**	**68.3**	**71.1**	**79.3**
		I	28.9	32.6	34.3	41.4
		II	21.5	21.2	22.2	22.8
		III	4.5	5.6	4.8	6.0
		IV	6.4	6.7	6.3	6.1
		Unknown	2.1	2.1	3.5	3.0
C53	Cervix uteri [1]	**Total**	**20.4**	**22.0**	**24.0**	**24.7**
		I	~~8.2~~	~~10.3~~	~~12.9~~	~~14.1~~
		II	~~6.8~~	~~7.7~~	~~6.6~~	~~5.8~~
		III	~~3.2~~	~~2.4~~	~~3.0~~	~~3.2~~
		IV	~~1.5~~	~~1.2~~	~~1.1~~	~~1.2~~
		Unknown	~~0.6~~	~~0.3~~	~~0.3~~	~~0.3~~
C54	Corpus uteri	**Total**	**12.1**	**13.6**	**15.7**	**18.1**
		Localised	9.8	10.9	12.8	14.7
		Regional	0.6	0.8	0.8	1.6
		Distant	1.2	1.7	1.8	1.5
		Unknown	0.4	0.1	0.3	0.2
C56, C57.0–4, C48.2	Ovary etc.	**Total**	**17.1**	**19.3**	**20.4**	**20.4**
		Localised	5.3	6.2	7.1	6.1
		Regional	1.1	1.0	1.4	1.3
		Distant	9.7	11.7	11.3	12.4
		Unknown	1.0	0.4	0.7	0.5
C64	Kidney (excl. renal pelvis)	**Total**	**5.5**	**5.6**	**6.1**	**6.5**
		Localised	3.1	3.2	3.1	3.3
		Regional	0.6	0.6	1.0	1.2
		Distant	1.5	1.7	1.8	1.9
		Unknown	0.3	0.2	0.2	0.2
C65–68	Urinary tract	**Total**	**8.2**	**8.9**	**10.1**	**11.3**
		Localised	5.2	5.8	6.3	7.8
		Regional	1.0	1.3	1.6	1.5
		Distant	1.3	1.2	1.4	1.3
		Unknown	0.8	0.5	0.7	0.6
C70–72	Central nervous system	**Total**	**6.7**	**7.2**	**6.6**	**8.9**
		Non-malignant	3.0	3.5	2.9	3.8
		Malignant	3.6	3.7	3.7	5.0
C73	Thyroid gland	**Total**	**3.5**	**4.3**	**5.5**	**6.4**
		Localised	1.5	2.2	2.9	4.1
		Regional	1.2	1.4	1.6	1.5
		Distant	0.7	0.6	0.6	0.7
		Unknown	0.1	0.1	0.3	0.1

1 The Cancer in Norway reports from 2015 to 2018 contained an error in staging of cervical cancer, and the numbers given in this table are incorrect. For more details see: https://www.kreftregisteret.no/Generelt/Rapporter/Cancer-in-Norway/erratum-for-cancer-in-norway/

1979–83	1984–88	1989–93	1994–98	1999–03	2004–08	2009–13	2014–18
82.5	**86.1**	**89.5**	**105.3**	**117.0**	**117.3**	**117.8**	**128.2**
44.5	27.8	13.9	30.9	40.7	48.7	48.6	54.9
24.1	30.6	34.0	39.3	47.0	47.5	40.3	43.8
4.3	5.8	4.7	6.0	6.9	8.1	13.8	14.3
5.3	5.5	6.0	5.8	5.6	4.9	4.1	4.9
4.3	16.4	30.8	23.2	16.7	8.1	10.9	10.3
19.9	**16.4**	**17.3**	**15.5**	**13.0**	**12.3**	**12.2**	**13.9**
~~11.7~~	~~9.1~~	~~10.3~~	~~9.4~~	~~7.8~~	~~6.8~~	~~7.4~~	~~8.6~~
~~4.0~~	~~3.7~~	~~3.3~~	~~3.1~~	~~2.3~~	~~2.7~~	~~2.6~~	~~0.9~~
~~2.7~~	~~2.3~~	~~2.1~~	~~1.7~~	~~1.5~~	~~1.1~~	~~0.9~~	~~1.4~~
~~1.1~~	~~1.1~~	~~1.4~~	~~1.2~~	~~1.1~~	~~1.2~~	~~1.2~~	~~1.7~~
~~0.5~~	~~0.2~~	~~0.2~~	~~0.2~~	~~0.3~~	~~0.5~~	~~0.1~~	~~1.3~~
19.6	**19.2**	**21.6**	**22.3**	**25.6**	**28.8**	**28.6**	**27.3**
14.8	14.6	15.8	15.7	15.3	18.4	21.6	20.0
2.5	2.1	2.3	2.2	2.9	3.2	2.0	1.9
1.7	2.0	2.6	2.8	3.3	3.8	3.7	3.3
0.6	0.6	0.9	1.5	4.1	3.4	1.3	2.2
21.7	**22.6**	**22.4**	**22.1**	**21.8**	**20.7**	**19.5**	**18.5**
5.4	6.2	6.4	5.1	3.8	3.7	3.9	4.1
2.2	1.3	0.9	0.7	0.7	0.5	0.7	2.0
13.2	14.5	14.2	14.6	14.5	14.8	13.8	11.4
0.8	0.7	0.8	1.7	2.8	1.7	1.1	1.1
7.0	**7.6**	**8.1**	**8.4**	**8.0**	**9.5**	**9.5**	**10.1**
3.3	3.4	4.4	4.1	3.2	4.6	6.7	7.1
1.5	1.4	1.1	1.0	0.8	0.9	0.7	0.8
1.9	2.4	1.9	2.0	2.0	1.5	1.5	1.1
0.3	0.4	0.7	1.3	2.1	2.5	0.7	1.1
12.2	**11.6**	**12.1**	**12.4**	**13.3**	**13.5**	**15.0**	**16.2**
9.0	8.8	9.2	7.1	6.1	6.9	11.9	13.0
1.4	1.2	0.9	1.0	1.2	1.4	1.3	1.6
1.1	0.7	0.9	0.8	1.2	0.9	0.9	0.8
0.7	1.0	1.2	3.5	4.8	4.3	0.9	0.9
10.4	**11.6**	**13.3**	**16.3**	**21.8**	**26.7**	**24.1**	**19.8**
4.5	5.7	7.5	10.1	15.2	19.7	17.3	13.3
5.8	5.9	5.8	6.3	6.6	6.9	6.8	6.5
7.3	**6.6**	**6.6**	**5.4**	**5.9**	**7.0**	**8.8**	**10.8**
4.9	4.6	4.3	3.0	2.8	3.0	5.4	5.8
1.6	1.4	1.5	1.6	1.8	2.2	2.8	3.1
0.6	0.4	0.5	0.4	0.4	0.4	0.3	0.3
0.2	0.2	0.3	0.4	0.9	1.4	0.3	1.6

Chapter 6 Prevalence

As of December 31st 2018, a total of 283 894 individuals were alive and previously diagnosed with cancer in Norway. The cancer prevalence in Table 6.1 provides the numbers of cancer survivors at a given number of years after a given diagnosis (< 1, 1–4, 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 prevalence was seen for prostate cancer (52 061), breast cancer (49 344), melanoma of the skin (27 315), and colon cancer (23 144).

Differences in prognosis and median age at diagnosis (rather than incidence) explain much of the site-specific variability in prevalence. In terms of new incident cases, there are 50% as many lung cancers as melanoma of the skin in Norway, but the number of lung cancer survivors ten years after the diagnosis is about 10% of surviving melanoma patients. This reflects the vast difference in prognosis for the two patient groups.

Table 6.2 shows the number of patients with distant metastases alive at specific time points. Only patients with metastasis confirmed histologically are included. Patients with metastatic disease now live longer, have more often diagnostic work-up and surgery for metastatic lesions, and are also given more chemotherapy than before. This patient group represents an increasing demand of personnel and costs in the health care system.

Table 6.1: Prevalence of cancers December 31st 2008 and December 31st 2018, both sexes

		Total no. of persons alive		Years after diagnosis			
ICD-10	**Site**	**31.12.2008**	**31.12.2018**	**<1**	**1–4**	**5–9**	**10+**
C00–96	**All sites**	**193 508**	**283 894**	**24 264**	**78 506**	**68 187**	**112 937**
C00–14	**Mouth, pharynx**	**3 622**	**5 480**	**572**	**1 732**	**1 334**	**1 842**
C00	Lip	1 056	1 175	79	314	307	475
C02–06	Oral cavity	1 195	1 737	208	534	405	590
C07–08	Salivary glands	475	703	67	218	119	299
C09–10, C01, C14	Oropharynx	734	1 657	200	602	445	410
C11	Nasopharynx	98	153	13	46	44	50
C12–13	Hypoharynx	89	99	16	40	22	21
C15–26	**Digestive organs**	**29 458**	**42 049**	**5 078**	**13 768**	**10 080**	**13 123**
C15	Oesophagus	325	788	216	339	151	82
C16	Stomach	1 969	1 977	259	580	410	728
C17	Small intestine	680	1 289	152	487	335	315
C18	Colon	16 275	23 144	2 603	7 635	5 651	7 255
C19–20	Rectum, rectosigmoid	9 059	12 527	1 240	3 882	3 119	4 286
C21	Anus	558	845	87	283	185	290
C22	Liver	247	622	141	248	121	112
C23–24	Gallbladder, bile ducts	320	489	81	191	101	116
C25	Pancreas	620	1 216	417	478	190	131
C26	Other digestive organs	128	209	70	60	29	50
C30–34, C38	**Respiratory organs**	**6 227**	**10 245**	**2 261**	**4 037**	**2 036**	**1 911**
C30–31	Nose, sinuses	291	350	34	89	94	133
C32	Larynx, epiglottis	1 091	1 107	113	291	269	434
C33–34	Lung, trachea	4 812	8 785	2 128	3 672	1 672	1 313
C38	Heart, mediastinum and pleura	63	70	10	14	8	38
C40–41	**Bone**	**637**	**855**	**50**	**166**	**136**	**503**
C43	**Melanoma of the skin**	**17 080**	**27 315**	**2 268**	**7 260**	**5 798**	**11 989**
C44	**Skin, non-melanoma**	**11 158**	**17 265**	**2 338**	**6 275**	**4 006**	**4 646**
C45	**Mesothelioma**	**100**	**122**	**44**	**59**	**10**	**9**
C47	**Autonomic nervous system**	**239**	**250**	**9**	**29**	**21**	**191**
C48–49	**Soft tissues**	**1 168**	**1 507**	**99**	**299**	**334**	**775**
C50	**Breast**	**34 719**	**49 344**	**3 476**	**12 318**	**11 229**	**22 321**
C51–58	**Female genital organs**	**20 176**	**23 911**	**1 576**	**5 188**	**4 570**	**12 577**
C51–52, C57.7–9	Other female genital	793	1 020	115	285	216	404
C53	Cervix uteri	6 770	7 410	341	1 225	1 092	4 752
C54	Corpus uteri	8 443	10 814	753	2 494	2 486	5 081
C55	Uterus, other	41	49	6	10	9	24
C56, C57.0–4, C48.2	Ovary etc.	4 318	4 842	391	1 255	821	2 375
C58	Placenta	132	150	3	7	16	124
C60–63	**Male genital organs**	**34 020**	**60 339**	**5 001**	**19 052**	**17 897**	**18 389**
C61	Prostate	28 042	52 061	4 667	17 791	16 395	13 208
C62	Testis	5 692	7 927	312	1 165	1 446	5 004
C60, C63	Other male genital	386	600	59	197	121	223
C64–68	**Urinary organs**	**15 002**	**22 275**	**2 323**	**7 396**	**5 530**	**7 026**
C64	Kidney (excl. renal pelvis)	4 283	7 580	786	2 570	1 992	2 232
C65–68	Urinary tract	10 790	14 887	1 568	4 919	3 583	4 817
C69	**Eye**	**921**	**1 150**	**82**	**271**	**227**	**570**
C70–72	**Central nervous system**	**10 048**	**13 991**	**719**	**2 679**	**3 255**	**7 338**
C73	**Thyroid gland**	**4 170**	**6 257**	**385**	**1 396**	**1 214**	**3 262**
C37, C74–75	**Other endocrine glands**	**2 782**	**4 101**	**150**	**701**	**1 077**	**2 173**
C39, C76, C80	**Other or unspecified**	**503**	**586**	**96**	**148**	**130**	**212**
C81–96	**Lymphoid/haematopoietic tissue**	**15 325**	**25 949**	**2 534**	**7 875**	**6 479**	**9 061**
C81	Hodgkin lymphoma	2 108	2 955	147	540	563	1 705
C82–86, C96	Non-Hodgkin lymphoma	6 331	10 478	969	2 985	2 719	3 805
C88	Immunoproliferative disease	372	665	62	231	213	159
C90	Multiple myeloma	1 466	2 374	377	1 053	575	369
C91–95	Leukaemia	5 133	9 688	1 011	3 148	2 463	3 066

Table 6.2: Prevalence of patients diagnosed with distant metastases during lifetime, by health region, both sexes

	Alive by					
Health region	**31.12.1993**	**31.12.1998**	**31.12.2003**	**31.12.2008**	**31.12.2013**	**31.12.2018**
South East	4 211	5 204	6 212	7 705	9 010	10 482
West	1 497	1 768	2 277	2 681	3 225	3 716
Middle	1 082	1 287	1 523	1 916	2 214	2 512
North	691	838	1 018	1 288	1 511	1 735
Total	**7 481**	**9 097**	**11 030**	**13 590**	**15 960**	**18 445**

Chapter 7 Mortality

The mortality data is obtained from the Cause of Death Registry. Of note is that mortality data for 2018 was not complete when this report was published (October 2019), and we therefore report figures for 2017.

There were 11 016 deaths from cancer in Norway in 2017, of which 5837 were men, and 5179 women (Table 7.1). Cancers of the lung, colon, prostate, pancreas and female breast, which represent the most frequent forms of cancer, account for nearly 50% of the total cancer deaths.

Among men, lung cancer caused 1164 deaths in 2017. Prostate cancer (934 deaths), colon cancer (583 deaths) and pancreas cancer (388 deaths) represent the second, third and fourth most frequent causes of cancer death among men, respectively.

Lung cancer mortality also ranks highest among women (974 deaths, followed by colon cancer (615 deaths), breast cancer (586 deaths), and pancreas cancer (399 deaths). Figure 7.1 shows the distribution of age-standardised mortality rates for selected cancer sites. There is at least a 10-fold difference in rates across these cancers. Given the very poor prognosis for pancreatic cancer, it ranks among the top four causes of cancer death among both men and women, even though pancreatic cancer only is a moderately common cancer.

The trends section in this report examines the incidence, mortality, and survival for 23 selected cancer sites.

Figure 7.1: Age-standardised (Norwegian standard) mortality rates per 100 000 person-years for selected cancers, 2017

Table 7.1: Number of cancer deaths by primary site and sex, 2017

ICD-10	Site	Males	Females	Total
C00–96	**All sites**	**5 837**	**5 179**	**11 016**
C00–14	**Mouth, pharynx**	**87**	**51**	**138**
C00	Lip	0	0	0
C02–06	Oral cavity	40	29	69
C07–08	Salivary glands	11	2	13
C09–10, C01, C14	Oropharynx	24	15	39
C11	Nasopharynx	3	2	5
C12–13	Hypoharynx	9	3	12
C15–26	**Digestive organs**	**1 822**	**1 618**	**3 440**
C15	Oesophagus	154	49	203
C16	Stomach	172	128	300
C17	Small intestine	43	36	79
C18	Colon	583	615	1 198
C19–20	Rectum, rectosigmoid	239	164	403
C21	Anus	6	14	20
C22	Liver	164	114	278
C23–24	Gallbladder, bile ducts	30	41	71
C25	Pancreas	388	399	787
C26	Other digestive organs	43	58	101
C30–34, C38	**Respiratory organs**	**1 210**	**988**	**2 198**
C30–31	Nose, sinuses	7	5	12
C32	Larynx, epiglottis	35	6	41
C33–34	Lung, trachea	1 164	974	2 138
C38	Heart, mediastinum and pleura	4	3	7
C40–41	**Bone**	**13**	**10**	**23**
C43	**Melanoma of the skin**	**160**	**124**	**284**
C44	**Skin, non-melanoma**	**29**	**20**	**49**
C45	**Mesothelioma**	**68**	**12**	**80**
C47	**Autonomic nervous system**	**2**	**2**	**4**
C48–49	**Soft tissues**	**36**	**37**	**73**
C50	**Breast**	**8**	**586**	**594**
C51–58	**Female genital organs**		**618**	**618**
C51–52, C57.7–9	Other female genital		54	54
C53	Cervix uteri		74	74
C54	Corpus uteri		71	71
C55	Uterus, other		75	75
C56, C57.0–4, C48.2	Ovary etc.		344	344
C58	Placenta		0	0
C60–63	**Male genital organs**	**953**		**953**
C61	Prostate	934		934
C62	Testis	3		3
C60, C63	Other male genital	16		16
C64–68	**Urinary organs**	**457**	**189**	**646**
C64	Kidney (excl. renal pelvis)	174	79	253
C65–68	Urinary tract	283	110	393
C69	**Eye**	**3**	**2**	**5**
C70–72	**Central nervous system**	**207**	**178**	**385**
C73	**Thyroid gland**	**18**	**26**	**44**
C37, C74–75	**Other endocrine glands**	**14**	**10**	**24**
C39, C76, C80	**Other or unspecified**	**184**	**247**	**431**
C81–96	**Lymphoid/haematopoietic tissue**	**566**	**461**	**1 027**
C81	Hodgkin lymphoma	15	10	25
C82–86, C96	Non-Hodgkin lymphoma	162	149	311
C88	Immunoproliferative disease	8	12	20
C90	Multiple myeloma	136	109	245
C91–95	Leukaemia	245	181	426

Chapter 8 Survival

Long-term estimates of survival are becoming increasingly relevant as life expectancy amongst cancer patients increases and cancer care continues to advance[18]. Table 8.3 gives the 1-year, 5-year, 10-year and 15-year relative survival estimates (with 95% confidence intervals) for the follow-up period 2014–2018 by cancer site and sex. Less frequent cancer diagnoses and groups with low survival will have few cases left especially at 10 and 15 years after diagnosis, and the 95% confidence intervals should be taken into consideration in any interpretation of the relative survival estimates.

Given that cancer patients survive longer, there is a need to communicate information about prognosis not only at the time of diagnosis, but also later because prognosis tends to improve for those surviving the first year(s) after diagnosis[16].

Figures 8.1–A to 8.1–X depict these two aspects of cancer survival in Norway for all cancers combined and for 23 specific cancer sites. Relative survival estimates are presented by sex and age, 1 to 15 years after diagnosis, with age strata determined specifically according to relevant biological and/or clinical criteria.

For some sites, the cumulative survival curve tends to level off a certain number of years after diagnosis, indicating that from this point forward, the cancer patient group has similar mortality as the comparable the group without cancer, or in other words, statistically, these patients appear to be "cured"[19]. This concept of "statistical cure" involves attributes of survival observed among patients as a group, and should be distinguished from clinical cure, which is determined on the basis of 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, which better quantify the prognosis of cancer patients at time points beyond the initial diagnosis (Figure 8.1–A to 8.1–X, dashed lines). When conditional five-year relative survival is above 90–95% we usually say that there is little or no excess mortality — 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 8.1–A. As mentioned in Chapter 9, the combined cancer group is 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 8.1–B to 8.1–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 8.1–Q) compared to patients with pancreatic cancer (Figure 8.1–I) strikingly illustrates the wide differences in prognosis according to cancer type. Long-term survival following diagnosis of melanoma and cancers of the oral cavity, central nervous system and thyroid gland clearly varies between men and women. This may be due to biological or anatomical differences or be related 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 8.1–E) relative to, for example, cervix cancer (Figure 8.1–M) or non-Hodgkin lymphoma (Figure 8.1–W). For certain cancers, including breast and corpus uteri cancer, long-term survival among patients diagnosed before the age of 50 are slightly lower than for patients diagnosed at the ages 50–59. This in part represents the diagnosis of more aggressive tumours in the younger age group, and, for 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 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 groups, 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% 1 year after diagnosis (Figure 8.1–L) and slowly increases to about 93% 10 years from diagnosis. As is evident from the continual decline in long-term breast cancer cumu-

lative survival, there remains a persistent excess mortality for women with this disease.

Tables 8.1 and 8.2 provide the five-year relative survival estimates over the last four decades by cancer site and stage for males and females, respectively. While the stage-specific count of cases by five-year period of diagnosis in Tables 5.21 and 5.22 are not equivalent to the size of the patient groups used in the survival calculations, the 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 8.1: Five-year relative survival by primary site, stage and period of diagnosis, 1979–2018, **males**

			Relative survival (%)							
ICD-10	**Site**	**Stage**	**1979–83**	**1984–88**	**1989–93**	**1994–98**	**1999–03**	**2004–08**	**2009–13**	**2014–18***
C00–96	**All sites**	**Total**	**41.7**	**44.1**	**49.1**	**53.6**	**58.9**	**65.8**	**70.9**	**74.1**
C00–14	**Mouth, pharynx**	**Total**	**56.7**	**57.8**	**57.3**	**53.9**	**57.2**	**57.7**	**67.1**	**68.1**
		Localised	79.0	77.5	83.9	77.9	82.6	78.7	84.8	85.8
		Regional	23.8	27.8	26.6	29.6	38.8	42.4	58.4	61.7
		Distant	-	-	-	9.1	8.8	14.7	4.8	4.8
		Unknown	-	49.9	40.4	55.2	58.8	73.9	61.8	62.1
C15	**Oesophagus**	**Total**	**3.8**	**4.0**	**4.5**	**7.5**	**7.5**	**9.2**	**16.7**	**22.2**
		Localised	5.0	5.9	14.3	25.0	22.9	23.7	43.3	62.3
		Regional	4.8	3.4	2.9	6.8	8.0	12.6	17.5	29.5
		Distant	0.0	0.7	0.0	0.7	0.5	0.0	2.7	4.1
		Unknown	-	-	1.1	5.0	7.4	8.2	18.1	12.4
C16	**Stomach**	**Total**	**17.0**	**18.1**	**18.2**	**17.4**	**19.3**	**23.3**	**25.5**	**27.8**
		Localised	38.3	47.1	47.7	62.7	54.1	62.3	59.1	72.9
		Regional	19.0	18.9	19.3	17.4	21.7	22.7	30.0	37.3
		Distant	1.6	1.4	0.5	1.0	1.9	2.3	3.4	3.5
		Unknown	5.6	4.4	6.8	11.7	22.4	30.1	16.1	16.9
C18	**Colon**	**Total**	**46.4**	**45.8**	**49.8**	**52.8**	**55.2**	**58.8**	**61.7**	**65.4**
		Localised	76.3	74.3	79.7	90.7	88.6	87.7	93.6	96.1
		Regional	53.6	54.8	58.4	65.3	69.6	74.5	79.7	82.7
		Distant	3.9	5.3	3.2	5.5	7.1	8.9	14.2	14.8
		Unknown	22.0	34.4	31.4	35.2	54.7	59.7	21.3	24.8
C19–20	**Rectum, rectosigmoid**	**Total**	**42.3**	**44.7**	**48.1**	**55.4**	**57.7**	**62.9**	**67.9**	**69.8**
		Localised	64.3	67.7	72.9	86.1	86.5	88.8	94.6	95.9
		Regional	37.8	43.9	44.9	60.2	66.1	74.6	82.1	82.4
		Distant	3.6	2.2	3.5	6.6	10.6	12.0	17.1	19.0
		Unknown	21.1	25.8	36.1	33.7	56.3	55.3	41.0	41.0
C22	**Liver**	**Total**	**1.0**	**3.2**	**7.0**	**5.9**	**5.8**	**12.6**	**16.5**	**18.8**
		Localised	2.2	6.2	10.7	18.0	13.4	21.8	32.9	50.2
		Regional	-	-	-	-	-	2.7	4.8	8.3
		Distant	0.0	0.0	-	0.0	1.2	4.7	0.6	-
		Unknown	-	-	4.6	2.2	2.4	14.8	11.8	7.4
C23–24	**Gallbladder, bile ducts**	**Total**	**7.1**	**13.9**	**9.4**	**13.1**	**15.7**	**14.6**	**16.9**	**21.0**
		Localised	14.8	25.5	18.0	-	47.0	37.1	38.2	50.4
		Regional	-	14.7	-	20.9	19.3	13.4	22.7	21.0
		Distant	2.4	3.9	0.0	1.3	1.5	5.2	1.5	-
		Unknown	-	-	-	10.0	7.9	14.0	-	-
C25	**Pancreas**	**Total**	**1.9**	**1.9**	**2.0**	**1.7**	**3.9**	**4.7**	**7.8**	**10.9**
		Localised	2.3	6.5	2.6	8.4	11.4	21.2	40.4	54.1
		Regional	4.9	1.9	7.5	4.5	6.4	6.9	8.7	20.5
		Distant	0.4	0.7	1.0	0.6	2.0	1.8	2.4	2.0
		Unknown	5.7	1.9	1.4	0.9	4.1	4.0	9.7	-
C33–34	**Lung, trachea**	**Total**	**6.9**	**7.3**	**7.7**	**8.3**	**8.7**	**11.3**	**15.1**	**19.4**
		Localised	15.5	17.4	16.5	30.1	34.8	41.0	49.1	59.0
		Regional	6.5	8.1	10.0	7.9	9.7	13.6	17.0	23.4
		Distant	0.8	0.4	0.8	0.4	0.8	1.7	1.9	2.2
		Unknown	3.3	3.7	6.4	6.4	9.2	13.0	10.6	15.8
C43	**Melanoma of the skin**	**Total**	**64.3**	**67.2**	**71.2**	**74.8**	**75.5**	**74.9**	**81.8**	**85.5**
		Localised	73.2	74.4	79.4	81.3	87.7	81.3	88.7	91.0
		Regional	27.3	28.4	36.1	29.5	49.8	37.7	49.0	67.1
		Distant	5.3	2.5	7.9	15.7	9.9	10.7	11.2	22.9
		Unknown	-	50.5	53.1	71.3	72.4	79.6	55.0	57.2
C61	**Prostate**	**Total**	**57.0**	**56.9**	**62.3**	**72.7**	**81.7**	**88.6**	**93.3**	**94.5**
		Localised	72.7	73.2	74.6	86.2	96.3	98.0	101.9	102.0
		Regional	38.4	46.4	59.8	68.1	73.7	86.5	94.4	94.8
		Distant	19.0	23.2	24.2	24.9	27.4	33.8	35.9	38.8
		Unknown	41.3	58.4	67.3	76.8	84.4	91.2	97.6	98.3

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Table 8.1: Five-year relative survival by primary site, stage and period of diagnosis, 1979–2018, **males** (Continued)

			Relative survival (%)							
ICD-10	**Site**	**Stage**	**1979–83**	**1984–88**	**1989–93**	**1994–98**	**1999–03**	**2004–08**	**2009–13**	**2014–18***
		Total	**90.4**	**92.7**	**95.5**	**95.9**	**96.6**	**97.8**	**97.9**	**98.8**
		Localised	98.7	98.4	98.7	98.7	98.8	100.5	99.0	99.9
C62	**Testis**	Regional	92.6	95.4	95.8	97.8	95.8	95.5	96.6	97.6
		Distant	62.7	69.3	76.7	75.7	82.6	84.7	89.5	87.4
		Unknown	-	-	-	101.9	99.7	98.0	-	-
		Total	**39.1**	**42.7**	**48.7**	**49.3**	**55.7**	**63.1**	**70.0**	**76.9**
		Localised	67.1	71.6	73.1	74.1	83.1	86.5	88.3	90.9
C64	**Kidney (excl. renal pelvis)**	Regional	50.4	46.1	55.1	55.5	48.8	56.5	59.9	66.1
		Distant	4.7	6.1	6.6	6.1	7.3	10.6	10.8	14.9
		Unknown	-	-	34.0	41.6	65.5	72.0	38.9	55.5
		Total	**60.0**	**65.7**	**68.1**	**68.4**	**70.1**	**72.2**	**75.1**	**78.0**
		Localised	68.3	72.9	74.4	76.0	83.4	83.3	83.0	84.8
C65–68	**Urinary tract**	Regional	25.5	24.2	31.6	24.1	24.0	30.1	30.1	31.8
		Distant	0.5	6.5	3.4	9.6	3.7	5.6	5.0	6.3
		Unknown	38.6	68.3	60.7	67.8	67.9	74.2	55.2	45.6
		Total	**31.0**	**38.0**	**40.4**	**49.0**	**55.9**	**60.4**	**61.8**	**60.2**
C70–72	**Central nervous system**	Non-malignant	62.8	77.6	73.4	83.3	93.4	90.3	94.4	96.2
		Malignant	17.8	21.6	23.3	21.8	20.8	24.9	27.1	27.8
		Total	**82.2**	**75.3**	**74.6**	**77.0**	**81.0**	**82.8**	**88.1**	**87.5**
		Localised	99.2	88.0	92.5	101.4	94.3	104.0	99.7	100.6
C73	**Thyroid gland**	Regional	83.5	84.2	82.6	83.1	87.3	85.9	89.6	86.0
		Distant	-	-	-	-	-	-	-	-
		Unknown	-	-	-	-	-	-	-	79.4
C81	**Hodgkin lymphoma**	**Total**	**66.4**	**66.3**	**75.3**	**82.1**	**85.3**	**83.8**	**83.7**	**87.8**
C82–86, C96	**Non-Hodgkin lymphoma**	**Total**	**39.7**	**44.7**	**44.3**	**48.2**	**52.6**	**61.7**	**71.5**	**75.2**
C91–95	**Leukaemia**	**Total**	**25.2**	**29.0**	**38.7**	**43.3**	**50.7**	**56.9**	**62.7**	**65.0**

* For 2014–18 the 5-year relative survival estimates are based on the period approach (observation window 2014–18)

- Not estimated due to too few patients (see Chapter 4).

Table 8.2: Five-year relative survival by primary site, stage and period of diagnosis, 1979–2018, **females**

			Relative survival (%)							
ICD-10	**Site**	**Stage**	**1979–83**	**1984–88**	**1989–93**	**1994–98**	**1999–03**	**2004–08**	**2009–13**	**2014–18***
C00–96	**All sites**	**Total**	**51.9**	**53.9**	**57.6**	**60.4**	**63.0**	**67.2**	**70.6**	**73.5**
C00–14	**Mouth, pharynx**	**Total**	**55.3**	**53.1**	**66.8**	**59.9**	**59.4**	**67.6**	**70.7**	**74.2**
		Localised	74.6	68.1	80.0	82.1	81.6	82.9	86.6	90.0
		Regional	30.0	35.7	48.4	32.0	45.2	48.7	54.4	57.2
		Distant	-	-	-	-	-	-	-	-
		Unknown	-	-	-	54.9	58.8	82.7	74.1	82.4
C15	**Oesophagus**	**Total**	**12.0**	**5.8**	**11.2**	**7.3**	**10.9**	**9.5**	**20.3**	**25.4**
		Localised	11.5	12.2	22.9	-	29.9	24.8	37.8	44.2
		Regional	-	-	-	-	-	11.0	23.2	40.1
		Distant	-	-	-	-	2.3	0.0	3.6	-
		Unknown	-	-	11.3	8.0	7.0	8.9	11.8	16.2
C16	**Stomach**	**Total**	**18.5**	**20.5**	**22.5**	**24.6**	**21.9**	**24.8**	**23.8**	**26.7**
		Localised	44.5	46.9	51.4	70.7	62.0	63.8	58.3	69.5
		Regional	17.5	23.0	23.9	31.2	25.5	23.9	23.6	30.0
		Distant	0.7	1.3	1.3	2.4	3.0	3.9	3.2	3.2
		Unknown	8.5	15.5	11.2	14.3	20.6	33.7	27.1	27.7
C18	**Colon**	**Total**	**44.6**	**49.6**	**52.0**	**55.8**	**57.6**	**62.2**	**64.6**	**68.6**
		Localised	71.7	80.0	78.5	91.8	89.8	93.3	95.0	98.4
		Regional	53.4	58.7	59.8	68.4	70.9	75.6	80.4	83.5
		Distant	4.3	5.2	3.6	6.8	8.3	12.7	15.3	17.8
		Unknown	18.4	27.1	34.7	42.0	58.0	58.6	24.6	28.0
C19–20	**Rectum, rectosigmoid**	**Total**	**45.7**	**49.8**	**54.1**	**58.9**	**61.9**	**64.9**	**68.3**	**69.4**
		Localised	68.2	75.2	77.3	92.1	90.0	94.7	97.3	97.4
		Regional	38.3	48.4	51.4	62.1	69.2	72.6	79.1	78.3
		Distant	5.4	4.7	3.6	6.6	9.9	11.8	22.0	22.1
		Unknown	-	25.4	50.2	37.9	61.7	63.9	40.8	40.9
C22	**Liver**	**Total**	**2.3**	**8.3**	**8.2**	**9.5**	**11.0**	**14.1**	**19.1**	**23.6**
		Localised	5.7	11.2	14.7	-	21.5	27.9	33.5	43.0
		Regional	-	-	-	-	-	-	-	23.7
		Distant	0.0	-	-	-	-	3.6	3.3	-
		Unknown	-	-	7.6	6.4	9.7	15.8	13.1	14.3
C23–24	**Gallbladder, bile ducts**	**Total**	**10.8**	**13.5**	**6.5**	**11.1**	**9.9**	**14.5**	**14.6**	**21.2**
		Localised	24.1	25.0	16.4	34.9	-	31.0	35.3	38.7
		Regional	6.5	18.1	3.4	16.4	18.5	18.8	24.6	30.1
		Distant	1.9	0.0	0.0	3.2	0.0	1.4	2.6	3.7
		Unknown	-	6.7	10.6	2.7	11.1	16.6	-	-
C25	**Pancreas**	**Total**	**2.5**	**2.1**	**2.5**	**3.3**	**3.9**	**4.9**	**8.1**	**10.5**
		Localised	3.5	4.0	9.8	14.7	22.0	17.8	38.4	49.6
		Regional	8.1	4.1	2.9	4.9	3.2	6.1	10.1	14.0
		Distant	1.2	0.7	0.4	0.9	1.5	1.6	2.6	2.2
		Unknown	1.1	1.6	2.5	2.6	5.6	9.7	0.8	-
C33–34	**Lung, trachea**	**Total**	**9.1**	**7.9**	**9.9**	**11.5**	**12.8**	**15.9**	**20.6**	**26.2**
		Localised	21.6	21.0	24.5	41.4	48.4	52.0	59.2	69.2
		Regional	7.8	8.2	11.6	12.6	12.5	17.5	21.4	31.1
		Distant	1.0	0.7	1.3	1.1	1.3	2.7	2.9	3.7
		Unknown	9.4	6.7	7.6	7.2	17.7	20.6	15.5	21.4
C43	**Melanoma of the skin**	**Total**	**79.5**	**83.9**	**87.4**	**87.3**	**86.8**	**88.0**	**89.4**	**91.7**
		Localised	85.5	88.4	92.2	92.3	93.5	94.2	93.3	95.1
		Regional	41.4	46.1	43.1	-	55.4	53.5	57.7	67.1
		Distant	7.4	8.6	18.2	16.8	19.1	29.0	28.8	39.8
		Unknown	-	72.5	77.2	84.8	86.5	87.6	67.7	74.0

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Table 8.2: Five-year relative survival by primary site, stage and period of diagnosis, 1979–2018, **females** (Continued)

			Relative survival (%)							
ICD-10	**Site**	**Stage**	**1979–83**	**1984–88**	**1989–93**	**1994–98**	**1999–03**	**2004–08**	**2009–13**	**2014–18***
C50	**Breast**	**Total**	**73.5**	**74.3**	**76.3**	**81.7**	**85.1**	**87.5**	**89.3**	**90.7**
		I	87.1	89.2	94.5	96.5	98.1	99.7	100.3	100.0
		II	64.0	70.4	75.0	81.7	86.5	89.3	94.1	95.0
		III	48.8	49.3	49.2	58.9	61.4	70.7	77.0	77.8
		IV	16.3	15.1	22.0	15.9	19.9	22.5	26.5	29.2
		Unknown	77.8	85.2	84.9	86.5	87.9	75.0	73.3	78.6
C53	**Cervix uteri** [1]	**Total**	**71.9**	**69.6**	**70.3**	**74.5**	**76.6**	**77.8**	**80.1**	**82.0**
		I	~~86.3~~	~~84.7~~	~~83.6~~	~~88.4~~	~~91.4~~	~~94.1~~	~~89.6~~	~~91.0~~
		II	~~59.8~~	~~53.7~~	~~59.6~~	~~58.7~~	~~70.2~~	~~76.2~~	~~80.1~~	~~77.8~~
		III	~~31.0~~	~~30.7~~	~~30.7~~	~~43.4~~	~~44.5~~	~~46.9~~	~~57.7~~	~~63.3~~
		IV	~~6.7~~	~~7.8~~	~~31.8~~	~~17.0~~	~~24.6~~	~~15.2~~	~~28.2~~	~~48.9~~
		Unknown	-	-	-	-	-	~~70.4~~	-	~~81.7~~
C54	**Corpus uteri**	**Total**	**70.7**	**71.0**	**74.6**	**77.1**	**81.1**	**81.8**	**83.2**	**84.4**
		Localised	82.6	81.9	86.5	89.9	92.1	92.9	94.5	96.3
		Regional	57.1	56.0	65.7	70.3	73.8	74.9	62.0	64.2
		Distant	23.0	21.7	30.3	32.6	34.1	42.4	35.7	39.3
		Unknown	36.5	49.5	45.0	52.7	87.7	80.3	71.1	61.2
C56, C57.0–4, C48.2	**Ovary etc.**	**Total**	**33.0**	**35.4**	**36.7**	**39.2**	**42.9**	**42.4**	**44.9**	**48.9**
		Localised	73.8	81.9	78.4	89.1	86.5	86.5	89.7	93.9
		Regional	39.6	44.5	52.4	51.6	65.4	68.9	55.6	61.3
		Distant	16.0	16.6	18.5	23.4	28.2	30.2	32.6	36.7
		Unknown	34.9	34.9	31.9	43.4	64.9	55.5	45.7	41.4
C64	**Kidney (excl. renal pelvis)**	**Total**	**46.1**	**46.4**	**54.8**	**53.3**	**57.1**	**68.5**	**73.4**	**76.7**
		Localised	70.5	77.8	76.5	79.3	84.7	86.3	90.2	91.0
		Regional	53.8	45.0	52.2	52.0	49.2	49.7	51.9	58.9
		Distant	3.8	8.0	7.7	8.0	12.8	12.3	12.1	13.5
		Unknown	-	-	36.4	45.8	61.1	76.7	-	34.9
C65–68	**Urinary tract**	**Total**	**52.6**	**58.9**	**60.2**	**60.1**	**61.3**	**63.3**	**69.0**	**71.9**
		Localised	66.1	69.6	70.2	74.3	81.9	78.2	79.2	80.8
		Regional	14.6	13.0	18.2	26.3	25.8	21.3	28.3	33.1
		Distant	2.9	6.7	6.6	3.9	3.8	7.8	7.8	-
		Unknown	31.3	52.4	53.5	54.3	60.1	65.6	50.6	33.1
C70–72	**Central nervous system**	**Total**	**43.9**	**51.2**	**60.2**	**62.9**	**71.6**	**76.5**	**77.7**	**75.3**
		Non-malignant	77.7	81.6	85.4	88.3	91.6	94.0	96.5	97.1
		Malignant	18.1	22.2	28.0	24.1	26.3	26.5	29.7	28.7
C73	**Thyroid gland**	**Total**	**84.9**	**87.6**	**89.9**	**88.3**	**88.6**	**90.0**	**93.5**	**93.4**
		Localised	92.9	95.6	96.5	99.9	104.6	102.5	100.4	100.1
		Regional	81.3	83.5	87.5	83.6	84.1	89.0	91.6	91.9
		Distant	48.9	-	52.6	-	-	42.0	-	-
		Unknown	-	-	-	-	83.3	86.6	-	81.0
C81	**Hodgkin lymphoma**	**Total**	**66.3**	**69.9**	**75.0**	**81.4**	**81.4**	**80.5**	**87.3**	**85.1**
C82–86, C96	**Non-Hodgkin lymphoma**	**Total**	**47.1**	**48.5**	**53.5**	**51.3**	**56.4**	**69.1**	**74.1**	**76.1**
C91–95	**Leukaemia**	**Total**	**27.9**	**28.3**	**40.7**	**47.1**	**52.5**	**60.8**	**67.1**	**71.0**

* For 2014–18 the 5-year relative survival estimates are based on the period approach (observation window 2014–18)

- Not estimated due to too few patients (see Chapter 4).

1 The Cancer in Norway reports from 2015 to 2018 contained an error in staging of cervical cancer, and the numbers given in this table are incorrect. For more details see: https://www.kreftregisteret.no/Generelt/Rapporter/Cancer-in-Norway/erratum-for-cancer-in-norway/

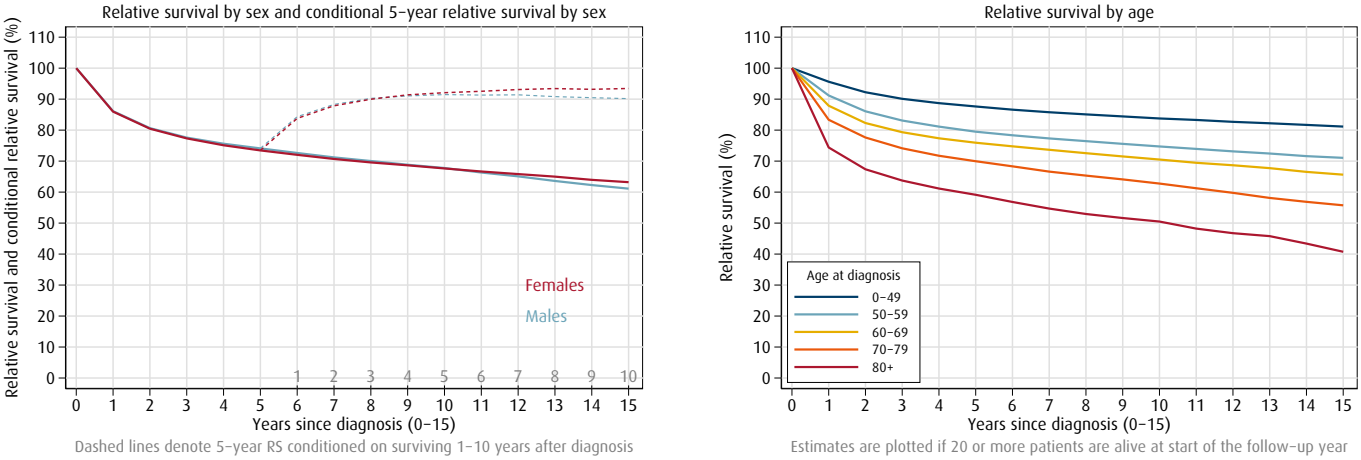
Table 8.3: 1-, 5-, 10-, and 15-year relative survival (%) with 95% confidence interval by primary site and sex. Period approach, 2014–2018

ICD-10	Site	Sex	1-year	5-year	10-year	15-year
C00–14	Mouth, pharynx	M	85.9 (84.2–87.5)	68.1 (65.4–70.7)	58.5 (54.6–62.2)	54.1 (47.0–60.6)
		F	88.4 (86.1–90.4)	74.2 (70.3–77.6)	64.5 (59.1–69.4)	51.0 (41.8–59.5)
C15	Oesophagus	M	51.8 (48.9–54.7)	22.2 (19.4–25.1)	16.8 (13.5–20.4)	12.5 (8.0–18.0)
		F	49.1 (43.8–54.1)	25.4 (20.6–30.5)	-	-
C16	Stomach	M	54.9 (52.3–57.5)	27.8 (25.2–30.5)	23.9 (20.6–27.3)	19.7 (15.5–24.2)
		F	51.2 (47.8–54.6)	26.7 (23.5–29.9)	23.9 (20.3–27.6)	21.8 (17.3–26.7)
C18	Colon	M	82.7 (81.6–83.6)	65.4 (63.8–67.0)	58.6 (56.1–61.0)	55.4 (50.4–60.1)
		F	83.3 (82.3–84.2)	68.6 (67.1–70.1)	64.6 (62.3–66.8)	63.4 (58.2–68.1)
C19–20	Rectum, rectosigmoid	M	89.2 (88.1–90.2)	69.8 (67.9–71.7)	61.5 (58.6–64.2)	57.7 (52.8–62.3)
		F	88.6 (87.3–89.9)	69.4 (67.2–71.4)	64.2 (61.2–66.9)	61.4 (56.8–65.6)
C22	Liver	M	39.4 (35.7–43.0)	18.8 (15.8–22.1)	16.6 (12.6–21.1)	-
		F	48.6 (43.9–53.1)	23.6 (19.4–28.1)	20.9 (15.9–26.3)	-
C23–24	Gallbladder, bile ducts	M	63.2 (57.7–68.2)	21.0 (16.4–26.0)	19.8 (14.7–25.4)	17.6 (10.6–26.0)
		F	49.7 (44.6–54.5)	21.2 (17.0–25.7)	17.6 (12.7–23.1)	-
C25	Pancreas	M	32.9 (30.8–35.0)	10.9 (9.3–12.6)	8.6 (6.7–10.8)	-
		F	31.5 (29.4–33.6)	10.5 (9.0–12.1)	8.9 (7.2–10.7)	-
C33–34	Lung, trachea	M	45.3 (44.1–46.4)	19.4 (18.3–20.4)	11.8 (10.7–12.9)	8.0 (6.6–9.6)
		F	52.8 (51.6–54.0)	26.2 (25.0–27.4)	17.7 (16.4–19.1)	13.7 (11.8–15.6)
C43	Melanoma of the skin	M	96.3 (95.6–97.0)	85.5 (83.8–87.0)	81.8 (78.6–84.6)	80.6 (72.9–86.2)
		F	98.0 (97.4–98.5)	91.7 (90.3–92.9)	88.8 (86.3–90.9)	85.3 (81.1–88.6)
C50	Breast	F	98.0 (97.7–98.3)	90.7 (90.0–91.3)	83.6 (82.5–84.6)	78.3 (76.8–79.7)
C53	Cervix uteri	F	93.7 (92.5–94.8)	82.0 (80.0–83.8)	76.9 (74.6–79.0)	73.3 (70.8–75.6)
C54	Corpus uteri	F	94.2 (93.3–95.0)	84.4 (82.8–86.0)	83.1 (80.5–85.3)	82.1 (77.4–85.8)
C56, C57.0–4, C48.2	Ovary etc.	F	83.4 (81.9–84.9)	48.9 (46.8–51.0)	35.7 (33.5–38.0)	33.0 (30.4–35.5)
C61	Prostate	M	99.3 (99.0–99.5)	94.5 (93.9–95.1)	88.3 (87.2–89.3)	77.8 (75.7–79.6)
C62	Testis	M	99.5 (98.8–99.8)	98.8 (97.7–99.4)	99.1 (97.2–99.7)	97.5 (95.2–98.7)
C64	Kidney (excl. renal pelvis)	M	88.8 (87.4–90.0)	76.9 (74.8–78.8)	65.7 (62.5–68.7)	55.1 (50.3–59.7)
		F	89.1 (87.2–90.8)	76.7 (73.7–79.4)	69.0 (65.1–72.6)	58.3 (52.7–63.5)
C65–68	Urinary tract	M	90.2 (89.3–91.1)	78.0 (76.3–79.7)	68.8 (65.9–71.6)	59.1 (53.8–64.1)
		F	83.8 (82.1–85.4)	71.9 (69.2–74.3)	66.6 (62.4–70.5)	54.2 (48.0–60.1)
C70–72	Central nervous system	M	77.7 (76.0–79.3)	60.2 (58.1–62.3)	58.1 (55.6–60.6)	53.1 (49.7–56.4)
		F	85.9 (84.5–87.2)	75.3 (73.4–77.0)	71.8 (69.6–73.9)	69.5 (66.6–72.1)
C73	Thyroid gland	M	93.2 (90.5–95.1)	87.5 (83.1–90.7)	81.6 (74.2–87.1)	78.0 (65.8–86.3)
		F	95.7 (94.3–96.7)	93.4 (91.3–94.9)	93.1 (89.8–95.3)	87.8 (81.8–91.9)
C81	Hodgkin lymphoma	M	94.8 (92.2–96.6)	87.8 (83.7–90.9)	85.2 (79.9–89.2)	80.4 (73.8–85.5)
		F	93.9 (90.4–96.2)	85.1 (80.5–88.7)	79.1 (73.4–83.7)	74.2 (68.1–79.2)
C82–86, C96	Non-Hodgkin lymphoma	M	86.2 (84.8–87.6)	75.2 (73.1–77.2)	65.1 (61.9–68.2)	57.6 (51.9–62.8)
		F	86.7 (85.1–88.1)	76.1 (73.7–78.2)	64.5 (61.3–67.5)	54.0 (48.9–58.8)
C91–95	Leukaemia	M	83.1 (81.7–84.5)	65.0 (63.0–66.9)	53.4 (50.8–56.0)	41.8 (37.8–45.9)
		F	83.4 (81.8–84.9)	71.0 (68.7–73.2)	58.9 (55.8–61.8)	43.9 (39.3–48.5)

- Not estimated due to too few patients (see Chapter 4).

Figure 8.1: Relative survival (RS) up to 15 years after diagnosis by sex and age, 2014–2018

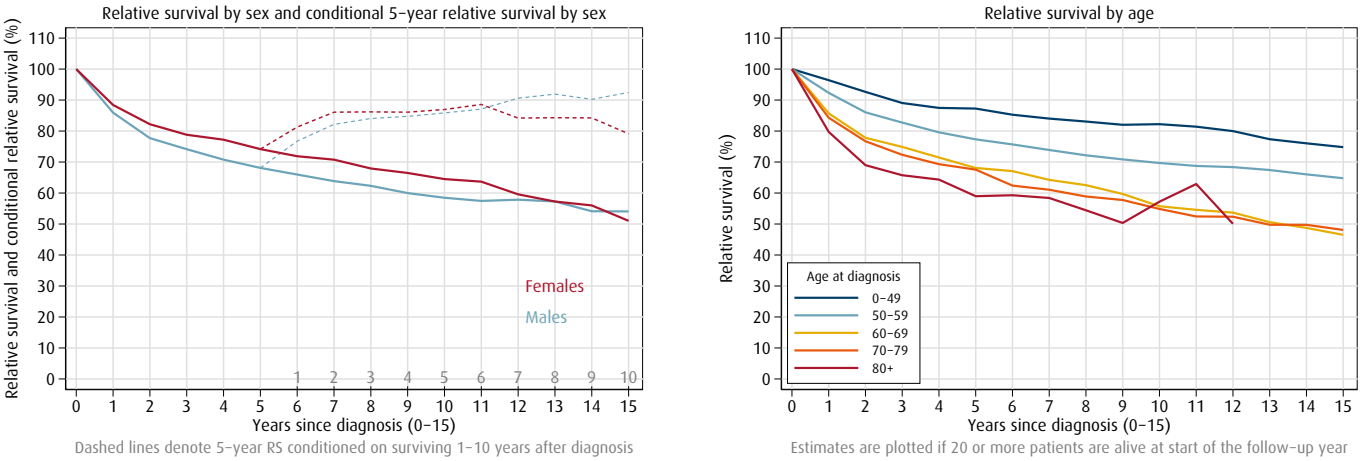
Figure 8.1–A: All sites (ICD-10 C00–96)



Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

Estimates are plotted if 20 or more patients are alive at start of the follow-up year

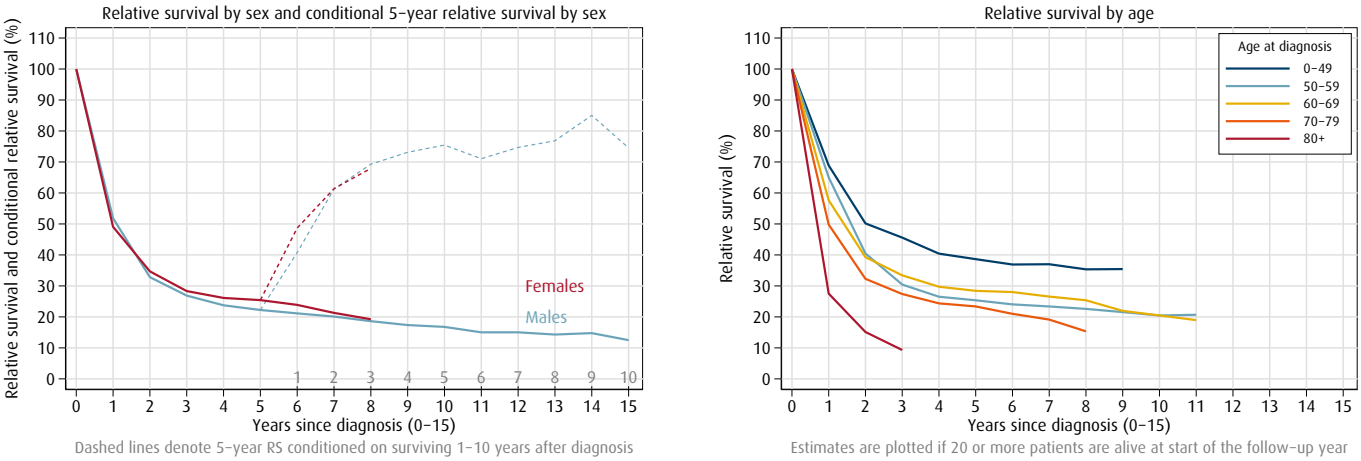
Figure 8.1–B: Mouth, pharynx (ICD-10 C00–14)



Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–C: Oesophagus (ICD-10 C15)

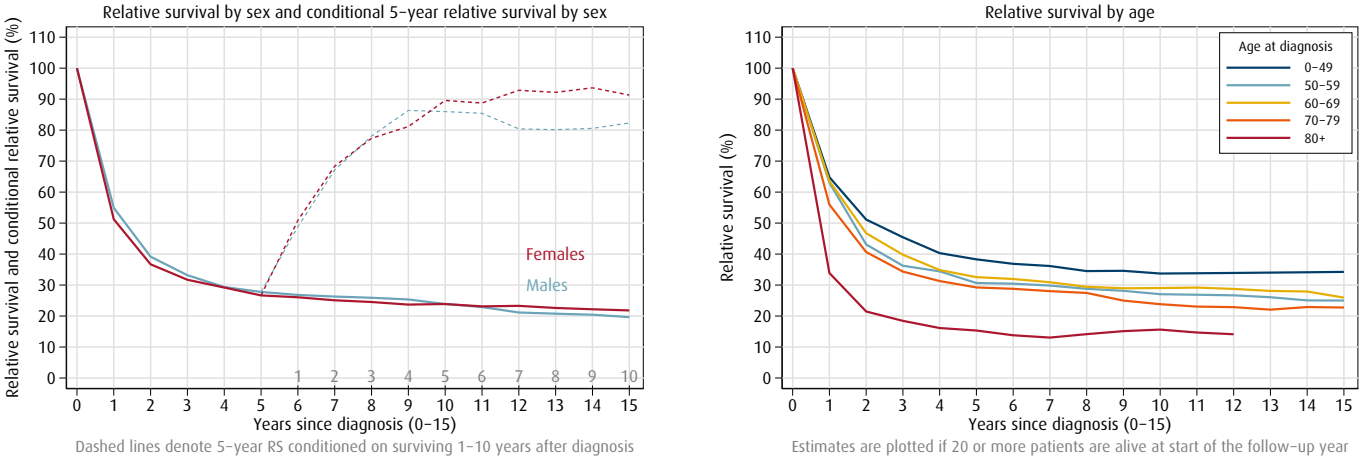


Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1: Relative survival (RS) up to 15 years after diagnosis by sex and age, 2014–2018

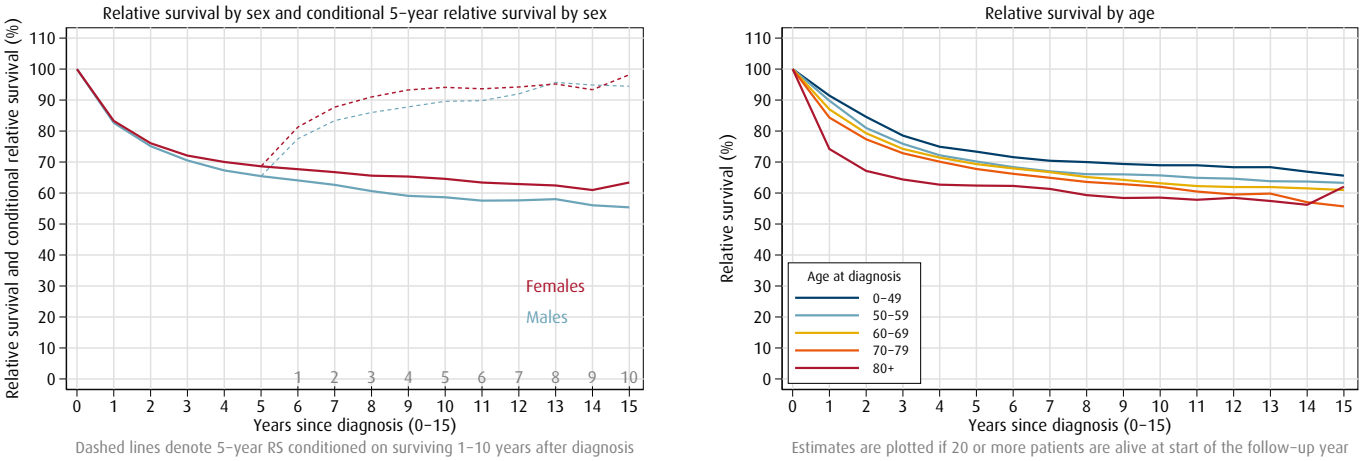
Figure 8.1–D: Stomach (ICD-10 C16)



Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

Estimates are plotted if 20 or more patients are alive at start of the follow-up year

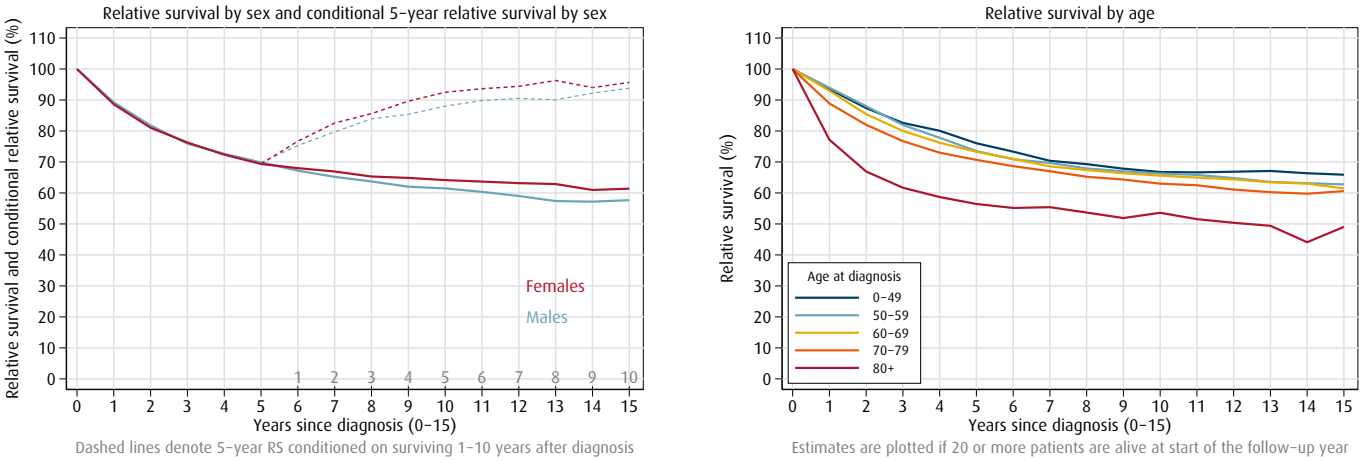
Figure 8.1–E: Colon (ICD-10 C18)



Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–F: Rectum, rectosigmoid (ICD-10 C19–20)

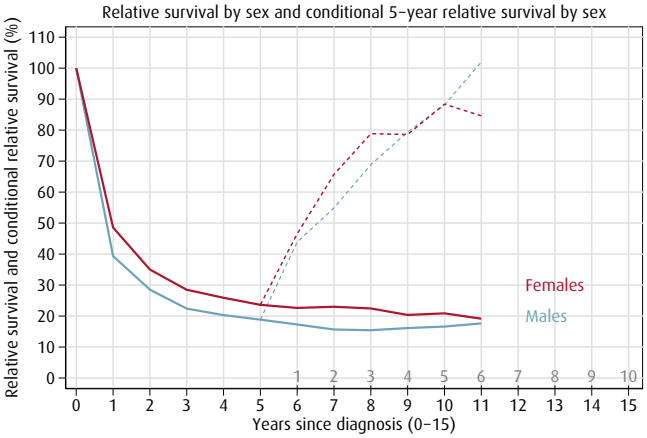


Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

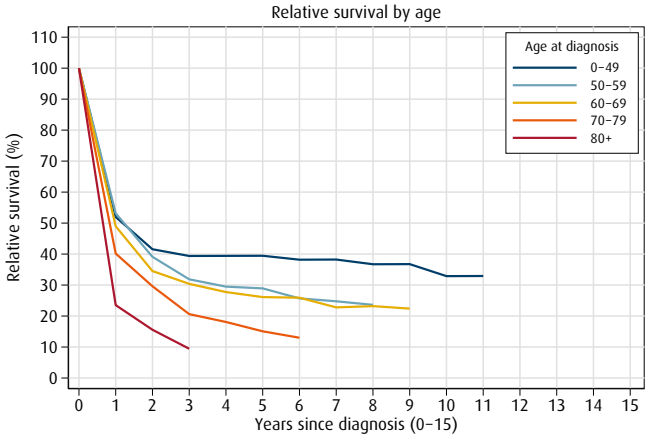
Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1: Relative survival (RS) up to 15 years after diagnosis by sex and age, 2014–2018

Figure 8.1–G: Liver (ICD-10 C22)

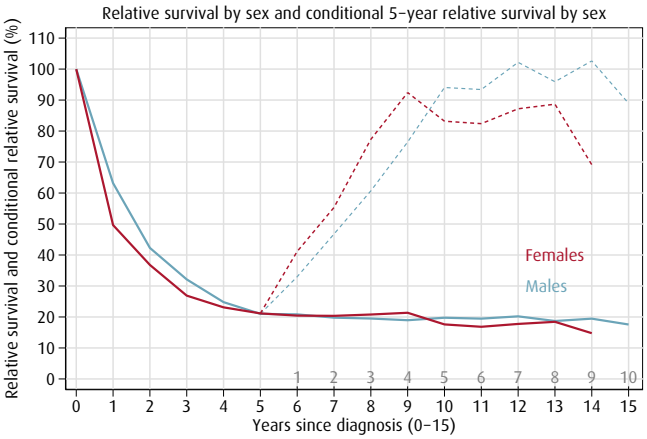


Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

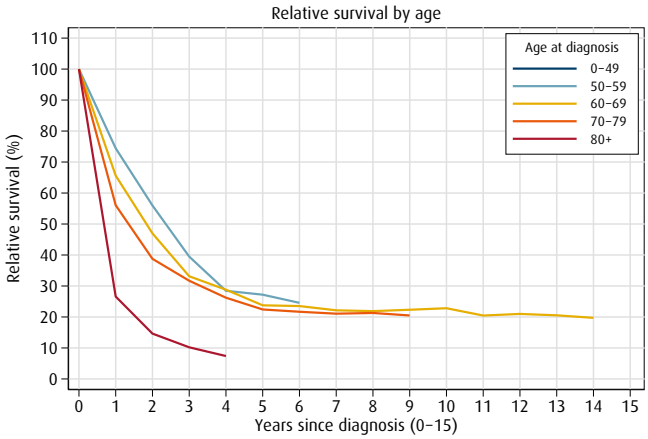


Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–H: Gallbladder, bile ducts (ICD-10 C23–24)

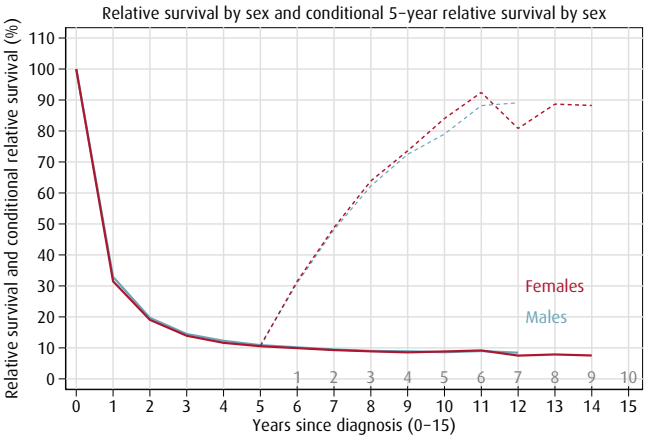


Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

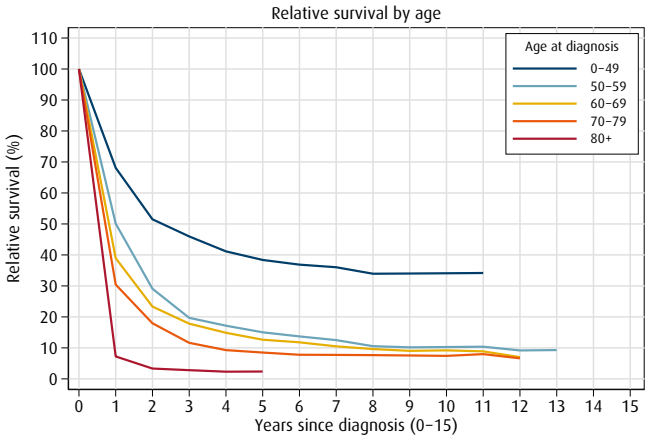


Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–I: Pancreas (ICD-10 C25)



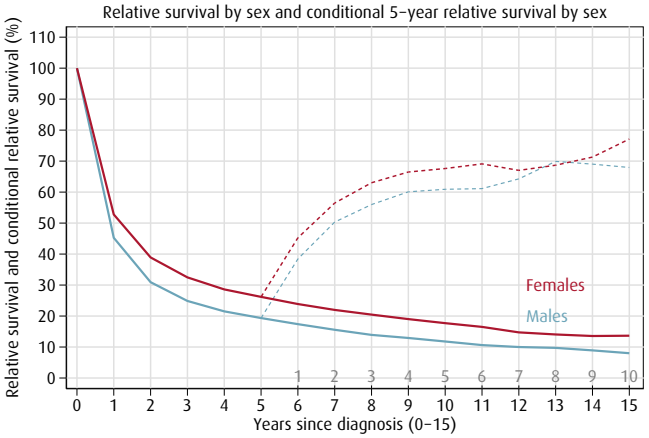
Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis



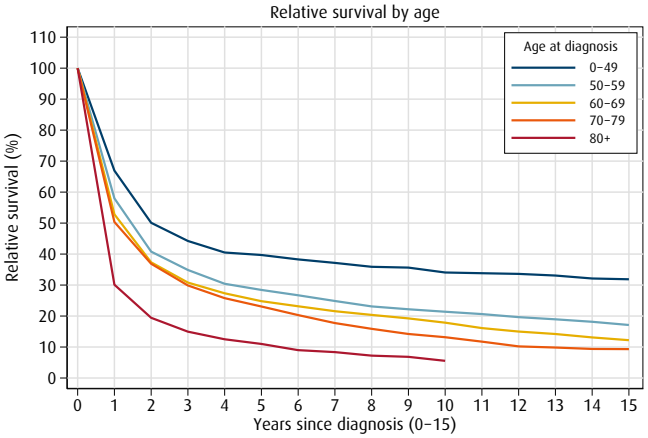
Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1: Relative survival (RS) up to 15 years after diagnosis by sex and age, 2014–2018

Figure 8.1–J: Lung, trachea (ICD-10 C33–34)

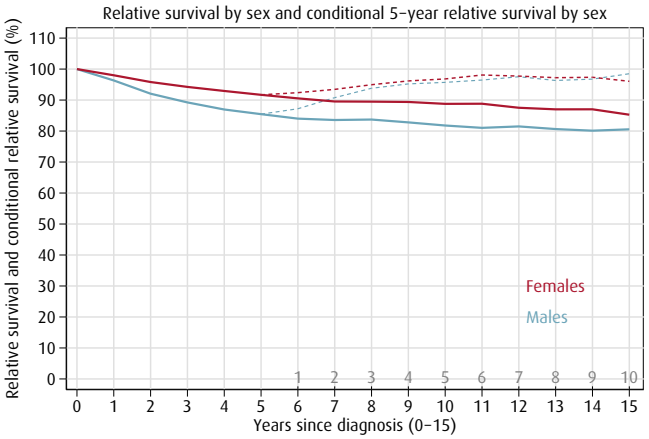


Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

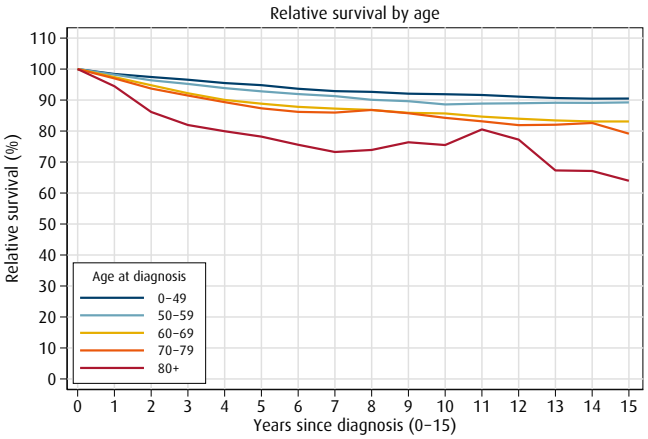


Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–K: Melanoma of the skin (ICD-10 C43)

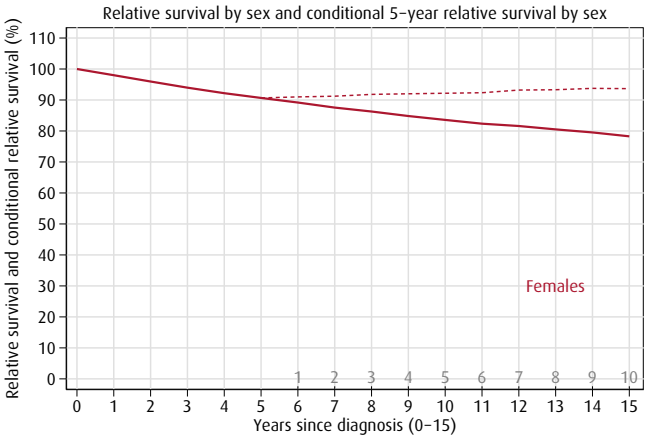


Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

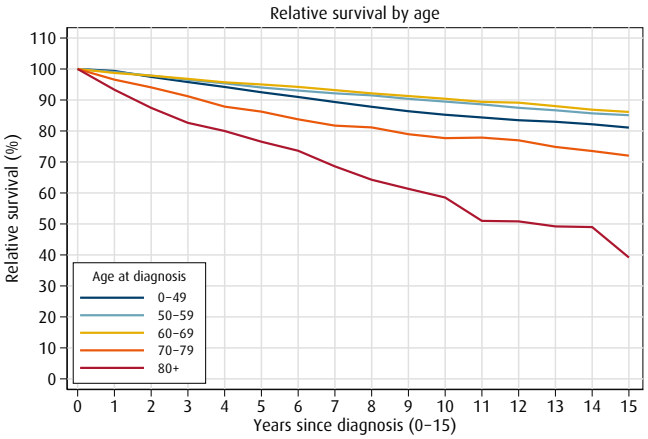


Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–L: Breast (ICD-10 C50)



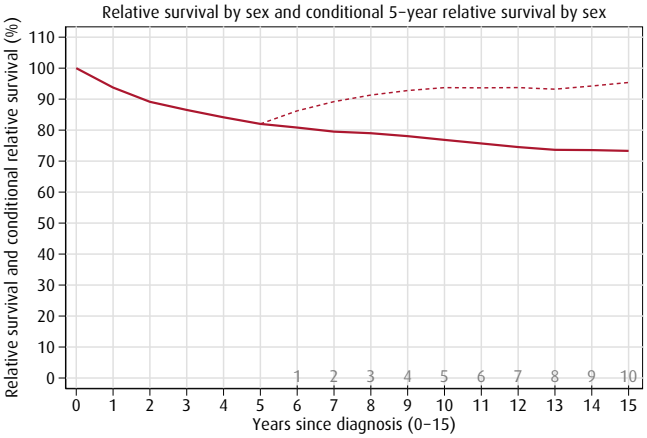
Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis



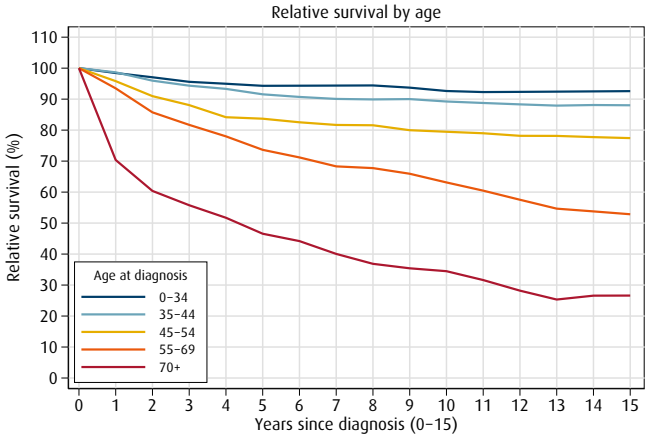
Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1: Relative survival (RS) up to 15 years after diagnosis by sex and age, 2014–2018

Figure 8.1–M: Cervix uteri (ICD-10 C53)



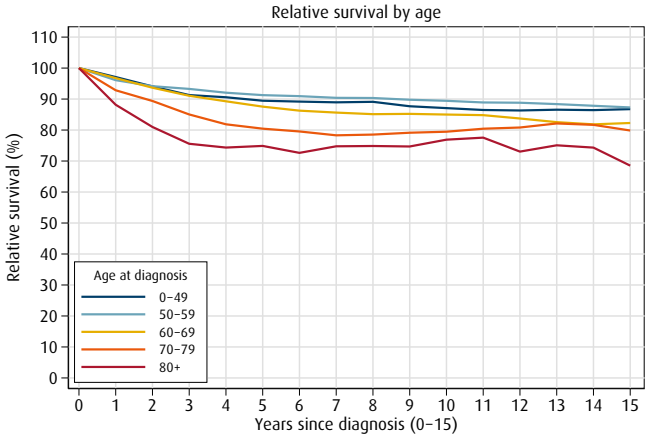
Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis



Estimates are plotted if 20 or more patients are alive at start of the follow-up year

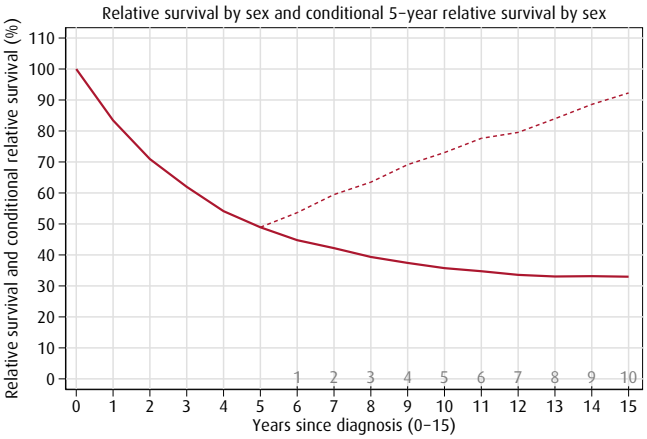
Figure 8.1–N: Corpus uteri (ICD-10 C54)

Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

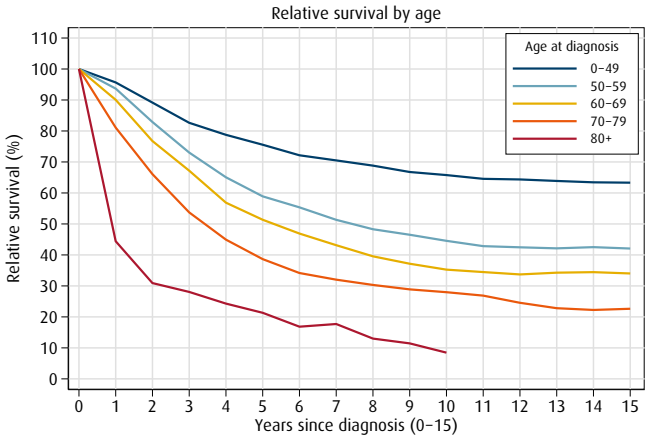


Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–O: Ovary etc. (ICD-10 C56, C57.0–4, C48.2)



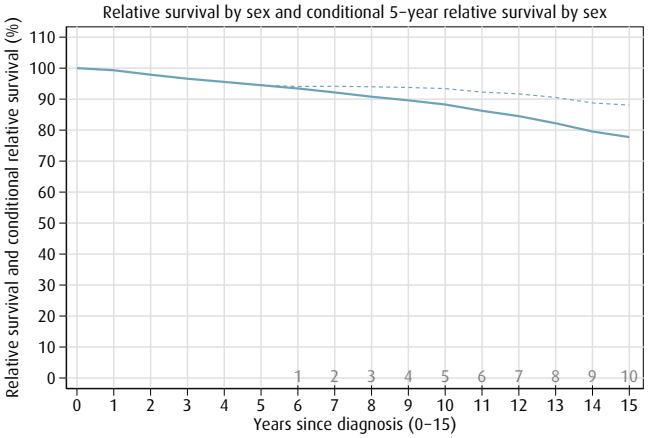
Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis



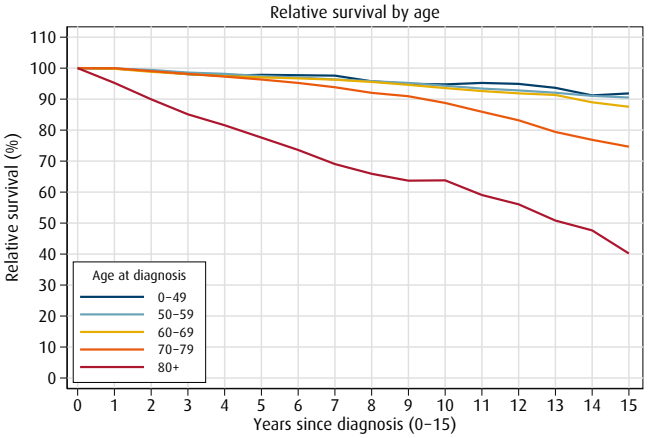
Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1: Relative survival (RS) up to 15 years after diagnosis by sex and age, 2014–2018

Figure 8.1–P: Prostate (ICD-10 C61)

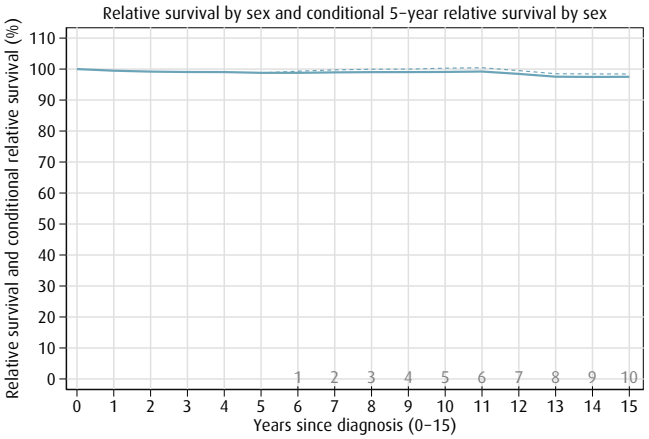


Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

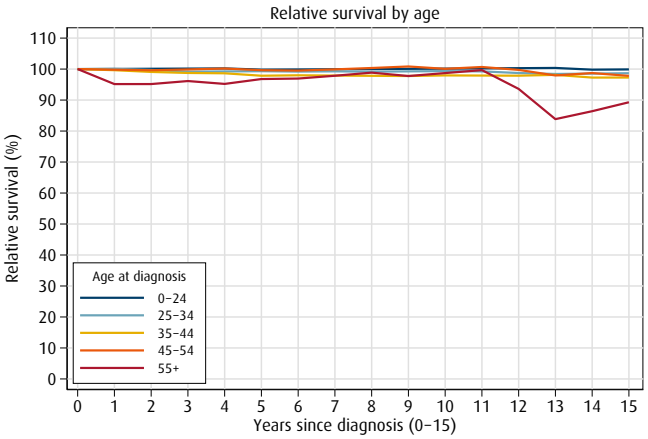


Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–Q: Testis (ICD-10 C62)

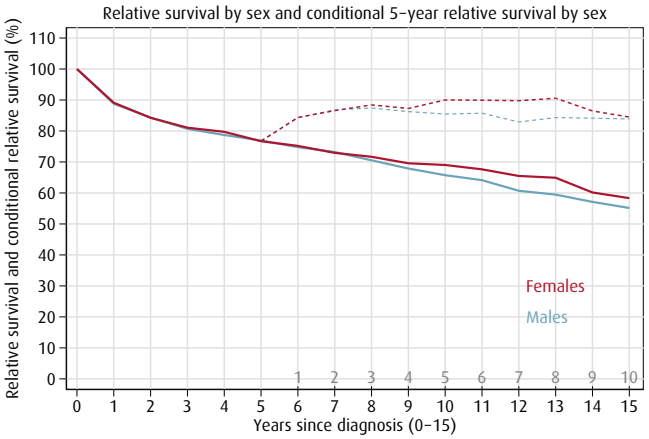


Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

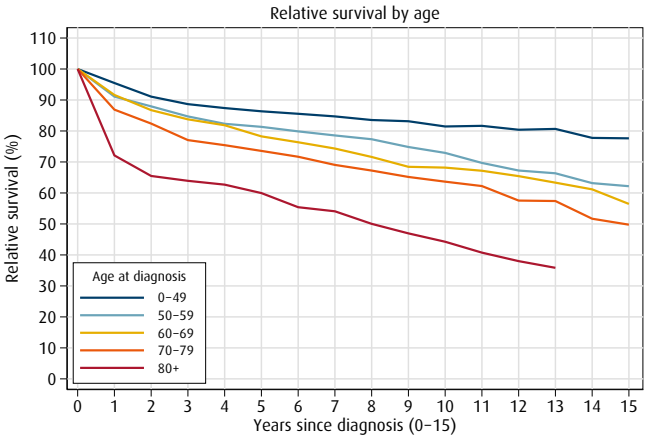


Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–R: Kidney (excl. renal pelvis) (ICD-10 C64)



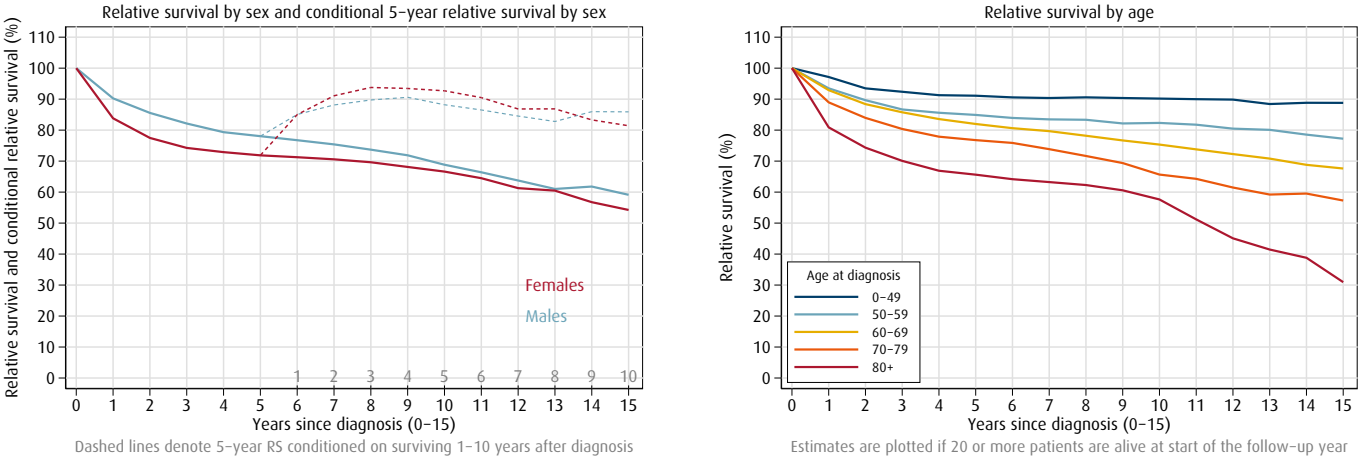
Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis



Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1: Relative survival (RS) up to 15 years after diagnosis by sex and age, 2014–2018

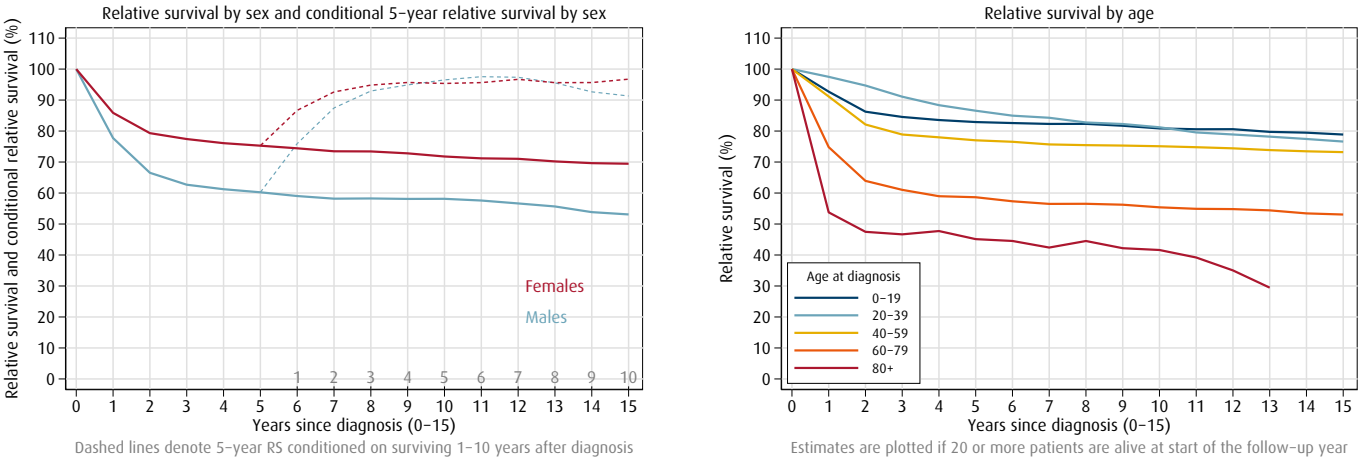
Figure 8.1–S: Urinary tract (ICD-10 C65–68)



Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

Estimates are plotted if 20 or more patients are alive at start of the follow-up year

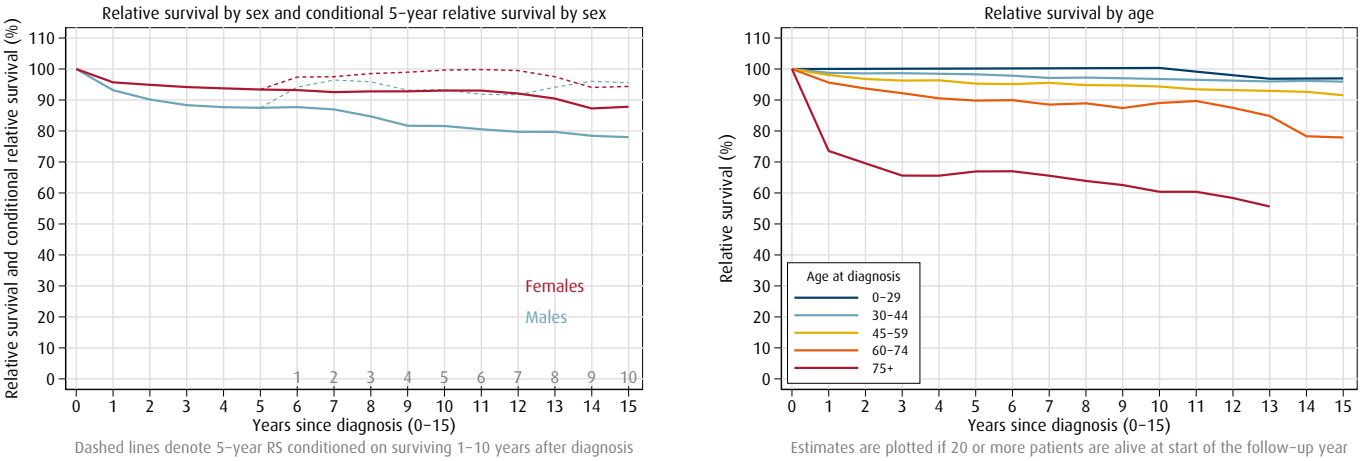
Figure 8.1–T: Central nervous system (ICD-10 C70–72)



Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–U: Thyroid gland (ICD-10 C73)

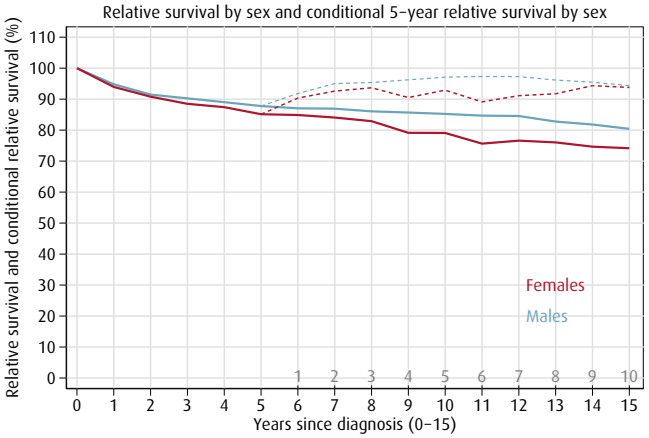


Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

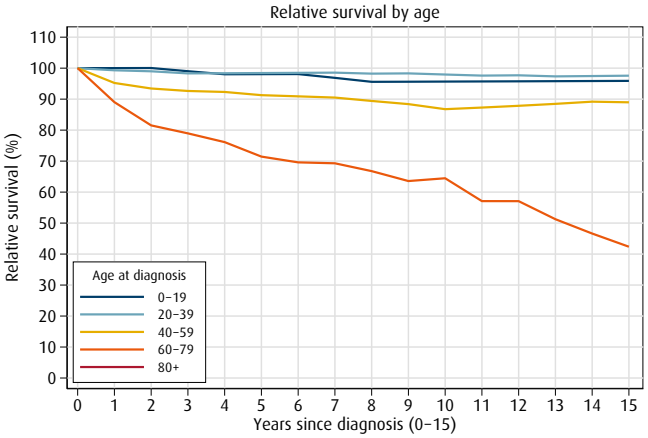
Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1: Relative survival (RS) up to 15 years after diagnosis by sex and age, 2014–2018

Figure 8.1–V: Hodgkin lymphoma (ICD-10 C81)

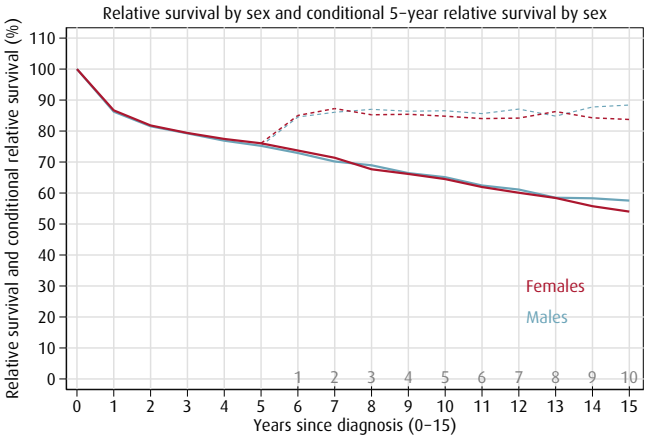


Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

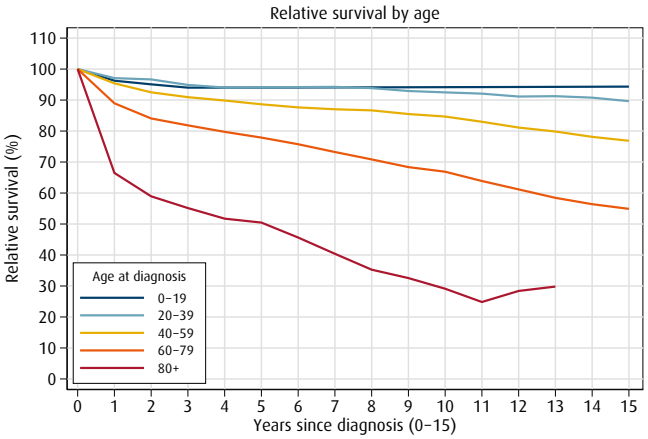


Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–W: Non-Hodgkin lymphoma (ICD-10 C82–86, C96)

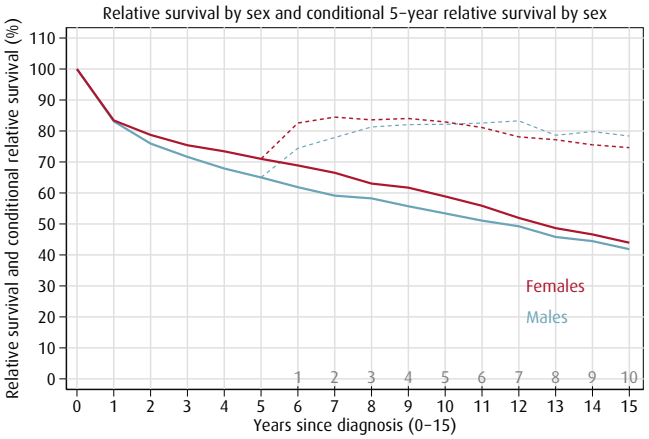


Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis

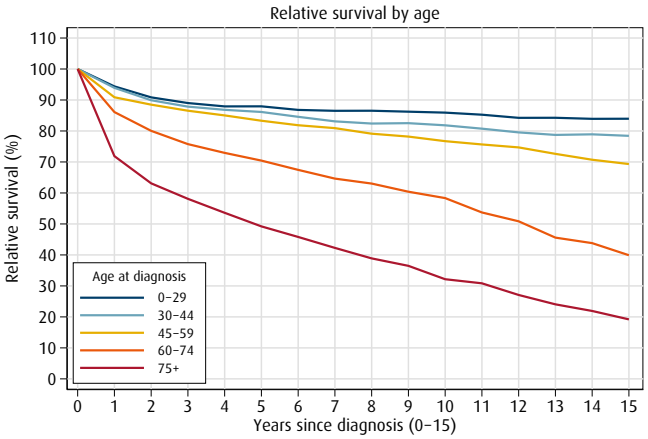


Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Figure 8.1–X: Leukaemia (ICD-10 C91–95)



Dashed lines denote 5-year RS conditioned on surviving 1–10 years after diagnosis



Estimates are plotted if 20 or more patients are alive at start of the follow-up year

Chapter 9 Trends in incidence, mortality and survival, Norway 1965–2018

There has been considerable discussion as to the relative merits of incidence, mortality and survival analysis in cancer research generally, and in time trend analysis specifically[20–24]. Analysing trends may provide some insight into changes in the incidence and distribution of risk factors, and the impact of interventions and screening 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, more effective therapies or better disease management.

The contribution of artefacts to the observed cancer incidence and mortality trends has been comprehensively addressed[25,26]. The accuracy of death certificates has also been discussed[27,28]. 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 may be affected by changes in diagnostic methods and disease classifications, as well as the extent of cancer screening that detect cases in an earlier stage of the disease.

There is a general consensus that a combined description of trends in incidence, mortality and survival aids our 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. Figures 9.1–A to 9.1–X present time trends during 1965–2018 for age-standardised incidence and mortality rates and five-year relative survival estimates. It should be noted that these summary measures will often fail to reflect true underlying age-calendar-year interactions for specific cancers, such as differences 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 9.1–A show a persistent increase in cancer incidence and survival in Norway over the last five decades, combined with a fairly stable mortality until the late 1990s. From 2000 onwards there has been a notable decline in the mortality rate in men, but only a slight decline in women. The interpretation of these aggregated estimates is complex, in that they comprise many different cancer types, which vary in terms of their capacity to be diagnosed as well as treated. Important contributions to the downward trend in men came from declines in mortality from lung cancer, prostate cancer and stomach cancer.

Among men, nearly 30% of all cancers diagnosed in 2018 were **prostate cancers**. General screening for prostate cancer using the PSA test is not recommended in Norway. However, the proportion of cases where PSA testing has led to further examination is still increasing and it is the main cause for performing a biopsy. The increase in both incidence and five-year relative survival from 1990 (Figure 9.1–O) probably reflects the availability and upsurge in the use of the PSA test for early 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 comprises more than 20% of all female cancer cases. There has been a monotonous increase in incidence rates up to 2005 with a steeper increase in the mid-1990s followed by a notable decline between 2005 and 2009 (Figure 9.1–M). The Norwegian Breast Cancer Screening Programme started as a four-year pilot project in four of the nineteen Norwegian counties in 1996, and gradually expanded to become nationwide by 2005. The programme invites women aged 50–69 years to biennial mammography. The implementation of the screening programme explains much of the increasing incidence trend from the mid-1990s to 2005.

The figures for recent years indicate that there is again an increase in incidence. This may be related to better diagnostic methods currently used in the program. The age-specific rates indicate, however, that the increase is primarily limited to the age group 70–79 years (not shown). The reason for this is unclear, but it may be related to women continuing to have mammography after the age of 70. The breast cancer mortality was almost stable up to the mid 1990s when it began declining (Figure 9.1–M). These good news most likely reflect a combination of improved diagnostics, better treatment, and the implementation of the screening programme for breast cancer. The five-year relative survival is 90% for all staged combined.

Trends in **lung cancer** incidence and mortality has followed each other closely. Since early 2000s, the distance between the rates has increased, reflecting improved survival for these patients. The varying trends by sex reflect the different phases of the smoking epidemic in Norwegian men and women (Figure 9.1–J). Overall, lung cancer incidence and mortality rates among males began to level off in the early 1990s and declined the past five years. For women, we have observed signs of a stabilization in the rates during recent years. However, the rate for 2018 reached an all-time high level. Thus, we may not yet have seen the peak. The age-specific rates (not presented in this report) show, however, a stabilization for women under 70. During the last two decades lung cancer has surpassed breast cancer as the most frequent cause of cancer death among women.

Both **colon and rectal cancer** incidence have been increasing for many decades, but the rectal cancer rates have levelled off since the 1990s (Figure 9.1–E and 9.1–F). Of particular note is the increasing survival and declining mortality from rectal cancer in both sexes, and the mortality is now nearly half of what it used to be. The most important determinants are probably 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 world, and remain a health 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 better hygiene and increased intake of fresh or frozen food, which have reduced the prevalence of Helicobacter pylori infections. The survival of stomach cancer has increased moderately over time (Figure 9.1–D).

In contrast, the incidence rate of **testicular cancer** increased gradually during the last decades (Figure 9.1–Q). An improvement in 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. This cancer now has the highest five-year relative survival.

A remarkable increase in incidence rates has been seen during the last years for **melanoma of the skin** in both genders (Figure 9.1–K). The steep rise is suggested to result from sun exposure habits. However, we cannot exclude the possibility that increased awareness, both in the general population and among general practitioners, and sliding of the diagnostic criteria, may have contributed to the increase. The moderate but steady increase in melanoma mortality indicates that some of the increase in incidence is caused by a higher risk of the disease.

The classification of diseases changes over time, and sometimes this appears clearly in the insidence trends. In 2002, polycythaemia vera (D45), myelodysplastic syndromes (D46) and other neoplasms of uncertain or unknown behavior of lymphoid, hematopoietic and related tissue (D47) were included in the statistics for **leukemia**, and this inclusion caused a notable increase in the incidence (Figure 9.1–X). The treatment of leukemia has improved, and a steep increase in the survival is observed since the early 1990s.

Cancer of the **bladder and urinary tract** is the fourth most frequent cancer in men, but are less frequent in women. The incidence rate increased gradually until the early 1990s, but has since then been less pronounced. The mortality rate has decreased since early 2000, reflecting the increase in survival (Figure 9.1–S).

Finally, among more uncommon cancer sites, there has been a notable increase in the rates for **liver and thyroid cancer** in both genders (Figures 9.1–G and 9.1–U). The rise of thyroid cancers during the last decade is also seen in the other Nordic countries, except in Iceland where the rates have been consistently higher than in Scandinavia since 1960. We do not know the exact reason for this increase, but it may be due to changes in the diagnostic workup with an increased use of ultrasound, CT or MRI for other indications, resulting in incidental findings of tumours in the thyroid.

We have earlier suspected that the increased rate of **liver** cancer was due to immigration from areas with higher incidence of this disease. A recent study revealed that this assumption was wrong, and that there has been a clear increase also among the Norwegian native population[29].

In summary, the overall trends in cancer survival probably reflect both artefacts, such as screening and improved diagnostics, and improved 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.

Note: The mortality rates used in the trend figures have some deviations from the incidence and survival estimates: Anal cancer is included in the mortality rates for rectum and rectosigmoid (C19–20).

Figure 9.1: Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 9.1–A: All sites (ICD-10 C00–96)

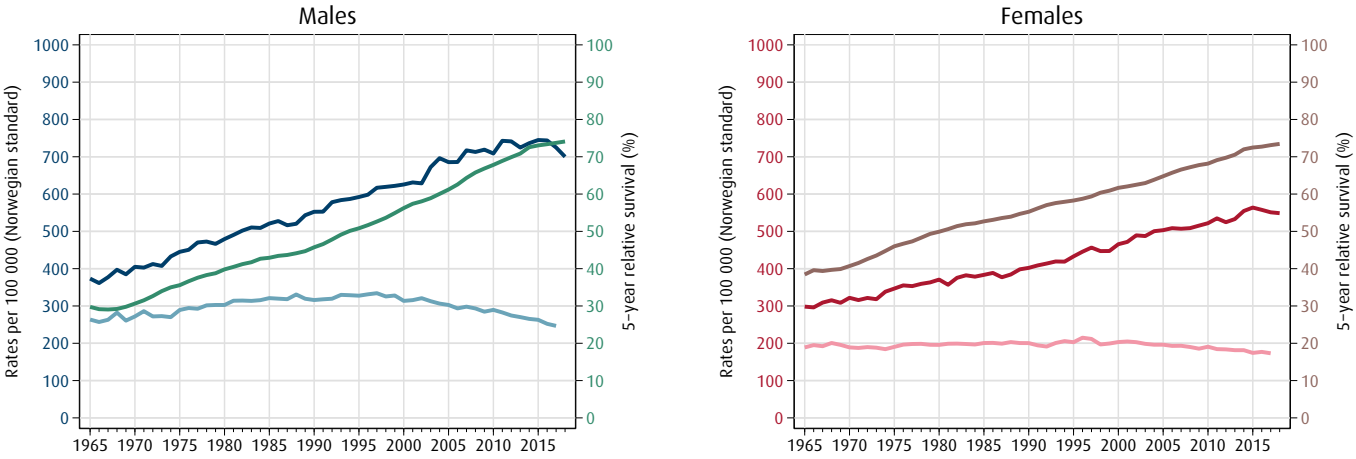


Figure 9.1–B: Mouth, pharynx (ICD-10 C00–14)

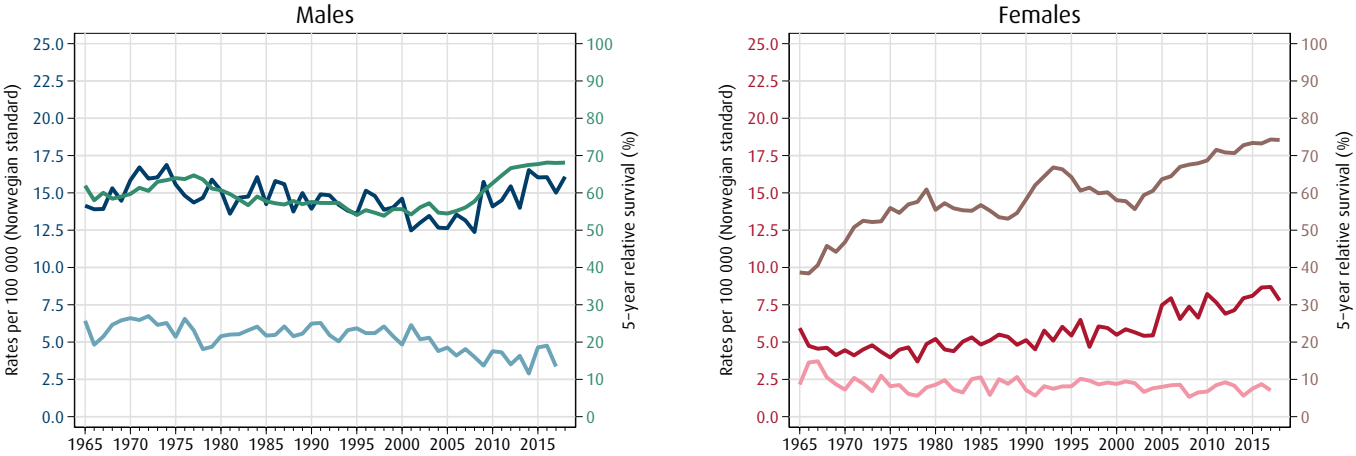


Figure 9.1–C: Oesophagus (ICD-10 C15)

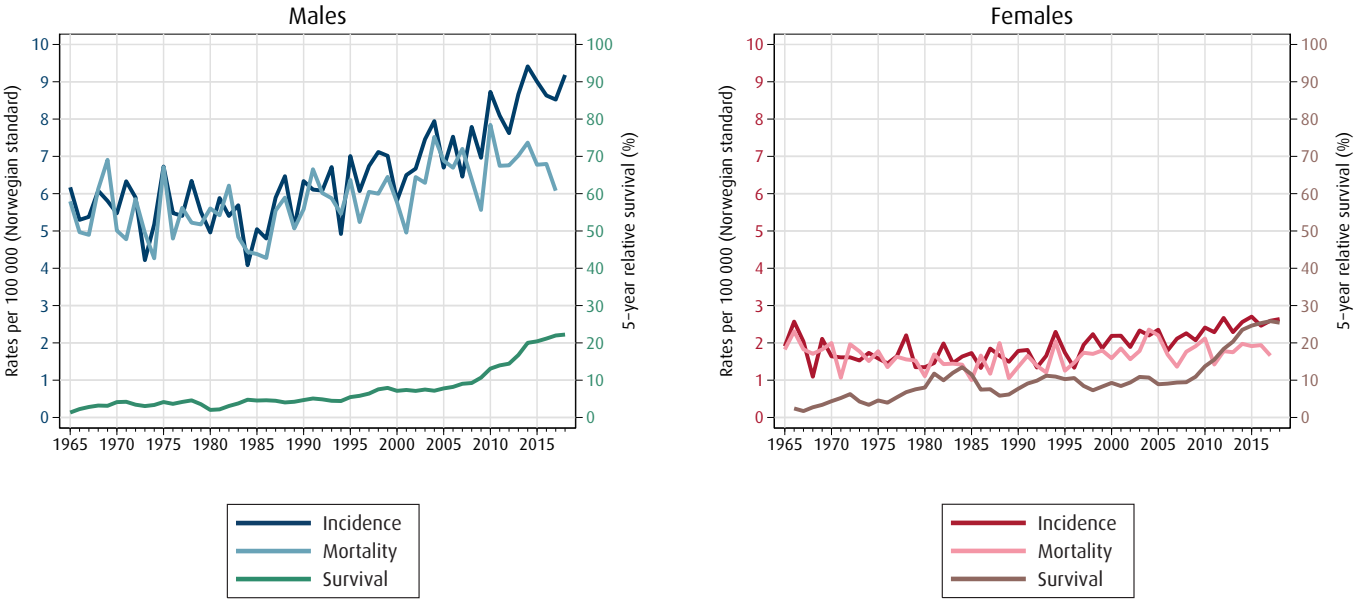


Figure 9.1: Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 9.1–D: Stomach (ICD-10 C16)

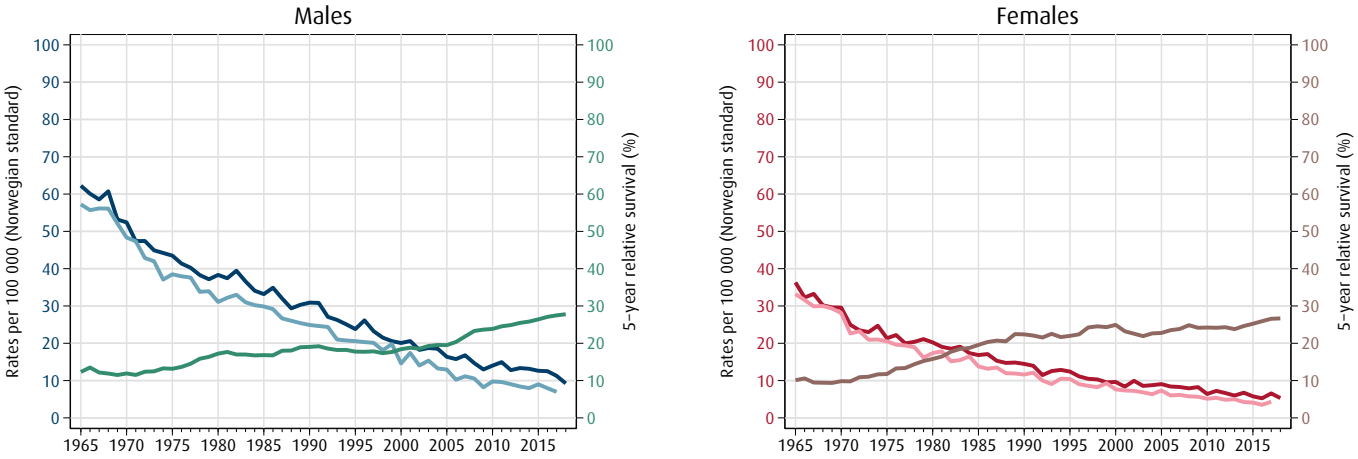


Figure 9.1–E: Colon (ICD-10 C18)

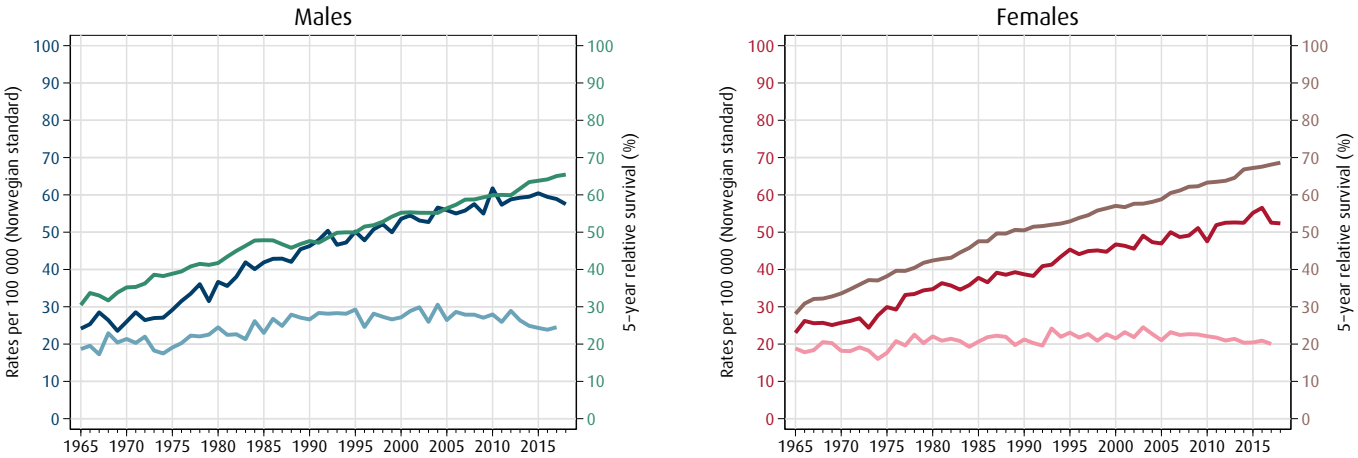


Figure 9.1–F: Rectum, rectosigmoid (ICD-10 C19–20)

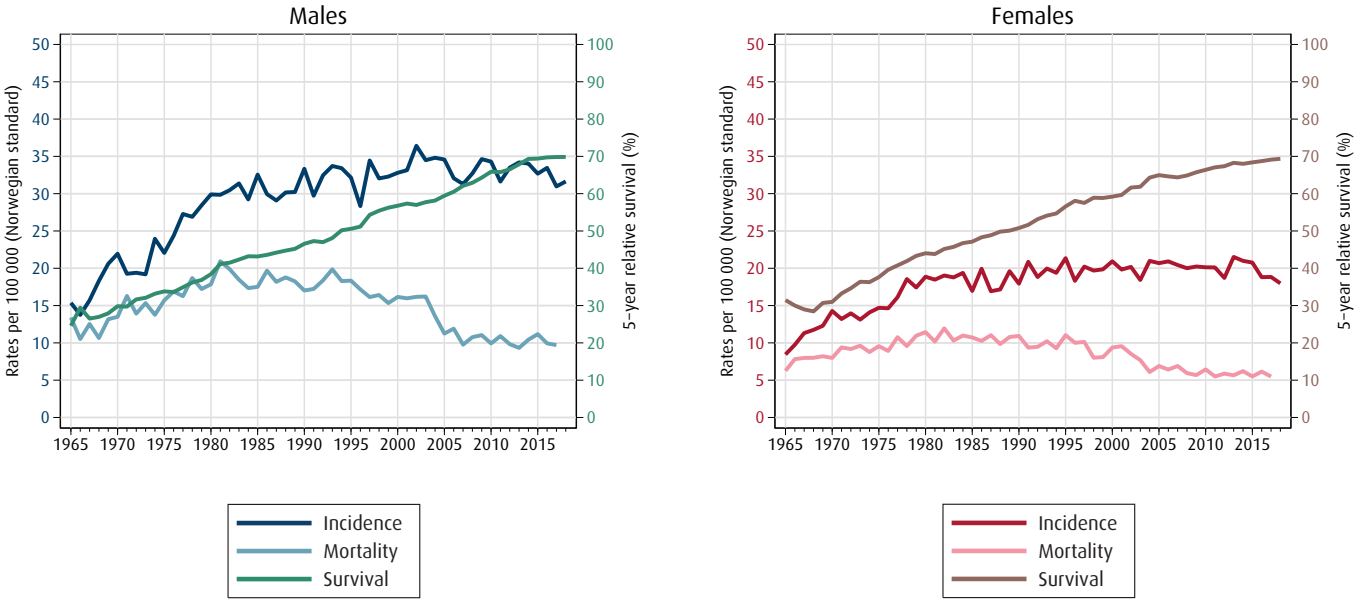


Figure 9.1: Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 9.1–G: Liver (ICD-10 C22)

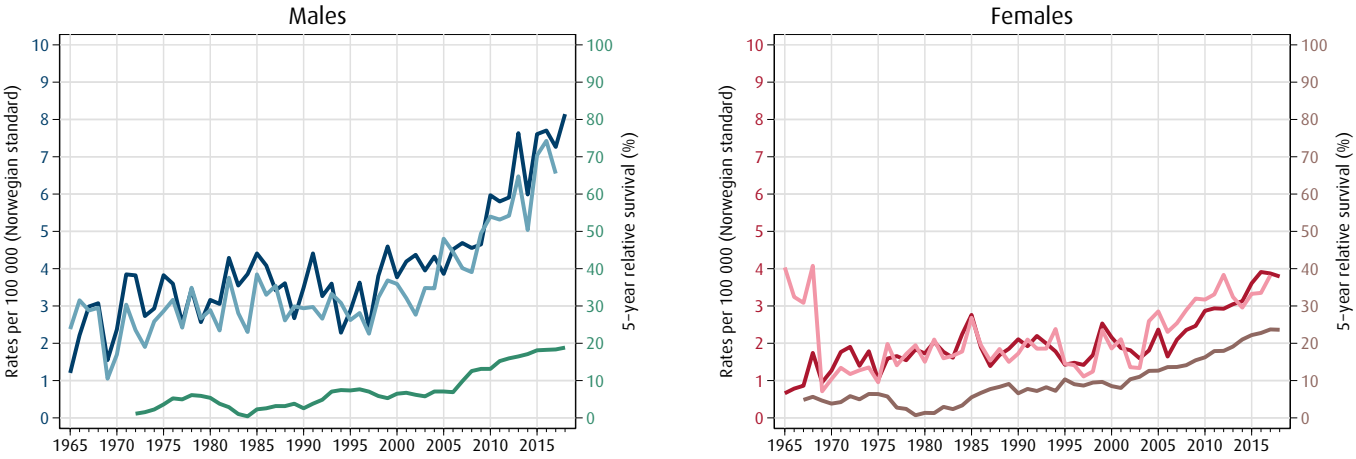


Figure 9.1–H: Gallbladder, bile ducts (ICD-10 C23–24)

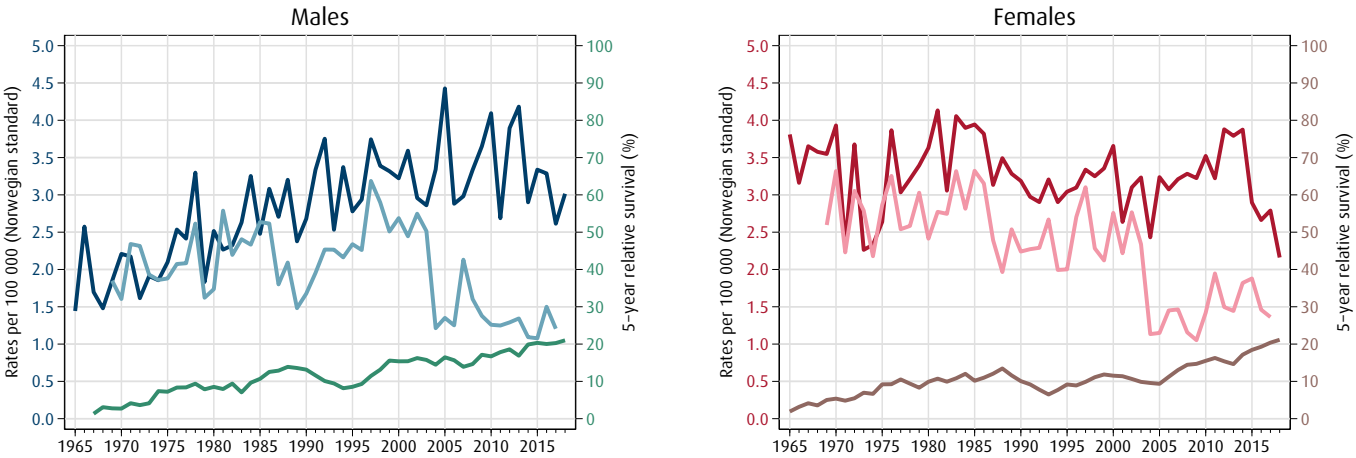


Figure 9.1–I: Pancreas (ICD-10 C25)

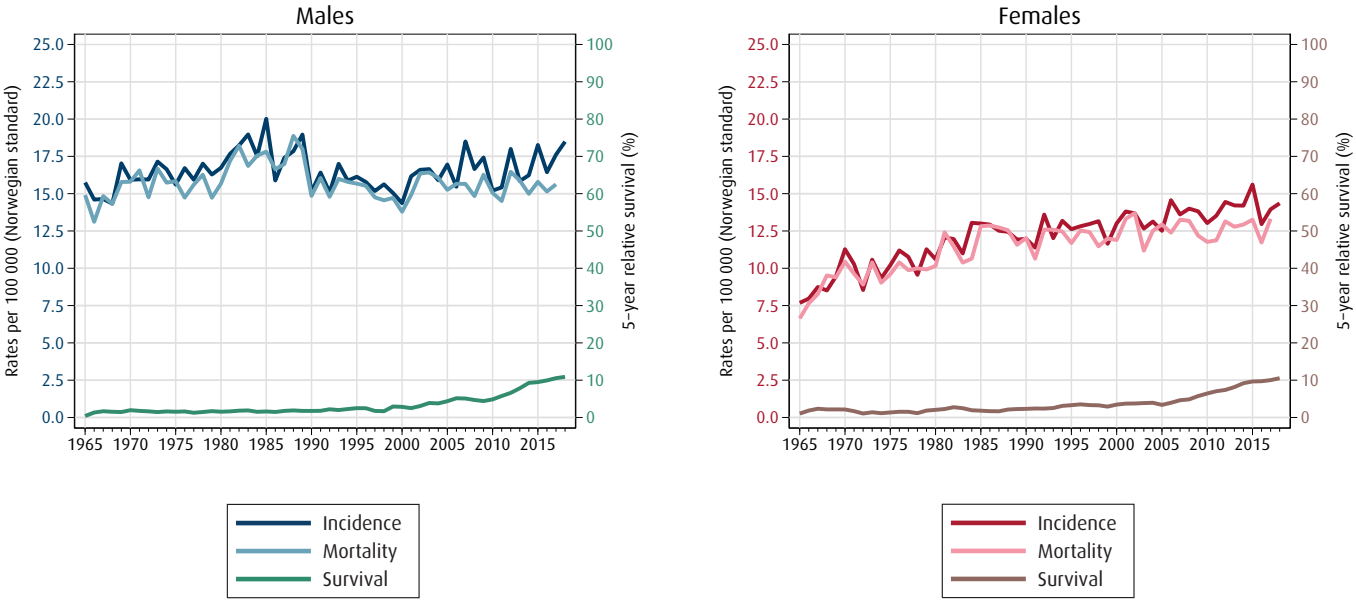


Figure 9.1: Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 9.1–J: Lung, trachea (ICD-10 C33–34)

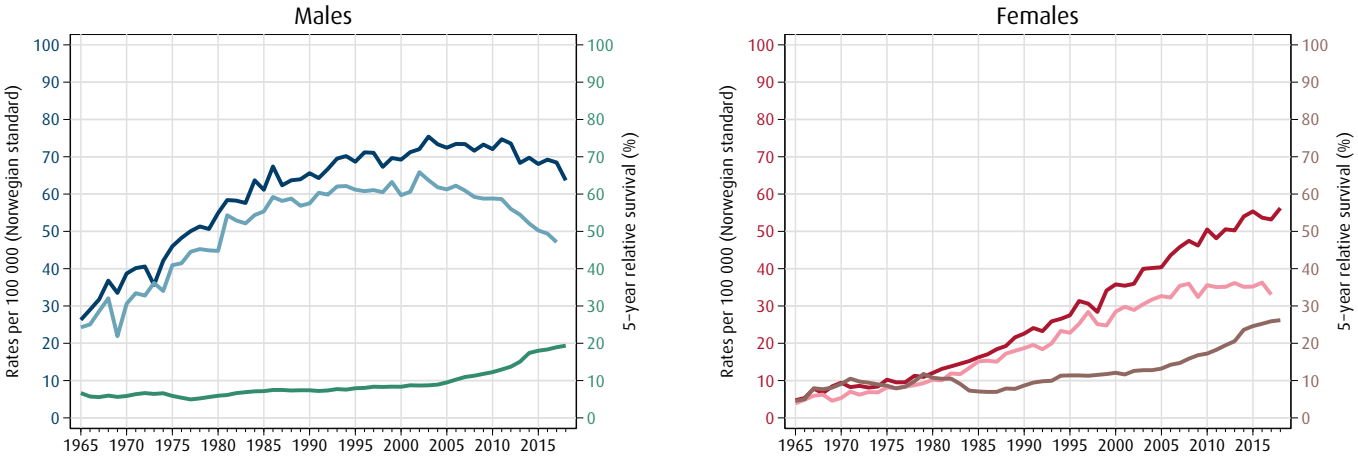


Figure 9.1–K: Melanoma of the skin (ICD-10 C43)

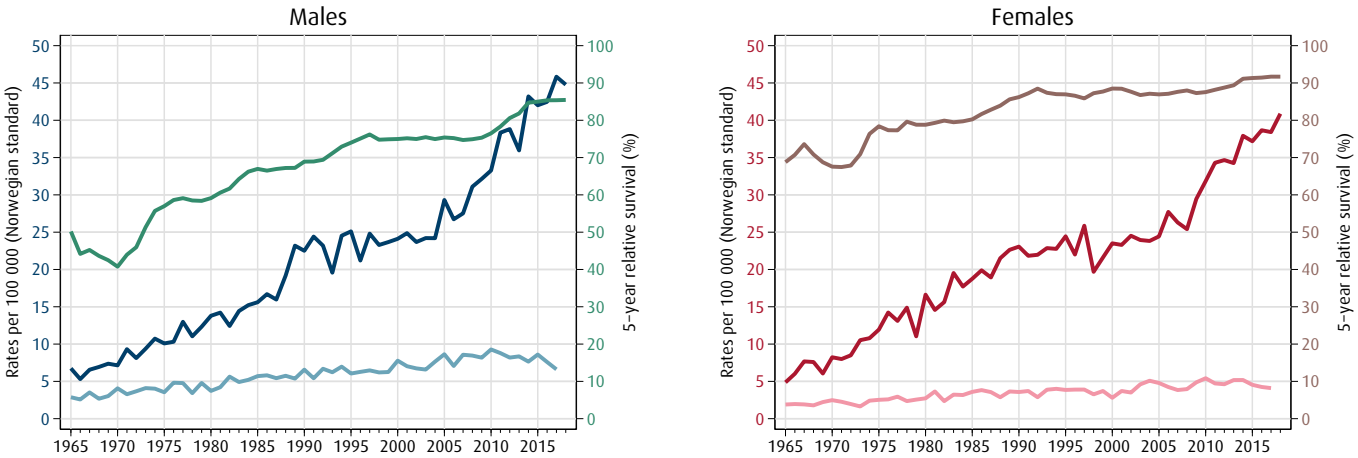


Figure 9.1–L: Kidney (excl. renal pelvis) (ICD-10 C64)

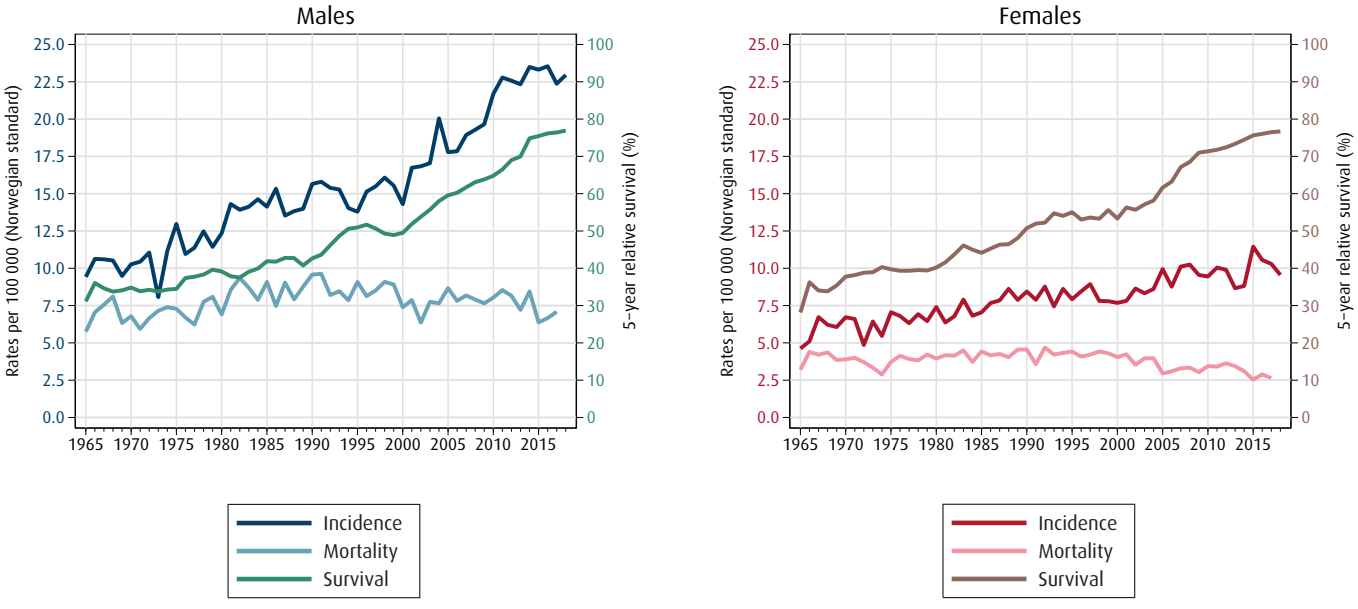


Figure 9.1: Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 9.1–M: Breast (ICD-10 C50)

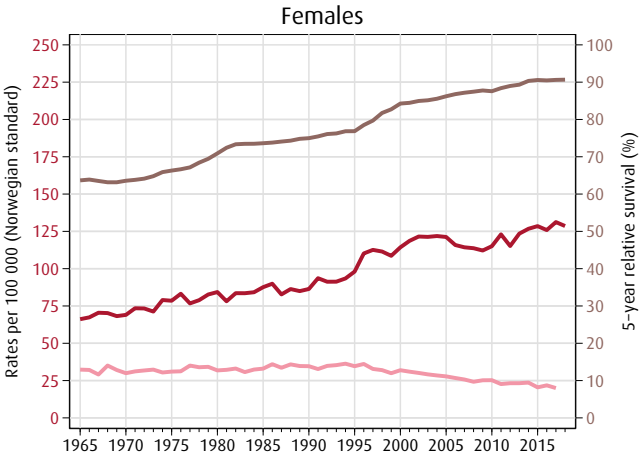


Figure 9.1–N: Cervix uteri (ICD-10 C53)

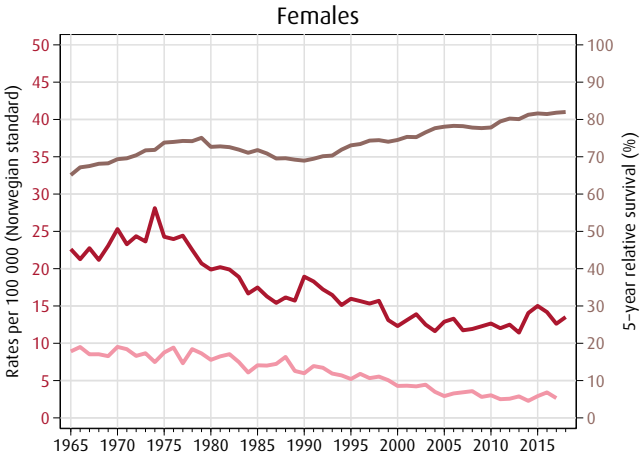


Figure 9.1–O: Prostate (ICD-10 C61)

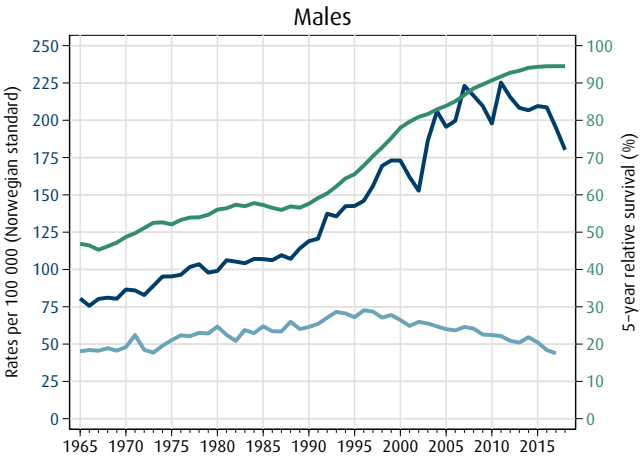


Figure 9.1–P: Corpus uteri (ICD-10 C54)

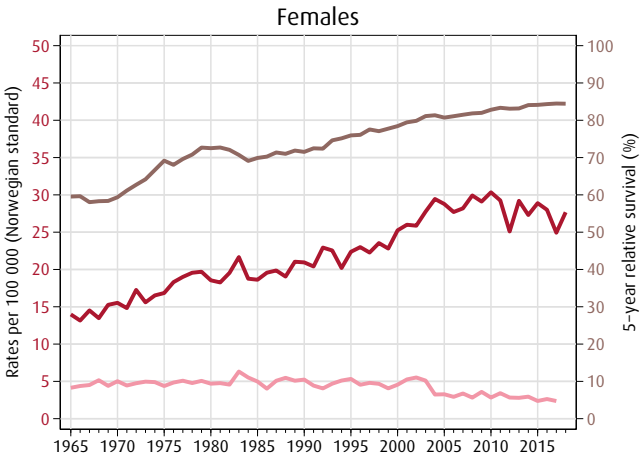


Figure 9.1–Q: Testis (ICD-10 C62)

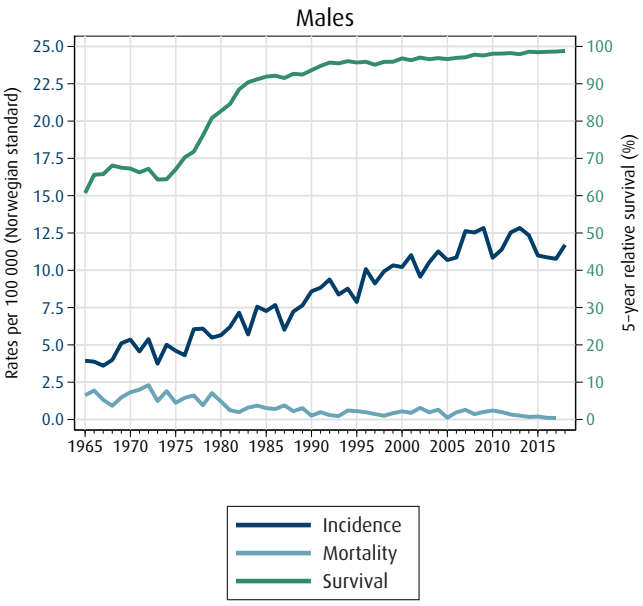


Figure 9.1–R: Ovary etc. (ICD-10 C56, C57.0–4, C48.2)

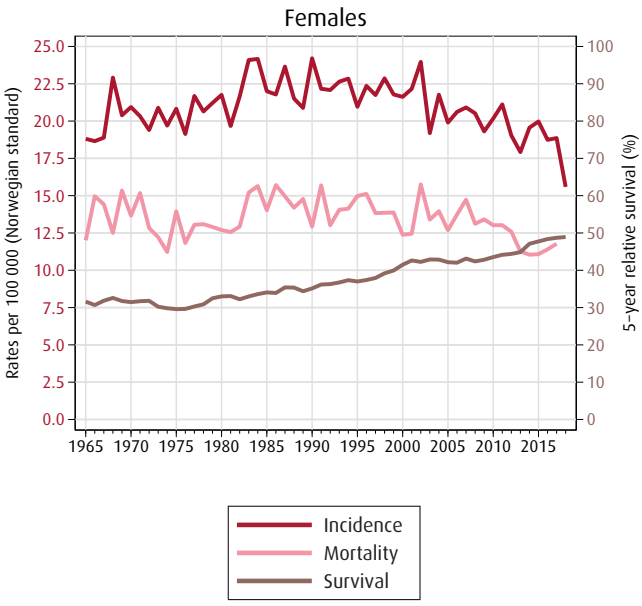


Figure 9.1: Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 9.1–S: Urinary tract (ICD-10 C65–68)

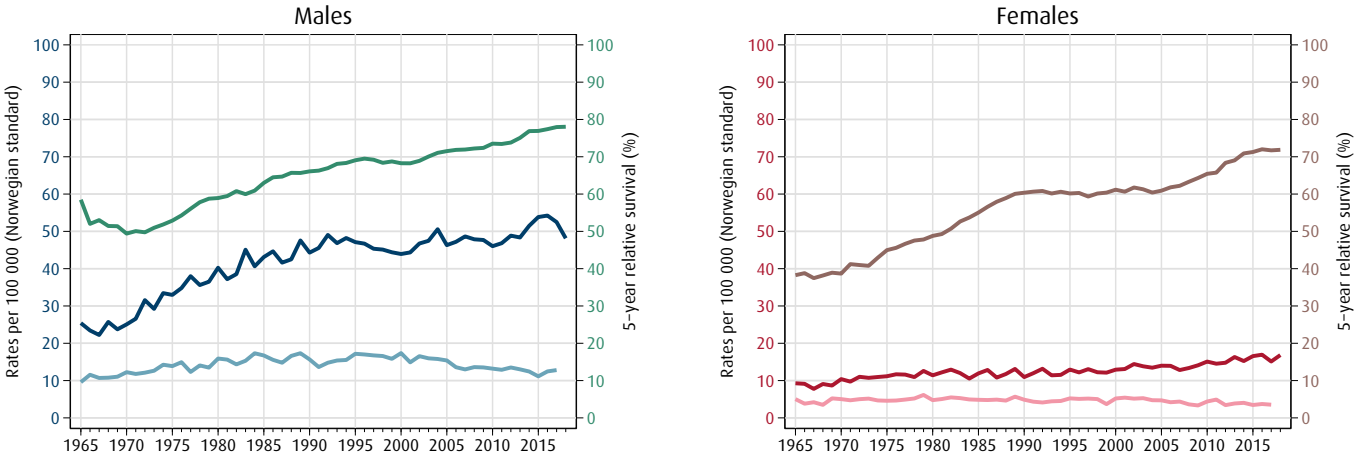


Figure 9.1–T: Central nervous system (ICD-10 C70–72)

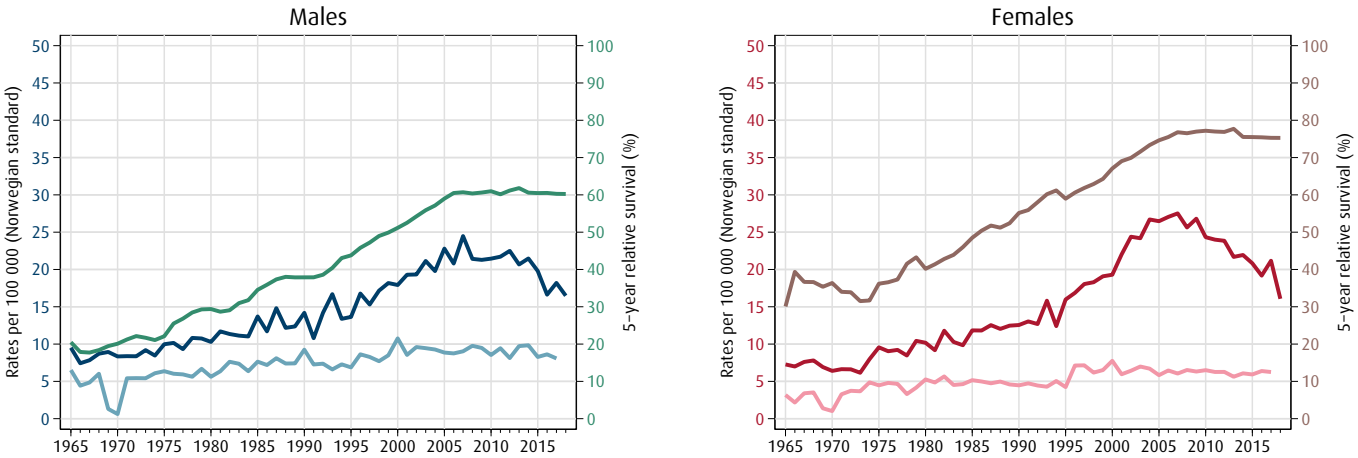


Figure 9.1–U: Thyroid gland (ICD-10 C73)

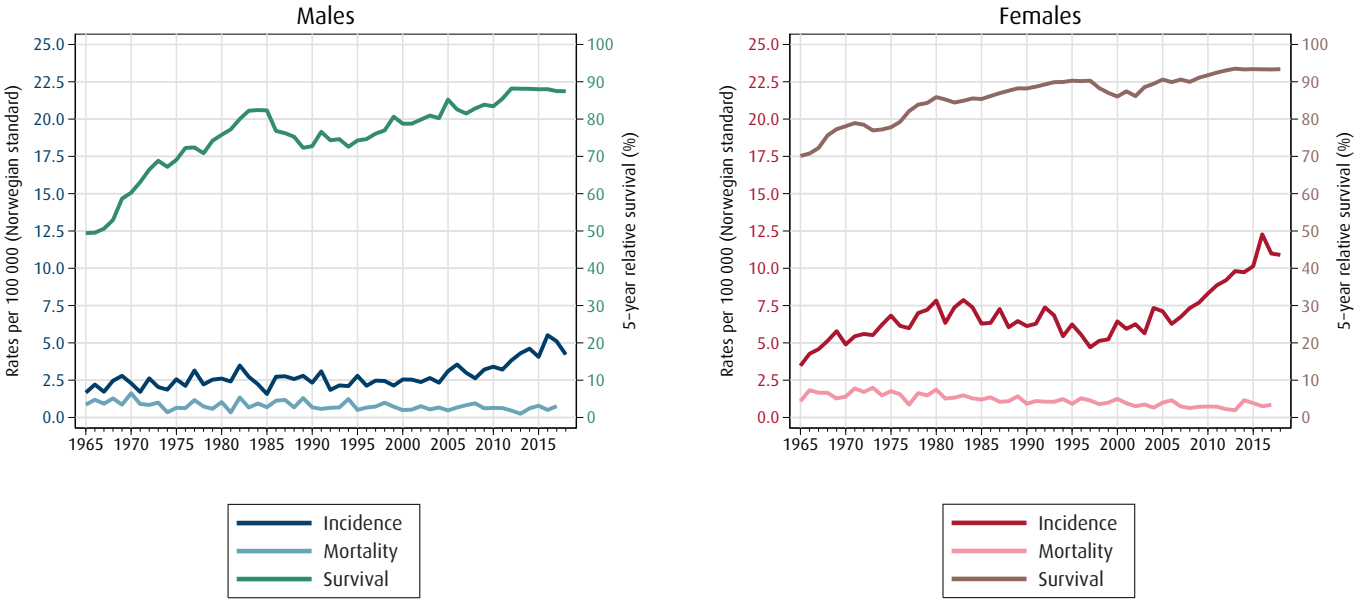


Figure 9.1: Trends in incidence and mortality rates and 5-year relative survival proportions

Figure 9.1–V: Hodgkin lymphoma (ICD-10 C81)

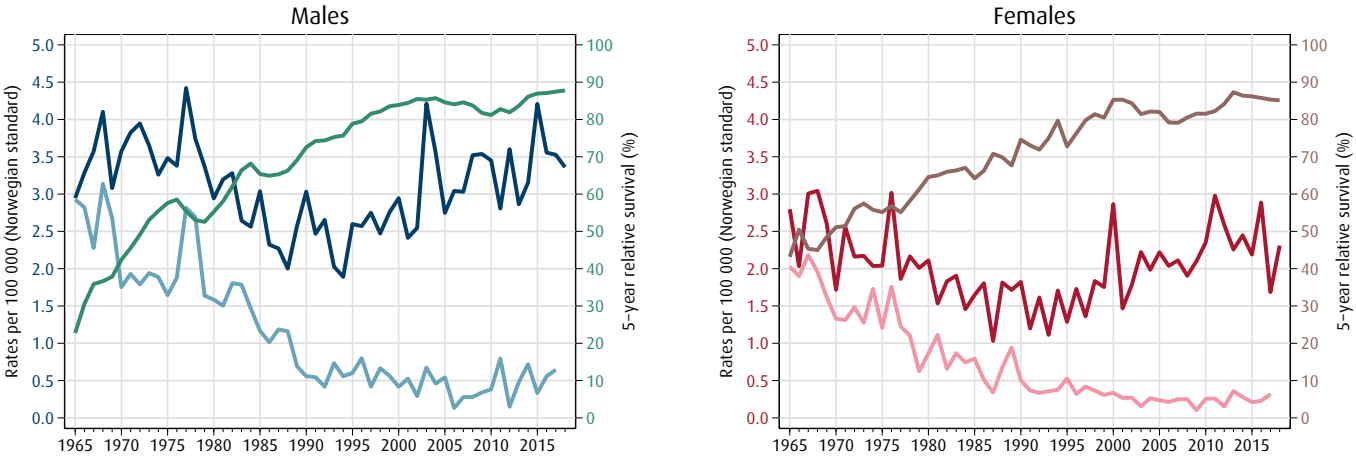


Figure 9.1–W: Non-Hodgkin lymphoma (ICD-10 C82–86, C96)

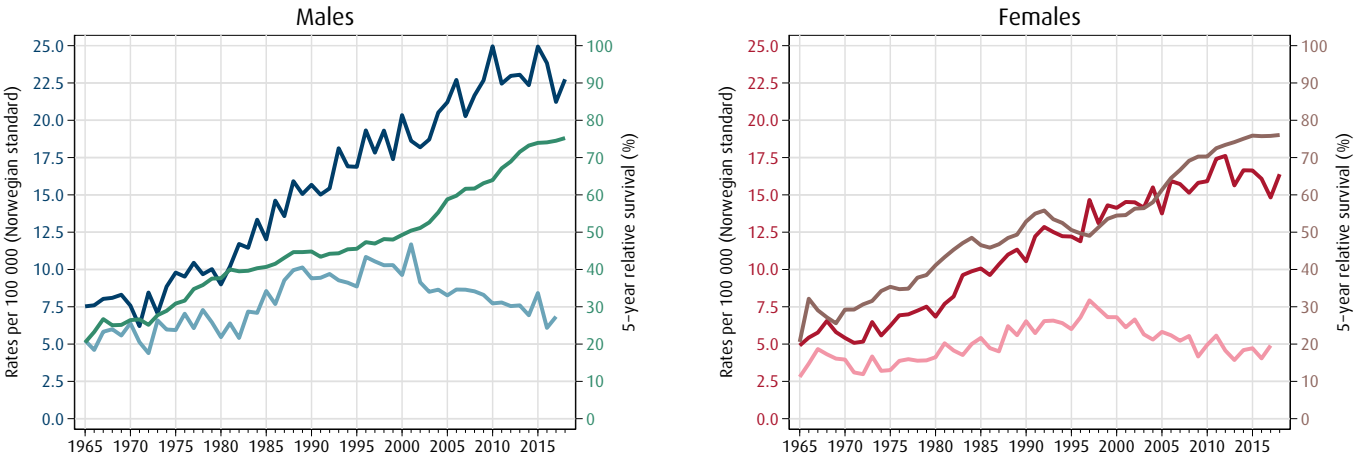
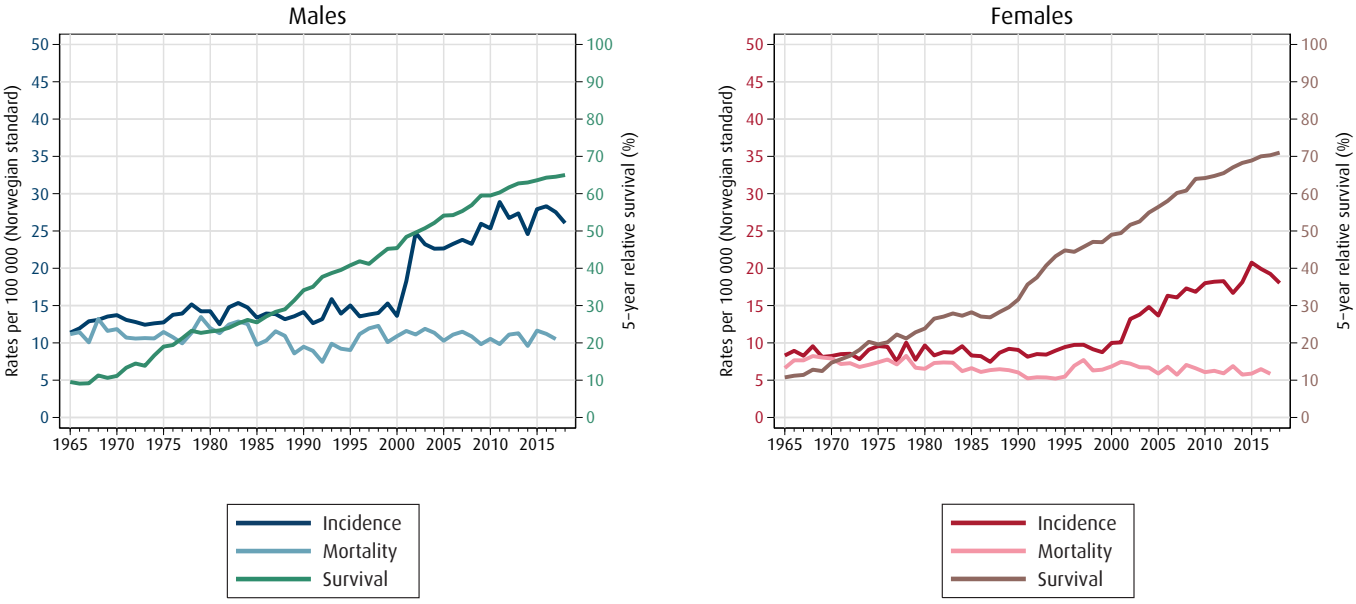


Figure 9.1–X: Leukaemia (ICD-10 C91–95)



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Kreftregisteret

Special Issue 2018

Sosial ulikhet, innvandring og kreft

En rapport om kreftforekomst etter landbakgrunn, utdanning, inntekt og bosted

Special Issue

Sosial ulikhet, innvandring og kreft

En rapport om kreftforekomst etter landbakgrunn, utdanning, inntekt og bosted

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Teknisk støtte:
B Aagnes

Anbefalt referanse: Cancer in Norway 2018. Special issue 2018: Sosial ulikhet, innvandring og kreft – En rapport om kreftforekomst etter landbakgrunn, utdanning, inntekt og bosted (E Vinberg, LRA Karlsson, B Møller, G Ursin, IK Larsen (red.)). Oslo: Cancer Registry of Norway, 2019.
Referanse til kapitler: Navn på forfattere, navn på kapittel. Sider. In: Special issue 2018: Sosial ulikhet, innvandring og kreft – En rapport om kreftforekomst etter landbakgrunn, utdanning, inntekt og bosted (E Vinberg, LRA Karlsson, B Møller, G Ursin, IK Larsen (red.)). Special issue for Cancer in Norway 2018. Oslo: Cancer Registry of Norway, 2019.

Cancer in Norway 2018

Special Issue

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Kapittel 1 Definisjoner

Aldersstandardisert insidensrate En fellesrate for insidens som er justert for alderssammensetningen i populasjonen.

Biomarkør Stoffer eller molekyler som kan måles eller påvises i kroppen, og som forteller noe om en underliggende helsetilstand.

Deprivert Å være frarøvet, avsatt. Depriverte områder blir ofte brukt om områder med høy andel mennesker med lav sosial status.

Insidens Antall nye sykdomstilfeller i en definert populasjon innen en gitt tidsperiode.

Insidensrate Antall nye tilfeller i en populasjon (insidensen) dividert på antall personer som er under risiko for å få sykdommen i samme periode. Raten er oftest uttrykt per 100 000 personår. Dersom det ikke gjøres en aldersstandardisering, vil dette refereres til som en ujustert rate.

Gentrifisering Gentrifisering er et fysisk, sosialt, økonomisk og kulturelt fenomen i store byer, som innebærer at arbeiderklassestrøk, gjerne nær sentrum, blir forvandlet til bydeler for mer velstående befolkningsgrupper.

Screening Systematiske undersøkelser utført på en gruppe mennesker i befolkningen uten sykdomssymptomer, med mål om å fjerne forstadier eller behandle kreft i et tidlig stadium.

Sosial status En persons relative plassering i et sosialt hierarki som er basert på underliggende verdier som prestisje, makt eller økonomiske ressurser.

Sosiale helsedeterminanter Sosiale forhold som har betydning for helsen. Disse inkluderer blant annet oppvekst, utdanning, arbeid og samfunnsmessige forhold.

Sosiodemografi Økonomiske, sosiale, kulturelle og biologiske forhold og hvordan disse påvirker en befolkning.

Sosioøkonomisk Samfunnsvitenskapelig uttrykk som er knyttet til samspillet mellom det sosiale og det økonomiske.

Definisjonene er basert på *A dictionary of Epidemiology*[1], og *Store norske leksikon* (snl.no).

Kapittel 2 Sammendrag

Formålet med denne spesialutgaven er å gi en oversikt over kreftforekomst etter landbakgrunn, utdanning, inntekt og bosted.

Hovedbudskap

Sosiale faktorer som landbakgrunn, utdanning og inntekt har betydning for kreftrisiko. De ulike kreftformene er imidlertid påvirket ulikt av de forskjellige sosiale faktorene.

Landbakgrunn

- I den siste femårs perioden (2014–2018) har det årlig, i gjennomsnitt, blitt diagnostisert mer enn 2600 nye krefttilfeller blant innvandrere: 1359 blant menn og 1264 blant kvinner.
- Prostata- og deretter lungekreft er de vanligste kreftformene blant menn, uavhenging av landbakgrunn.
- Brystkreft er den vanligste kreftformen blant kvinner, uavhengig av landbakgrunn.
- Menn fra vestlige land har lik kreftrisiko som norskfødte for de fleste kreftformer unntatt for endetarmskreft og melanom i hud, hvor de hadde lavere risiko.
- Menn fra ikke-vestlige land har lavere risiko for kreft totalt, og for kreft i munn og svelg, spiserør, tykk- og endetarm, bukspyttkjertel, lunge, melanom i hud, prostata og testikkel. Derimot hadde de høyere risiko for kreft i magesekk, lever og galleblære.
- Kvinner fra vestlige land har lavere risiko for kreft i tykktarm, bukspyttkjertel og lunge, og høyere risiko for kreft i spiserør, bryst og skjoldbruskkjertel.
- Kvinner fra ikke-vestlige land har lavere risiko for all kreft samlet, samt kreft i tykk- og endetarm, lunge, melanom i hud, bryst, livmorhals og urinveier. De hadde høyere risiko for kreft i magesekk, skjoldbruskkjertel og lever.
- Justering for inntekt- og utdanningsnivå ga kun små endringer på estimatene for innvandrere.

Utdanning og inntekt

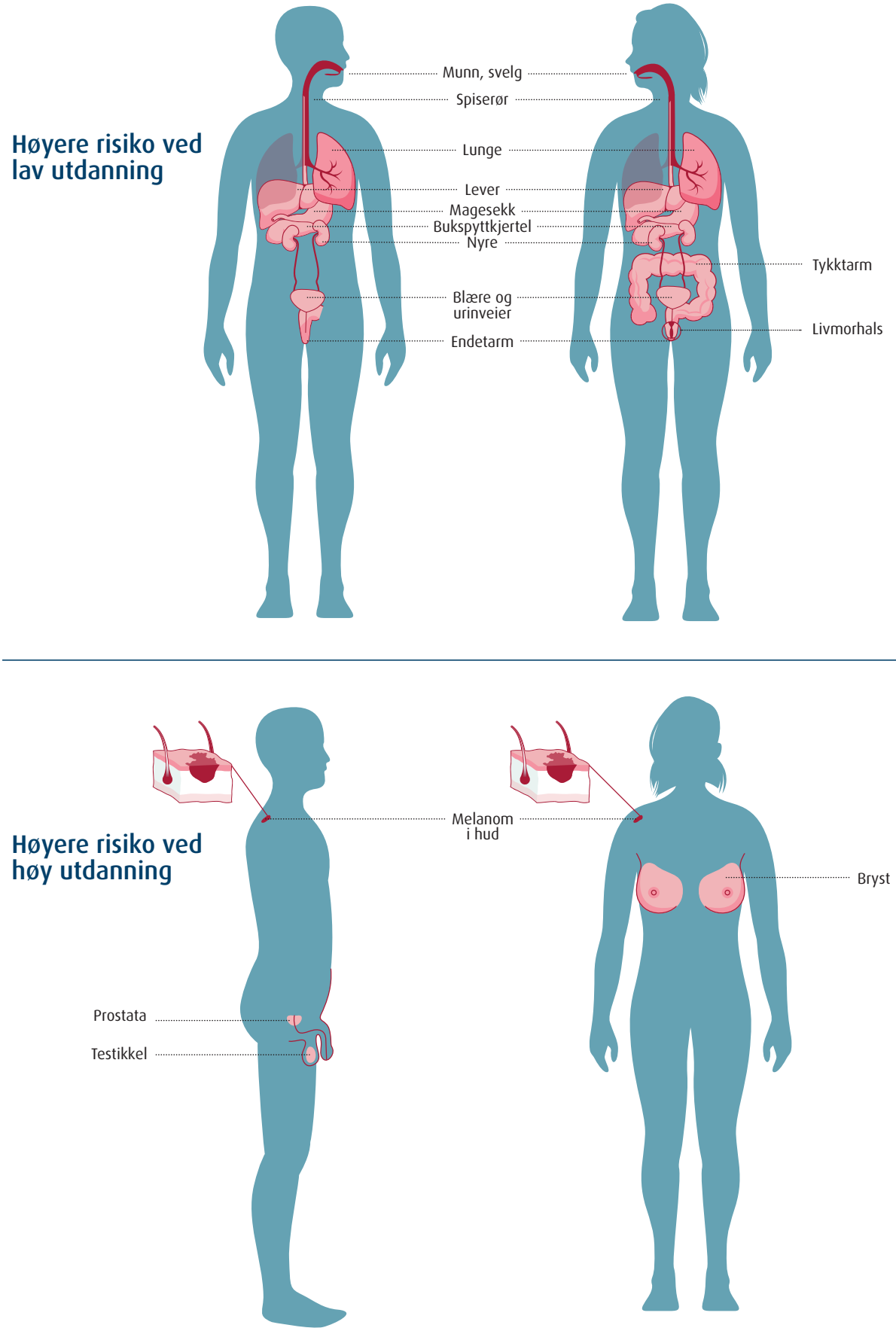
- Utdanning og inntekt har betydning for kreftrisiko blant menn. Utdanning, men i liten grad inntekt, har betydning for kreftrisiko blant kvinner.
- Lav utdanning er forbundet med høyere risiko for kreft i lunge, livmorhals, spiserør, lever, nyre, magesekk, munn og svelg, blære og urinveier, endetarm, bukspyttkjertel, tykktarm (kun kvinner), galleblære (kun kvinner), skjoldbruskkjertel (kun kvinner).
- Høy utdanning er forbundet med høyere risiko for melanom i hud, kreft i bryst, testikkel og prostata.

Resultatene for utdanning er oppsummert i figur 2.1.

Kreftforekomst i Oslos bydeler

- For alle kreftformene samlet har Grorud høyest insidens for menn, og Bjerke og St. Hanshaugen har høyest insidens for kvinner. De bydelene med lavest kreftinsidens for alle kreftformer samlet, er Nordre Aker for menn og Søndre Nordstrand for kvinner.
- Insidensraten av lungekreft er for menn høyest i Grorud, og for kvinner høyest på Grünerløkka. Vestre Aker har lavest rate for begge kjønn.
- Frogner har høyest, og Søndre Nordstrand har lavest insidensenrate av brystkreft.
- Insidensraten av prostatakreft er høyest i Ullern og Nordstrand, mens Grünerløkka har lavest rate.

Figur 2.1: Kreftformer hvor utdanning har betydning for risiko



Kapittel 3 Introduksjon

Karlsson LRA, Vinberg E, Larsen IK, Campbell S, Babigumira R, Langseth H, Staldgaard D

3.1 Bakgrunn

Per 1. januar 2019 er 14.3 % av den norske befolkningen innvandrere (dvs. født i utlandet, og har to utenlandsfødte foreldre). I tillegg er 3.4 % av befolkningen født i Norge og har to utenlandsfødte foreldre[2]. Innvandrere utgjør en økende andel av befolkningen, og i løpet av de siste 5–10 årene har flere forskningsmiljøer hatt økt fokus på innvandrernes helse. På Kreftregisteret har vi hatt fire store forskningsprosjekter knyttet til kreft hos innvandrere. Prosjektene har dekket temaer som kreftforekomst[3,4], screeningdeltakelse[5–10], diagnostikk og overlevelse[11,12]. Noen av disse forskningsprosjektene har vært finanisert av Kreftforeningens strategiske forskningsmidler på innvandrere/etniske minoriteter og kreft.

Folkehelseloven (Lov 24. juni 2011 om folkehelsearbeid) har som formål å bidra til at samfunnsutviklingen i Norge fremmer folkehelsen og utjevner sosiale helseforskjeller. Dette kommer også til uttrykk i oppdraget til Helse Sør-Øst: "*Gode og likeverdige helsetjenester til alle som trenger det, når de trenger det, uavhengig av alder, bosted, etnisk bakgrunn, kjønn og økonomi.*"

Kreftregisteret har i tillegg hatt andre studier som har sett på hvilken betydning sosioøkonomi har på behandling og overlevelse av kreft. Disse studiene har alle funnet at lav utdanning og inntekt har en negativ sammenheng med behandling og overlevelse[13–15].

Globalt er det store variasjoner i insidensraten av ulike kreftformer. Dette er selvsagt knyttet til flere faktorer, blant annet eksponering for ytre risikofaktorer. Samtidig ses en klar variasjon mellom land med vestlig og ikke-vestlig livsstil, noe som kan indikere at risikoen også er assosiert med sosioøkonomiske faktorer. For å forstå det totale kreftbildet blant innvandrere i Norge, har det derfor vært viktig å ta hensyn til sosioøkonomiske faktorer. Innvandrere, spesielt fra afrikanske og asiatiske land, har lavere inntekts-[16] og utdanningsnivå[17]. I analyser med formål om økt forståelse av forekomst og prognoser for kreft, er det derfor viktig å ta hensyn til sosioøkonomiske faktorer og innvandrerstatus.

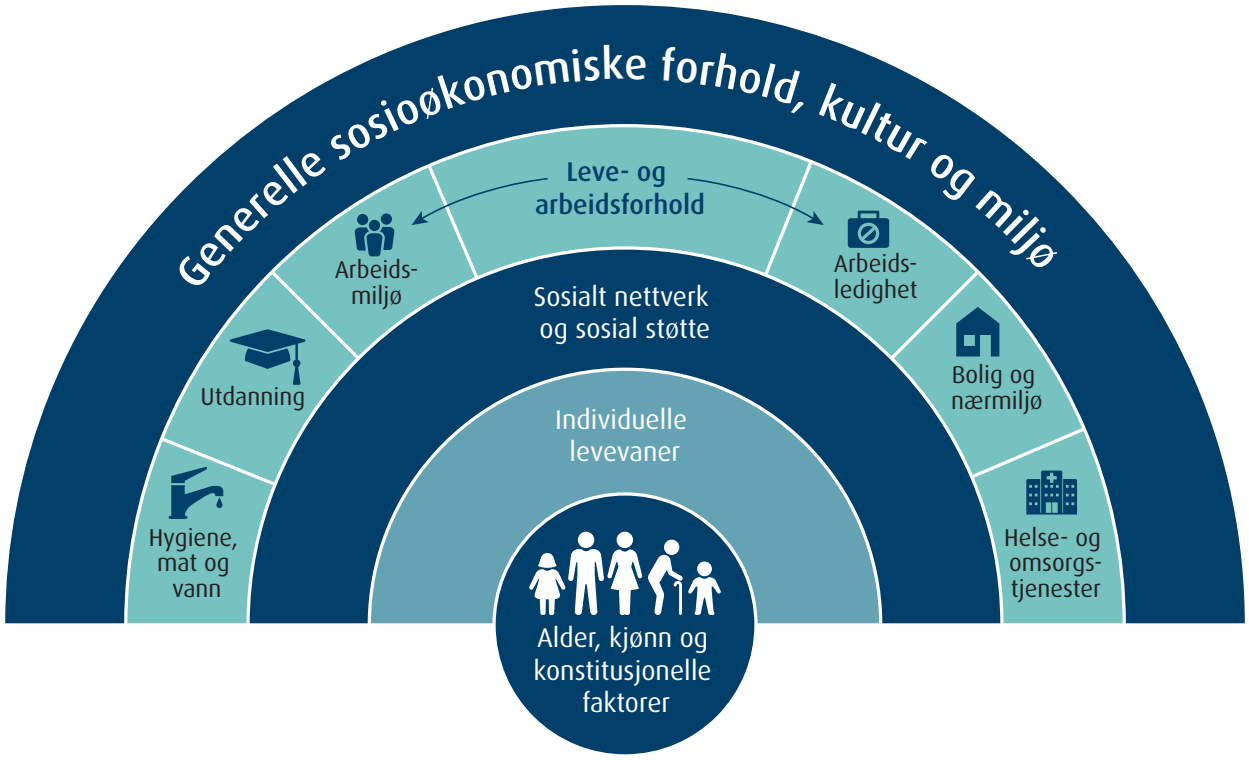
Formålet med denne rapporten er å gi en oversikt over hvilken betydning landbakgrunn, utdanning, inntekt og bosted har for kreftrisiko. Dataene som er benyttet i disse analysene, er fra et pågående forskningsprosjekt. Ofte er det ikke plass til å publisere alle analyser i en forskningsartikkel, og derfor er denne spesialutgaven viet til noen av resultatene.

3.2 Sosial ulikhet og helse

Med sosial ulikhet i helse menes den ulike fordelingen av god helse i et samfunn. Det er et globalt problem, og ulikhetene ses på mange områder, blant annet helseatferd, forekomst av sykdom og død[18–20]. Sosial- og helsedepartementet ga i 2005 ut en nasjonal handlingsplan mot sosial ulikhet i helse[21], og samme år kom også en kunnskapsoversikt over områder hvor sosial ulikhet var funnet å ha en helsemessig betydning[22]. Oversikten viste blant annet at risikoen for død i aldersgruppen 45–59 år sank med økt utdannings- og inntektsnivå – og forskjellene var størst for menn. Dødelighet av hjerte- og karsykdommer var mindre i gruppene med høyere utdanning. Dødeligheten av kreft, for samme aldersgruppe, viste samme mønster, men forskjellene var mindre enn for hjerte-karsykdommene. En nylig studie viser at de sosiale forskjellene i Norge har økt de seneste årene[23], og den nye folkehelserapporten fra 2018 viser at høy utdanning og god økonomi fremdeles er assosiert med færre helseproblemer og lengre levetid[24]. Nesten uavhengig av årsak, er dødeligheten høyere blant personer med lavere sosioøkonomisk status, og derfor kan sosial ulikhet i helse sies å være et generelt fenomen[25].

Figur 3.1 illustrerer hvordan mennesket med sin genetiske disposisjon, kjønn og alder, påvirkes av levevaner, sosialt nettverk og tilknytning. I tillegg viser modellen hvordan dette henger sammen med økonomiske og politiske forhold i samfunnet som vi vokser opp og lever i. I denne modellen er lagene som formes rundt individet under konstant, gjensidig påvirkning[26].

Figur 3.1: Modell for helsedetarminanter



Bearbeidet versjon, gjengitt med tillatelse fra Institute for Future Studies, Stockholm, Sverige. Originalfiguren, *The Main Determinants of Health*, ble publisert av Dahlgren G Whitehead M, 1991, Policies and Strategies to Promote Social Equity in Health[26].

3.3 Sosial ulikhet og helse blant innvandrere i Norge

Det nasjonale kompetansesenteret for migrasjons- og minoritetshelse (NAKMI) ble opprettet i 2003, og har vært et ledende miljø innen forskning og formidling om migrasjonshelse i Norge. I dag er senteret en del av Folkehelseinstituttet (FHI), organisert som en egen enhet om migrasjonshelse. I den nyeste Folkehelserapporten fra FHI finner man en god oppsummering av innvandrerhelsen i Norge[27]. Et hovedpunkt er at botid, innvandringsårsak og landbakgrunn har stor betydning for helsen til innvandrere. Flyktninger skiller seg fra andre innvandringsgrupper ved å ha en dårligere helseprofil, og de oppgir flere psykiske plager enn befolkningen generelt. Det store bildet er imidlertid at innvandrere er mindre syke og bruker helsetjenestene mindre enn den norskfødte delen av befolkningen. Noen innvandrergrupper har imidlertid høyere forekomst av enkelte sykdommer. For eksempel har personer født i Sri Lanka, India og Pakistan høy forekomst av diabetes. Hjerte- og karsykdommer er mer utbredt blant innvandrere fra Sør-Asia og Balkan. Overvekt og fedme er særlig utbredt blant innvandrere fra Tyrkia, Irak, Pakistan og somaliske kvinner, mens D-vitaminmangel er utbredt blant innvandrere fra Sør-Asia, Afrika (sør for Sahara) og Midtøsten[27]. Andel daglig-røykere er høyere blant innvandrermenn fra Øst-Europa, Balkan, Tyrkia, Iran og Irak, mens innvandrere fra land utenfor Europa konsumerer mindre alkohol enn befolkningen generelt[27].

Innvandrere som svarte på statistisk sentralbyrås (SSB) utvidede levekårsundersøkelse blant innvandrere (LKI)[1], rapporterte oftere helseproblemer enn befolkningen generelt; andelen med psykiske helseplager var større, og andelen som vurderte sin egen helse som "*svært god eller god*" var lavere blant innvandrere[16].

Barrierer som kan hindre tilgang til likeverdige helsetjenester og helsefremmende tiltak, kan være manglende språkkompetanse, lav grad av integrering eller kort botid i Norge. Dårlige erfaringer med helsesystemet i hjemlandet kan også spille en rolle. Ulike innvanderergrupper kan ha ulike helseutfordringer. Dette kan omfatte et vidt spekter av tilstander; fra psykiske lidelser som skyldes vold eller traumer, til mangel- og livsstilssykdommer. Kulturelle forskjeller i oppfatning av helse og sykdoms-

[1] SSBs «Levekårsundersøkelse blant personer med innvandrerbakgrunn» for 2016 presenterer kun svar for innvandrere som har bodd i Norge i minst 2 år, som er født i utlandet av to utenlandsfødte foreldre og fire utenlandsfødte besteforeldre. Svarene inkluderer ikke svar fra innvandrernes norskfødte barn

årsaker, utgjør også en utfordring når det gjelder å sikre likeverdige helsetjenester til alle[28].

Innvandrere har i gjennomsnitt lavere utdannings- og inntektsnivå enn norskfødte, men det er store forskjeller mellom innvandrere fra ulike landområder(figur 5.2). Blant innvandrere er det en høyere andel kvinner enn menn som har høyere utdanning, men det er en større andel innvandrermenn som er i lønnet arbeid[16,29].
I LKI fra 2016 påvises det store inntektsforskjeller mellom innvandringsgrupper. Jevnt over tjener innvandrere mindre enn norskfødte, men innvandrere fra land som Vietnam, Sri Lanka og Polen tjener mer enn innvandrere fra f. eks Somalia. Noe av disse forskjellene forklares av botid og innvandringsgrunn. For eksempel har innvandrere fra Sri Lanka og Vietnam migrert til Norge for flere tiår siden, og har dermed hatt lengre tid på å integrere seg i arbeidsmarkedet. Innvandrere fra Polen og Somalia har derimot relativt kort botid, men her kan forskjellene forklares av forskjellig innvandringsgrunn[16].

3.4 Hvordan kan sosial status måles?

Utdanning, inntekt og yrke er de mest brukte målene på sosial status[30]. Dette er faktorer som bidrar til å etablere en persons posisjon i det sosiale hierarkiet, i tillegg til at de representerer ulike mekanismer som genererer sammenhengen mellom helse og sosial status[31]. Bruken av disse målene krever tilgang til gode individdata, slik vi har i Norge[30].

Et annet vanlig mål på sosial status er å bruke sosioøkonomiske indekser og geografiske bostedsdata. I flere studier som omhandler sosioøkonomisk status og kreft finner man eksempler på dette[32–36], men selv med tilgang på gode individdata, er det utfordrende å operasjonalisere menneskers sosiale status. Det finnes fordeler og ulemper med samtlige målemetoder.

Utdanning

Utdanningsnivået har stor betydning for senere yrke og inntekt[37]. Utdanningsnivået er forholdsvis enkelt å måle, og er tilgjengelig for en stor del av befolkningen samtidig som det er ganske stabilt etter 25 års alderen. Sammenliknet med andre indikatorer, påvirkes utdanningsnivået mindre av helsestatus senere i livet[30,37], og det er vist at dødelighet for en rekke sykdommer synker lineært med økt utdanningsnivå[38]. Det kan være flere forklaringer på hvorfor utdanning kan ha innvirkning på helse. Først og fremst kan det bedre personens evne til å oppfatte og gjøre nytte av relevant helseinformasjon, eksempelvis ved å forholde seg til livsstilsråd eller gjenkjenne symptomer som vil være primærforebyggende for sykdom. I tillegg kan det påvirke kommunikasjon med helsearbeidere eksempelvis ved bedre forklaring av symptombilde[31]. Utdanning kan være et godt mål på sosial status, men den er i seg selv ikke tilstrekkelig for å få et helhetlig bilde. En svakhet med utdanningsvariabelen er at utdanningskategoriene vil ha ulik sammensetning for ulike alderskohorter. I studier med stor aldersspredning i studiepopulasjonen, vil det også kunne være stor forskjell i utdanningsnivået i de ulike alderskohortene (se figur 6.1 i kapittel 6).

Inntekt

Inntekt måler materielle goder og ressurser, og gjenspeiler de materielle levekår vi omgir oss med[31]. Selv i en velferdsstat som Norge, hvor helsetjenester stort sett dekkes av staten, har man funnet forskjeller i sykdomsbehandling på bakgrunn av inntekt. For eksempel viste en studie som inkluderte alle lungekreftpasienter i Norge i perioden 2002 til 2011, at eldre pasienter og personer med lavere husholdningsinntekt hadde mindre sannsynlighet for å motta noen form for behandling. Studien fant også at lungekreftpasienter med lavere utdanning hadde lavere sannsynlighet for å bli operert[14].

Vår sosiale status påvirker ofte våre individuelle livsstilsvalg, som igjen kan ha betydning for helsen. Livsstil er ofte kulturelt betinget, men kan også være bestemt av økonomiske ressurser, som for eksempel kostnader til sunn versus usunn mat[31]. En ulempe med bruk av inntekt som mål på sosial status er at den raskt kan endres, og kan derfor være et ustabilt mål[30,37]. I tillegg kan denne variabelen være utsatt for omvendt kausalitet, det vil si at de med dårlig helse i utgangspunktet kan ha dårligere arbeidsevne og dermed tjene mindre.

Yrke

Yrkeskatgorier er også et mye brukt mål på sosial posisjon. Allerede på 1800-tallet fantes det en klassifisering av yrke, *Registrar General's scheme* (RG) som ble brukt til å studere forskjell i dødelighet mellom yrkesgrupper i Storbritannia[39]. Å bruke yrke som mål på sosial status er likevel ikke uproblematisk, fordi flere yrker har ikke en klar hierarkisk relasjon til hverandre. I tillegg kan en person skifte yrke flere ganger i løpet av sitt arbeidsliv.

Indekser

Kombinasjonen av forhold som har betydning for menneskets helse kan brukes for å lage en indeks for fattigdom eller deprivasjon. Blant målene som brukes for å definere sosial status er gjennomsnittsinntekt, sivilstatus, familiestørrelse, og eierskap av bolig og bil. I tillegg blir også sosioøkonomiske aspekter ved bosted brukt. Dette kan inkludere kriminalitet, andelen som har fullført

grunn- eller videregående skole, og andelen arbeidsledige. Disse kan kombineres i standardiserte deprivasjonsindekser for å gi et mål der flere dimensjoner av sosial status uttrykkes i ett samlet tall[30]. Deprivasjonsindekser er særlig egnede for å sammenligne deprivasjonsgrad mellom områder, eller forske på sosiodemografiske forholds betydning for helsen[31,40], og for å identifisere og gi målrettet forebygging til grupper med høy risiko for ulike sykdommer[41].

3.5 Forklaringsmodeller

For å forklare sosial ulikhet i helse tar de vanligste forklaringsmodellene utgangspunkt i at det er et gjensidig påvirkningsforhold mellom et menneskes sosiale status og helse.

Helseatferdsforklaringer

Helseatferdforklaringer tar utgangspunkt i at sosiale forskjeller i helse har sammenheng med forskjeller i atferd, som for eksempel røykevaner, alkohol og kosthold. Sykdomsutvikling er nært forbundet med livsstil og levevaner, og mennesker med ulik sosial status tar ulike livsvalg og anlegger ulik helseatferd.

Folkehelserapporten fra 2018 viser noen av de sosioøkonomiske forskjeller i helsevaner som vi ser i Norge[24]. Røykevaner er kanskje den variabelen som har størst betydning for en rekke sykdommer, og det er også her vi finner de største forskjellene. I aldersgruppen 25–74 år, er andelen dagligrøykere blant menn med universitets- eller høyskoleutdanning 5 % . Til sammenligning er det 25 % dagligrøykere blant menn som har grunnskole som høyeste utdanning. Tilsvarende forskjeller ses blant kvinner (5 % røyker i gruppen med universitets- og høyskoleutdanning, og 22 % røyker i gruppen med grunnskoleutdanning)[24]. Når det gjelder andre variabler som har betydning for helse, viser folkehelserapporten at gruppen med universitets- eller høyskoleutdanning også har en lavere andel med fedme. På den andre siden øker alkoholbruk med både inntekt og utdanningsnivå, men andelen som er alkoholavhengige er likevel høyest i gruppen med lav sosioøkonomisk status[24].

Resultat fra helseundersøkelsene i Nord-Trøndelag (HUNT-studien) har også vist at personer med høyere utdanning har et høyere alkoholforbruk[42]. HUNT-studien fant også at personer med universitetsutdanning har lavere risiko for usunn diett, røyking og fysisk inaktivitet sammenlignet med de uten universitetsutdanning[43].

Materielle forklaringer

Materielle forklaringer tar utgangspunkt i hvordan mennesket daglig påvirkes av biologiske, kjemiske, fysiske og mekaniske belastninger, som luftkvalitet, sanitetsforhold, støy og ugunstige arbeidsstillinger[44]. Materielle goder kan påvirke helsen fordi det er et grunnlag for hvilke resursser man gis tilgang til. Dette kan inkludere bolig/boforhold, ernæring, helsefremmende aktiviteter osv. Materielle ressurser kan også ha betydning for hvorvidt man bruker private helsetjenester eller ikke, som igjen kan ha betydning for hvor tidlig sykdom påvises og hvor raskt den behandles. Materielle ressurser kan gi økt mulighet for deltakelse i samfunnet som igjen gir økt sosial tilhørighet (*psykososial forklaring*), og det kan redusere stress i form av færre økonomiske bekymringer (*materiell forklaring*)[37].

Psykososiale forklaringer

De psykososiale modellene forklarer sosial ulikhet i helse gjennom individets subjektive oppfatning av sosial status. Det er vist at personer med lav sosial status oftere har færre kognitive verktøy for å mestre stressende situasjoner, samtidig som de kan være mer utsatt for stress og uro[45]. Psykososialt stress kan aktivere en rekke biologiske prosesser i kroppen som for eksempel økt inflammasjonsrespons, nedsatt immunfunksjon, hormonelle og epigenetiske forandringer, og raskere aldring[46,47]. Lav sosioøkonomi tidlig i livet kan gi en vedvarende økt risiko for en rekke kroniske helsetilstander[48,49], og det er også målt høyere biologisk alder blant voksne som har vokst opp med foreldre med lav sosial status[50]. Noen av disse fysiologiske og molekylære prosessene kan måles i blodet, og brukes som biomarkører for å studere mekanismene som antas å ligge bak utviklingen av kreft og andre sykdommer. Flere studier har undersøkt sammenhengen mellom sosioøkonomi og nivået av sirkulerende inflammasjonsmarkører, og vist at lavere utdanning og/eller inntekt er assosiert med høyere nivåer[48,51,52].

Det er også gjort studier som har sett på biomarkører, sosioøkonomi og andre etablerte risikofaktorer. Blant annet har en stor internasjonal studie med 18 kohorter fra 12 ulike land vist at biomarkører for biologisk aldring var assosiert med utdanning og andre riskofaktorer slik som fedme og alkoholinntak[53]. Dette er også vist i andre studier[54,55].

Biomarkører kan på denne måten være et hjelpemiddel til å forstå sammenhengen mellom sosial ulikhet og sykdomsutvikling.

Kapittel 4 Globale forskjeller i kreftforekomst

Larsen IK, Vinberg E, Campbell S, Babigumira R, Martinsen JI, og Mangerud G

Det er store globale forskjeller i kreftrisiko. For all kreft samlet, og for mange livsstilsrelaterte kreftformer, er insidensraten høyest i høyinntektsland. Det er anslått at omkring 15 % av alle krefttilfellene på verdensbasis er forårsaket av infeksjoner[56], og disse kreftformene (særlig livmorhals-, lever-, og magesekkreft) har høyest insidensrate i lavinntektsland[57]. Den globale kreftinsidensen synes altså å ha en sammenheng med sosiale forhold som inntekt og utdanning.

Studier har vist at kreftrisikoen blant innvandrere nærmer seg nivået til vertslandet ved økt botid, og at forskjeller vaskes ut i løpet av en til to generasjoner[58,59]. En studie fra Kreftregisteret har vist at innvandrere i Norge generelt sett har lik eller lavere risiko for kreft sammenlignet med den norskfødte delen av befolkningen[3]. Noen få kreftformer hadde høyere insidensrate blant innvandrere; menn fra andre nordiske land og fra Øst-Europa hadde høyere risiko for lungekreft. Kvinner fra andre nordiske land og Vest-Europa hadde høyere risiko for brystkreft, og kvinner fra Øst-Europa hadde høyere risiko for leverkreft. Studien viste også at menn og kvinner fra Øst-Europa hadde høyere risiko for magesekkreft, og risikoen for leverkreft var høyere for menn og kvinner fra Asia og Afrika.

Figur 4.1–A til 4.1–I viser den globale insidensraten av kreft for utvalgte kreftformer, og sammenhengen mellom insidensrate og bruttonasjonalprodukt (BNP) per innbygger. Tallene er basert på data fra Globocan Cancer Today[57] og Verdensbanken[60]. Landene er delt inn i fire inntektskategorier basert på bruttonasjonalinntekt (BNI) per innbygger, ved bruk av *Atlasmetoden*[1]. BNI er et mål på et lands samlede inntekter, til forskjell fra BNP som er verdien av de varer og tjenester som er produsert i løpet av et år. For de fleste landene er det veldig liten forskjell mellom BNP og BNI. I denne delen er det også gitt en oversikt over noen studier som har sett på sammenhengen mellom sosioøkonomisk status og risikoen for kreft.

4.1 Alle kreftformer samlet

I følge estimatene til International Agency for Research on Cancer (IARC) har Europa, Australia, og Nord-Amerika den høyeste insidensraten av kreft samlet sett. De høyeste ratene er i land med høyest BNP, og Australia (AUS), New Zealand (NZL), Irland (IRL), Ungarn (HUN) og USA er landene med aller høyest insidensrate, mens Norge ligger på niende plass (Figur 4.1–A). Land i Midtøsten, som Qatar, De forente arabiske emirater, Kuwait, Bahrain, Saudi-Arabia og Oman skiller seg ut ved å ha relativt høy BNP, men lav insidensrate.

Det er vanskelig å tolke disse dataene fordi de er sammensatt av mange ulike krefttyper, med ulike risikofaktorer. I tillegg har en del land organiserte screeningprogram, eller et bedre tilbud om tidlig diagnostikk og helsesjekk, og har dermed en annen diagnostisk kapasitet. Særlig gjelder dette vanlige kreftformer som bryst-, prostata-, livmorhals-, og tykk- og endetarmkreft.

4.2 Magesekkreft

Sør-Korea (KOR), Mongolia (MNG), Japan (JPN), Kina (CHN) og Bhutan (BTN) er de landene med høyest insidensrate av magesekkreft (Figur 4.1–B). Infeksjoner med bakterien *Heliobacter pylori* er en klar risikofaktor for denne kreftformen. Det samme er inntak av saltet og røkt mat. De fleste landene har hatt en klar nedgang i insidensraten av magesekkreft etter at bruk av slike konserveringsmetoder ble redusert, og kjøleskap tatt i bruk for bevaring av mat. På verdensbasis er det i dag ingen sterk sammenheng mellom BNP og insidensraten av kreft i magesekk, men flere studier har vist at personer med lav sosioøkonomisk status har høyere risiko for magekreft sammenlignet med personer med høyere sosioøkonomisk status[32,34,36].

4.3 Tykk- og endetarmskreft

Tykk- og endetarmskreft er en av de kreftformene hvor risikoen er vist å ha klarest sammenheng med livsstilsfaktorer som kosthold, fedme og fysisk aktivitet. Ungarn (HUN), Sør-Korea (KOR), Slovakia (SVK), Norge (NOR) og Slovenia (SVN) er de landene med høyest insidensrate i verden. Figur 4.1–C viser at det på verdensbasis er en positiv sammenheng mellom BNP og

[1] https://datahelpdesk.worldbank.org/knowledgebase/articles/378832-what-is-the-world-bank-atlas-method

insidensraten av tykk- og endetarmskreft, og den høyeste raten er i land med høyest BNP.

Studier som har undersøkt sammenhengen mellom sosioøkonomisk status og risiko for tykk- og endetarmskreft gir ikke entydige resultater[61]. Noen studier, særlig europeiske, finner høyere risiko for tykk- og endetarmskreft blant personer med høy sosioøkonomisk status[33,62–64], andre finner høyere risiko for personer med lav sosioøkonomisk status[34,36,62,65,66], små eller ingen forskjeller[32], eller ulikt resultat for menn og kvinner[34,64]. Et av hovedfunnene i en oversiktsartikkel fra 2010, var at studier fra USA og Canada generelt viste at lavere sosial klasse var assosiert med en høyere risiko for både tykk- og endetarmskreft. De europeiske studiene fant derimot at lavere sosial klasse var assosiert med lavere risiko[62].

I 2012 ble resultater fra en stor europeisk studie (European Prospective Investigation into Cancer and Nutrition (EPIC)) publisert[63]. Studien undersøkte sammenhengen mellom sosioøkonomisk status, målt ved utdanningsnivå, og risikoen for tykk- og endetarmskreft blant 400 510 deltakere (70 % kvinner) hvor 2447 deltakere hadde fått tykk- eller endetarmskreft i løpet av oppfølgingstiden. En styrke med denne studien var at de kunne kontrollere for en rekke risikofaktorer slik som BMI, fysisk aktivitet, kosthold, røyking og alkoholkonsum. Et interessant funn var at høyere utdanning var assosiert med lavere risiko for tykk- og endetarmskreft for sydeuropeere (Spania, Italia og Hellas), mens det ikke var noen sammenheng mellom sosioøkonomisk status og tarmkreftrisiko verken for Vest-Europa (Storbritannia, Nederland og Tyskland) eller Norden (Sverige, Danmark og Norge). Analyser stratifisert på tarmsegment fant bare signifikante sammenhenger for kreft i høyresidig tykktarm. En tysk studie har senere funnet signifikant høyere risiko for tykk- og endetarmskreft for menn som bor i områder med lav sosioøkonomisk status, men fant ingen tilsvarende sammenheng for kvinner[34].

En stor amerikansk studie fant at risikoen for tykk- og endetarmskreft var høyere blant de med lavt utdanningsnivå, og blant de som levde i områder med lav sosioøkonomisk status. I motsetning til resultatene i EPIC-studien, var sammenhengen sterkest for endetarmskreft, og de fant ingen påviselig sammenheng med høyresidig tykktarmskreft[65]. I en oppfølgende artikkel på samme populasjon, så de nærmere på bidraget fra atferdsmessige risikofaktorer og fedme. Samlet sett forklarte helseatferd og BMI 43.9 % av sammenhengen med utdanningsnivå, og 36.2 % av sammenhengen med nabolagets sosioøkonomiske status og risikoen for tykk- og endetarmskreft. Andelen som kunne forklares av alle faktorene, og BMI kombinert, var størst for høyresidig tykktarmskreft, og minst for endetarmskreft[67].

4.4 Lungekreft

Insidensen av lungekreft er høyest i Europa og USA. De landene som ligger på topp er Ungarn (HUN), Serbia (SRB), Ny-Caledonia (ikke vist i figur), Hellas (GRC), Franske Polynesia (ikke vist i figur), Montenegro (MNE) og Belgia (BEL) (Figur 4.1–D). På verdensbasis kan det se ut til å være en positiv sammenheng mellom BNP og insidensraten av lungekreft.

Studier viser at det er en negativ sammenheng mellom sosioøkonomisk status og risiko for lungekreft (det vil si høyere lungekreftinsidens blant de med lavest sosioøkonomisk status). Dette er vist både der sosioøkonomisk status er beregnet ut fra inntekt[66,68], yrke[33,68,69] utdanning[66,68,70], indeks[33] og nabolag/bosted[32,35,36,71,72]. En tysk studie fra 2018 fant signifikant sammenheng bare for menn[34]. Samlede analyser av pasient-kontroll studier fant at sammenhengen mellom sosioøkonomisk status (målt som yrkeshistorikk) og risikoen for lungekreft ble betydelig redusert etter at analysene ble justert for røyking, men sammenhengen var likevel signifikant[69]. Effekten av yrkeseksponering kan også tenkes å forklare noe av de sosioøkonomiske forskjellene for yrke. EPIC-studien viste at yrkeseksponering forklarte 14 % av de sosioøkonomiske forskjellene som var igjen etter at det var justert for røykevaner og inntak av frukt og grønnsaker. De konkluderte med at yrkeseksponering hadde en beskjeden innvirkning på sosioøkonomiske ulikheter i kreftrisiko[70].

4.5 Melanom i hud

Den høyeste insidensraten av melanom i hud ses i Australia (AUS), New Zealand (NZL), Norge (NOR), Danmark (DNK) og Nederland (NLD), og det var en positiv sammenheng mellom BNP og insidensrate (Figur 4.1–E). Studier har vist at det er en positiv sammenheng mellom sosioøkonomisk status og risiko for melanom[32,34,35,73,74]. En oversiktsartikkel fra 2015 konkluderte med at flere faktorer, inkludert yrke, overvekt og soleksponering, kunne forklare sammenhengen mellom sosioøkonomisk status og insidensraten av melanom[74]. En annen oversiktsartikkel, som kun inkluderte studier fra Nord-Europa, fant også en klar positiv sammenheng mellom sosioøkonomisk status og risikoen for melanom i hud. Her var konklusjonen at den økte risikoen sannsynligvis hadde sammenheng med solferier, men det ble også trukket frem at personer med høy sosioøkonomisk status i større grad brukte leger og dermatologer for sjekk av merker og føflekker, og at dette ga økt kunnskap om melanom[73].

4.6 Brystkreft

Insidensraten av brystkreft er høyest i Belgia (BEL), Luxembourg (LUX), Nederland (NLD), Frankrike (FRA), Ny-Caledonia (ikke vist i figur) og Libanon (LBN). Det er en positiv sammenheng mellom nasjonal BNP og insidensraten av brystkreft (Figur 4.1–F).

Sosioøkonomisk status er knyttet til en rekke risikofaktorer for brystkreft, slik som hormonelle faktorer relatert til alder ved menarke og menopause, antall barnefødsler, mammografiscreening, bruk av hormoner i forbindelse med overgangsalder, og livsstilsfaktorer[75].

Studier har vist at det er en klar og positiv sammenheng mellom risiko for brystkreft og sosioøkonomisk status[32–36,71,76]. Det er også vist at kvinner med lavere sosioøkonomisk status har høyere risiko for å få diagnostisert sykdommen i et senere stadium enn kvinner med høyere sosioøkonomisk status, og motsatt[66,77]. En studie fra USA benyttet utdanningsnivå, familieinntekt og fattigdomsstatus som mål på sosioøkonomisk status, og fant signifikante sammenhenger kun mellom utdanningsnivå og brystkreftrisiko[66].

Lundquist og kollegaer publiserte i 2016 en oversiktsartikkel om sosioøkonomisk ulikhet i insidens og dødelighet av brystkreft i Europa[75]. Oversikten inkluderte åtte studier hvor insidens av brystkreft var utfallsvariabelen. De fleste studiene var fra Norden, og hadde brukt utdanning som mål for sosioøkonomisk status. En metaanalyse, som inkluderte fire av studiene, fant at det var signifikant høyere insidens av brystkreft blant kvinner med høy sosioøkonomisk status. En av studiene fant en signifikant sammenheng også i analysene som kontrollerte for screening, alder og andre faktorer[78]. En studie fra Kreftregisteret har vist at insidensraten av brystkreft har vært høyest for kvinner med høyt utdanningsnivå i perioden fra 1971 og frem til 2009, men at forskjellen er redusert over tid[79]. Innføring av populasjonsbasert screening kan være en mulig årsak.

4.7 Livmorhalskreft

Livmorhalskreft er en av få kreftformer som har høyest utbredelse i lavinntektsland. Høyest insidensrate har Eswatini (tidligere Swaziland) (SWZ), Malawi (MWI), Zambia (ZMB), Zimbabwe (ZWE) og Tanzania (TZA), mens land i Midtøsten har den laveste raten. Det er også en av de kreftformene som har klar sammenheng med sosioøkonomisk status; lav sosioøkonomisk status er assosiert med høyere risiko (Figur 4.1–G). Dette har også blitt vist i flere studier fra Europa, USA og New Zealand[32–36,80–82].

En fransk studie som undersøkte sammenhengen mellom sosioøkonomisk status og insidensraten av ulike kreftformer fant at livmorhalskreft var den kreftformen som hadde størst forskjell mellom laveste og høyeste sosiale klasse; kvinner i den laveste sosiale klassen hadde 62 % høyere risiko for denne kreftformen sammenlignet med kvinner i den høyeste sosiale klassen[32]. Enda større forskjeller ble funnet i en studie blant asiatiske og latinamerikanske kvinner i California. Her hadde latinamerikanske kvinner som levde i et geografisk avgrenset nabolag med lav sosioøkonomi nær 13 ganger høyere rater av livmorhalskreft sammenlignet med de som levde i nabolag med høy sosioøkonomisk status[80].

Trolig er det en sammensatt og kompleks forklaring på denne sammenhengen, men årsaken kan knyttes til infeksjon av HPV-virus, tilgang til helsetjenester og utbredelse og tilgang til screeningprogram.

4.8 Prostatakreft

Høye insidensrater av prostatakreft forekommer i alle verdensdeler unntatt Asia. Landene med de høyeste ratene er Guadeloupe (GLP), Martinique (ikke vist i figur), Irland (IRL), Barbados (BRB), Estland (EST) og Norge (NOR). Det er en positiv sammenheng mellom BNP og insidensrate, men det er relativt stor spredning i BNP blant landene med høy insidens. Bhutan og Nepal er landene med lavest insidens (Figur 4.1–H).

Studier har vist at det er en positiv sammenheng mellom sosioøkonomisk status og risiko for prostatakreft[32,36,83]. I likhet med brystkreft er det også for prostatakreft vist en sammenheng med stadium, og menn med høyere sosioøkonomisk status får oppdaget kreften på et tidligere stadium[66]. Det indikerer en sammenheng med PSA-testing. En tysk studie fant imidlertid ingen sammenheng mellom sosioøkonomi og risiko for prostatakreft[34]. En norsk studie fant at menn i yrker med høy status hadde 30 % høyere risiko for prostatakreft sammenlignet med menn i yrker med lav sosioøkonomisk status, og menn med høy utdanning hadde 56 % høyere risiko sammenlignet med menn med lav utdanning[83].

4.9 Kreft i blære og urinveier

Kreft i blære og urinveier har høyest insidensrate i Libanon (LBN), Hellas (GRC), Danmark (DNK) og Ungarn (HUN). Den høyeste raten ses altså i land med relativ høy BNP (Figur 4.1–I). Lavest rate ses i Belize, Gambia og Botswana. Studier har funnet at lavere sosioøkonomisk status er assosiert med høyere risiko for kreft i blære og urinveiene[32,34].

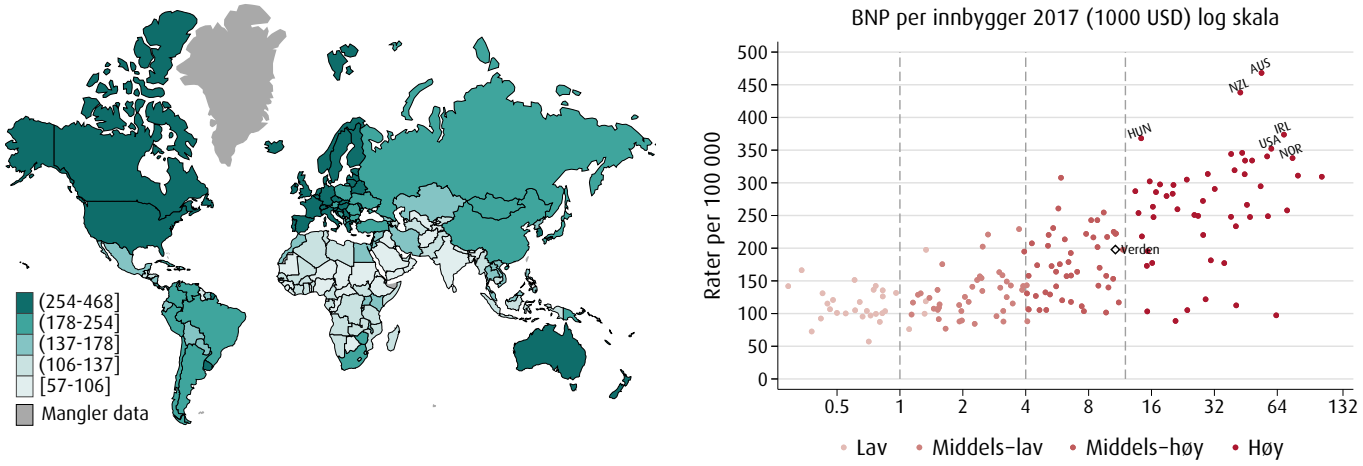
4.10 Andre kreftformer

Lavere sosioøkonomisk status er vist å ha en sammenheng med høyere risiko for kreft i leppe[32], munnhule[32], svelg[32,34], strupehode[32,34], spiserør[32,34,36], lever[32,36], bukspyttkjertel[32], nyre[34] og lymfoid, hematopoetisk eller beslektet vev[34]. Høyere sosioøkonomisk status er vist å ha en sammenheng med høyere risiko for kreft i testikkel[32] og eggstokk[32].

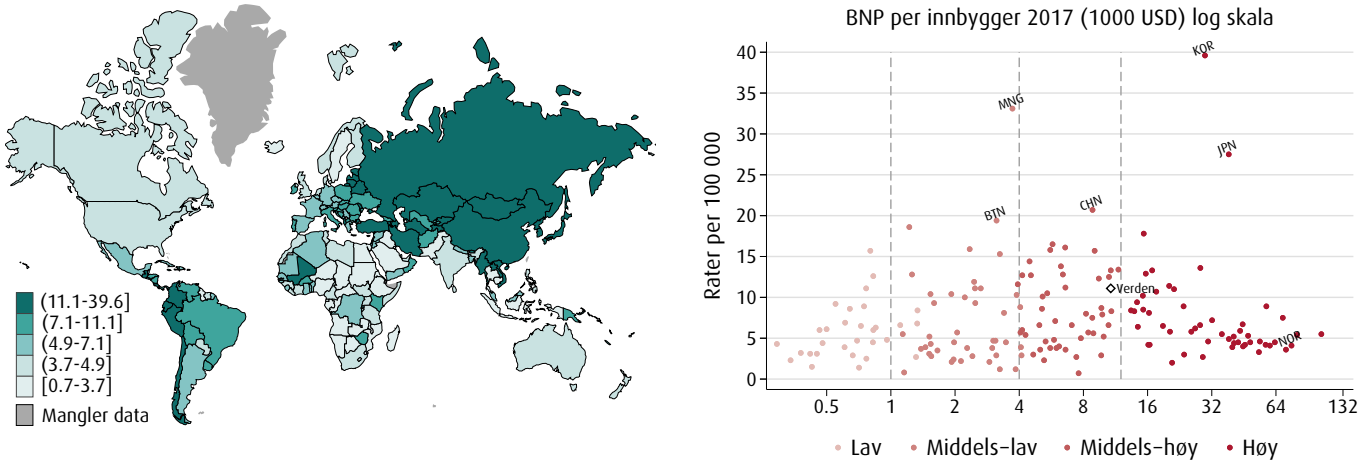
Det er ikke gjort en systematisk litteraturgjennomgang, og derfor presiseres det at dette ikke kan ses på som en fullgod oversikt over temaet. Den gir likevel et bilde på hva en kan forvente å finne i analysene av norske data i kapittel 5 og 6.

Figur 4.1: Global kreftforekomst (kart) og kreftforekomst etter inntekt. Estimerte aldersstandardiserte insidensrater (Verdensstandard) per 100 000 for 2018

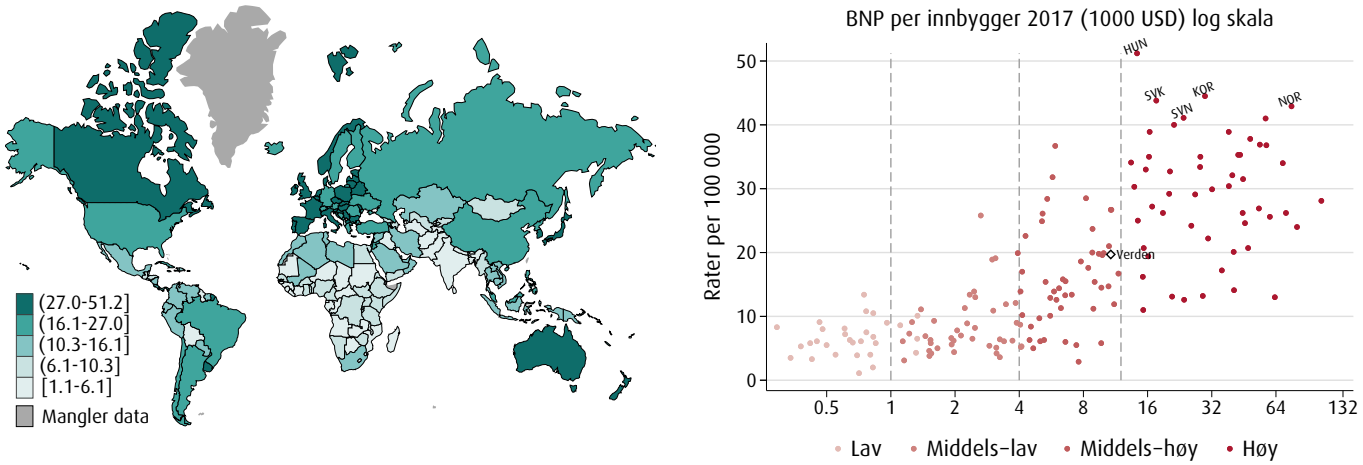
Figur 4.1–A: All kreft (ICD-10 C00–96)



Figur 4.1–B: Magesekk (ICD-10 C16)



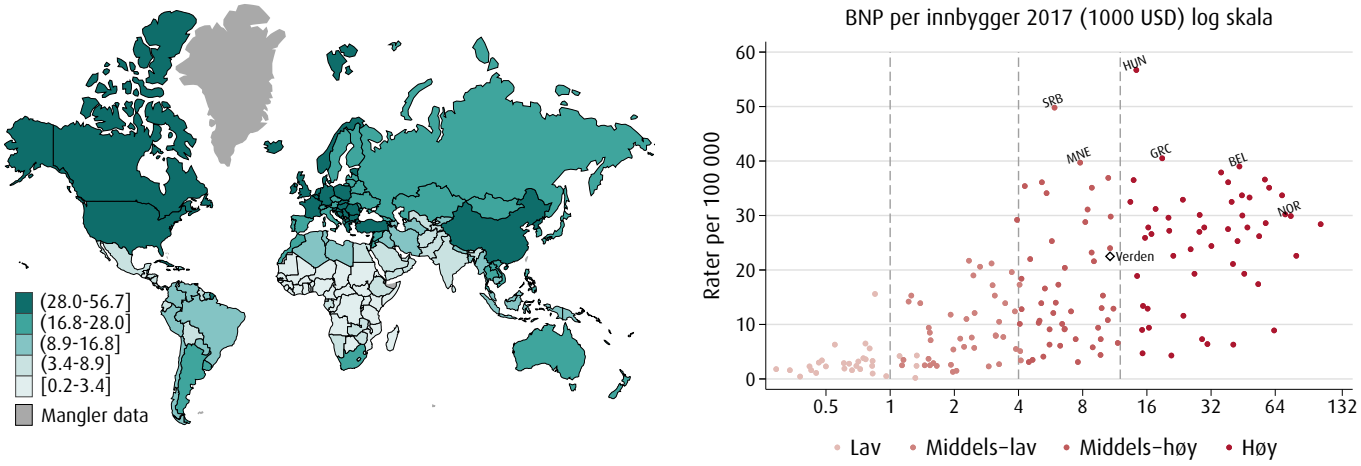
Figur 4.1–C: Tykk- og endetarm (ICD-10 C18–20)



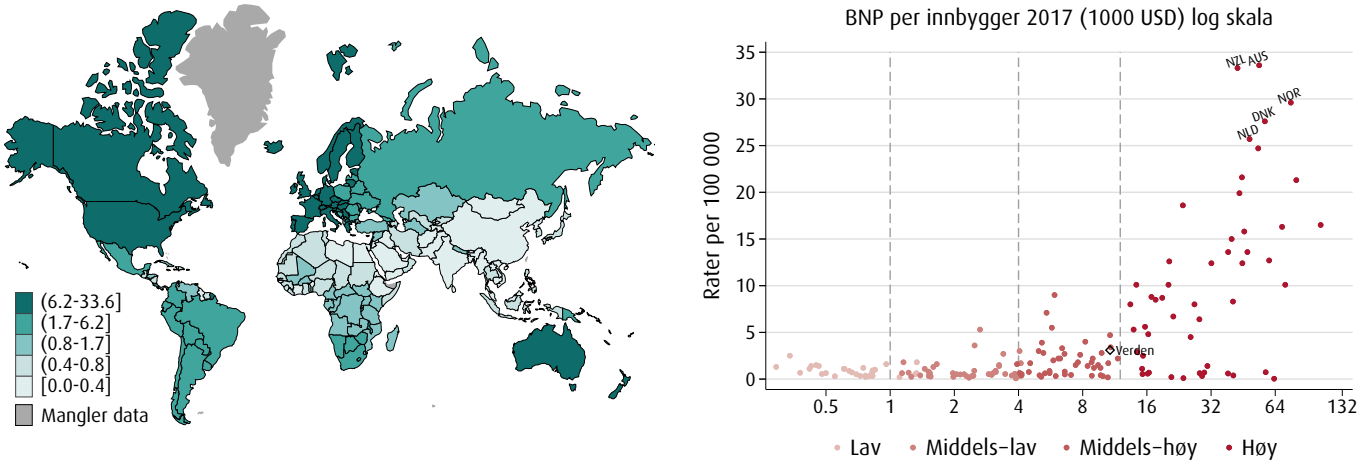
Kilder: Globocan Cancer Today, International Agency for Research on Cancer (IARC), og Verdensbanken. Inndelingen i lav, middels-lav, middels-høy og høy inntekt er basert på Verdensbankens klassifisering fra 2017. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

Figur 4.1: Global kreftforekomst (kart) og kreftforekomst etter inntekt. Estimerte aldersstandardiserte insidensrater (Verdensstandard) per 100 000 for 2018

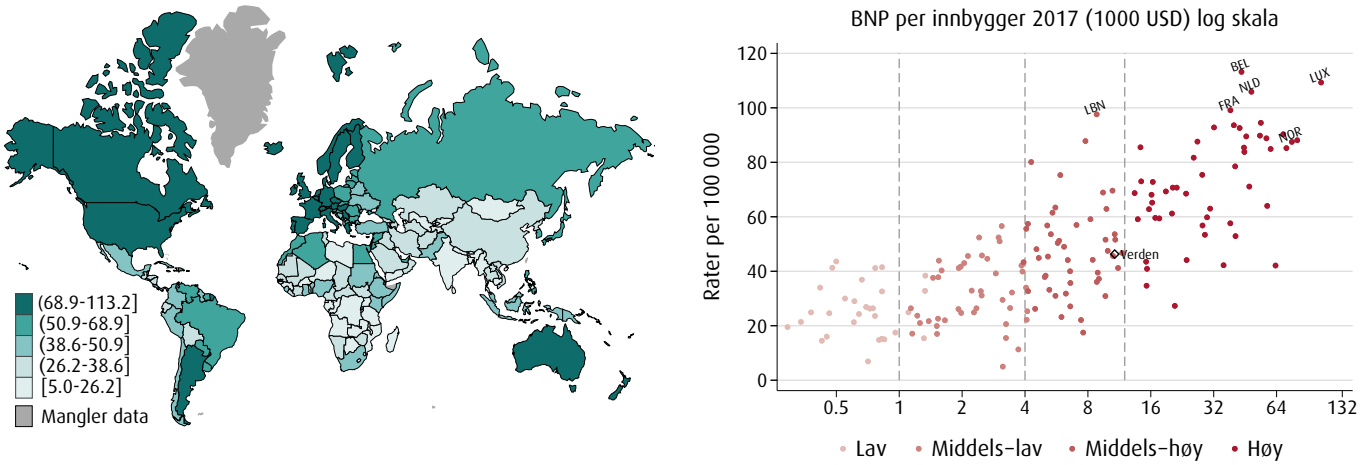
Figur 4.1–D: Lunge, luftrør (ICD-10 C33–34)



Figur 4.1–E: Melanom i hud (ICD-10 C43)



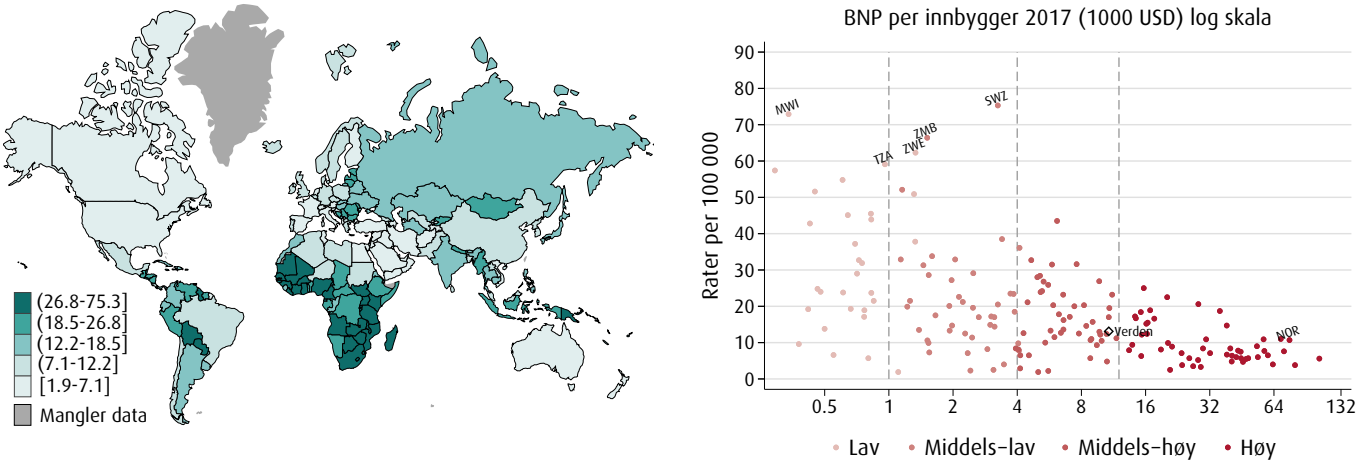
Figur 4.1–F: Bryst (ICD-10 C50)



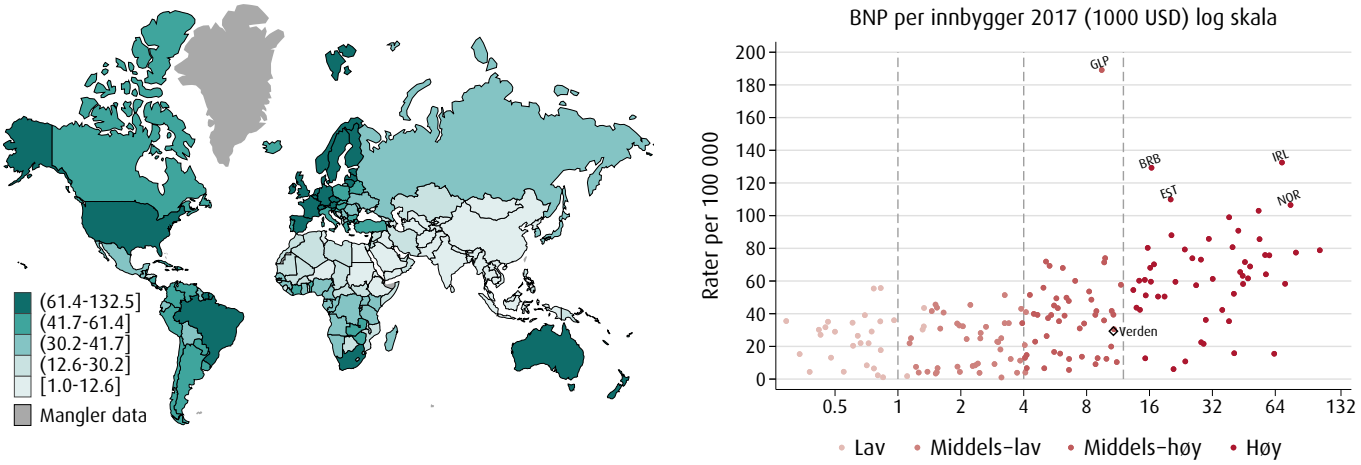
Kilder: Globocan Cancer Today, International Agency for Research on Cancer (IARC), og Verdensbanken. Inndelingen i lav, middels-lav, middels-høy og høy inntekt er basert på Verdensbankens klassifisering fra 2017. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

Figur 4.1: Global kreftforekomst (kart) og kreftforekomst etter inntekt. Estimerte aldersstandardiserte insidensrater (Verdensstandard) per 100 000 for 2018

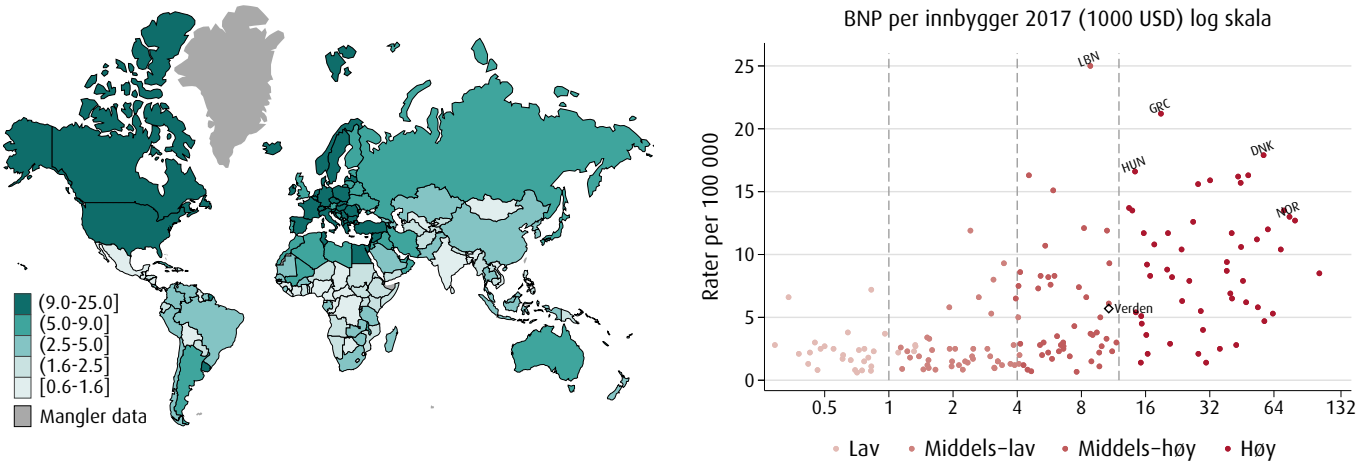
Figur 4.1–G: Livmorhals (ICD-10 C53)



Figur 4.1–H: Prostata (ICD-10 C61)



Figur 4.1–I: Blære, nyrebekken, urinleder (ICD-10 C65–68)



Kilder: Globocan Cancer Today, International Agency for Research on Cancer (IARC), og Verdensbanken. Inndelingen i lav, middels-lav, middels-høy og høy inntekt er basert på Verdensbankens klassifisering fra 2017. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

Kapittel 5 Kreftforekomst hos innvandrere

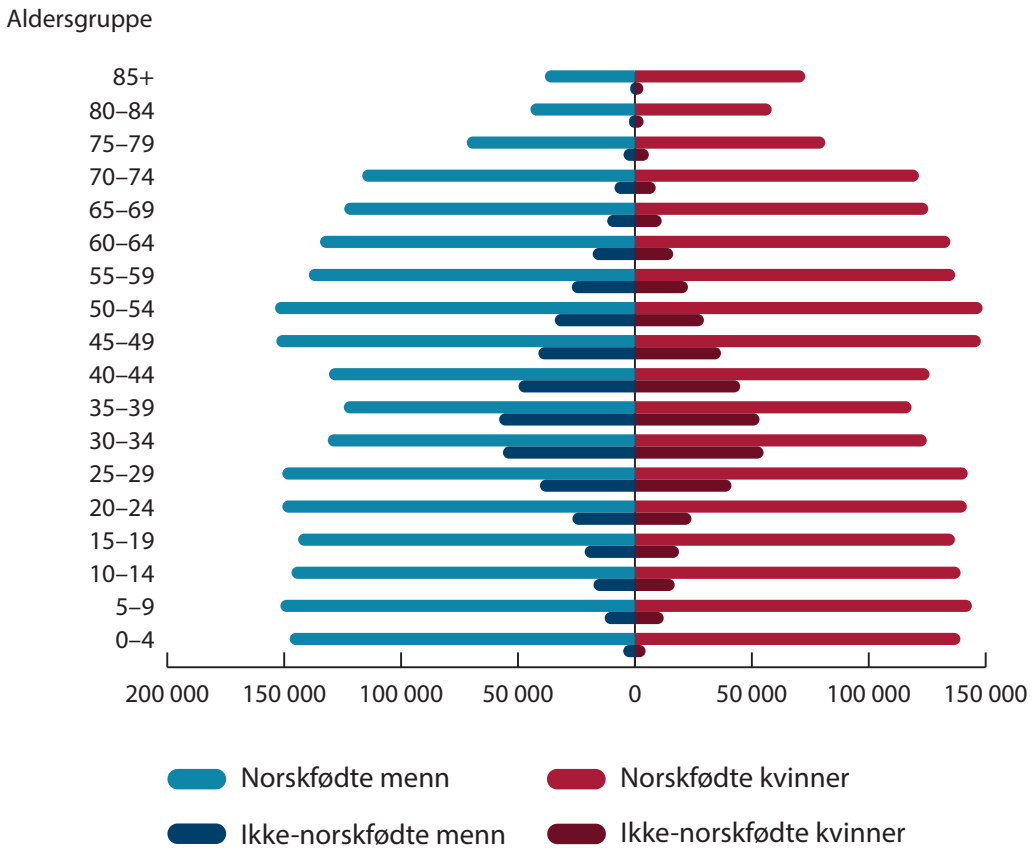
Larsen IK, Aaserud S, Jerm MB, Møller B, Campbell S, Mangerud G, Nygård M, Ursin G

I 2018 ble Kreftregisterforskriften endret slik at registeret kunne lagre og behandle informasjon om landbakgrunn. I denne utgaven av Cancer in Norway kan det for første gang defor publisere kreftdata for ulike innvandrergrupper.

5.1 Innvandrere i Norge

Norge har siden 1970-tallet hatt en jevn økning i innvandringen, og per 1. januar 2019 er 14.3 % av befolkningen i Norge innvandrere, og 3.4 % er norskfødte med innvandrerforeldre[2]. De nyeste tallene fra SSB viser at Norge har innvandrere fra over 210 land eller stater. Polen er det landet hvor flest innvandrere kommer fra, og utgjør 12.9 % av alle innvandrerne. Sammen med innvandrere fra Litauen og Sverige, gir de en sterk økning i antall arbeidsinnvandrere[16,28] (Figur 5.2). Innvandrere fra Somalia, Syria og Irak søker hovedsakelig familiegjenforening eller kommer som flyktninger. Innvandrere er unge i forhold til den norskfødte delen av befolkningen (Figur 5.1), men i de senere årene har flere innvandrere passert 60 år, en alder hvor risikoen for kreft øker.

Figur 5.1: Befolkningssammensetningen i Norge i 2018



Som vi viste i kapittel 4, er det store geografiske forskjeller i kreftinsidensen i verden. Norge ligger på verdenstoppen når det gjelder kreftinsidens for en rekke ulike kreftformer, og derfor er det forventet at innvandrere i Norge har lavere kreftforekomst enn det norskfødte har. En nylig studie fra Kreftregisteret bekreftet dette.

De fant at innvandrere, med noen få unntak, stort sett hadde en signifikant lavere risiko for kreft sammenlignet med norskfødte. Noen få kreftformer, deriblant lunge-, bryst-, magesekk- og leverkreft hadde imidlertid høyere insidens blant enkelte innvandrergrupper[3]. En annen studie fra Kreftregistret undersøkte om den lave risikoen for kreft blant innvandrere hadde påvirket de nasjonale kreftratene. Studien stilte også spørsmål om ratene blant norskfødte egentlig var høyere enn det de nasjonale tallene viste. Studien fant at den lave kreftrisikoen blant innvandrere ikke hadde hatt noen innvirkning på de nasjonale ratene. Det var kun noen få kreftformer, deriblant melanom, hvor en kunne se en liten tendens til forskjeller mellom nasjonale rater (for hele befolkningen), og ratene for norskfødte alene[4].

5.2 Innvandrere og screening

Screening innebærer systematiske undersøkelser utført på en gruppe mennesker i befolkningen uten sykdomssymptomer, med mål om å fjerne forstadier eller behandle kreft i et tidlig stadium. Norge har nasjonale screeningprogrammer for livmorhalskreft og brystkreft, og et screeningprogram mot tarmkreft er under utvikling. Vi vet at screening kan påvirke insidensratene. I Norge antar vi at innføringen av screeningprogrammet for brystkreft i perioden fra midten av 1990-tallet til 2005 forklarer mye økningen i insidens i samme periode, og fremmøte til screening er derfor en faktor å ta hensyn til når man skal se på forskjeller i kreftforekomst.

Livmorhalsprogrammet

Målgruppen til livmorhalsprogrammet er alle kvinner i aldersgruppen 25–69 år, og det er anbefalt å ta celleprøve fra livmorhalsen regelmessig. Programmet sender ut en påminnelsen når det nærmer seg tid for ny prøve. En norsk studie fra 2015 fant at screening har redusert forekomsten av livmorhalskreft med 68 %[84]. Av de ca. 300 nye tilfellene av livmorhalskreft i Norge hvert år, er over 50 % blant kvinner som ikke møter til screening[85]. En studie fra Kreftregisteret i 2017 fant at innvandrerkvinner hadde signifikant lavere fremmøte til screening sammenlignet med norskfødte kvinner. Andelen som ikke møtte til screening[1] var 34 % for alle kvinner i Norge. Blant innvandrerkvinner var andelen 52 %. Studien fant også at andelen som ikke møtte var høyest blant de med lavest inntekt og utdanning[8]. I en oppfølgingsstudie ble det nærmere undersøkt hvilke faktorer som hadde betydning for å ikke møte til screening blant innvandrere. Her ble innvandrerkvinnene kategorisert i grupper basert på hvilket land eller område de kom fra. Alle gruppene hadde lavere oppmøte enn norskfødte kvinner, men det var stor forskjell mellom gruppene. Kvinner fra Øst-Europa hadde lavest oppmøte til screening, mens kvinner fra Norden hadde høyest oppmøte. Innvandrerkvinner fra alle områder unntatt Vest-Asia og Afrika, som hadde bodd i Norge i mindre enn ti år, hadde lavere oppmøte enn kvinner som hadde bodd i Norge i mer enn 10 år. Kvinner med lav inntekt hadde lavere oppmøte enn kvinner med høy inntekt, og dette var signifikant for alle gruppene[9].

Mammografiprogrammet

I Norge får alle kvinner i alderen 50–69 år tilbud om å delta i det offentlige screeningprogrammet for brystkreft, Mammografiprogrammet, hvert andre år. Programmet har vært landsdekkende siden 2005.

Vi har inntil nylig hatt lite kunnskap om innvandrerkvinners risiko for brystkreft, og om hvordan de forholder seg til det norske helsevesenet, inkludert deltakelse i de offentlige screeningprogrammene. En studie fra Kreftregisteret har vist at siden oppstart av Mammografiprogrammet og frem til 2017, hadde 86 % av norskfødte kvinner møtt en eller flere ganger i programmet, mens andelen var 67 % for innvandrerkvinner. Forskjellene i oppmøte ble mindre, men var likevel signifikante, etter at det ble justert for sosioøkonomiske faktorer[7]. Andre studier fra Kreftregisteret har vist at innvandrerkvinner fra lavforekomstland, har lavere insidensrater av brystkreft enn norskfødte kvinner[3], men blir oftere diagnostisert med mer avansert brystkreft[11]. Studier fra Mammografiprogrammet har vist systematiske forskjeller i oppmøte blant kvinner med ulik sosioøkonomisk status både blant norskfødte kvinner og innvandrerkvinner. Lav inntekt og utdanning, samt det å være uten arbeid, er assosiert med lavere oppmøte i begge gruppene[10].

5.3 Metode

Vi har benyttet samme metode for utregning av insidens som i hovedrapporten. En beskrivelse av metoden finnes på Kreftregisterets nettsider:

https://www.kreftregisteret.no/globalassets/cancer-in-norway/2018/cin-2018supmeth.pdf

Innvandrerne er kategorisert etter landbakgrunn, og her er det definert som fødeland. Barn født i Norge, med innvandrerforeldre, er gruppert som norskfødte. Landene er deretter kategorisert i elleve ulike landområder. På grunn av få krefttilfeller, er tallene presentert for fem hovedgrupper.Gruppen "Øst-Europa, Baltikum og Balkan" er i teksten omtalt som Øst-Europa. Data for Latin-Amerika og Karibien er ikke vist i resultatdelen fordi det ikke var

[1] Definert som kvinner som ikke hadde tatt en screeningprøve i løpet av de siste 3,5 år før studiestart

naturlig å slå tallene sammen med noen andre hovedgrupper, og denne kategorien hadde for få tilfeller til å kunne vises alene. Tabell 5.1 gir en oversikt over landene som inngår i de ulike områdene (tallene er basert på data fra SSB[2], og vi har kun tatt med landene med flere enn 1000 innvandrere). Vi har ikke benyttet den samme inndelingen av landområder som SSB benytter i sin statistikk, derfor er det ikke helt samsvar mellom inndeling i tabell 5.1 og figur 5.2. I tillegg benytter vi begrepene "Vestlige" og "Ikke-vestlige" land. Denne inndelingen er på mange måter utdatert, og brukes ikke lenger i offisiell statistikk fra SSB[86]. Innenfor kreftområdet er begrepene fortsatt relevante, fordi det for mange kreftformer er et skille i kreftforekomst mellom disse områdene.

Tabell 5.1: Antall innvandrere fra ulike land, og inndeling av landområder

	Vestlige land				Ikke-vestlige land						
	Norden	Vest-Europa, Nord-Amerika og Oseania			Øst-Europa, Baltikum og Balkan	Midtøsten og Afrika		Asia			Latin-Amerika og Karibien*
Antall innvandrere i Norge	**Norden**	**Vest-Europa**	**Nord-Amerika**	**Oseania**	**Øst-Europa, Baltikum og Balkan**	**Midtøsten og Nord-Afrika**	**Afrika sør for Sahara**	**Sør-Asia**	**Sør-Øst Asia**	**Øst-Asia**	
90 000 – 99 999					Polen						
30 000 – 39 999	Sverige				Litauen						
20 000 – 29 999		Tyskland				Syria Irak	Somalia Eritrea	Pakistan	Filippinene		
10 000 – 19 999	Danmark	Storbritannia			Russland Romania Bosnia-Herc. Tyrkia Kosovo Latvia	Iran		Afghanistan India	Vietnam Thailand		
1 000 – 9 999	Island Finland	Nederland Spania Frankrike Italia Portugal Sveits Østerrike Belgia Irland	USA Canada	Australia	Bulgaria Serbia Ukraina Estland Kroatia Ungarn Slovakia Hellas Nord-Makedonia Tsjekkia Albania Hviterussland Moldova	Marokko Sudan Palestina Libanon Algerie Egypt Tunisia	Etiopia Kongo Ghana Nigeria Kenya Uganda Gambia Burundi Sør-Afrika	Sri Lanka Nepal Bangladesh	Myanmar Indonesia	Kina Sør-Korea Japan	Chile Brasil Colombia Peru Mexico Venezuela Cuba

*Latin-Amerika og Karibien er ikke vist som egen gruppe i tabellene 5.2–5.5 på grunn av få krefttilfeller

5.4 Kreftforekomst blant innvandrere

Tabellene 5.2 og 5.3 viser gjennomsnittlig antall nye krefttilfeller i Norge per år etter kreftform og landbakgrunn. I løpet av den siste femårs perioden (2014–2018) har i gjennomsnitt 1359 innvandrermenn og 1264 innvandrerkvinner blitt diagnostisert med kreft. Dette utgjør 7.8 % av alle krefttilfellene som diagnostiseres hvert år.

Tabellene 5.4 og 5.5 viser aldersstandardiserte insidensrater per 100 000 personår etter kreftform og landbakgrunn i 2014–2018. Norskfødte kvinner har den høyeste insidensraten av all kreft samlet. Brystkreft er den vanligste kreftformen blant kvinner, uavhengig av landbakgrunn, og utgjør fra 23 % av alle krefttilfellene blant norskfødte til 30 % av alle krefttilfellene blant innvandrerkvinner fra Asia. Kvinner med bakgrunn fra Asia og Øst-Europa har de høyeste ratene av kreft i mage-

sekk og lever, og kvinner fra Øst-Europa har også høyest rate av kreft i bukspyttkjertel. Brystkreft har høyest rate blant innvandrerkvinner fra Norden og Vest-Europa, og innvandrerkvinner fra Asia har høyest rate av skjoldbruskkjertelkreft. For de fleste andre kreftformer har innvandrerkvinner tilnærmet lik eller lavere rater sammenlignet med norskfødte.

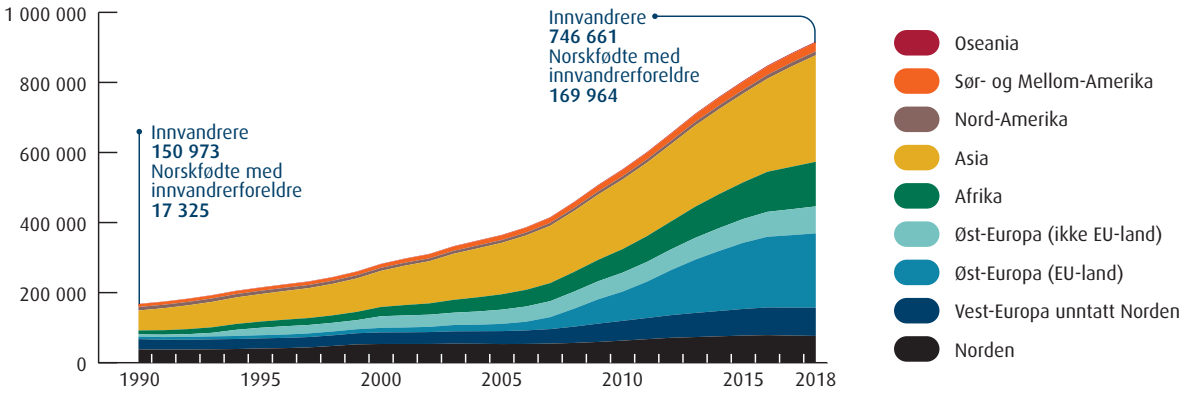
Norskfødte menn har den høyeste raten av all kreft samlet. Prostatakreft er den vanligste kreftformen blant alle innvandrergruppene, og utgjør fra 20 % av alle kreftilfellene blant menn med bakgrunn fra Øst-Europa til 28 % av alle tilfellene blant menn fra Norden. Innvandrermenn fra Vest- og Øst-Europa har de høyeste ratene av magesekkreft, og ratene for leverkreft er høyest blant menn fra Midtøsten, Afrika og Asia. Menn fra Norden og fra Øst-Europa har de høyeste ratene av lungekreft, og menn fra Norden har også høyest rate av kreft i blære og urinveier.

I kapittel 6 presenteres analyser av kreftrisiko etter inntekt, utdanning og landbakgrunn.

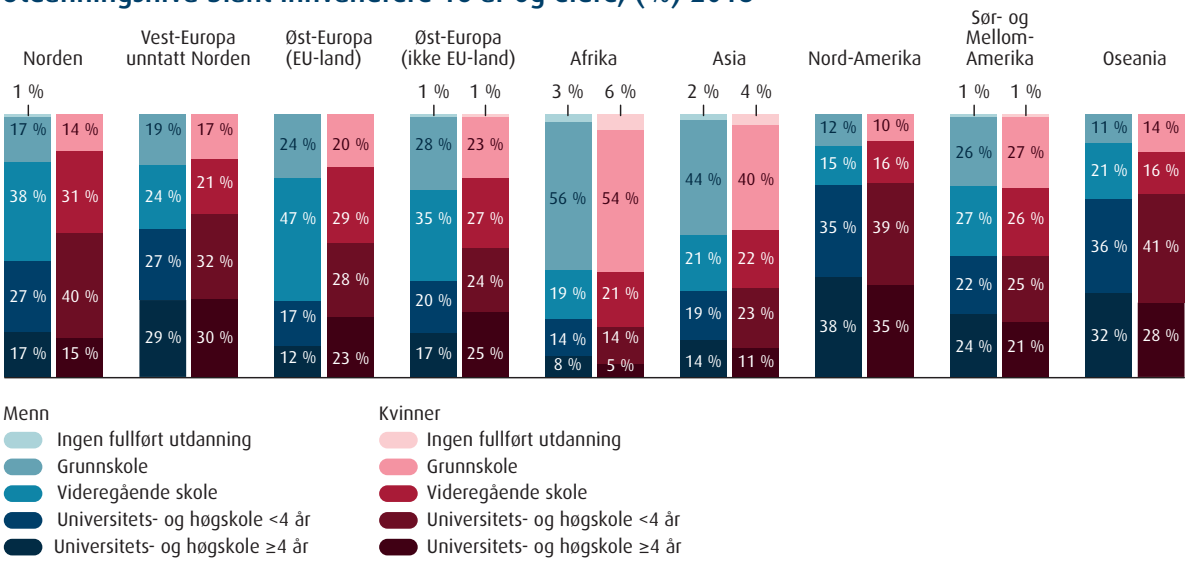
Figur 5.2: Innvandrerbefolkningen i Norge fra 1990 til 2018

Innvandrerbefolkningen i Norge 1990–2018

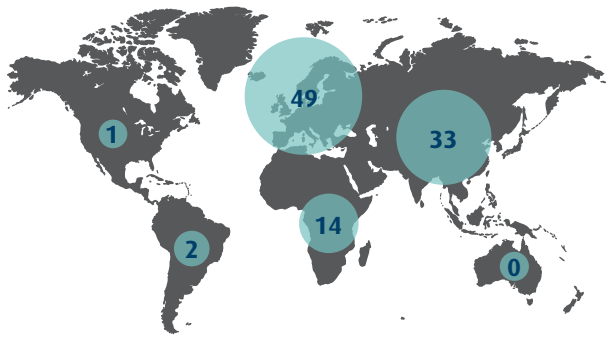
Landbakgrunn for innvandrere og norskfødte med innvandrerforeldre



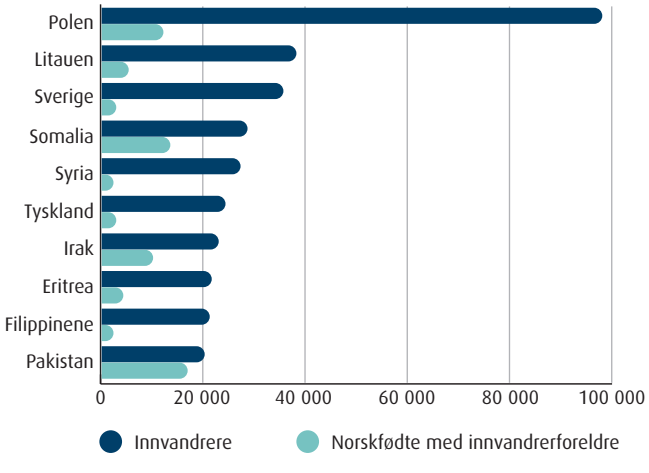
Utdanningsnivå blant innvandrere 16 år og eldre, (%) 2018



Innvandrere og norskfødte med innvandrer-foreldre fordelt på verdensdel, (%) 2018



De ti landene med flest innvandrere 2018



Kilde: Statistisk sentralbyrå

Tabell 5.2: Gjennomsnittlig antall nye krefttilfeller per år for kreftform og landbakgrunn, 2014–2018, **menn**

ICD-10	Kreftform	Norskfødte	Norden	Vest-Europa, Nord-Amerika og Oseania	Øst-Europa, Baltikum og Balkan	Midtøsten og Afrika	Asia
C00–96	**All kreft**	**16 775**	**264**	**292**	**249**	**165**	**126**
C00–14	**Leppe, munnhule og svelg**	**373**	**8**	**7**	**7**	**5**	**3**
C00	Leppe	51	0	1	1	0	0
C02–06	Munnhule	112	3	1	1	2	1
C07–08	Spyttkjertler	37	1	1	0	1	0
C09–10, C01, C14	Oropharynx	147	3	3	3	0	0
C11	Nasopharynx	6	0	0	1	1	0
C12–13	Hypoharynx	19	1	0	0	0	0
C15–26	**Fordøyelsesorganer**	**3 387**	**49**	**58**	**46**	**36**	**29**
C15	Spiserør	207	3	4	2	1	1
C16	Magesekk	255	1	6	9	6	3
C17	Tynntarm	100	1	2	1	0	0
C18	Tykktarm	1 350	20	19	14	10	7
C19–20	Endetarm	761	12	12	9	8	6
C21	Anus	27	0	1	0	0	0
C22	Lever	159	2	3	4	4	7
C23–24	Galleblære og galleveier	68	2	1	2	1	0
C25	Bukspyttkjertel	396	6	8	5	4	3
C26	Andre fordøyelsesorganer	63	1	2	1	1	2
C30–34, C38	**Åndedrettsorganer**	**1 664**	**28**	**28**	**37**	**13**	**13**
C30–31	Nese og bihuler	22	0	0	1	0	0
C32	Strupe	83	2	1	4	1	0
C33–34	Lunge, luftrør	1 549	25	26	32	12	13
C38	Hjerte, mediastinum og brysthinne	10	0	0	0	0	0
C40–41	**Knokler og leddbrusk**	**25**	**0**	**0**	**3**	**1**	**1**
C43	**Melanom i hud**	**1 036**	**16**	**17**	**10**	**1**	**1**
C44	**Hud ekskl. melanom**	**1 106**	**12**	**16**	**3**	**4**	**2**
C45	**Mesoteliom**	**58**	**1**	**1**	**1**	**0**	**0**
C47	**Autonome nervesystem**	**5**	**0**	**0**	**0**	**0**	**0**
C48–49	**Bløtvev m.m.**	**56**	**1**	**1**	**2**	**2**	**1**
C50	**Bryst**	**26**	**0**	**1**	**1**	**0**	**0**
C60–63	**Mannlige kjønnsorganer**	**5 077**	**83**	**84**	**47**	**34**	**27**
C61	Prostata	4 742	76	76	35	32	26
C62	Testikkel	273	5	7	11	2	1
C60, C63	Andre mannlige kjønnsorganer	61	2	1	1	0	0
C64–68	**Urinveier**	**1 696**	**30**	**30**	**38**	**22**	**12**
C64	Nyre ekskl. nyrebekken	540	9	9	17	8	4
C65–68	Blære, nyrebekken, urinleder	1 157	21	21	21	14	8
C69	**Øye**	**40**	**0**	**1**	**1**	**0**	**1**
C70–72	**Sentralnervesystemet**	**424**	**8**	**9**	**15**	**10**	**7**
C73	**Skjoldbruskkjertel**	**104**	**1**	**3**	**4**	**4**	**3**
C37, C74–75	**Andre endokrine kjertler**	**84**	**1**	**1**	**3**	**3**	**3**
C39, C76, C80	**Andre eller uspesifiserte**	**137**	**1**	**2**	**2**	**1**	**1**
C81–96	**Lymfoid og hematopoetisk vev**	**1 477**	**24**	**33**	**31**	**29**	**22**
C81	Hodgkin lymfom	82	1	2	3	4	2
C82–86, C96	Non-Hodgkin lymfom	518	10	12	12	10	9
C88	Immunoproliferative sykdommer	42	1	1	0	0	0
C90	Myelomatose	235	4	4	3	3	2
C91–95	Leukemi	600	9	14	13	12	9

Tabell 5.3: Gjennomsnittlig antall nye krefttilfeller per år for kreftform og landbakgrunn, 2014–2018, **kvinner**

ICD-10	Kreftform	Norskfødte	Norden	Vest-Europa, Nord-Amerika og Oseania	Øst-Europa, Baltikum og Balkan	Midtøsten og Afrika	Asia
C00–96	**All kreft**	**14 282**	**239**	**229**	**272**	**121**	**214**
C00–14	**Leppe, munnhule og svelg**	**213**	**3**	**3**	**4**	**2**	**4**
C00	Leppe	38	0	0	0	0	0
C02–06	Munnhule	89	2	2	1	0	1
C07–08	Spyttkjertler	30	0	0	0	0	2
C09–10, C01, C14	Oropharynx	49	1	0	1	1	1
C11	Nasopharynx	4	0	0	1	0	1
C12–13	Hypoharynx	4	0	0	0	0	0
C15–26	**Fordøyelsesorganer**	**2 991**	**45**	**37**	**38**	**18**	**29**
C15	Spiserør	68	1	2	1	2	1
C16	Magesekk	153	2	2	6	2	3
C17	Tynntarm	76	1	0	0	1	0
C18	Tykktarm	1 481	24	18	13	5	10
C19–20	Endetarm	516	7	5	6	3	6
C21	Anus	62	1	2	0	0	0
C22	Lever	94	1	1	2	1	4
C23–24	Galleblære og galleveier	78	1	1	1	1	1
C25	Bukspyttkjertel	387	5	5	5	2	3
C26	Andre fordøyelsesorganer	75	1	1	1	1	2
C30–34, C38	**Åndedrettsorganer**	**1 492**	**20**	**20**	**20**	**5**	**12**
C30–31	Nese og bihuler	15	0	1	0	0	0
C32	Strupe	19	0	0	0	0	0
C33–34	Lunge, luftrør	1 453	19	19	19	5	12
C38	Hjerte, mediastinum og brysthinne	5	0	0	0	0	0
C40–41	**Knokler og leddbrusk**	**23**	**0**	**0**	**1**	**0**	**1**
C43	**Melanom i hud**	**1 004**	**17**	**14**	**11**	**1**	**0**
C44	**Hud ekskl. melanom**	**943**	**11**	**14**	**5**	**2**	**2**
C45	**Mesoteliom**	**13**	**0**	**0**	**0**	**0**	**0**
C47	**Autonome nervesystem**	**4**	**0**	**0**	**0**	**0**	**0**
C48–49	**Bløtvev m.m.**	**46**	**2**	**1**	**1**	**1**	**0**
C50	**Bryst**	**3 100**	**63**	**66**	**79**	**38**	**71**
C51–58	**Kvinnelige kjønnsorganer**	**1 610**	**26**	**27**	**40**	**13**	**36**
C51–52, C57.7–9	Andre kvinnelige kjønnsorganer	120	2	1	1	1	1
C53	Livmorhals	313	7	4	14	5	13
C54	Livmorlegeme	698	12	12	13	4	12
C55	Livmor, uspesifisert	10	0	0	0	0	0
C56, C57.0–4, C48.2	Eggstokk, eggleder m.m.	467	5	9	11	4	9
C58	Morkake	2	0	0	0	0	0
C64–68	**Urinveier**	**695**	**11**	**10**	**11**	**4**	**7**
C64	Nyre ekskl. nyrebekken	258	3	4	7	2	4
C65–68	Blære, nyrebekken, urinleder	438	8	6	5	2	3
C69	**Øye**	**37**	**1**	**1**	**0**	**0**	**0**
C70–72	**Sentralnervesystemet**	**476**	**9**	**9**	**16**	**8**	**11**
C73	**Skjoldbruskkjertel**	**231**	**4**	**5**	**15**	**9**	**18**
C37, C74–75	**Andre endokrine kjertler**	**84**	**2**	**1**	**3**	**4**	**3**
C39, C76, C80	**Andre eller uspesifiserte**	**157**	**3**	**1**	**1**	**0**	**1**
C81–96	**Lymfoid og hematopoetisk vev**	**1 165**	**22**	**21**	**27**	**15**	**16**
C81	Hodgkin lymfom	50	1	1	3	2	2
C82–86, C96	Non-Hodgkin lymfom	416	8	7	10	3	7
C88	Immunoproliferative sykdommer	24	0	0	0	0	0
C90	Myelomatose	182	2	3	3	1	1
C91–95	Leukemi	493	10	9	12	8	6

Tabell 5.4: Aldersstandardiserte (norsk standard) insidensrater per 100 000 personår for kreftform og landbakgrunn, 2014–2018, **menn**

ICD-10	Kreftform	Norskfødte	Norden	Vest-Europa, Nord-Amerika og Oseania	Øst-Europa, Baltikum og Balkan	Midtøsten og Afrika	Asia
C00–96	**All kreft**	**734.1**	**696.7**	**681.9**	**474.4**	**442.8**	**399.4**
C00–14	**Leppe, munnhule og svelg**	**16.1**	**17.3**	**14.7**	**9.3**	**9.5**	**7.1**
C00	Leppe	2.3	0.0	2.3	2.7	0.9	0.0
C02–06	Munnhule	4.9	7.4	3.8	1.7	4.3	2.7
C07–08	Spyttkjertler	1.7	1.5	1.1	0.3	1.7	0.7
C09–10, C01, C14	Oropharynx	6.3	6.1	6.6	3.0	0.4	3.3
C11	Nasopharynx	0.3	0.9	0.6	1.4	1.4	0.5
C12–13	Hypoharynx	0.8	1.4	0.3	0.2	0.9	0.0
C15–26	**Fordøyelsesorganer**	**148.7**	**127.4**	**143.8**	**95.2**	**108.9**	**90.1**
C15	Spiserør	9.0	7.8	10.6	2.3	2.4	2.2
C16	Magesekk	11.4	3.2	15.5	16.8	11.3	6.3
C17	Tynntarm	4.4	4.5	3.8	3.9	0.5	0.6
C18	Tykktarm	59.7	52.2	50.1	31.0	45.1	28.5
C19–20	Endetarm	33.0	31.0	28.5	11.6	14.4	15.7
C21	Anus	1.2	0.4	1.3	2.5	0.0	0.0
C22	Lever	6.9	4.3	7.4	7.2	15.7	18.2
C23–24	Galleblære og galleveier	3.0	6.8	3.3	7.7	2.7	1.0
C25	Bukspyttkjertel	17.4	13.0	19.3	10.9	15.3	9.7
C26	Andre fordøyelsesorganer	2.8	4.2	4.0	1.4	1.4	7.9
C30–34, C38	**Åndedrettsorganer**	**71.9**	**81.9**	**67.4**	**79.9**	**49.2**	**45.3**
C30–31	Nese og bihuler	1.0	1.8	1.4	0.9	0.5	0.2
C32	Strupe	3.6	4.9	1.7	8.0	2.5	0.6
C33–34	Lunge, luftrør	66.9	75.2	63.6	71.0	45.8	44.5
C38	Hjerte, mediastinum og brysthinne	0.5	0.0	0.7	0.1	0.4	0.0
C40–41	**Knokler og leddbrusk**	**1.1**	**0.7**	**0.7**	**2.9**	**0.4**	**1.9**
C43	**Melanom i hud**	**45.9**	**37.3**	**33.6**	**15.3**	**6.7**	**1.9**
C44	**Hud ekskl. melanom**	**51.8**	**44.8**	**50.3**	**9.0**	**14.8**	**11.1**
C45	**Mesoteliom**	**2.5**	**3.3**	**5.0**	**0.6**	**0.3**	**0.5**
C47	**Autonome nervesystem**	**0.2**	**0.0**	**0.0**	**0.1**	**0.2**	**0.9**
C48–49	**Bløtvev m.m.**	**2.5**	**4.4**	**3.2**	**3.1**	**3.9**	**0.8**
C50	**Bryst**	**1.1**	**0.7**	**3.3**	**1.4**	**0.0**	**0.0**
C60–63	**Mannlige kjønnsorganer**	**217.5**	**207.4**	**184.5**	**103.4**	**102.0**	**107.1**
C61	Prostata	201.6	193.0	170.6	96.4	100.0	103.8
C62	Testikkel	13.2	9.0	10.3	4.3	2.0	1.5
C60, C63	Andre mannlige kjønnsorganer	2.7	5.3	3.6	2.7	0.0	1.8
C64–68	**Urinveier**	**74.3**	**82.5**	**69.9**	**74.5**	**59.6**	**40.6**
C64	Nyre ekskl. nyrebekken	23.2	20.8	19.3	21.4	15.0	10.3
C65–68	Blære, nyrebekken, urinleder	51.1	61.6	50.6	53.0	44.6	30.3
C69	**Øye**	**1.8**	**0.7**	**1.4**	**0.9**	**0.0**	**1.4**
C70–72	**Sentralnervesystemet**	**18.8**	**17.8**	**17.2**	**17.2**	**17.0**	**12.3**
C73	**Skjoldbruskkjertel**	**4.7**	**1.9**	**4.0**	**4.1**	**7.6**	**5.0**
C37, C74–75	**Andre endokrine kjertler**	**3.7**	**1.8**	**2.2**	**2.6**	**3.2**	**7.4**
C39, C76, C80	**Andre eller uspesifiserte**	**6.4**	**3.5**	**6.1**	**6.1**	**2.3**	**8.9**
C81–96	**Lymfoid og hematopoetisk vev**	**65.0**	**63.3**	**74.7**	**48.8**	**57.2**	**57.1**
C81	Hodgkin lymfom	3.7	1.7	2.4	1.5	5.2	2.7
C82–86, C96	Non-Hodgkin lymfom	22.6	25.2	24.2	19.1	23.2	24.6
C88	Immunoproliferative sykdommer	1.8	2.2	2.4	1.1	0.5	0.0
C90	Myelomatose	10.3	9.1	10.1	4.8	6.9	8.6
C91–95	Leukemi	26.5	25.2	35.6	22.3	21.4	21.2

Tabell 5.5: Aldersstandardiserte (norsk standard) insidensrater per 100 000 personår for kreftform og landbakgrunn, 2014–2018, **kvinner**

ICD-10	Kreftform	Norskfødte	Norden	Vest-Europa, Nord-Amerika og Oseania	Øst-Europa, Baltikum og Balkan	Midtøsten og Afrika	Asia
C00–96	**All kreft**	**563.0**	**501.5**	**509.6**	**432.8**	**326.8**	**337.7**
C00–14	**Leppe, munnhule og svelg**	**8.3**	**6.3**	**6.6**	**5.4**	**3.6**	**6.4**
C00	Leppe	1.4	0.5	0.9	0.9	0.2	0.4
C02–06	Munnhule	3.4	3.2	4.4	1.8	0.5	3.0
C07–08	Spyttkjertler	1.2	0.5	1.0	0.3	0.3	1.1
C09–10, C01, C14	Oropharynx	2.0	1.4	0.0	1.6	2.2	1.4
C11	Nasopharynx	0.2	0.4	0.4	0.7	0.4	0.5
C12–13	Hypoharynx	0.2	0.5	0.0	0.0	0.0	0.0
C15–26	**Fordøyelsesorganer**	**112.0**	**95.7**	**88.4**	**84.0**	**65.5**	**65.3**
C15	Spiserør	2.5	2.6	4.2	1.4	7.4	1.4
C16	Magesekk	5.7	5.0	5.0	9.4	6.7	9.3
C17	Tynntarm	3.0	2.5	1.0	0.3	1.3	0.4
C18	Tykktarm	54.8	51.0	41.9	29.9	15.4	20.5
C19–20	Endetarm	20.0	15.7	11.0	13.3	12.9	9.2
C21	Anus	2.5	3.1	4.5	0.4	2.0	0.0
C22	Lever	3.5	2.0	3.5	4.3	2.2	11.2
C23–24	Galleblære og galleveier	2.9	1.3	1.5	5.0	3.7	3.0
C25	Bukspyttkjertel	14.3	11.3	12.1	17.3	11.6	7.7
C26	Andre fordøyelsesorganer	2.7	1.3	3.6	2.8	2.3	2.7
C30–34, C38	**Åndedrettsorganer**	**56.6**	**42.8**	**48.1**	**45.0**	**17.5**	**31.9**
C30–31	Nese og bihuler	0.6	0.5	1.4	0.1	0.2	0.0
C32	Strupe	0.7	0.4	0.3	0.4	0.3	0.0
C33–34	Lunge, luftrør	55.1	41.8	46.4	44.4	17.0	31.9
C38	Hjerte, mediastinum og brysthinne	0.2	0.0	0.0	0.1	0.0	0.0
C40–41	**Knokler og leddbrusk**	**1.0**	**0.7**	**0.8**	**0.7**	**0.2**	**0.8**
C43	**Melanom i hud**	**41.8**	**34.3**	**29.2**	**13.8**	**4.7**	**0.3**
C44	**Hud ekskl. melanom**	**33.0**	**23.2**	**33.7**	**16.8**	**7.0**	**3.1**
C45	**Mesoteliom**	**0.5**	**0.4**	**0.0**	**0.6**	**0.0**	**0.2**
C47	**Autonome nervesystem**	**0.2**	**0.0**	**0.0**	**0.0**	**1.3**	**0.0**
C48–49	**Bløtvev m.m.**	**1.9**	**4.3**	**2.3**	**0.8**	**2.6**	**0.4**
C50	**Bryst**	**129.4**	**131.4**	**137.8**	**106.5**	**90.2**	**100.1**
C51–58	**Kvinnelige kjønnsorganer**	**66.1**	**53.1**	**58.3**	**54.7**	**35.7**	**41.3**
C51–52, C57.7–9	Andre kvinnelige kjønnsorganer	4.6	3.5	1.8	2.8	1.0	1.5
C53	Livmorhals	14.9	12.8	7.5	11.0	8.1	12.7
C54	Livmorlegeme	27.4	25.3	28.6	22.2	18.4	14.3
C55	Livmor, uspesifisert	0.4	0.4	0.0	0.6	0.0	0.0
C56, C57.0–4, C48.2	Eggstokk, eggleder m.m.	18.7	11.2	20.2	18.2	8.2	12.5
C58	Morkake	0.1	0.0	0.3	0.0	0.0	0.2
C64–68	**Urinveier**	**26.4**	**23.8**	**22.6**	**18.2**	**14.8**	**14.0**
C64	Nyre ekskl. nyrebekken	10.1	7.4	8.9	11.3	5.5	9.0
C65–68	Blære, nyrebekken, urinleder	16.3	16.4	13.7	6.9	9.2	5.0
C69	**Øye**	**1.5**	**1.9**	**1.2**	**0.2**	**0.0**	**0.3**
C70–72	**Sentralnervesystemet**	**20.0**	**19.1**	**20.5**	**19.1**	**19.6**	**17.4**
C73	**Skjoldbruskkjertel**	**10.2**	**8.3**	**7.5**	**13.4**	**13.6**	**20.3**
C37, C74–75	**Andre endokrine kjertler**	**3.6**	**3.9**	**1.2**	**1.6**	**8.2**	**2.9**
C39, C76, C80	**Andre eller uspesifiserte**	**5.5**	**5.9**	**2.9**	**4.1**	**2.0**	**2.2**
C81–96	**Lymfoid og hematopoetisk vev**	**45.0**	**46.5**	**48.5**	**47.8**	**40.6**	**30.9**
C81	Hodgkin lymfom	2.2	2.0	2.4	1.9	3.3	2.9
C82–86, C96	Non-Hodgkin lymfom	16.1	17.1	15.2	17.7	11.8	14.4
C88	Immunoproliferative sykdommer	0.9	0.8	1.1	0.0	0.8	0.0
C90	Myelomatose	6.9	4.3	8.1	5.9	4.2	1.4
C91–95	Leukemi	19.0	22.3	21.6	22.3	20.5	12.2

Kapittel 6 Risiko for kreft etter inntekt, utdanning og landbakgrunn

Larsen IK, Myklebust TÅ

Resultatene som er presentert i dette kapittelet er del av et større forskningsprosjekt om forekomsten av kreft blant multietniske grupper i Norge, og dataene er derfor fra en annen tidsperiode enn det som er vist i kapittel 5. Prosjektet har delt innvandrere i to grupper; innvandrere fra vestlige og ikke-vestlige land, og gjør at kontrastene som vises i kapittel 5 ikke blir like tydelige i denne studien. Studien har også hatt informasjon om sosioøkonomiske faktorer (inntekt og utdanning), og dette har gjort det mulig å se på sammenhengen mellom sosioøkonomiske faktorer og kreftrisiko for alle innbyggere, og samtidig justert og stratifisert på landbakgrunn. I alle analysene har vi sammenlignet insidensrater mellom ulike innvandrergrupper med ratene blant norskfødte. Innvandrere, spesielt fra Asia og Afrika, har en høyere andel i lavinntektsgruppen sammenlignet med den norskfødte delen av befolkningen. Det har derfor vært viktig å ta hensyn til sosioøkonomiske faktorer for å forstå det totale kreftbildet blant innvandrere. Figur 6.1 viser utdanningsnivået for menn og kvinner i perioden 1990 til 2018.

6.1 Metode

Populasjon og datakilder

I data fra **Kreftregisteret** inngår data om alle personer som ble diagnostisert med en kreftdiagnose i perioden 1990–2016. Dataene inkluderer informasjon både om pasient og krefttype. Blant variablene er: kjønn, fødselsmåned og -år, diagnoseår og -måned, bostedsfylke, underliggende dødsårsak, krefttype, topografi, lokalisasjon, og stadium ved diagnose.

I data fra **Statistisk sentralbyrå** inngår informasjon om kjønn, fødeland, foreldres og besteforeldres fødeland, dato for immigrasjon, årsak til immigrasjon, alder ved immigrasjon, utdanning, individuell- og familieinntekt, antall barn og antall familiemedlemmer.

Fra **Dødsårsaksregisteret** har vi fått informasjon om dødsdato, hoveddødsårsak og underliggende dødsårsaker.

Data fra de tre registrene ble koblet ved hjelp av fødselsnummer. Før utlevering til forskere ble fødselsnummeret fjernet og erstattet med et personspesifikt løpenummer.

Inntekt

Inntekt er oppgitt som femårs gjennomsnittlig personinntekt i henholdsvis periodene 1995–1999, 2000–2004, 2005–2009 og 2010–2015. For personer som ikke var bosatt i Norge i hele den aktuelle perioden er det gjennomsnittlig personinntekt for de årene vedkommende var bosatt som er oppgitt. Inntekt er videre kategorisert i tre kategorier; lav, middels og høy. Lav inntekt betyr at man hadde en gjennomsnittlig personinntekt som var blant de 20 % laveste. Høy inntekt betyr at man var i gruppen med de 20 % høyeste inntektene. De gjenværende ble kategorisert som middels inntekt. Denne tredelte inntektsvariabelen ble laget for hver femårig aldersgruppe, for hvert år og separat for kvinner og menn. På den måten tar man høyde for at det er inntektsforskjeller mellom aldersgrupper, kjønn og år.

Utdanning

Utdanning er oppgitt som høyeste oppnådde utdanning i årene 1989, 1990, 1991, 1995, 1999, 2000, 2005, 2010 og 2015. Utdanning ble kategorisert i tre kategorier basert på den til enhver tid høyest fullførte utdanningen; grunnskole, videregående og høyskole/universitet.

Landbakgrunn

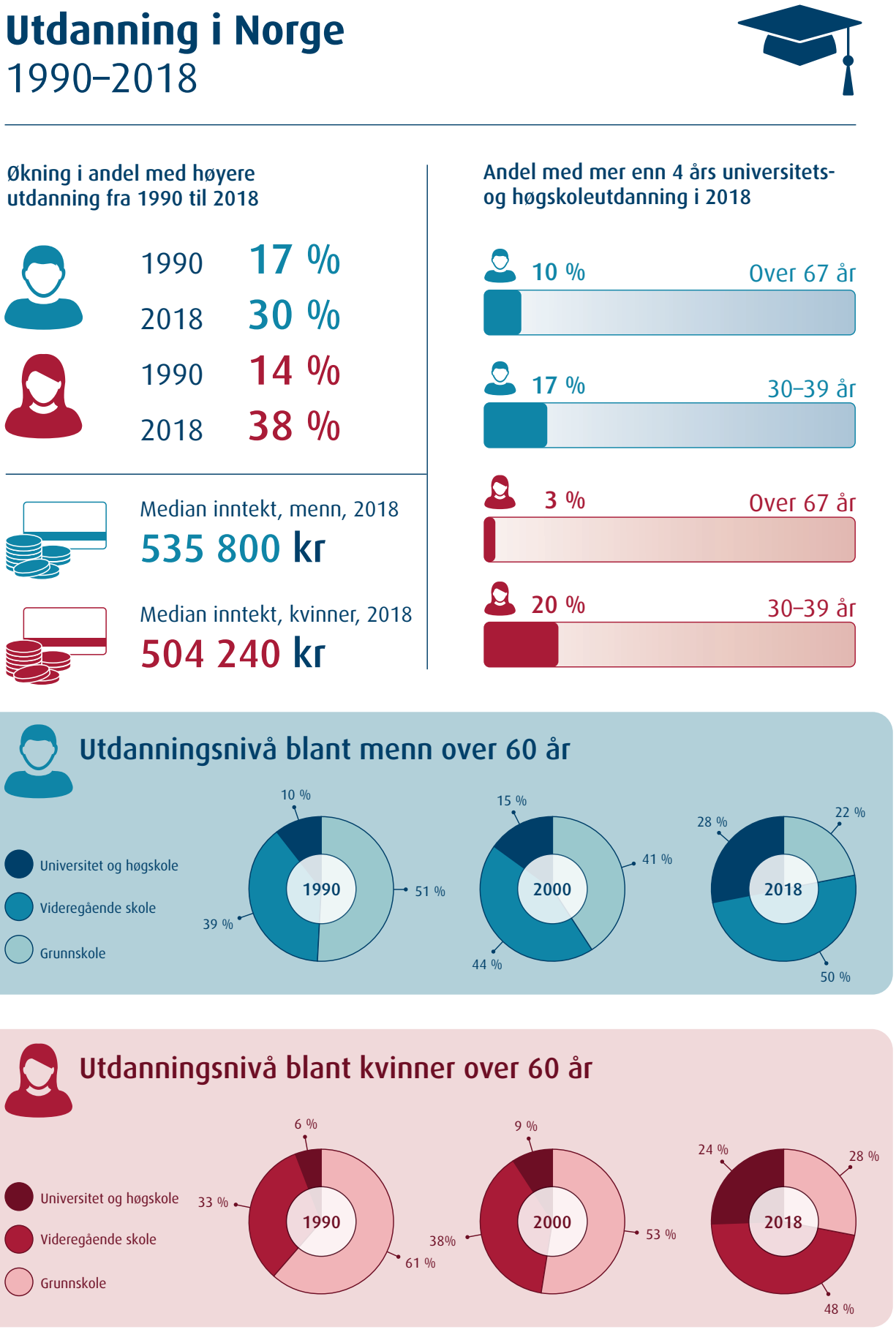
Variabelen "Landbakgrunn" er benyttet slik den er definert av SSB: "*For personer født i utlandet, er dette (med noen få unntak) eget fødeland. For personer født i Norge er det foreldrenes fødeland. I de tilfeller der foreldrene har ulikt fødeland, er det morens fødeland som blir valgt.*"

Fra 2003 ble følgende tillegg lagt til definisjonen: "*Hvis ikke personen selv eller noen av foreldrene er utenlandsfødt, hentes landbakgrunn fra de første utenlandsfødte en treffer på i rekkefølgen mormor, morfar, farmor eller farfar.*"

Analyser

Vi har estimert relativ risiko for kreft (insidensrateratioer) ved hjelp av Poisson-regresjon. For hver kombinasjon av kjønn, femårig aldersgruppe, kalenderår/periode og variabel av interesse (utdanning, inntekt eller landbakgrunn) beregnes totalt antall personår under risiko ved å summere individuell persontid. Deretter telles antall kreftilfeller for de samme gruppene. Aldersstandardiserte insidensrater beregnes ved å vekte de aldersspesifikke insidensratene med forhåndsdefinerte vekter. I disse analysene brukes samme vekter som oppgitt i hovedrapporten for Cancer in Norway 2018. I tillegg til variabelen av interesse (inntekt, utdanning eller landbakgrunn) inngår femårig aldersgruppe, kjønn og fem-års perioder (med unntak av siste periode som kun består av årene 2015 og 2016).

Figur 6.1: Utdanningsnivå i Norge, menn, 1990–2018



Kilde: Statistisk sentralbyrå og Beregningsutvalget

6.2 Resultater

Tilsammen var 692 721 krefttilfeller inkludert i analysene, av disse var 94.6 % diagnostisert blant norskfødte, 1.9 % blant innvandrere fra Norden, 1.1 % blant innvandrere fra Vest-Europa, 0.8 % blant innvandrere fra Øst-Europa, mens den resterende andelen på 1.6 % var diagnostisert blant innvandrere fra Amerika, Asia eller Afrika. For alle krefttilfellene samlet sett, hadde 38.4 % kun grunnskole, 45.6 % hadde videregående skole, mens 17.0 % hadde høyskole- eller universitetsutdannelse. Inntektskategorien var på forhånd inndelt i kvintiler, og fordelingen ble dermed 19.2 % av tilfellene i den laveste inntekstkategorien, 61.2 % i middelkategorien, og 19.6 % i høyinntektskategorien.

Utdanning og inntekt

Tabell 6.1 viser estimatene for relative risko for kreft for de ulike kategoriene av inntekt og utdanning i forhold til referansekategorien (lavest utdanning og lavest inntekt). Et hovedtrekk med disse analysene var at det var relativt godt samsvar mellom estimatene for inntekt og utdanning og risiko for kreft blant menn. For kvinner, derimot, var det flere signifikante forskjeller i kreftrisiko mellom kvinner med høy kontra lav utdanning. Inntekt ble derimot ikke funnet å ha særlig betydning for kreftrisiko. I analysene for inntekt var det justert for utdanningsnivå og vice versa. En forklaring på dette kan være at det er et godt samsvar mellom utdanning og inntektsnivå blant kvinner, slik at effekten av inntekt forsvinner når det justeres for utdanning. I tillegg kan det tenkes at husholdningsinntekt er et bedre mål for sosiøkonomisk status blant kvinner i de eldste aldersgruppene. Blant menn kan en anta at det er mindre sammenheng mellom utdanning og inntekt, og dermed forblir det en sammenheng mellom inntekt og kreftrisiko etter justering for utdanning.

Utdanning synes dermed å være et godt mål for sosioøkonomi blant kvinner, mens både utdanning og inntekt er gode mål for sosiøkonomi blant menn.

I figur 6.2 og 6.3 er resultatene fra tabell 6.1 presentert grafisk. Det er kun resultatene for den høyeste kategorien som er illustrert. Lungekreft var den kreftformen hvor høyere utdanning var sterkest assosiert med redusert risiko, og melanom var den kreftformen hvor høyere utdanning var sterkest assosiert med økt risiko. Mønsteret var det samme for menn og kvinner.

For menn var både høyere utdanning og høyere inntekt assosiert med lavere risiko for kreft i lunge, spiserør, lever, magesekk, munn og svelg og bukspyttkjertel. I tillegg var det en signifikant sammenheng mellom høyere utdanning, men ikke høyere inntekt, og lavere risiko for kreft i endetarm og blære og urinveier. Høyere inntekt, men ikke høyere utdanning, var assosiert med lavere risiko for kreft i galleblære og tykktarm.

Høyere utdanning og inntekt var assosiert med høyere risiko for melanom og prostatakreft. Menn med høyere utdanning hadde i tillegg høyere risiko for testikkelkreft, men her var det ingen signifikant sammenheng med inntekt (Figur 6.2).

For kvinner var høyere utdanning, men ikke høyere inntekt, assosiert med lavere risiko for kreft i lunge, livmorhals, lever, magesekk, blære og urinveier, nyre, spiserør, galleblære, bukspyttkjertel, endetarm, skjoldbruskkjertel og tykktarm. Kreft i munn og svelg var den eneste kreftformen hvor risikoen var signifikant lavere både i høyeste utdannings- og inntektskategori. Høyere inntekt, men ikke utdanning, var assosiert med lavere risiko for kreft i livmorlegeme og hodgkin lymfom.

Høyere utdanning og høyere inntekt var assosiert med høyere risiko for melanom i hud og brystkreft (Figur 6.3).

Figur 6.6–A til 6.7–J viser aldersstandardiserte insidensrater fordelt på utdanning og inntekt for noen utvalgte kreftformer.

Landbakgrunn

Tabell 6.2 viser relativ risiko for kreft for vestlige og ikke-vestlige innvandrere sammenlignet med norskfødte.

Menn fra vestlige land hadde lik kreftrisiko som norskfødte for alle kreftformer unntatt for endetarmskreft og melanom i hud hvor de hadde lavere risiko. Menn fra ikke-vestlige land hadde lavere risiko for kreft totalt, og for flere kreftformer i munn og svelg, og kreft i spiserør, tarm, bukspyttkjertel, melanom i hud, prostata og testikkel. I tillegg hadde de høyere risiko for kreft i magesekk, lever og galleblære. Etter justering for inntekts- og utdanningsnivå var det ikke lenger signifikante forskjeller i risiko for galleblære, og for de andre kreftformene var det kun små endringer estimatene.

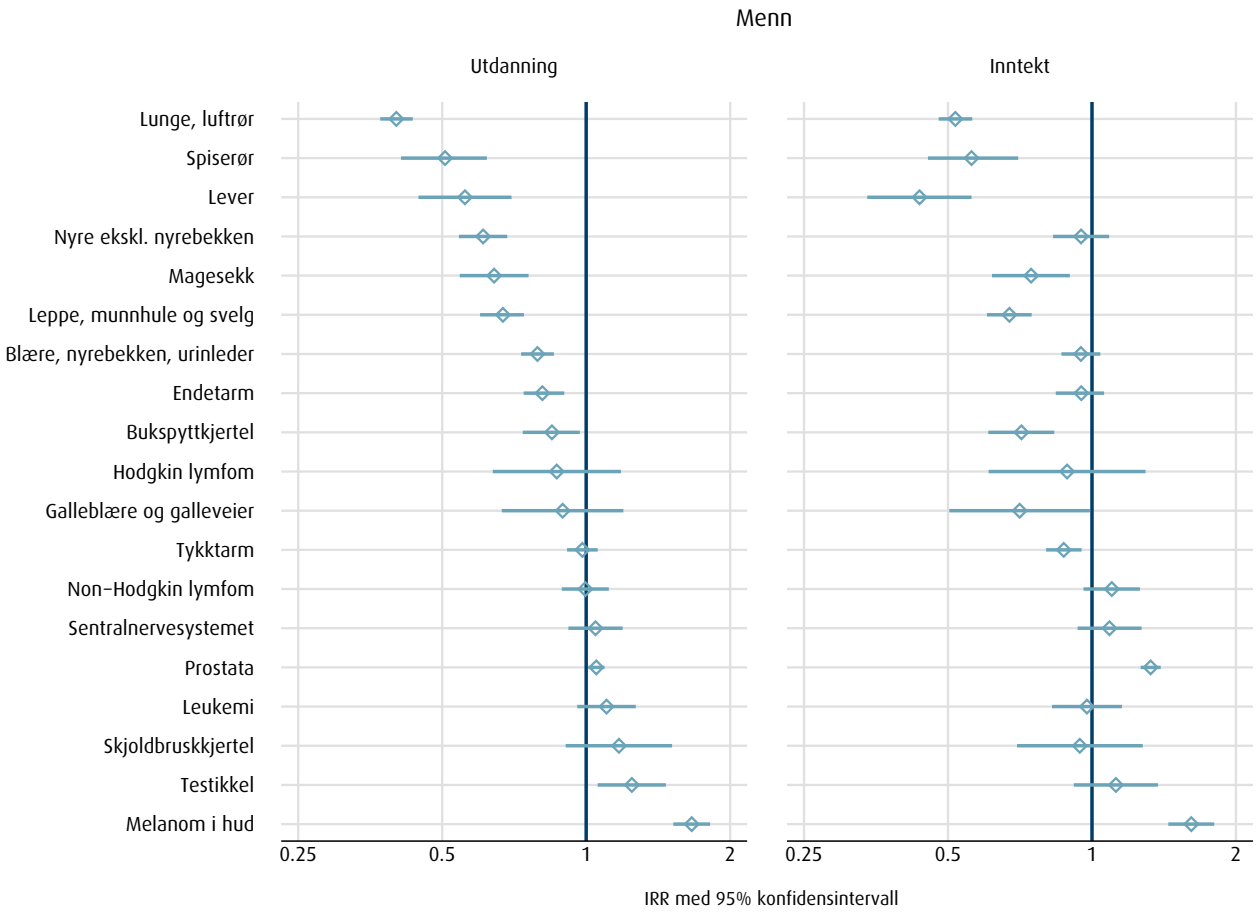
Kvinner fra vestlige land hadde lavere risiko for kreft i tykktarm, bukspyttkjertel og lunge, og høyere risiko for kreft i spiserør, bryst og skjoldbruskkjertel. Kvinner fra ikke-vestlige land hadde lavere risiko for all kreft samlet, samt kreft i tykk- og endetarm, lunge, melanom i hud, bryst, livmorhals og blære og urinveier. Justeringer for inntekts- og utdanningsnivå ga også her kun små endringer i estimatene. Resultatene fra tabell 6.2 er vist grafisk i figur 6.5 og 6.5.

Figur 6.8–A til 6.8–J viser utviklingen i insidensrater for utvalgte kreftformer i perioden 1990–2016 for norskfødte, innvandrere fra vestlige og ikke-vestlige land.

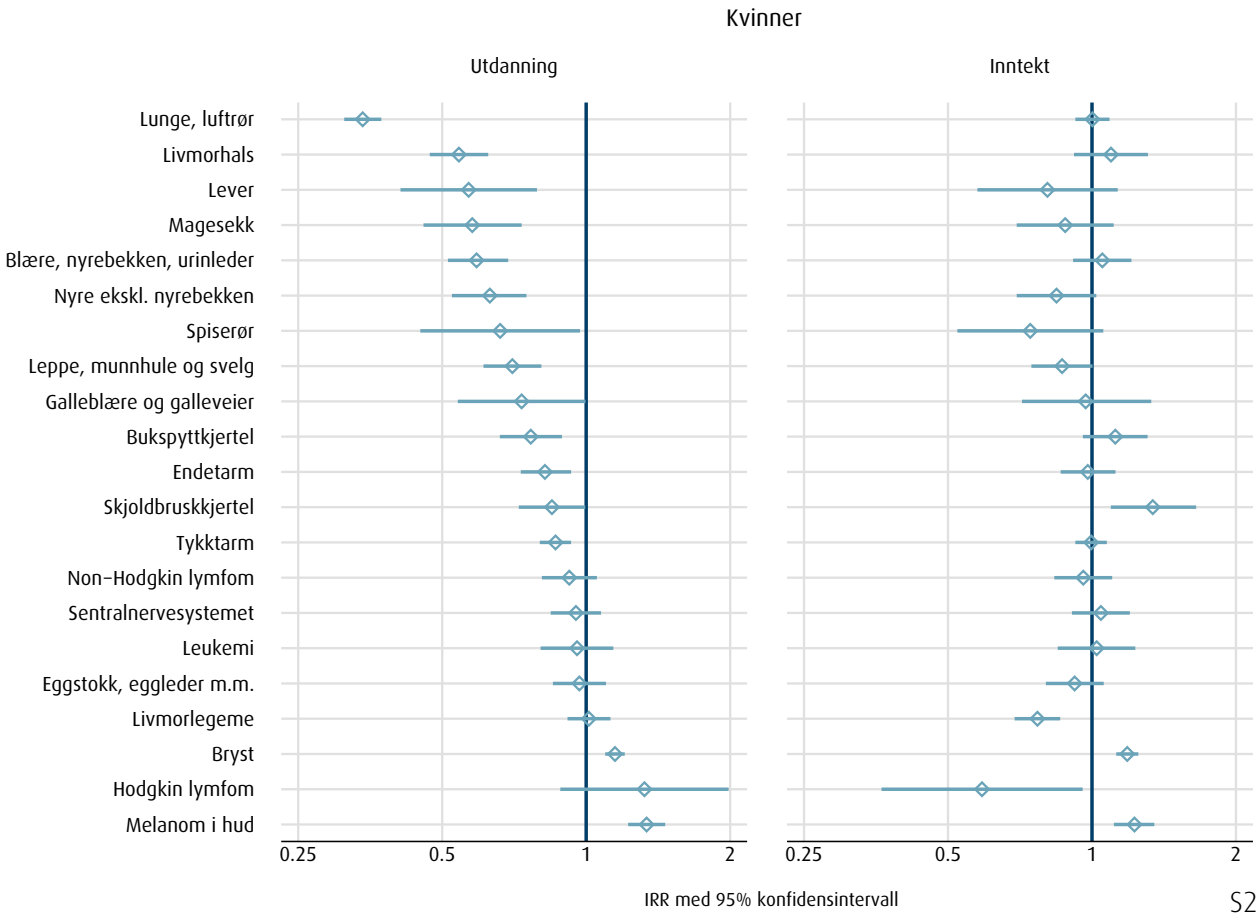
Tabell 6.1: Insidensrate ratio (IRR) for kreft blant menn og kvinner i ulike utdannings- og inntektskategorier (laveste kategori er referanse) med 95 % konfidensintervall, 2012–2016

ICD-10	Kreftform	Kjønn	Middels inntekt	Høy inntekt	Videregående skole	Høyskole/ universitet
C00–14	Leppe, munnhule og svelg	M	0.69 (0.63–0.75)	0.67 (0.60–0.75)	0.92 (0.85–0.99)	0.67 (0.60–0.74)
		K	0.91 (0.81–1.02)	0.87 (0.75–1.00)	0.80 (0.73–0.88)	0.70 (0.61–0.81)
C15	Spiserør	M	0.69 (0.59–0.81)	0.56 (0.45–0.70)	0.69 (0.60–0.80)	0.51 (0.41–0.62)
		K	0.79 (0.60–1.04)	0.74 (0.52–1.06)	1.01 (0.80–1.28)	0.66 (0.45–0.97)
C16	Magesekk	M	0.90 (0.78–1.04)	0.75 (0.62–0.90)	0.82 (0.73–0.93)	0.64 (0.54–0.76)
		K	0.96 (0.80–1.15)	0.88 (0.70–1.11)	0.79 (0.68–0.92)	0.58 (0.46–0.73)
C18	Tykktarm	M	0.92 (0.86–0.99)	0.87 (0.80–0.95)	1.06 (1.00–1.12)	0.98 (0.91–1.06)
		K	1.00 (0.94–1.06)	1.00 (0.92–1.07)	0.99 (0.94–1.04)	0.86 (0.80–0.93)
C19–20	Endetarm	M	1.02 (0.92–1.12)	0.95 (0.84–1.06)	0.94 (0.87–1.01)	0.81 (0.74–0.90)
		K	1.06 (0.95–1.18)	0.98 (0.86–1.12)	0.95 (0.87–1.03)	0.82 (0.73–0.93)
C22	Lever	M	0.60 (0.51–0.72)	0.44 (0.34–0.56)	0.67 (0.57–0.79)	0.56 (0.45–0.70)
		K	1.09 (0.85–1.40)	0.81 (0.58–1.13)	0.74 (0.60–0.91)	0.57 (0.41–0.79)
C23–24	Galleblære og galleveier	M	0.79 (0.60–1.04)	0.71 (0.50–0.99)	0.85 (0.67–1.08)	0.89 (0.67–1.20)
		K	0.95 (0.74–1.23)	0.97 (0.71–1.33)	0.83 (0.67–1.02)	0.73 (0.54–1.00)
C25	Bukspyttkjertel	M	0.80 (0.71–0.91)	0.71 (0.61–0.83)	0.91 (0.82–1.01)	0.85 (0.74–0.97)
		K	1.13 (0.99–1.28)	1.12 (0.96–1.31)	0.88 (0.79–0.97)	0.77 (0.66–0.89)
C33–34	Lunge, luftrør	M	0.75 (0.71–0.79)	0.52 (0.48–0.56)	0.70 (0.67–0.73)	0.40 (0.37–0.43)
		K	1.10 (1.03–1.17)	1.00 (0.92–1.09)	0.66 (0.63–0.70)	0.34 (0.31–0.37)
C43	Melanom i hud	M	1.32 (1.20–1.46)	1.61 (1.44–1.80)	1.43 (1.32–1.55)	1.66 (1.52–1.82)
		K	1.07 (0.98–1.16)	1.23 (1.11–1.35)	1.37 (1.27–1.47)	1.34 (1.22–1.46)
C50	Bryst	K	1.06 (1.01–1.11)	1.19 (1.12–1.25)	1.15 (1.11–1.20)	1.15 (1.10–1.20)
C53	Livmorhals	K	1.05 (0.92–1.20)	1.10 (0.92–1.31)	0.72 (0.63–0.81)	0.54 (0.47–0.62)
C54	Livmorlegeme	K	0.81 (0.74–0.89)	0.77 (0.69–0.86)	1.02 (0.94–1.10)	1.01 (0.91–1.12)
C56, C57.0–4, C48.2	Eggstokk, eggleder m.m.	K	0.86 (0.77–0.97)	0.92 (0.80–1.06)	1.00 (0.90–1.10)	0.97 (0.85–1.10)
C61	Prostata	M	1.19 (1.14–1.24)	1.33 (1.26–1.39)	1.07 (1.03–1.10)	1.05 (1.01–1.09)
C62	Testikkel	M	1.24 (1.06–1.44)	1.12 (0.92–1.37)	1.23 (1.05–1.43)	1.25 (1.06–1.47)
C64	Nyre ekskl. nyrebekken	M	1.04 (0.93–1.16)	0.95 (0.83–1.09)	0.85 (0.78–0.93)	0.61 (0.54–0.68)
		K	1.00 (0.87–1.17)	0.84 (0.70–1.02)	0.88 (0.77–0.99)	0.63 (0.52–0.75)
C65–68	Blære, nyrebekken, urinleder	M	1.07 (0.99–1.15)	0.95 (0.86–1.04)	0.90 (0.85–0.96)	0.79 (0.73–0.86)
		K	1.07 (0.95–1.19)	1.05 (0.91–1.21)	0.87 (0.79–0.95)	0.59 (0.51–0.69)
C70–72	Sentralnervesystemet	M	1.06 (0.93–1.20)	1.09 (0.93–1.27)	1.08 (0.97–1.21)	1.05 (0.92–1.19)
		K	1.06 (0.94–1.18)	1.04 (0.91–1.20)	1.01 (0.91–1.11)	0.95 (0.84–1.07)
C73	Skjoldbruskkjertel	M	0.98 (0.76–1.25)	0.94 (0.70–1.28)	1.08 (0.86–1.35)	1.17 (0.91–1.51)
		K	1.39 (1.18–1.64)	1.34 (1.10–1.65)	0.87 (0.76–1.00)	0.85 (0.72–1.00)
C81	Hodgkin lymfom	M	0.98 (0.74–1.30)	0.89 (0.61–1.29)	0.94 (0.72–1.22)	0.87 (0.64–1.18)
		K	0.80 (0.57–1.13)	0.59 (0.36–0.96)	1.23 (0.86–1.77)	1.32 (0.88–1.99)
C82–86, C96	Non-Hodgkin lymfom	M	1.10 (0.98–1.24)	1.10 (0.96–1.26)	1.07 (0.97–1.17)	1.00 (0.89–1.12)
		K	0.94 (0.84–1.06)	0.96 (0.83–1.10)	1.02 (0.93–1.13)	0.92 (0.81–1.05)
C91–95	Leukemi	M	0.96 (0.83–1.10)	0.98 (0.83–1.16)	0.98 (0.87–1.10)	1.10 (0.96–1.27)
		K	0.96 (0.83–1.12)	1.02 (0.85–1.23)	0.99 (0.87–1.13)	0.96 (0.80–1.14)

Figur 6.2: Insidensrate ratio (IRR) for kreft blant menn i høyeste utdannings- og inntektskategori (laveste kategori er referanse) med 95 % konfidensintervall, 2012–2016



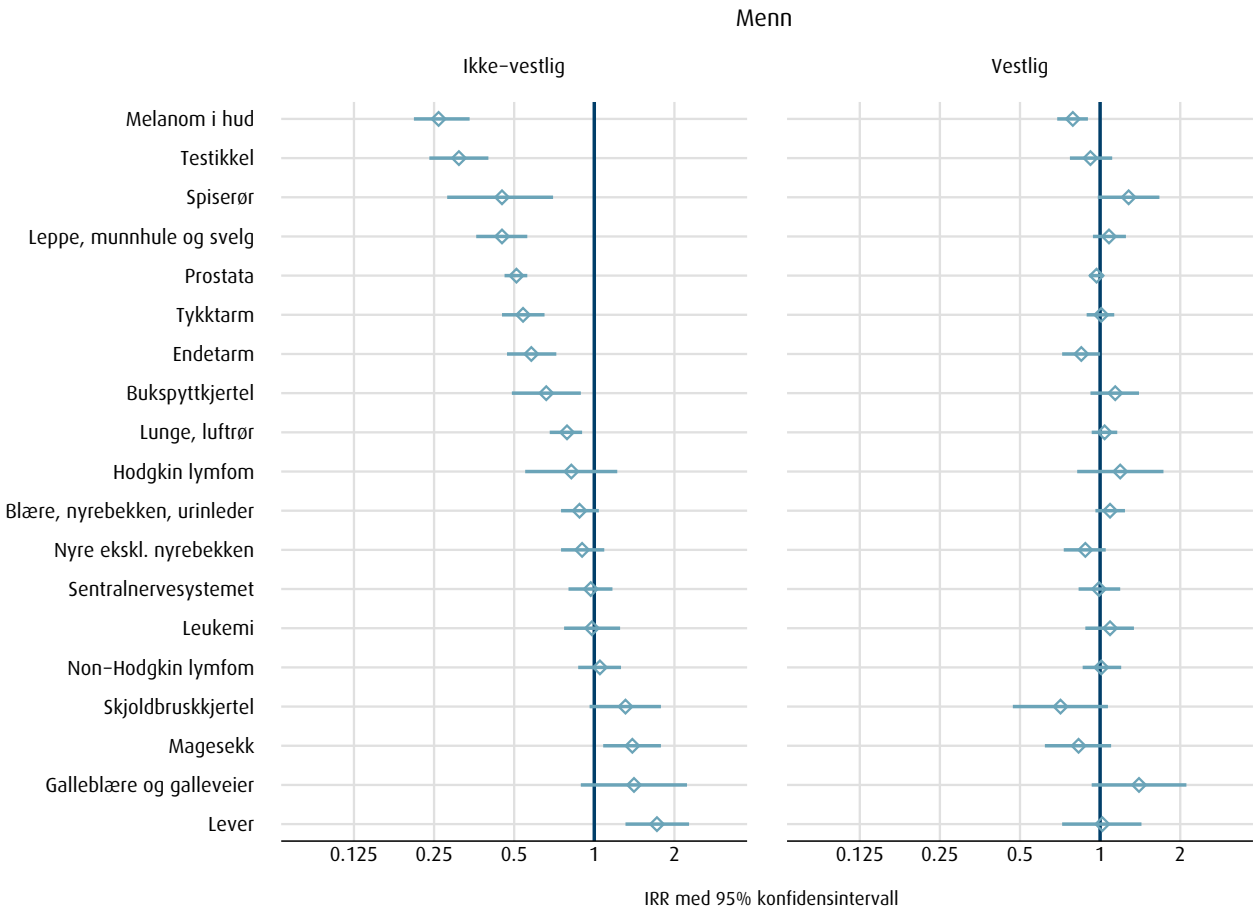
Figur 6.3: Insidensrate ratio (IRR) for kreft blant kvinner i høyeste utdannings- og inntektskategori (laveste kategori er referanse) med 95 % konfidensintervall, 2012–2016



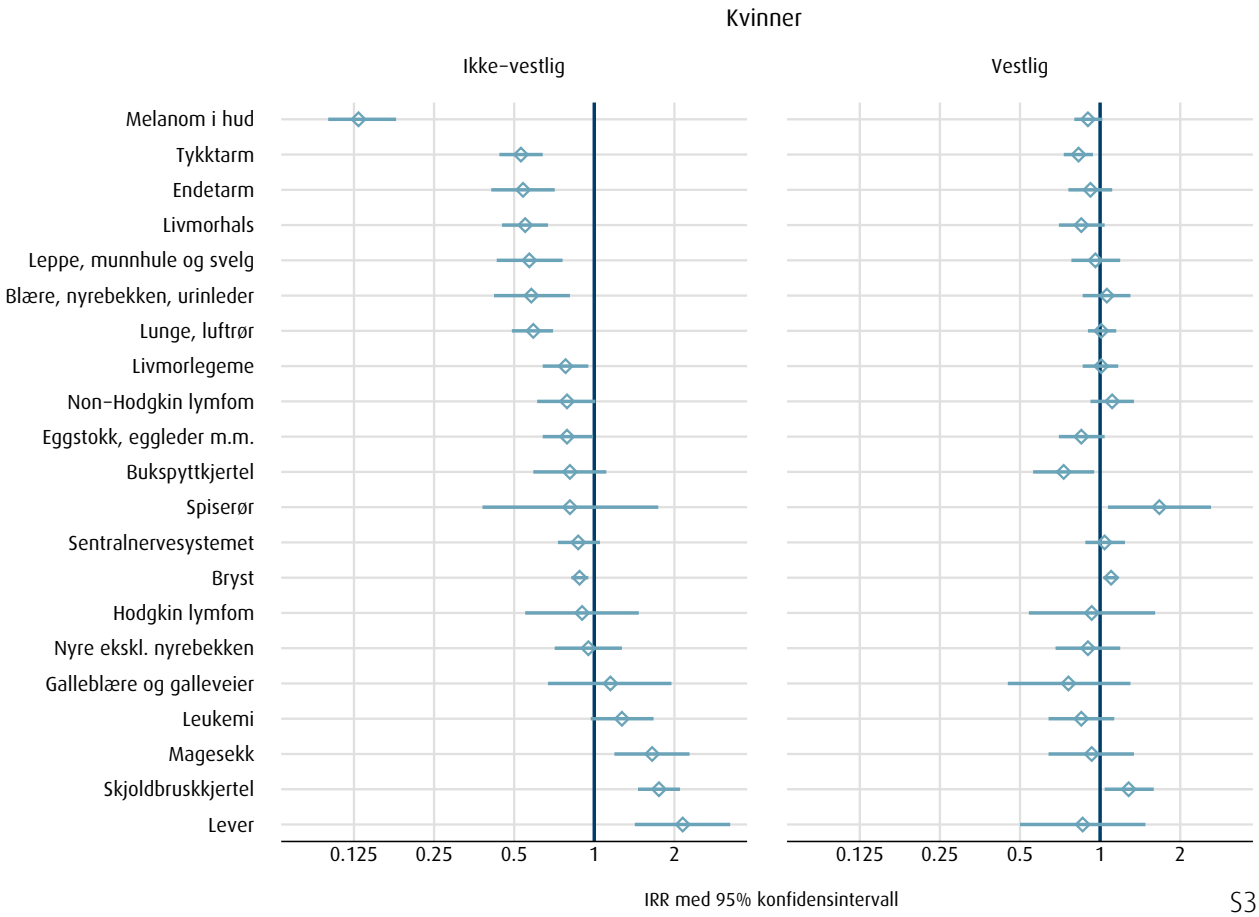
Tabell 6.2: Insidensrate ratio (IRR) for kreft blant menn og kvinner etter landbakgrunn (norskfødte er referanse) justert for alder, inntekt og utdanning med 95 % konfidensintervall, 2012–2016

			Ujustert (kun for alder)		Justert for inntekt og utdanning	
ICD-10	**Kreftform**	**Kjønn**	**Vestlig**	**Ikke-vestlig**	**Vestlig**	**Ikke-vestlig**
C00–14	Leppe, munnhule og svelg	M	1.06 (0.92–1.22)	0.51 (0.41–0.63)	1.08 (0.94–1.25)	0.45 (0.36–0.56)
		K	0.92 (0.75–1.14)	0.61 (0.46–0.81)	0.96 (0.78–1.19)	0.57 (0.43–0.76)
C15	Spiserør	M	1.24 (0.95–1.62)	0.53 (0.34–0.83)	1.28 (0.98–1.67)	0.45 (0.28–0.70)
		K	1.57 (1.00–2.44)	0.86 (0.40–1.82)	1.67 (1.07–2.61)	0.81 (0.38–1.74)
C16	Magesekk	M	0.80 (0.60–1.06)	1.49 (1.16–1.90)	0.83 (0.62–1.10)	1.39 (1.08–1.78)
		K	0.86 (0.60–1.24)	1.74 (1.26–2.39)	0.93 (0.64–1.34)	1.65 (1.19–2.28)
C18	Tykktarm	M	1.00 (0.89–1.12)	0.56 (0.46–0.66)	1.01 (0.89–1.13)	0.54 (0.45–0.65)
		K	0.81 (0.72–0.92)	0.53 (0.44–0.64)	0.83 (0.73–0.94)	0.53 (0.44–0.64)
C19–20	Endetarm	M	0.83 (0.71–0.97)	0.58 (0.47–0.72)	0.85 (0.72–1.00)	0.58 (0.47–0.72)
		K	0.89 (0.74–1.08)	0.54 (0.41–0.71)	0.92 (0.76–1.11)	0.54 (0.41–0.71)
C22	Lever	M	1.01 (0.71–1.41)	2.21 (1.69–2.88)	1.02 (0.72–1.43)	1.72 (1.31–2.27)
		K	0.78 (0.46–1.34)	2.24 (1.50–3.36)	0.86 (0.50–1.48)	2.15 (1.42–3.24)
C23–24	Galleblære og galleveier	M	1.42 (0.94–2.13)	1.58 (1.01–2.48)	1.40 (0.93–2.11)	1.41 (0.89–2.23)
		K	0.73 (0.43–1.25)	1.19 (0.70–2.01)	0.76 (0.45–1.30)	1.15 (0.67–1.95)
C25	Bukspyttkjertel	M	1.13 (0.92–1.40)	0.73 (0.54–0.98)	1.14 (0.92–1.40)	0.66 (0.49–0.89)
		K	0.70 (0.54–0.92)	0.79 (0.58–1.08)	0.73 (0.56–0.95)	0.81 (0.59–1.11)
C33–34	Lunge, luftrør	M	0.99 (0.88–1.10)	0.92 (0.81–1.06)	1.04 (0.93–1.16)	0.79 (0.68–0.90)
		K	0.88 (0.78–0.99)	0.61 (0.51–0.72)	1.01 (0.90–1.15)	0.59 (0.49–0.70)
C43	Melanom i hud	M	0.81 (0.71–0.92)	0.23 (0.18–0.30)	0.79 (0.69–0.90)	0.26 (0.21–0.34)
		K	0.92 (0.81–1.04)	0.12 (0.09–0.17)	0.90 (0.80–1.02)	0.13 (0.10–0.18)
C50	Bryst	K	1.11 (1.04–1.18)	0.84 (0.78–0.90)	1.10 (1.03–1.17)	0.88 (0.82–0.95)
C53	Livmorhals	K	0.81 (0.67–1.00)	0.58 (0.48–0.71)	0.85 (0.70–1.04)	0.55 (0.45–0.67)
C54	Livmorlegeme	K	1.01 (0.86–1.18)	0.83 (0.69–1.01)	1.01 (0.86–1.17)	0.78 (0.64–0.95)
C56, C57.0–4, C48.2	Eggstokk, eggleder m.m.	K	0.86 (0.70–1.05)	0.82 (0.66–1.02)	0.85 (0.70–1.04)	0.79 (0.64–0.99)
C61	Prostata	M	0.97 (0.91–1.03)	0.47 (0.42–0.52)	0.97 (0.91–1.03)	0.51 (0.46–0.56)
C62	Testikkel	M	0.92 (0.76–1.10)	0.29 (0.23–0.38)	0.92 (0.77–1.11)	0.31 (0.24–0.40)
C64	Nyre ekskl. nyrebekken	M	0.84 (0.70–1.00)	0.91 (0.75–1.09)	0.88 (0.73–1.05)	0.90 (0.75–1.09)
		K	0.84 (0.63–1.11)	0.98 (0.74–1.31)	0.90 (0.68–1.19)	0.95 (0.71–1.27)
C65–68	Blære, nyrebekken, urinleder	M	1.07 (0.94–1.21)	0.88 (0.75–1.03)	1.09 (0.96–1.24)	0.88 (0.75–1.04)
		K	0.98 (0.80–1.21)	0.58 (0.41–0.81)	1.06 (0.86–1.30)	0.58 (0.42–0.81)
C70–72	Sentralnervesystemet	M	0.99 (0.83–1.19)	0.94 (0.79–1.13)	0.99 (0.83–1.19)	0.97 (0.80–1.17)
		K	1.03 (0.87–1.22)	0.86 (0.72–1.03)	1.04 (0.88–1.24)	0.87 (0.73–1.05)
C73	Skjoldbruskkjertel	M	0.72 (0.47–1.08)	1.31 (0.97–1.78)	0.71 (0.47–1.07)	1.31 (0.96–1.78)
		K	1.25 (1.01–1.55)	1.63 (1.37–1.95)	1.28 (1.04–1.59)	1.75 (1.46–2.10)
C81	Hodgkin lymfom	M	1.17 (0.81–1.71)	0.84 (0.56–1.24)	1.19 (0.82–1.73)	0.82 (0.55–1.22)
		K	0.95 (0.55–1.64)	0.95 (0.59–1.54)	0.93 (0.54–1.61)	0.90 (0.55–1.47)
C82–86, C96	Non-Hodgkin lymfom	M	1.00 (0.85–1.19)	1.01 (0.84–1.21)	1.01 (0.86–1.20)	1.05 (0.87–1.26)
		K	1.10 (0.91–1.32)	0.79 (0.62–1.02)	1.11 (0.92–1.34)	0.79 (0.61–1.01)
C91–95	Leukemi	M	1.11 (0.90–1.36)	1.00 (0.79–1.27)	1.09 (0.88–1.34)	0.98 (0.77–1.25)
		K	0.85 (0.64–1.13)	1.28 (0.98–1.67)	0.85 (0.64–1.13)	1.27 (0.97–1.67)

Figur 6.4: Insidensrate ratio (IRR) for kreft blant menn etter landbakgrunn (norskfødte er referanse) justert for alder, inntekt og utdanning med 95 % konfidensintervall, 2012–2016

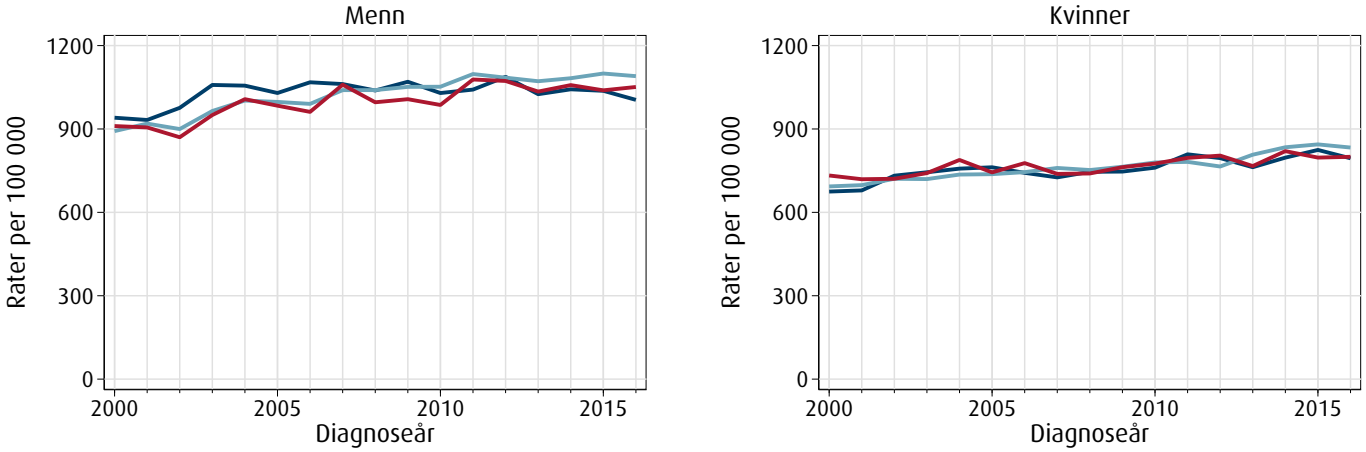


Figur 6.5: Insidensrate ratio (IRR) for kreft blant kvinner etter landbakgrunn (norskfødte er referanse) justert for alder, inntekt og utdanning med 95 % konfidensintervall, 2012–2016

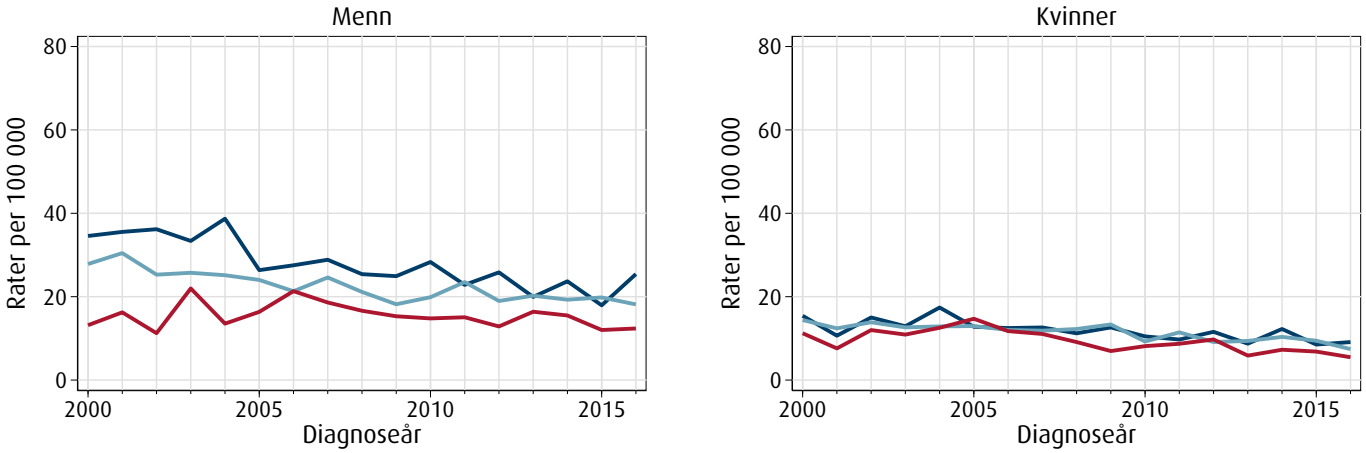


Figur 6.6: Aldersstandardiserte insidensrater (norsk standard) per 100 000 personår for utvalgte kreftformer etter inntektskategori, 2000–2016

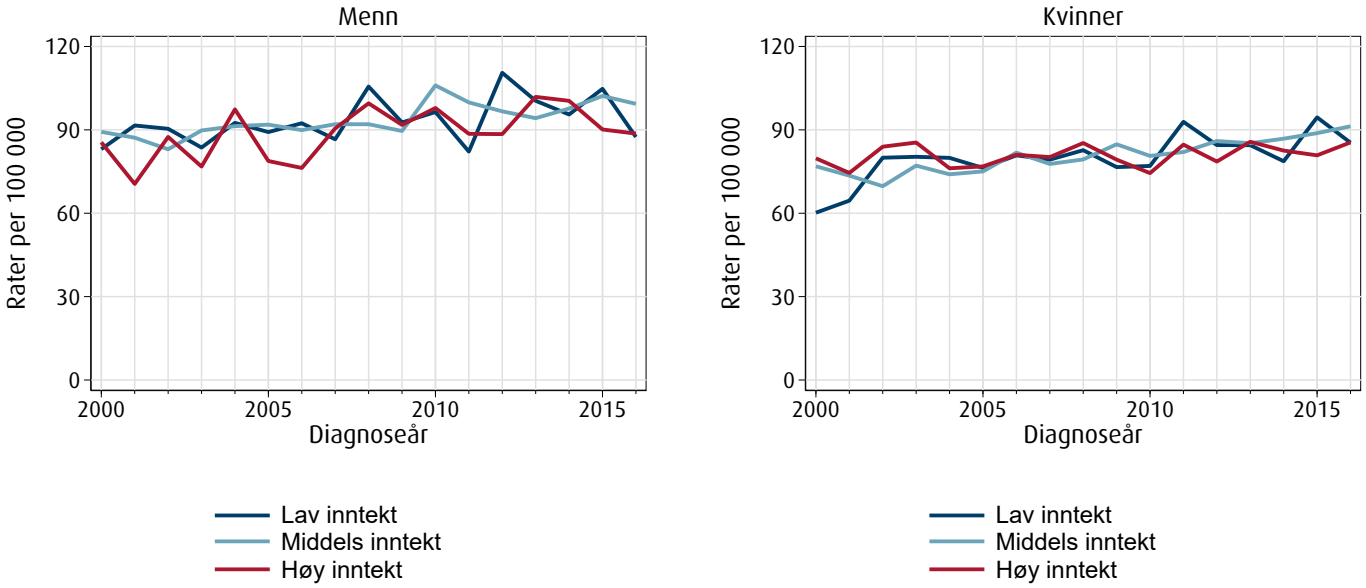
Figur 6.6–A: All kreft (ICD-10 C00–96)



Figur 6.6–B: Magesekk (ICD-10 C16)

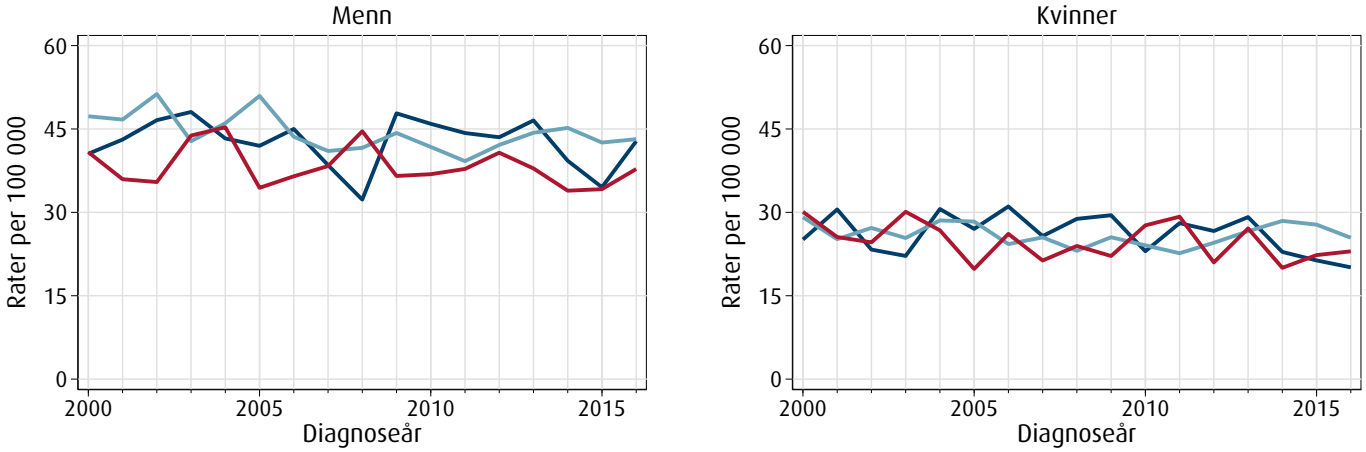


Figur 6.6–C: Tykktarm (ICD-10 C18)

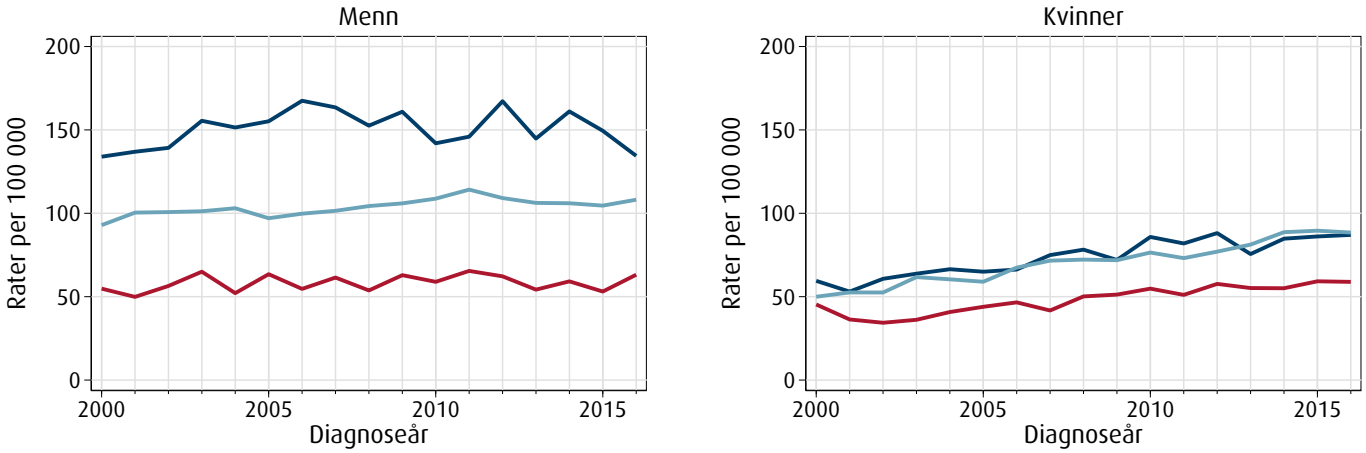


Figur 6.6: Aldersstandardiserte insidensrater (norsk standard) per 100 000 personår for utvalgte kreftformer etter inntektskategori, 2000–2016

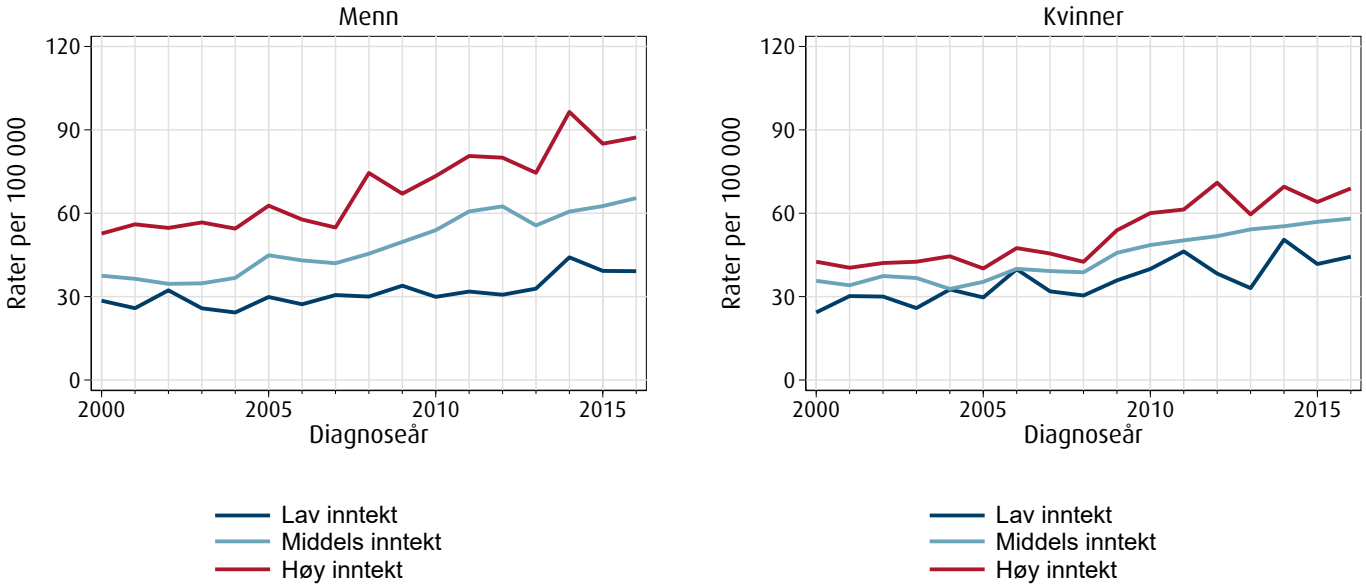
Figur 6.6–D: Endetarm (ICD-10 C19–20)



Figur 6.6–E: Lunge, luftrør (ICD-10 C33–34)

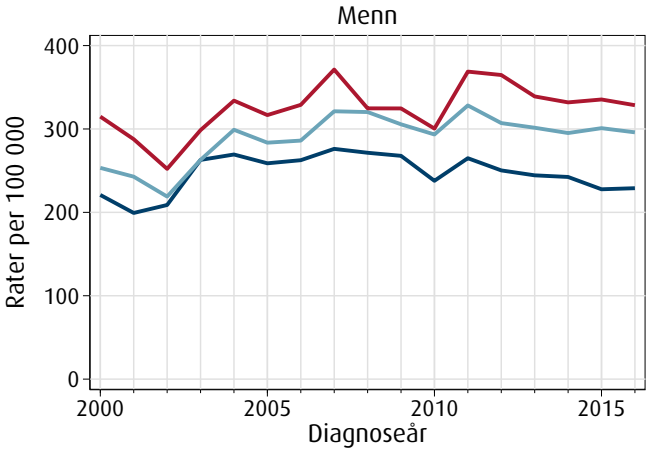


Figur 6.6–F: Melanom i hud (ICD-10 C43)

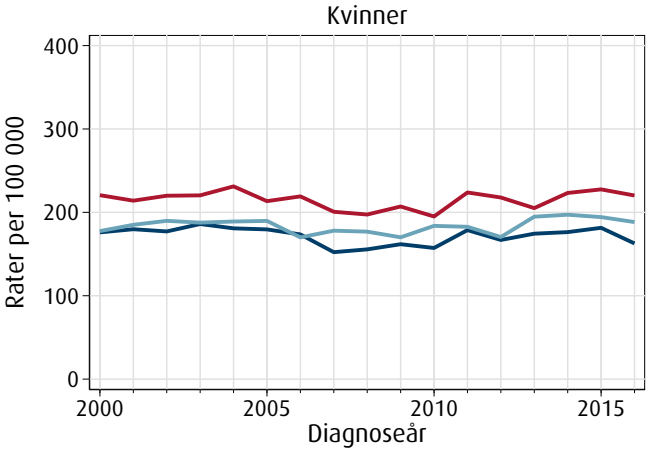


Figur 6.6: Aldersstandardiserte insidensrater (norsk standard) per 100 000 personår for utvalgte kreftformer etter inntektskategori, 2000–2016

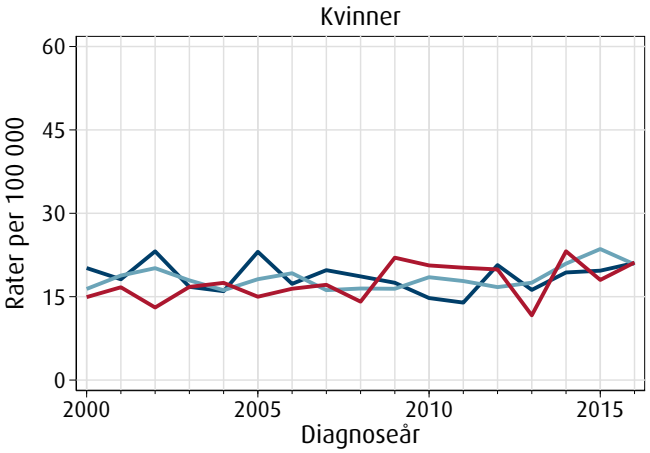
Figur 6.6–G: Prostata (ICD-10 C61)



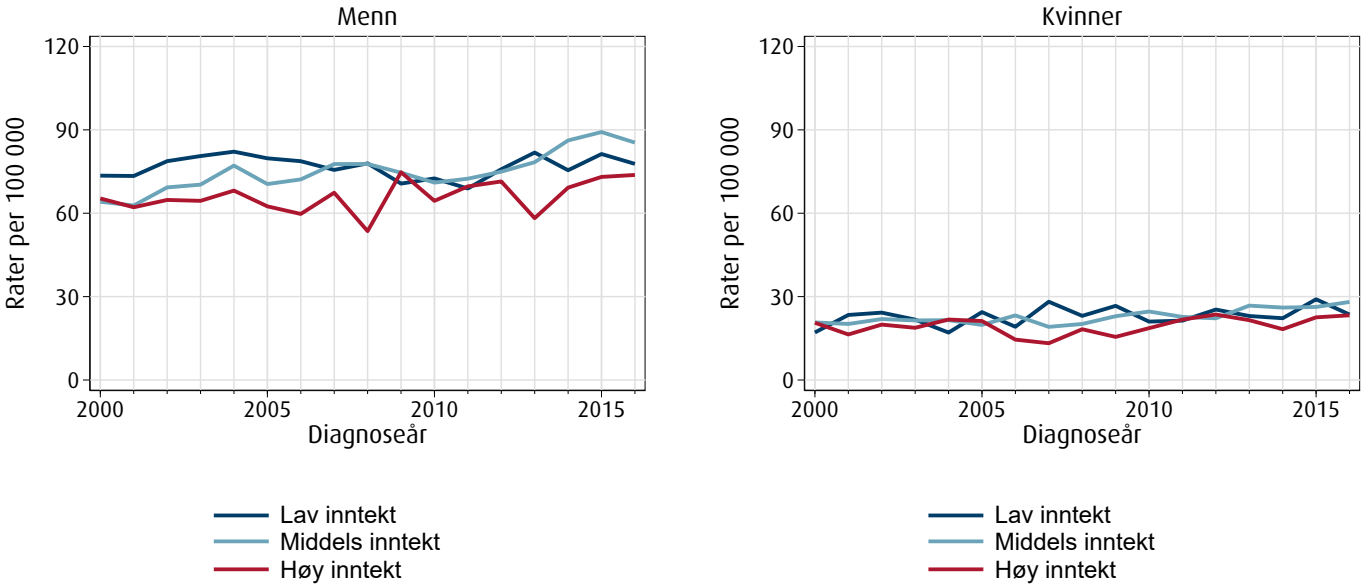
Figur 6.6–H: Bryst (ICD-10 C50)



Figur 6.6–I: Livmorhals (ICD-10 C53)

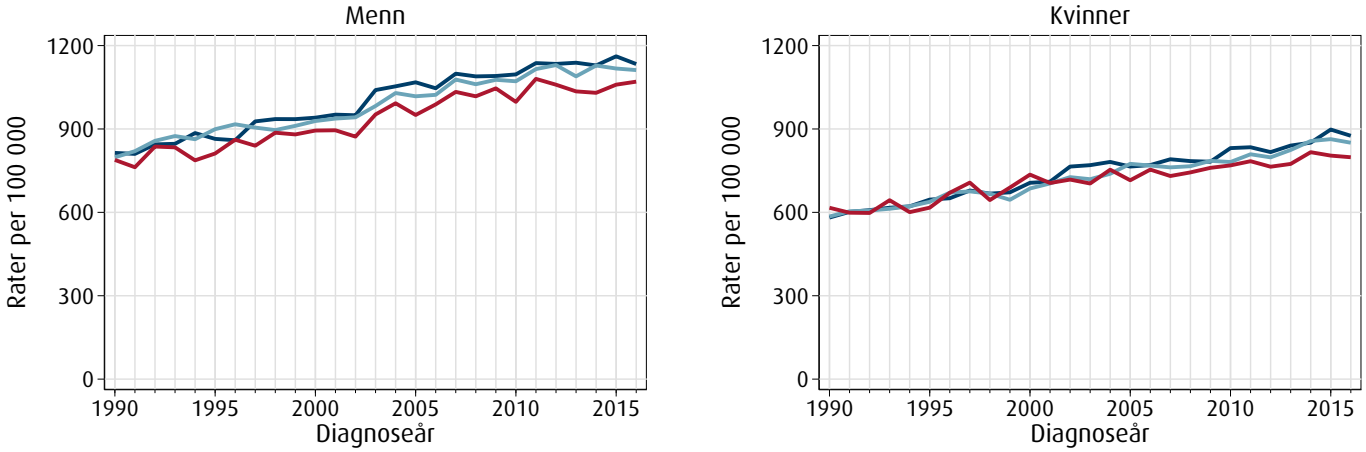


Figur 6.6–J: Blære, nyrebekken, urinleder (ICD-10 C65–68)

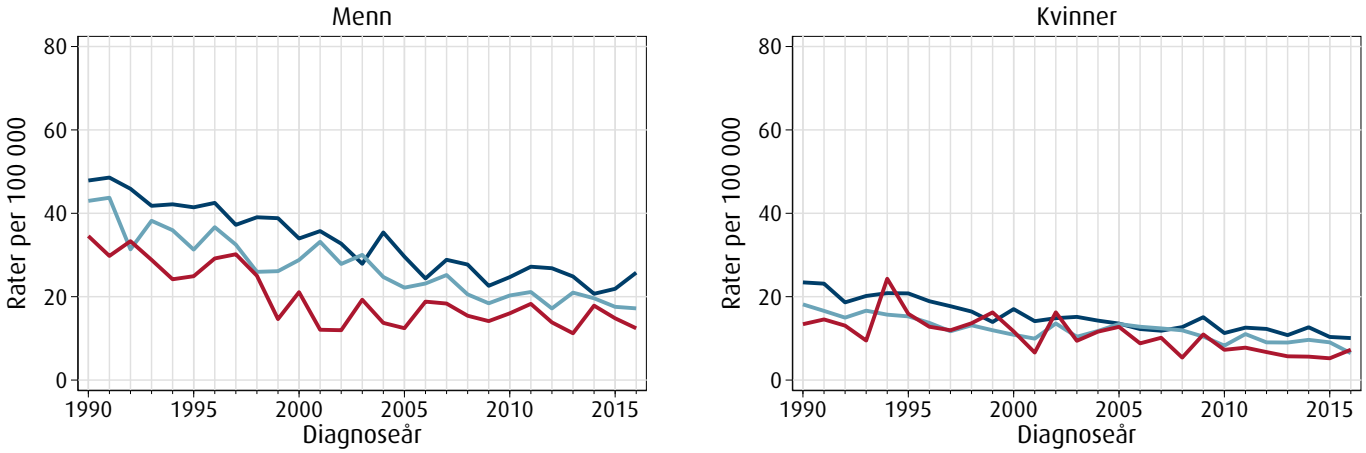


Figur 6.7: Aldersstandardiserte insidensrater (norsk standard) per 100 000 personår for utvalgte kreftformer etter utdanningskategori, 1990–2016

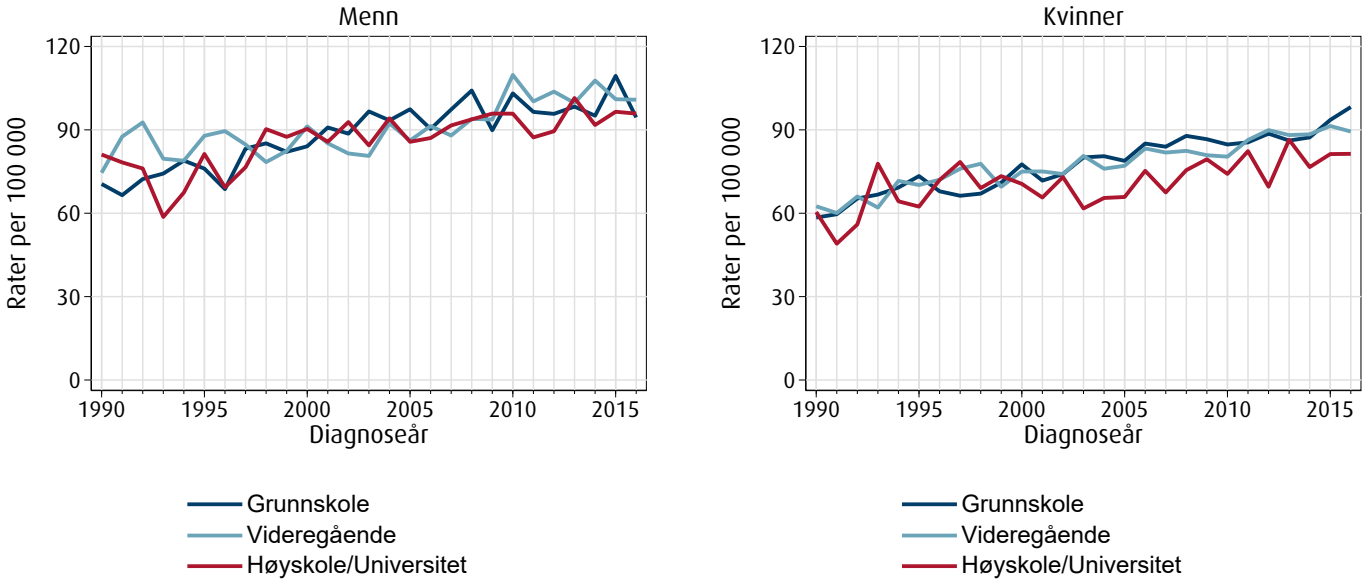
Figur 6.7–A: All kreft (ICD-10 C00–96)



Figur 6.7–B: Magesekk (ICD-10 C16)

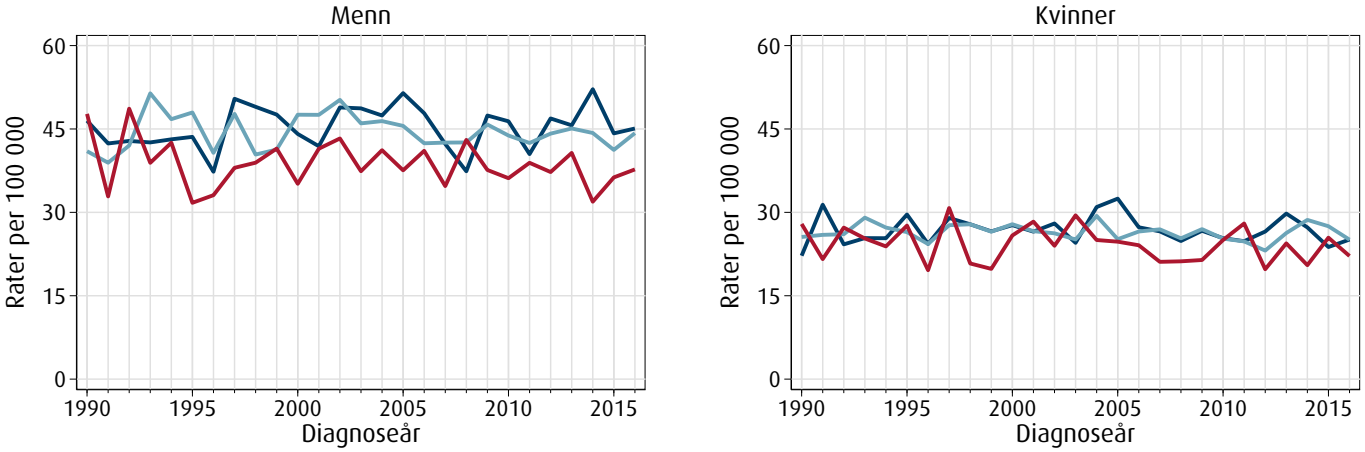


Figur 6.7–C: Tykktarm (ICD-10 C18)

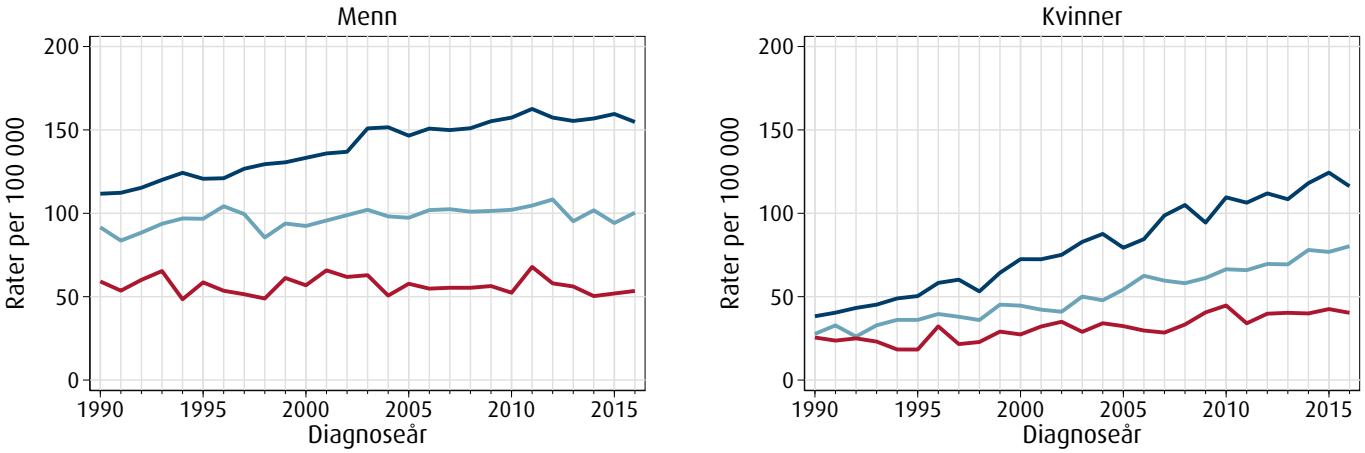


Figur 6.7: Aldersstandardiserte insidensrater (norsk standard) per 100 000 personår for utvalgte kreftformer etter utdanningskategori, 1990–2016

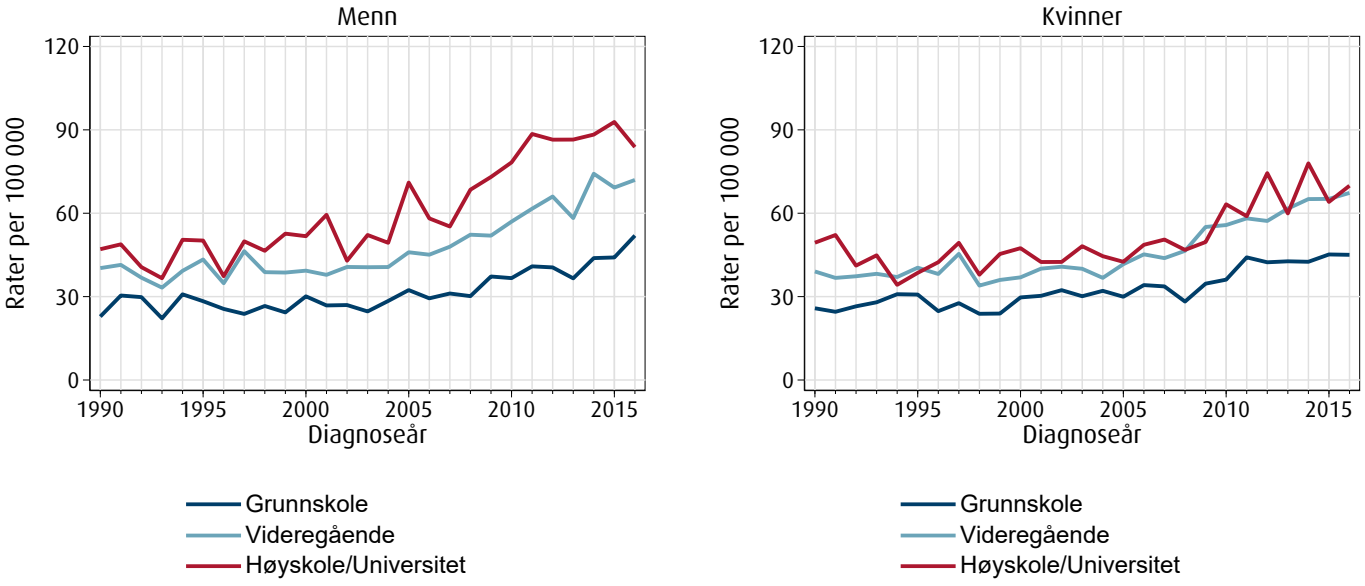
Figur 6.7–D: Endetarm (ICD-10 C19–20)



Figur 6.7–E: Lunge, luftrør (ICD-10 C33–34)

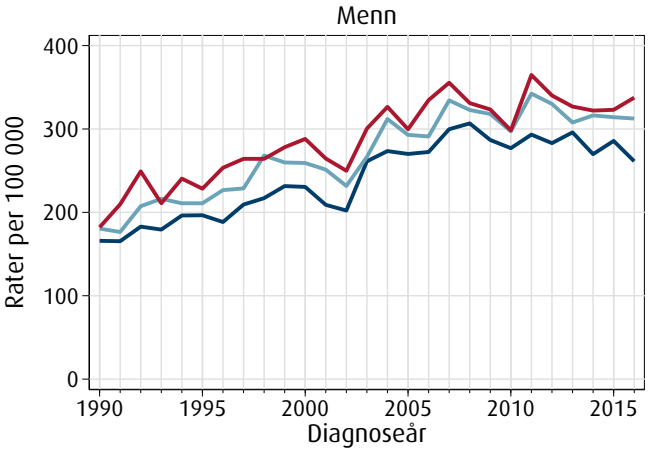


Figur 6.7–F: Melanom i hud (ICD-10 C43)

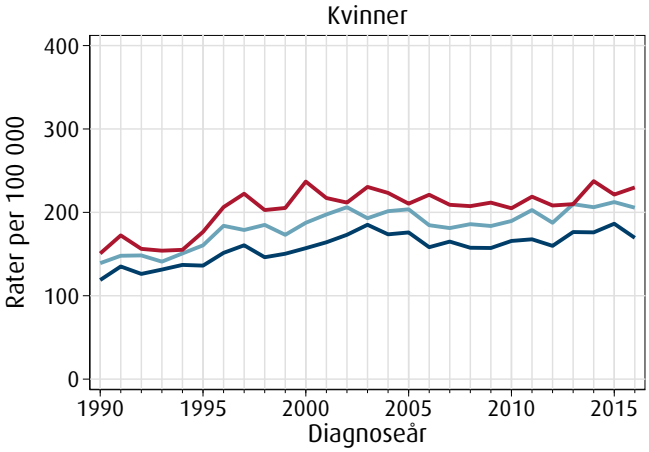


Figur 6.7: Aldersstandardiserte insidensrater (norsk standard) per 100 000 personår for utvalgte kreftformer etter utdanningskategori, 1990–2016

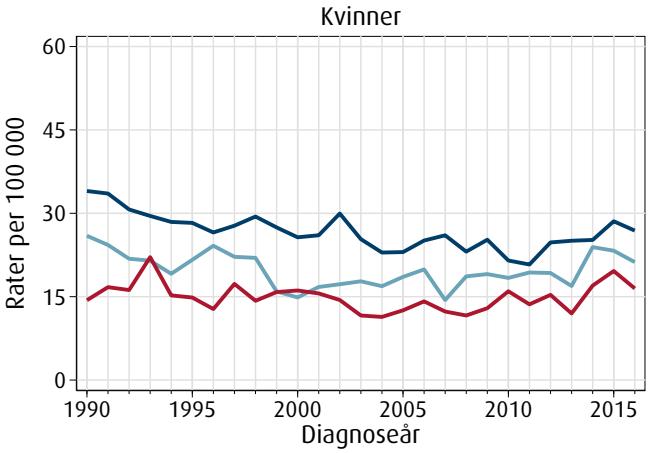
Figur 6.7–G: Prostata (ICD-10 C61)



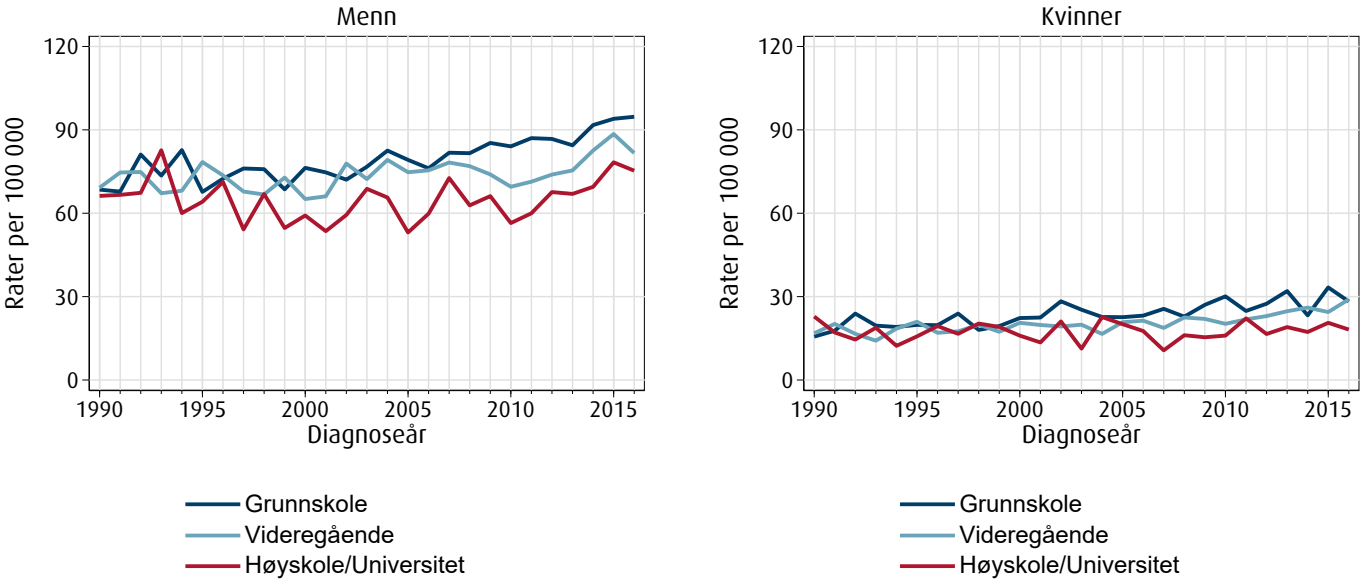
Figur 6.7–H: Bryst (ICD-10 C50)



Figur 6.7–I: Livmorhals (ICD-10 C53)

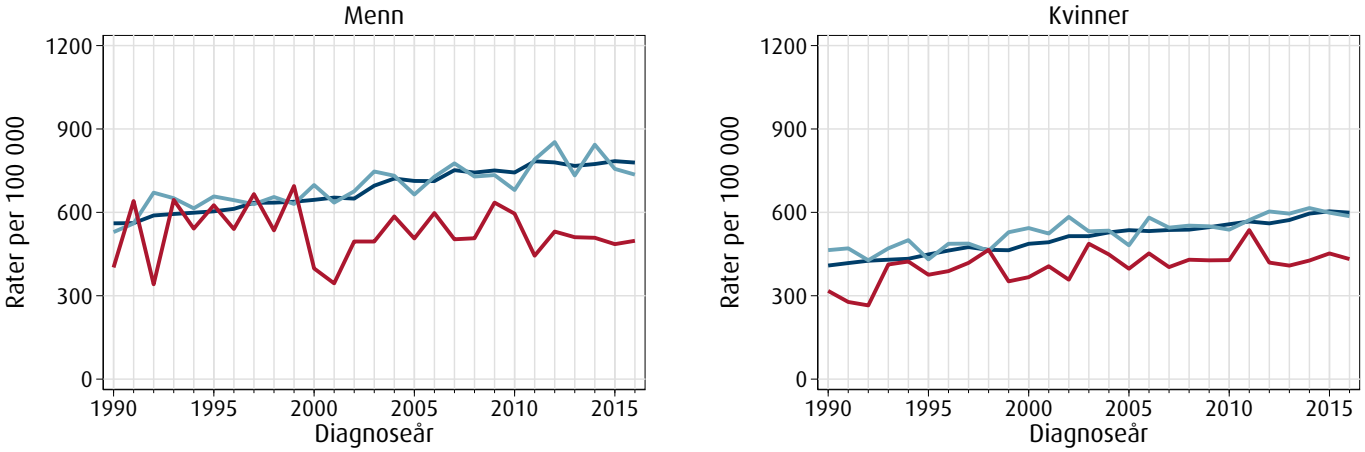


Figur 6.7–J: Blære, nyrebekken, urinleder (ICD-10 C65–68)

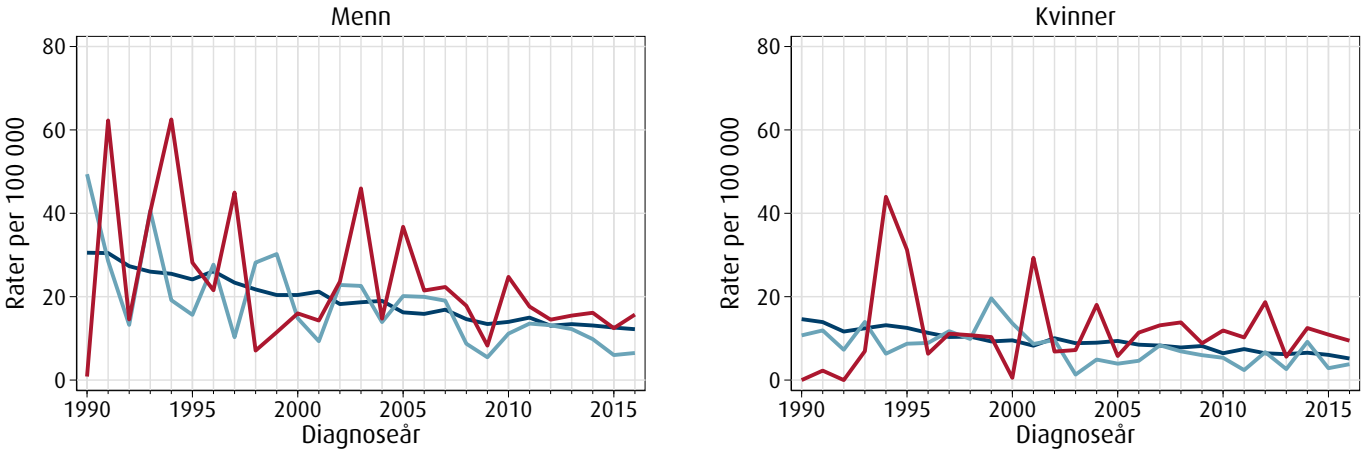


Figur 6.8: Aldersstandardiserte insidensrater (norsk standard) per 100 000 personår for utvalgte kreftformer etter landbakgrunn, 1990–2016

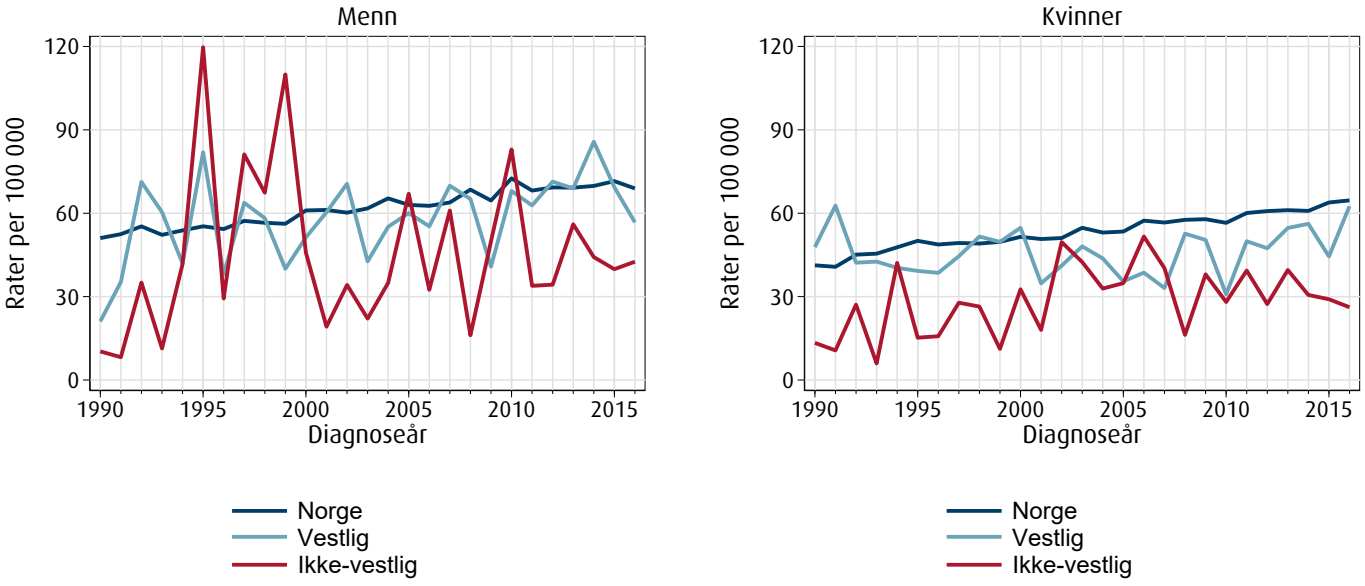
Figur 6.8–A: All kreft (ICD-10 C00–96)



Figur 6.8–B: Magesekk (ICD-10 C16)

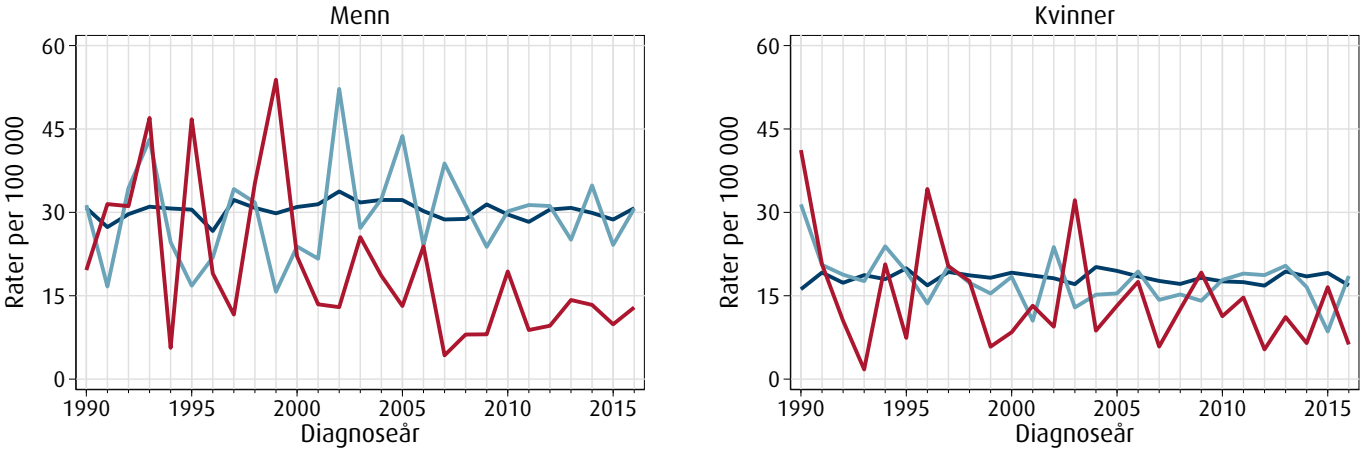


Figur 6.8–C: Tykktarm (ICD-10 C18)

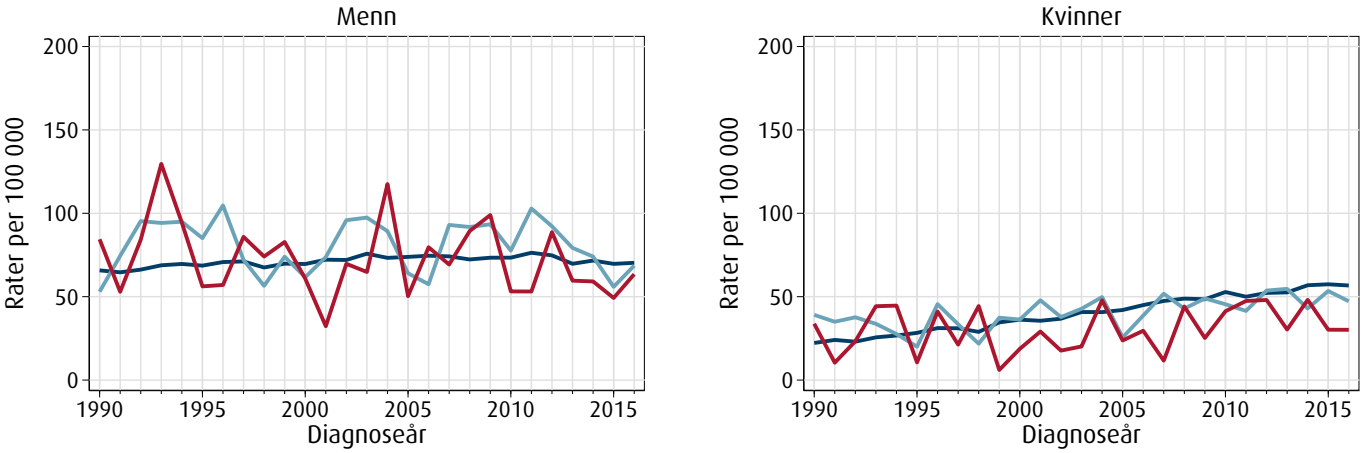


Figur 6.8: Aldersstandardiserte insidensrater (norsk standard) per 100 000 personår for utvalgte kreftformer etter landbakgrunn, 1990–2016

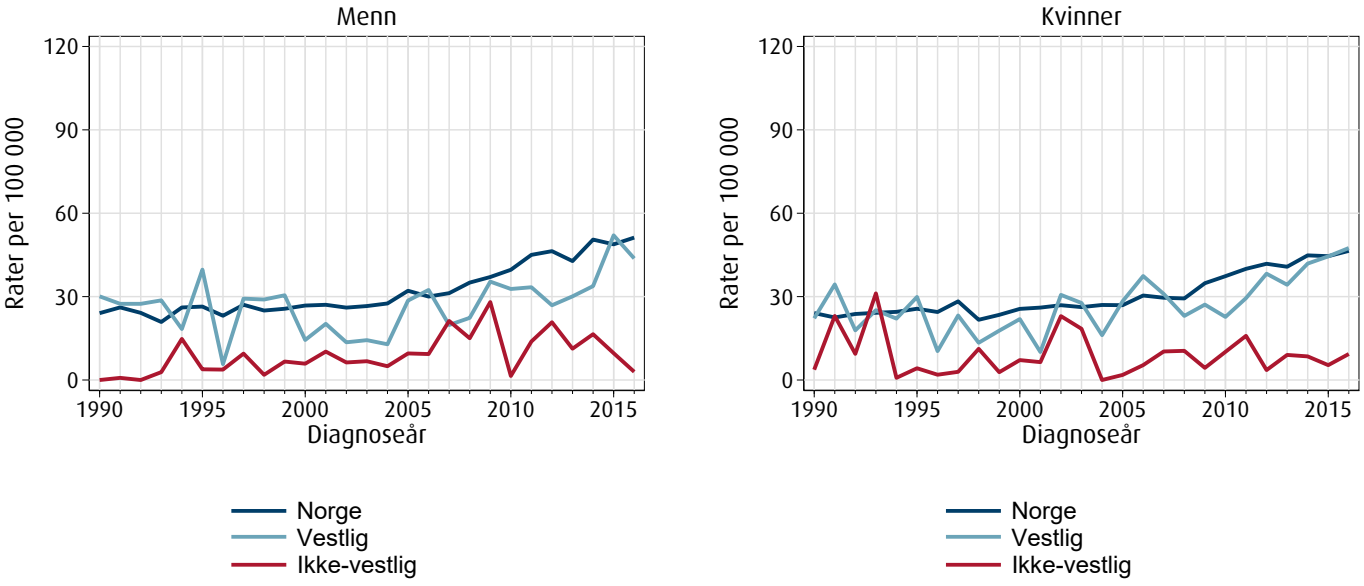
Figur 6.8–D: Endetarm (ICD-10 C19–20)



Figur 6.8–E: Lunge, luftrør (ICD-10 C33–34)

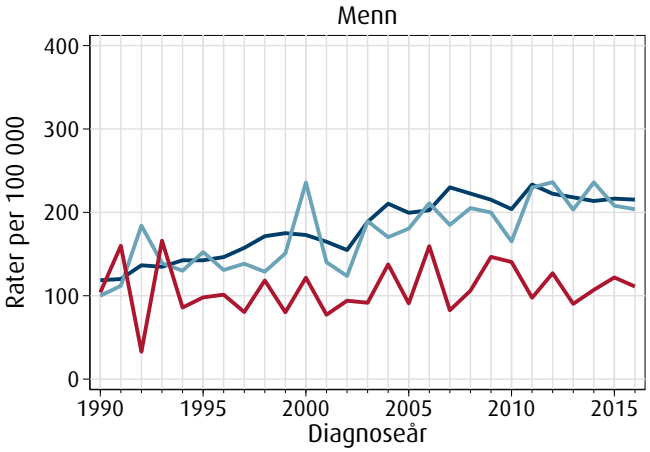


Figur 6.8–F: Melanom i hud (ICD-10 C43)

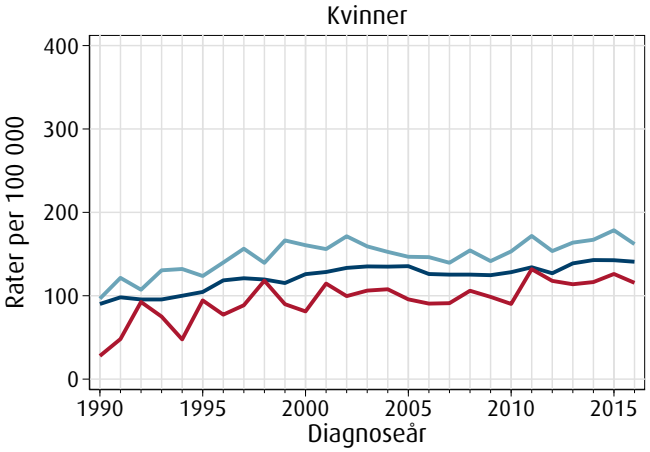


Figur 6.8: Aldersstandardiserte insidensrater (norsk standard) per 100 000 personår for utvalgte kreftformer etter landbakgrunn, 1990–2016

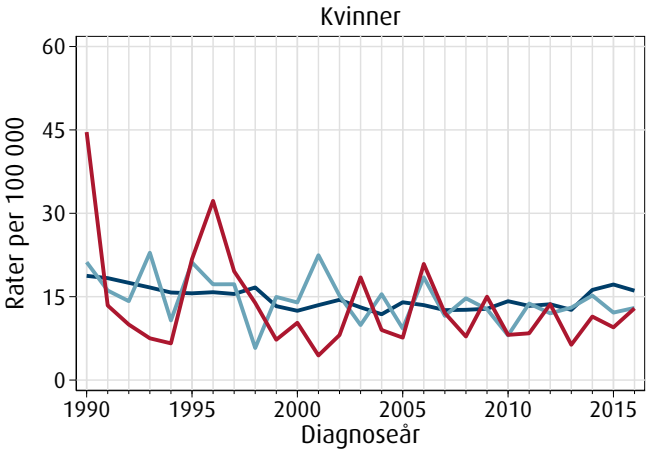
Figur 6.8–G: Prostata (ICD-10 C61)



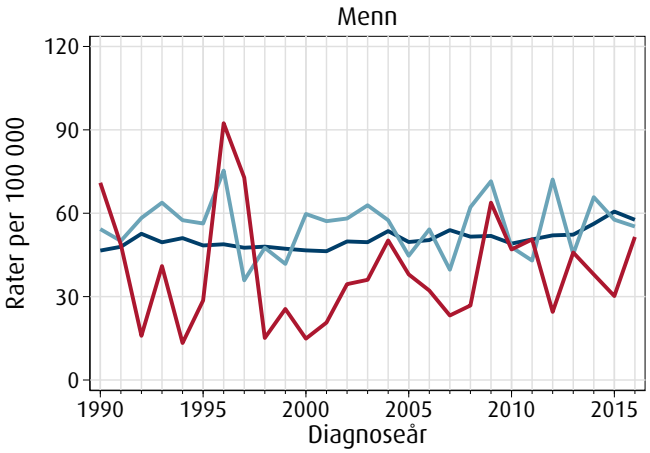
Figur 6.8–H: Bryst (ICD-10 C50)

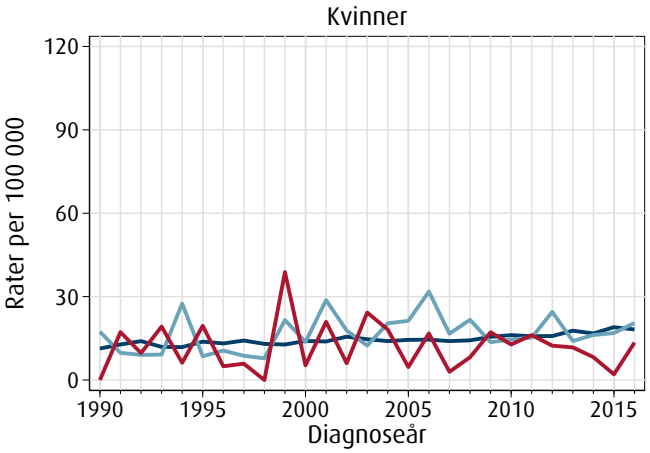


Figur 6.8–I: Livmorhals (ICD-10 C53)



Figur 6.8–J: Blære, nyrebekken, urinleder (ICD-10 C65–68)





Kapittel 7 Kreftforekomst i Oslos bydeler

Gulbrandsen J, Nilssen Y, Larsen IK, Karlsson LRA, Campbell S

7.1 Introduksjon

Vindretningen har ofte blitt brukt til å forklare øst-vest skillet i flere Europeiske storbyer: Det blåser oftere fra vest til øst, noe som gir renere luft i vest fordi vinden fører industrirøyken bort. Vindretningen er imidlertid ingen god forklaring på øst-vest skillet i Oslo, for vinden blåser sjeldent fra vest i hovedstaden. Dessuten var skillet allerede i emning før industrialiseringen gjorde sitt inntog i byen. Med Akerselva i sentrum som geografisk, politisk og sosialt skille mellom øst- og vestkanten, begynte ulikhetene for alvor å følge geografiske områder i hovedstaden[87]. Høy status preger bildet som både landets og byens innbyggere har av Oslo vest; store leiligheter i velholdte blokker, hageflekker og sentrumsnærhet. Østkantstempelet, derimot, vekker andre konnotasjoner; trangboddhet, kommunale boliger og tungbetong. I et forsøk på å kvitte seg med det stigmatiserende preget, markedsførte blant annet OBOS på 1990-tallet bydel Romsås og delbydel Sandaker som «nordlige», og plasserte Rodeløkka og Kampen beleilig i "sentrum" - til tross for himmelretning og allmenn oppfatning[88].

Historien om Oslohelsa kan på flere måter sies å være en historie om en delt by. Historisk har det fra starten av 1800-tallet og frem til i dag, vært et sosialt skille blant byens innbyggere: Mellom sentrum i Kvadraturen ("Den Egentlige by") og forstadens og drabantbyenes periferi, mellom østkanten og vestkanten, og mellom villaforstedenes fremvekst og deres plass i byens struktur[88]. Med det geografiske skillet fulgte også politikk, kultur og sosiale forhold, og klasseskillene i bosetningsmønstrene representerte i høy grad det sosiale skillet i befolkningen.

Byer kan altså tradisjonelt bære preg av et sosialt øst-vest skille. Det som er spesielt for bydelsforskjellene i Oslo, er at forskjellene fortsatt er markante, til tross for for eksempel endringer i hovedstadens befolkning, som at høystatusgrupper har begynt å bosette seg i tradisjonelle lavstatus-bydeler (gentrifisering). De sosialgeografiske helseforskjellene er større i Oslo både når en sammenligner med andre norske byer, men også i forhold til andre internasjonale byer som Oslo kan sammenliknes med[89]. Spesielt markerte blir forskjellene dersom en sammenlikner bydeler i indre øst med bydelene i ytre vest; her er forskjellen i forventet levealder for menn hele 6 år[90].

Flere rapporter har dokumentert og påpekt skjevfordelingen av helse blant bydelene i Oslo[91–93]. Det er tidligere vist at antall kreftdødsfall er ujevnt fordelt mellom bydelene, og dødeligheten er høyere for bydelene i midtre øst, og lavere i de vestlige bydelene[89]. I dette kapittelet vil vi presentere tall fra Kreftregisteret som viser antall nye tilfeller av kreft, og kreftrisikoen i Oslos bydeler.

7.2 Metode

Forekomst blir presentert etter bydel for personer som ble diagnostisert med kreft i perioden 2009–2018 og som var bosatt i Oslo ved diagnosetidspunktet. På grunn av få innbyggere i Sentrum er insidensratene i dette området beregnet sammen med bydel St. Hanshaugen. Området Marka er utelatt fra analysene. Analysene viser aldersstandardiserte insidensrater per 100 000 personår, og er beregnet på tilsvarende måte som i Cancer in Norway 2018.

https://www.kreftregisteret.no/globalassets/cancer-in-norway/2018/cin-2018supmeth.pdf

For de utvalgte kreftformene (og per kjønn) ble er det testet om bosted (bydel) var en statistisk signifikant forklaringsvariabel for kreftinsidensen. Dette ble gjort ved en likelihood ratio test, og $p<0.05$ ble satt som signifikansnivå.

Antall krefttilfeller og insidensrater for de utvalgte kreftformene er presentert i tabell 7.1 og 7.2.

7.3 Bydelene i Oslo

I figur 7.1 gis noen nøkkeltall for bydelene i Oslo basert på data fra Oslo kommunes hjemmeside og deres statistikkbank:

http://statistikkbanken.oslo.kommune.no/webview/

Informasjon om befolkning, andel innvandrere per bydel, medianinntekt og andel med høyere utdanning er hentet for 2017, som er det året med siste tilgjengelige tall for alle variablene. Andelen med høyere utdanning

er oppgitt for de med universitets- eller høyskoleutdannelse på 4 år eller mer.

7.4 Resultater

Av de ni utvalgte kreftformene som er med i denne analysen, var det fire kreftformer (lunge, melanom i hud, bryst og prostata) hvor insidensratene var markant forskjellig i de ulike bydelene. I kart 7.2–A til 7.2–D vises insidensraten for de største kreftformene, og tabell 7.2 viser insidensratene for alle kreftformene samlet, og for de ni utvalgte kreftformene.

Tabell 7.1 viser gjennomsnittlig antall nye krefttilfeller per år i de enkelte bydelene for perioden 2009–2018. Bydelen med flest krefttilfeller var Nordstrand for både kvinner og menn, og bydelen med færrest årlige nye tilfeller var St. Hanshaugen for menn og Sagene og Søndre Nordstrand for kvinner. Som figur 7.1 viser, er det stor forskjell mellom bydelene både med hensyn til antall innbyggere og alderssammensetning. Begge disse faktorene har betydning for kreftforekomst, og for å se forskjeller i risiko må vi derfor se på de aldersjusterte insidensratene som er vist i tabell 7.2.

For alle kreftformene samlet er det Grorud som har høyest insidensrate for menn, og Bjerke og St. Hanshaugen som har høyest rate for kvinner. De bydelene som har lavest rate for alle kreftformer samlet er Nordre Aker for menn og Søndre Nordstrand for kvinner.

Blant de ni kreftformene som var inkludert i denne gjennomgangen, var det signifikant forskjell i kreftinsidensen mellom bydelene for melanom i hud, lunge og prostata.

Insidensraten av **lungekreft** var høyest i Grorud for menn, og Grünerløkka hadde den høyeste raten for kvinner. Lavest rate var i Vestre Aker for begge kjønn. I kartene (Figur 7.2–A) vises en mer detaljert oversikt over de bydelene som lå over eller under snittraten.

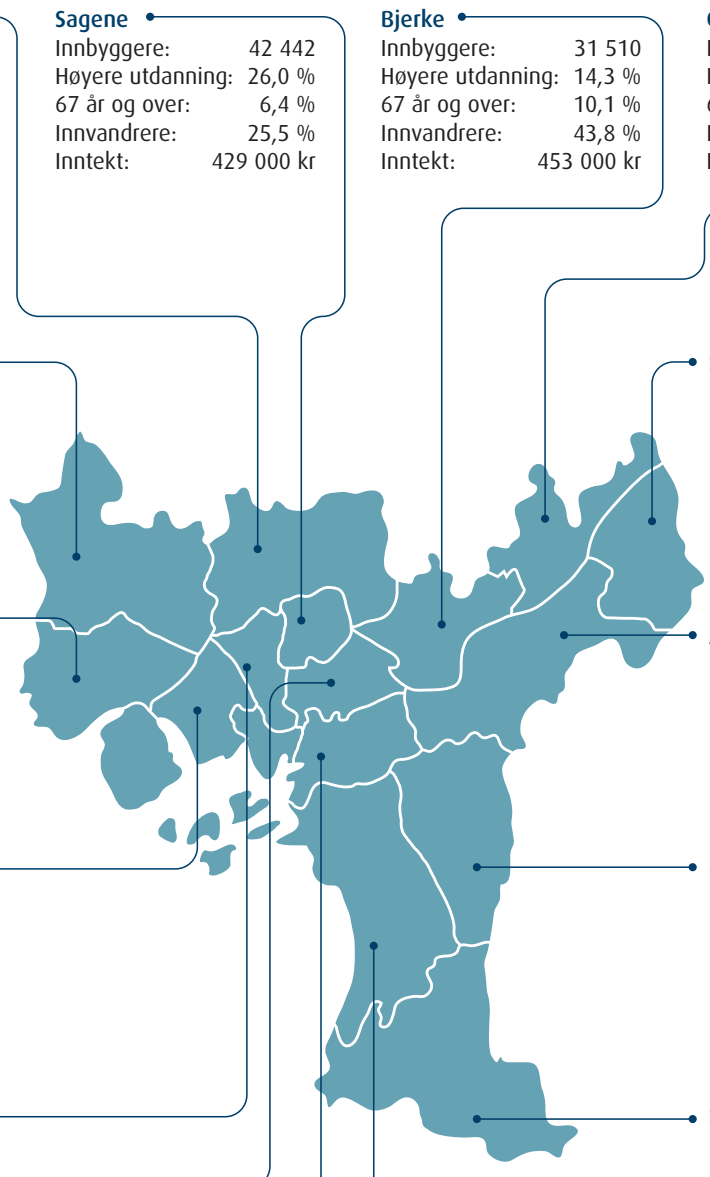
Insidensraten av **melanom i hud** var høyest i bydel Nordstrand blant menn, mens bydelene Ullern og Østensjø hadde de høyeste insidensratene blant kvinner. Bydelene med lavest forekomst av melanom i hud var Gamle Oslo blant menn, og Grünerløkka blant kvinner. Kartene (Figur 7.2–B) viser at insidensen har en øst-vest gradient med høyest forekomst i vest.

Frogner hadde høyest og Søndre Nordstrand hadde lavest insidensenrate av **brystkreft**. Kartet (Figur 7.2–D) viser at det kun var disse to bydelene som hadde forhøyet eller redusert nivå på >10 %, og analysene som testet om bydel var en signifikant forklaringsvariabel for brystkreftrisiko viste en p-verdi på 0.06.

Ullern og Nordstrand var de bydelene med høyest insidensrate av **prostatakreft**, mens Sagene hadde lavest insidens (Figur 7.2–C).

Figur 7.1: Befolkningen i Oslos bydeler

Befolkningen i Oslo
2017



Nordre Aker
Innbyggere: 50 224
Høyere utdanning: 27,9 %
67 år og over: 12,1 %
Innvandrere: 17,6 %
Inntekt: 550 000 kr

Sagene
Innbyggere: 42 442
Høyere utdanning: 26,0 %
67 år og over: 6,4 %
Innvandrere: 25,5 %
Inntekt: 429 000 kr

Bjerke
Innbyggere: 31 510
Høyere utdanning: 14,3 %
67 år og over: 10,1 %
Innvandrere: 43,8 %
Inntekt: 453 000 kr

Grorud
Innbyggere: 27 566
Høyere utdanning: 8,3 %
67 år og over: 12,0 %
Innvandrere: 49,5 %
Inntekt: 428 000 kr

Vestre Aker
Innbyggere: 48 229
Høyere utdanning: 28,8 %
67 år og over: 14,9 %
Innvandrere: 17,3 %
Inntekt: 650 000 kr

Stovner
Innbyggere: 32 527
Høyere utdanning: 6,6 %
67 år og over: 13,2 %
Innvandrere: 55,4 %
Inntekt: 465 000 kr

Ullern
Innbyggere: 33 760
Høyere utdanning: 28,8 %
67 år og over: 16,6 %
Innvandrere: 19,9 %
Inntekt: 615 000 kr

Alna
Innbyggere: 49 282
Høyere utdanning: 8,9 %
67 år og over: 12,0 %
Innvandrere: 52,7 %
Inntekt: 449 000 kr

Frogner
Innbyggere: 57 551
Høyere utdanning: 26,9 %
67 år og over: 12,5 %
Innvandrere: 27,8 %
Inntekt: 438 000 kr

Østensjø
Innbyggere: 49 973
Høyere utdanning: 14,1 %
67 år og over: 13,7 %
Innvandrere: 25,1 %
Inntekt: 501 000 kr

St. Hanshaugen
Innbyggere: 37 849
Høyere utdanning: 27,5 %
67 år og over: 7,0 %
Innvandrere: 27,4 %
Inntekt: 405 000 kr

Søndre Nordstrand
Innbyggere: 38 672
Høyere utdanning: 10,5 %
67 år og over: 8,3 %
Innvandrere: 54,3 %
Inntekt: 509 000 kr

Grünerløkka
Innbyggere: 57 567
Høyere utdanning: 22,5 %
67 år og over: 5,0 %
Innvandrere: 35,0 %
Inntekt: 411 000 kr

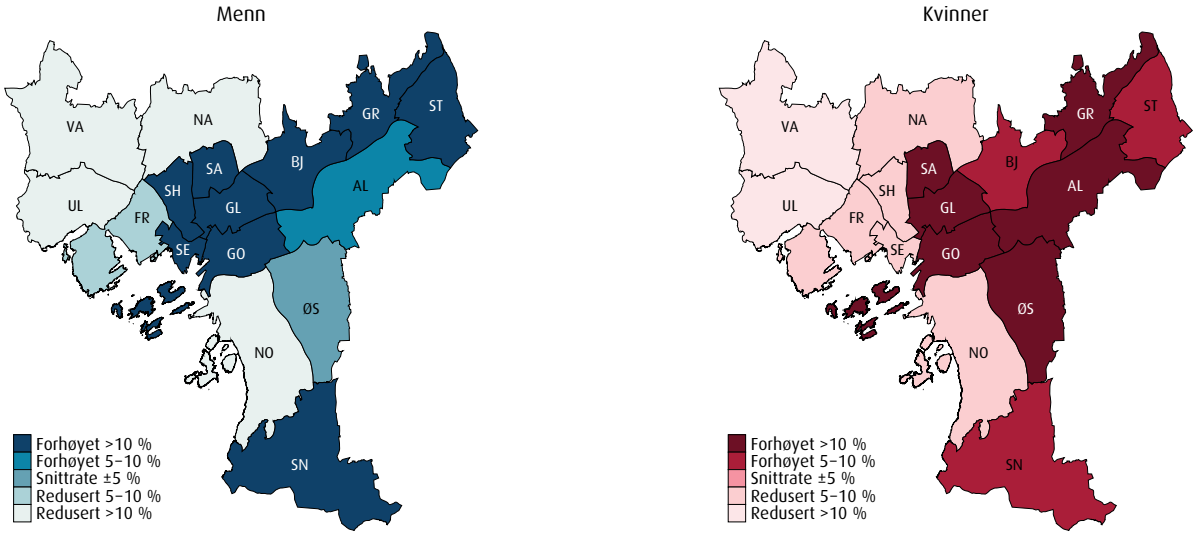
Gamle Oslo
Innbyggere: 54 241
Høyere utdanning: 21,3 %
67 år og over: 5,7 %
Innvandrere: 39,5 %
Inntekt: 413 000 kr

Nordstrand
Innbyggere: 50 645
Høyere utdanning: 18,1 %
67 år og over: 14,4 %
Innvandrere: 17,0 %
Inntekt: 570 000 kr

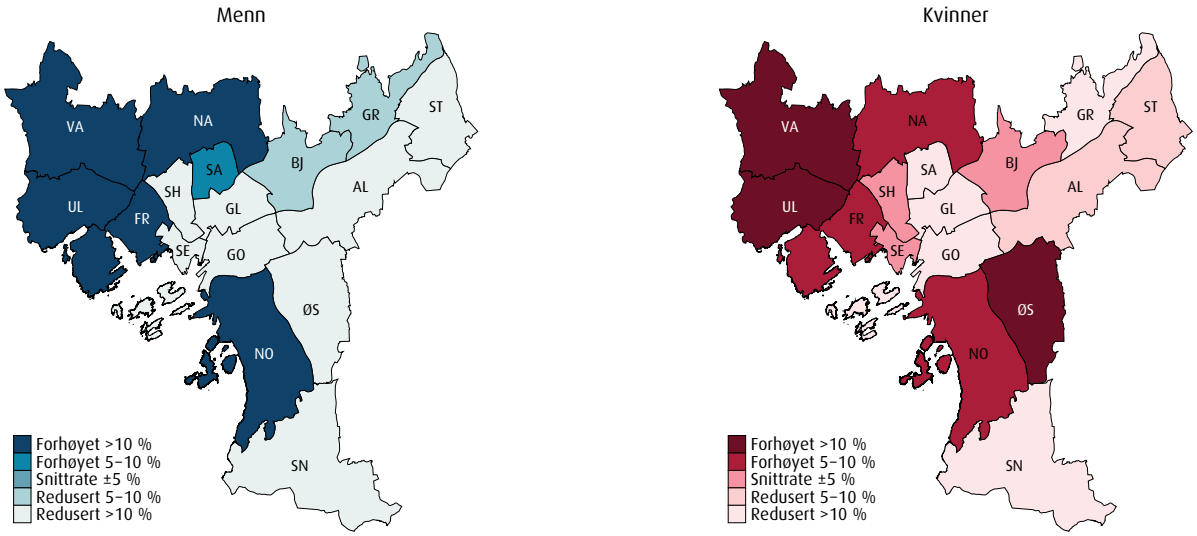
Kilde: Oslo kommunes hjemmeside og statistikkbank

Figur 7.2: Kreftrisiko i bydeler i Oslo etter kreftform og kjønn, 2009–2018

Figur 7.2–A: Lunge, luftrør (ICD-10 C33–34)

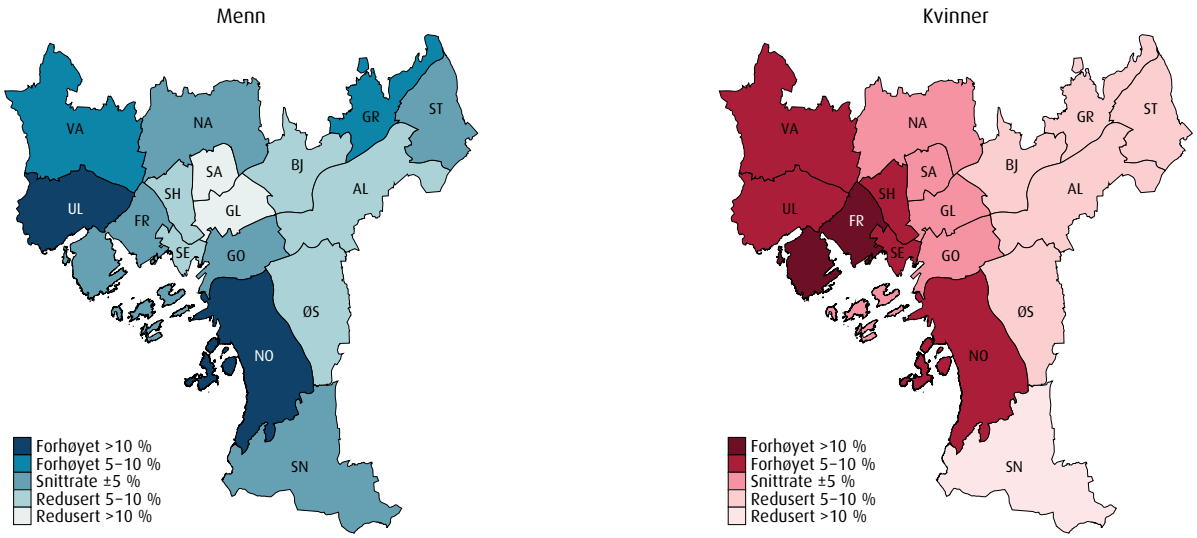


Figur 7.2–B: Melanom i hud (ICD-10 C43)



Figur 7.2–C: Prostata (ICD-10 C61)

Figur 7.2–D: Bryst (ICD-10 C50)



Tabell 7.1: Antall nye krefttilfeller per kjønn, kreftform og bydel i Oslo, 2009–2018

ICD-10	Kreftform	Kjønn	Alna	Bjerke	Frogner	Gamle Oslo	Grorud	Grünerløkka
C00–96	All kreft	M	140	82	161	90	83	92
		K	142	86	165	90	85	88
C16	Magesekk	M	3	2	2	2	1	2
		K	2	1	1	1	1	1
C18	Tykktarm	M	9	6	13	6	6	6
		K	12	9	16	7	9	6
C19–20	Endetarm	M	7	5	7	3	3	3
		K	4	3	5	3	3	3
C33–34	Lunge, luftrør	M	14	8	12	9	11	10
		K	16	8	13	9	9	9
C43	Melanom i hud	M	7	4	13	4	4	5
		K	8	5	11	5	4	4
C50	Bryst	K	33	19	43	23	19	23
C53	Livmorhals	K	3	3	5	3	2	5
C61	Prostata	M	34	18	40	20	21	17
C65–68	Blære, nyrebekken, urinleder	M	7	6	10	7	6	5
		K	4	3	5	2	3	3

Tabell 7.2: Aldersstandardiserte (norsk standard) insidensrater per 100 000 personår per kjønn, kreftform og bydel i Oslo, 2009–2018

ICD-10	Kreftform	Kjønn	Alna	Bjerke	Frogner	Gamle Oslo	Grorud	Grünerløkka
C00–96	All kreft	M	669.4	706.9	684.8	676.0	722.3	654.5
		K	546.9	580.0	565.4	555.6	556.9	525.1
C16	Magesekk	M	14.4	15.1	7.7	16.2	12.8	16.0
		K	7.1	8.5	4.9	7.1	4.6	3.1
C18	Tykktarm	M	48.0	53.6	56.7	46.8	53.8	47.5
		K	45.7	61.3	53.4	44.5	60.3	42.0
C19–20	Endetarm	M	34.3	40.5	29.3	25.2	26.5	26.5
		K	14.7	23.3	18.1	20.9	17.7	19.2
C33–34	Lunge, luftrør	M	68.6	72.3	51.1	81.3	94.5	89.3
		K	63.7	56.1	44.8	66.0	64.2	68.8
C43	Melanom i hud	M	32.7	35.7	52.7	21.1	37.8	25.9
		K	29.8	32.9	36.8	27.6	27.8	18.9
C50	Bryst	K	129.7	129.8	158.0	134.7	128.7	135.9
C53	Livmorhals	K	11.3	14.6	16.6	10.0	11.4	19.5
C61	Prostata	M	166.5	163.9	171.5	169.8	192.9	136.6
C65–68	Blære, nyrebekken, urinleder	M	37.4	51.4	44.8	55.5	56.6	46.5
		K	13.1	21.1	17.7	14.1	18.6	22.9

Nordre Aker	Nordstrand	Sagene	St. Hans-haugen	Stovner	Søndre Nordstrand	Ullern	Vestre Aker	Østensjø
135	169	73	71	99	91	116	153	154
138	173	77	79	89	77	119	150	172
1	2	1	1	2	1	1	2	3
2	2	1	0	1	1	1	1	2
10	13	5	5	9	6	9	11	14
14	15	5	6	8	5	10	12	15
7	8	4	3	4	5	4	6	8
4	6	3	4	4	3	4	4	6
8	9	8	7	11	8	6	7	13
11	14	8	6	10	8	7	9	18
10	13	5	4	5	4	8	11	7
10	11	4	5	5	4	10	12	14
35	42	19	19	22	19	30	41	36
3	5	4	3	2	2	2	3	3
36	48	13	15	25	23	35	47	35
9	11	5	5	7	6	8	8	10
5	6	2	2	3	2	3	4	5

Nordre Aker	Nordstrand	Sagene	St. Hans-haugen	Stovner	Søndre Nordstrand	Ullern	Vestre Aker	Østensjø
651.1	713.3	672.3	692.9	687.6	717.4	690.1	667.8	694.5
534.7	560.1	544.9	579.7	516.2	492.8	551.2	532.4	561.5
7.4	10.5	9.9	6.7	13.7	10.3	6.5	9.6	11.8
7.4	6.4	8.6	2.8	5.0	10.8	3.8	3.8	6.5
50.6	52.4	46.6	57.6	62.6	52.9	51.9	49.1	61.2
51.2	46.1	37.7	47.2	48.3	37.0	42.7	42.0	42.5
34.3	33.6	36.9	27.9	27.4	40.8	22.4	28.0	35.3
15.9	19.6	24.5	27.6	21.2	18.2	16.2	15.2	19.3
41.2	37.6	83.9	79.4	80.0	69.7	35.9	31.8	59.6
44.5	45.4	61.9	45.8	56.9	55.7	33.0	30.7	58.8
48.5	53.9	44.5	32.5	34.7	32.5	47.9	48.0	33.3
38.2	37.6	20.8	32.9	31.4	24.0	45.5	40.9	45.9
141.3	144.4	136.3	147.5	128.3	108.4	148.3	149.6	126.7
12.8	16.8	13.4	11.5	10.3	11.3	11.0	12.3	12.0
177.6	204.5	139.8	156.9	172.0	174.3	205.4	198.6	163.8
44.1	48.2	56.8	55.3	53.7	55.5	50.9	34.7	44.0
17.6	19.7	18.5	13.4	16.4	12.9	14.6	13.4	15.9

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