

CANCER INCIDENCE PROJECTIONS FOR IRELAND 2020-2045

2019



GLOSS/	ARY
95% CI	95% confidence interval
ASR	Age-standardised rate (European standard population)
CNS	Central nervous system
CSO	Central Statistics Office
ESP	European Standard Population
HD	Hakulinen-Dyba (projection models)
IARC	International Agency for Research on Cancer
ICD	International Statistical Classification of Diseases and Related Health Problems
NCRI	National Cancer Registry, Ireland
NMSC	Non-melanoma skin cancer

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FOREWORD

The most recent annual statistical report of the National Cancer Registry, published in November 2018, provided a summary of projected changes in the cancer incidence burden in Ireland over the coming decades, up to 2045. Fuller details are provided in this report, covering a wider range of cancers, updating the last detailed report, published in 2014, which projected cancer incidence to 2040.

There is no doubt that population growth and ageing will result in substantial increases in numbers of cancers diagnosed in Ireland over the coming decades, with resultant increases in the demands on cancer healthcare services. Potentially, between 2015 and 2045, we could see a doubling of the number of cases diagnosed annually if current cancer rates continue to apply.

Nevertheless, there are some grounds for optimism. Recent trends in age-standardised cancer incidence rates, which reflect the risk of an individual being diagnosed with cancer, appear to show a levelling-off or even a decline for a range of cancers. If these recent trends continue, increases in numbers of cancers diagnosed may prove to be substantially smaller, but they are still likely to amount to at least a 50% increase by 2045. But even that more limited increase in projected numbers of cancers will depend on sustained and where possible expanded public health and cancer prevention interventions aimed at reducing the risk of cancer diagnosis at the individual and population level.

Following the publication of this report, the NCRI plans to produce a report in late 2019 focusing on the contribution of various risk factors to the cancer incidence burden in Ireland. That report will also consider how changes in the exposure to these risk factors could impact on future incidence of cancer. A further report will examine treatment projections in more detail and consider the economic implications.

Professor Kerri Clough-Gorr Director National Cancer Registry

Keni H. Cloux Com



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REPORT AT A GLANCE

Cancer Incidence Projections 2020-2045

Who are we, and what do we do?

The National Cancer Registry of Ireland (NCRI) works on behalf of the Department of Health and collects information from all hospitals in Ireland on the number of persons diagnosed with cancer and the types of cancer they have. NCRI also follows up the numbers dying from their cancer or from other causes. All the patient's personal and private details are removed before summaries of this information are made available to the public and health professionals through our annual cancer report and other reports on our website.

What will the cancer figures look like in the decades ahead?

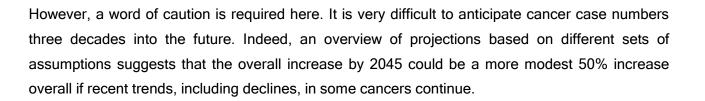
The population of Ireland increased by over one million between 1996 and 2016. Moreover, the proportion of the population most likely to be diagnosed with cancer (age 65+ years) expanded by over 50% over the same period. As the population is expected to continue to increase, it is likely that the numbers of cancer cases will continue to increase over the next three decades. If average rates of cancer (at each age) during 2011-2015 are applied to population estimates up to 2045, estimated (projected) numbers of invasive cancer, excluding non-melanoma skin cancer (NMSC), are summarised in the following figure.



The figures for 2015 represent the number of cases observed in that year. The figures for 2020, 2025, 2030, 2035, 2040 and 2045 are projections. The percentages are the increase on the observed 2015 case count.

What these figures mean is that, if future populations have the same risk of being diagnosed with cancer as currently, numbers of cancers (excluding NMSC) would be expected to increase by more than double in men and to almost double in women by 2045 - to 43,000 cases in total, a doubling of numbers overall.

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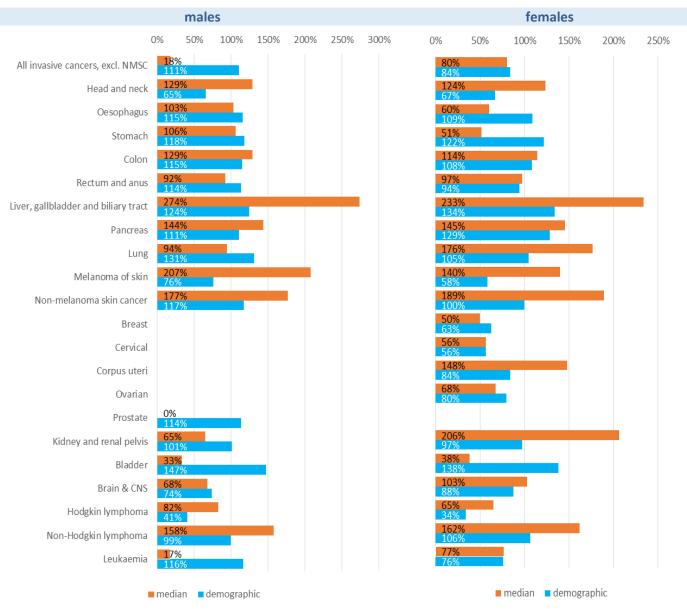
The number of projected cases can vary widely depending on the assumptions used. In this report, six different projection models were used, and the resulting projected total cases increased by between 27% and 143%.

The picture varies even more widely when looking at individual cancer sites. The figure on the next page shows the projected percentage increase in the number of cancer cases between 2015 and 2045, by cancer site and sex. The percentage increases are presented for two models, the demographic model which assumes risk of cancer is the same in the future as it is now, and the median of all projections. The median projection gives an estimate of the middle point of all the projection models and takes into account the range of alternative projections, depending on to what extent recent or longer-term trends in cancer rates (or individual risk of being diagnosed with cancer) carry on into the future.

Longer-term projections for individual cancer sites can have additional uncertainty when screening programmes are in place, as these can lead to initial increases followed by later decreases in cancer rates. Recent downward trends in breast and cervical cancer incidence rates are likely to be in part the result of the national screening programmes, BreastCheck and CervicalCheck. A recent decline in prostate cancer incidence rates may reflect high levels of PSA testing from the mid-1990s on (in effect, a form of unorganised screening). It is not clear if these declining trends are likely to continue into the future, and changes in trends in the years to come make it less likely that the projections presented in this report will accurately reflect future case counts. Changes in the trend in incidence rates for colon or rectal cancers may also occur, following the recent introduction of the BowelScreen programme.

Potential changes in trends in risk factors, such as rates of smoking, alcohol consumption, obesity rates and exposure to UV radiation could also impact on incidence rates for specific cancer sites, causing incidence to decrease (e.g. due to lower rates of smoking) or increase (e.g. due to higher rates of obesity) in the future. The contribution of these risk factors to incidence rates and trends is not examined in this report, but will be looked at in detail in a report due to be released in November 2019.

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Summary Figure: Projected percentage increase in number of cancer cases 2015-2045, by cancer site and sex

For individual cancer types in males, the increases in case numbers ranged from 41% (Hodgkin lymphoma) to 147% (bladder) using demographic projections, or from 0% (prostate) to 274% (liver, gallbladder and biliary tract) using the median projection.

For females, the increases in case numbers ranged from 34% (Hodgkin lymphoma) to 138% (bladder) using demographic projections, or from 38% (bladder) to 233% (liver, gallbladder and biliary tract) using the median projection.

This illustrates the wide variation in projections when different assumptions are used. But, overall, these projections indicate that at least a 50% increase, and potentially a doubling, in annual cancer case numbers, for all invasive cancers excluding NMSC, is likely to be seen between 2015 and 2045.

1. TECHNICAL SUMMARY

General methodology

Cancer incidence data from the National Cancer Registry from 1994 to 2015 and population projections from the Irish Central Statistics Office (CSO) have been combined to estimate the number of new cancer cases expected in the years 2020, 2025, 2030, 2035, 2040 and 2045.

Cancer sites

Projections for the 21 major cancer groups listed in Table 1.1, as well as all cancers combined excluding non-melanoma skin cancer, are presented in this report.

Cancer site	h projections are presented in this report ICD10 codes
All invasive cancers, excl. NMSC	C00-43,C45-96
Head and neck	C01-C14, C30-32
Oesophagus	C15
Stomach	C16
Colon	C18
Rectum and anus	C19-21
Liver, gallbladder and biliary tract	C22-24
Pancreas	C25
Lung	C34
Melanoma of skin	C43
Non-melanoma skin cancer	C44
Female breast	C50
Cervix uteri	C53
Corpus uteri	C54
Ovary	C56
Prostate	C61
Kidney and renal pelvis	C64-65
Bladder	C67
Brain & central nervous system (CNS)	C70-72
Hodgkin lymphoma	C81
Non-Hodgkin lymphoma	C82-85
Leukaemia	C91-95

Projection methods

A number of different estimation methods were used:

 Demographic projections, which apply the average annual age-specific incidence rates for 2011-2015 to the future projected populations provided by the CSO. These assume that there are no changes in the underlying incidence rates over time and therefore make the fewest assumptions.

- Age-period methods, as described by Hakulinen and Dyba (HD) [1-3], which apply linear, nonlinear and log-linear models to historical data.
- 3) The Nordpred method [4,5], which uses a special version of the age-period-cohort model with a power link.

The advantages and limitations of cancer projections have been described in previous reports [6-9]. It is important to note that this report gives projections of current data into the future, and not predictions as such. To make predictions would ideally require knowledge of underlying exposure to risk factors (and trends in such exposure).

In the absence of appropriate risk-factor data (and methodologies to account for them), the projections made here assume that available cancer-rate data reflect exposure to relevant risk factors, and that either recent trends continue or current rates prevail in future years.

The figures in this report highlight projections based on demographic changes and the median of all projections generated, with the full range of available projections also shown (highlighting the variability of projections, reflecting different model assumptions).

Projected population changes 2020-2045

The cancer case projections in this report are based on the population projections of the CSO. The CSO population projections [10], are themselves based on different assumptions regarding mortality, migration (M) and fertility (F). These give expected population numbers for each year 2020-2045, by five year age group and sex.

Six different population projections, based on combinations of the above assumptions, have been published by the CSO (M1F1-M3F2). Three migration assumptions and two fertility assumptions are used. The mortality assumptions are the same for all population projections.

Figure 1.1 shows the differences between the 2015 population and the projected 2045 populations for the different assumptions. The youngest age groups have the widest variation in population projections. For most ages over 50 the projections suggest a population increase of between 50,000 and 100,000 in each five-year age group.

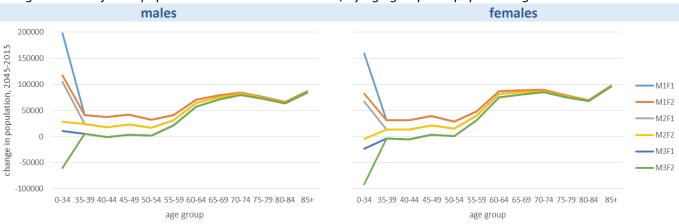
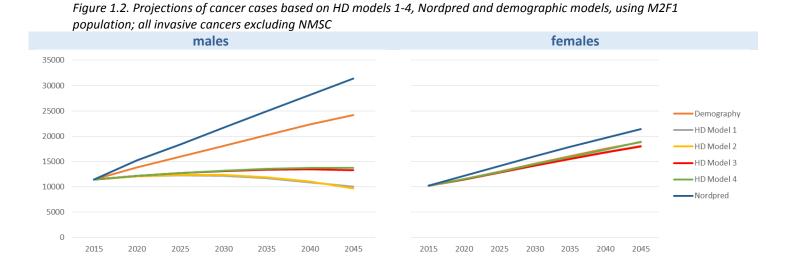


Figure 1.1. Projected population increase 2015 to 2045, by age group and population growth model

As most of the difference between the models is in the population under 60, who have a low cancer incidence, the impact of using different population projections is relatively small, with a 5-6% difference between the smallest and largest incidence projection by 2045.

The different fertility assumptions made almost no difference to the incidence projections. The M1 migration assumption gives the highest incidence projections, and the M3 assumption gives the lowest. For this report, the M2F1 population projections have been used as they produce projected case numbers which are approximately midway between the lowest and highest estimates.

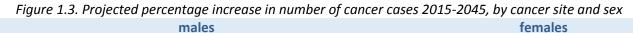
Projections of overall numbers of cancers from 2020 to 2045, based on the four HD models, Nordpred and the demographic approach, are shown in Figure 1.2. For females, the projections made by the six models are broadly similar, reflecting the fact that trends in age-standardised rates for females have been quite stable over time. For males, on the other hand, the projections are very different, based on the different models used, as a recent decline in the age-standardised rates is factored in to the HD models but is not reflected in the Nordpred projection (which is based on longerterm rate trends) or the demographic projection (which assumes no rate trend).

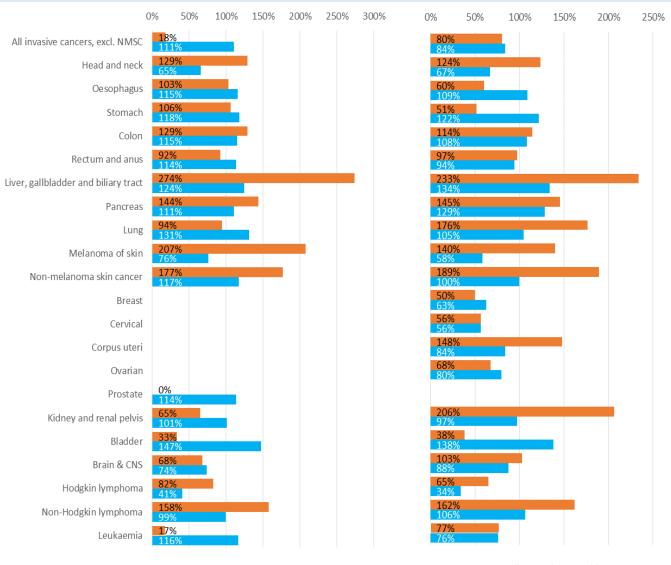


Incidence projections 2020-2045

Figure 1.3 below shows the projected percentage increase in the number of cancer cases between 2015 and 2045, by cancer site and sex.

For all cancers combined, excluding non-melanoma skin cancer, the demographic model projected an increase of 111% increase for males and an 80% increase for females - a doubling of numbers overall. The median model projections showed a similar picture for females with an 84% increase in incidence, whereas for males the position was very different, showing a much more modest projected increase of only 18% - about a 50% increase overall for males and females combined.





median demographic

median demographic

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Longer-term projections for individual cancer sites can have additional uncertainty when screening programmes are in place, as these can lead to initial increases followed by later decreases in cancer rates. Recent downward trends in breast and cervical cancer incidence rates are likely to be in part the result of the national screening programmes, BreastCheck and CervicalCheck. A recent decline in prostate cancer incidence rates may reflect high levels of PSA testing from the mid-1990s on (in effect, a form of unorganised screening). It is not clear if these declining trends are likely to continue into the future, and changes in trends in the years to come make it less likely that the projections presented in this report will accurately reflect future case counts. Changes in the trend in incidence rates for colon or rectal cancers may also occur, following the recent introduction of the BowelScreen programme.

Potential changes in trends in risk factors, such as rates of smoking, alcohol consumption, obesity rates and exposure to UV radiation could also impact on incidence rates for specific cancer sites, causing incidence to decrease (e.g. due to lower rates of smoking) or increase (e.g. due to higher rates of obesity) in the future. The contribution of these risk factors to incidence rates and trends is not examined in this report, but will be looked at in detail in a report due to be released in November 2019.

Across individual cancer types, for males, the increases in case numbers ranged from 41% (Hodgkin lymphoma) to 147% (bladder) using demographic projections, and from 0% (prostate) to 274% (liver, gallbladder and biliary tract) using the median projection.

For females, the increases in case numbers ranged from 34% (Hodgkin lymphoma) to 138% (bladder) using demographic projections, and from 38% (bladder) to 233% (liver, gallbladder and biliary tract) using the median projection.

This illustrates the wide variation in projections based on different methodologies, where the site with the largest increase using the demographic method, has the smallest increase using the median projection.

Cancers most strongly associated with advanced age tend to see the biggest increase in the demographic projection, as the elderly population is expected to increase substantially between now and 2045. This is reflected in large increases in cases of bladder (147% for men and 138% for women), lung (131% for men and 105% for women) and prostate cancer (114%).

Sites with smaller projected increases using demographic projections, such as melanoma of skin, Hodgkin lymphoma, and cervical cancer, are more likely to be cancers that affect younger age groups.

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Changes in age-standardised rates 2015-2045

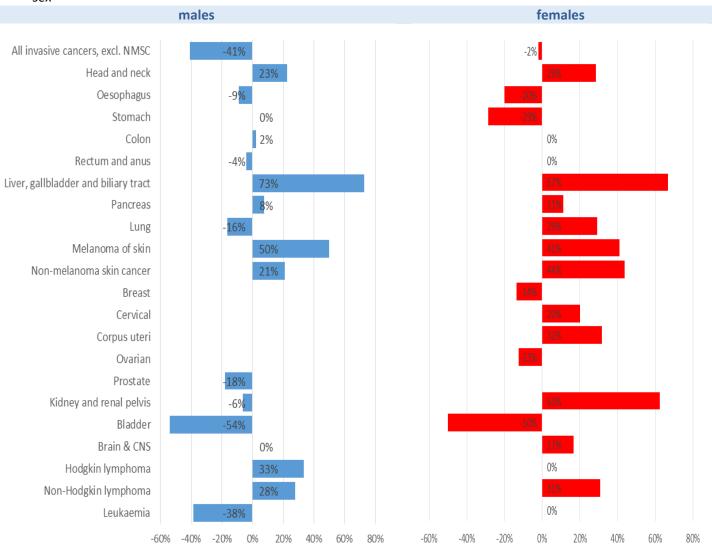


Figure 1.4. Median projected percentage increase in age-standardised rates 2015-2045, by cancer site and sex

While the demographic method assumes that the age-standardised rates remain steady from 2015 to 2045, the HD and Nordpred methods assume that recent trends in age-standardised rates will continue into the future. As a result, the age-standardised rate of the median of the projected models, in most cases, will change over time.

Figure 1.4, above, shows the percentage change in age-standardised rates between 2015 and 2045, based on the median of all six models used. For all cancers combined, excluding non-melanoma skin cancer, the median projection showed a decrease of 41% for males and a much more modest 2% decrease for females.

For individual sites, for males, the median projected change in age-standardised rates ranged from a 54% decrease (bladder cancer) to a 73% increase (liver, gallbladder and biliary tract). For females,



the median projected change in age-standardised rates ranged from a 50% decrease (bladder cancer) to a 67% increase (liver, gallbladder and biliary tract).

For both males and females, bladder cancer had the biggest fall in the age-standardised rate in the median of the projections models, while liver, gallbladder and biliary tract cancer had the biggest increase.

2. INTRODUCTION

In order to plan for the needs of future cancer patients, and to ensure that sufficient cancer services are available, the number of cases of cancer in the years to come need to be estimated. Adequate health service planning, especially with regard to staff training and recruitment, and the development of long-term capital projects, requires estimates of the likely future burden of cancer.

This is the fourth set of projections of future cancer cases produced by the National Cancer Registry Ireland (NCRI), following on from reports in 2006, 2008 and 2014 [6-8]. The NCRI will continue to produce projections reports on a five yearly basis, to ensure that up to date estimates are available to allow for future planning of health services.

The projections methods [1-5] used in this report are broadly in line with those used in the previous reports, with some modifications.

This report presents

- 1. Trends in cancer incidence rates over the period 1994 to 2015.
- Estimates of the future number of cancer cases and incidence rates, at five year intervals, from 2020 to 2045.

These estimates are presented for all cancer types combined, excluding non-melanoma skin cancers, and for 21 individual cancers or cancer groups. For each cancer site, estimates of future cases are calculated using six models (including a "demography only" model), with the median of these estimates also calculated.

The median projections are presented for each cancer or cancer group, as well as the demographic projections. The latter are calculated assuming the risk of cancer stays the same as in the period 2011-2015, and the changes in projected number of cases are down solely to changes in the population. The highest and lowest projections figures are also presented.

Estimates of the future number of cancer directed treatments (surgery, radiotherapy and chemotherapy) that patients will undergo are also presented up to 2045, based on treatment rates in the period 2011-2015, applied to the demographic projection case numbers.



3. PROJECTIONS BY CANCER SITE

Incidence trends from 1994 to 2015, and projections of incidence (case numbers and agestandardised rates) to 2045, are presented in detail below for each cancer site or grouping of sites. Trends and projections are shown separately by sex, but for each site a textual summary is given of overall projected changes in case numbers between 2015 and 2045.

The figures showing projections highlight *projections based on demographic changes* (blue line) and the *median of all six projections* (yellow line), with the full range of available projections in grey (highlighting the variability of projections, reflecting different model assumptions).

Further details (projected case numbers for all six models for each cancer site) are tabulated in Appendices 1-4 of this report. This allows assessment of which specific models give the lowest and highest projections of case numbers.

Patterns of variation that may result from different trends in age-standardised rates (up to 2015) include:

- For cancers where age-standardised rates have been relatively stable in recent years, the median
 projection of case numbers will generally be quite similar to the demographic projection, as the
 median projection is heavily influenced by the four HD models, which reflect the most recent trend
 in rates (if this differs significantly from the longer-term trend).
- Where rates show a recent trend of decline, the demographic model will tend to give a higher projection of case numbers than the median projection, because the demographic model applies average (rather than declining) 2011-2015 rates to future populations.
- Conversely, where rates show a recent trend of increase, the demographic model will tend to give a lower projection of case numbers than the median projection.
- Where rates have shown an overall increase between 1994 and 2015, but with a recent slowing down in rate of increase, the Nordpred model will generally give the highest projection of case numbers, as it does not take short-term changes in trend into account.
- Where rates show both long-term and recent increases in trend, the demographic model will generally give the lowest projection of case numbers, potentially underestimating future case numbers.
- Where rates show both long-term and recent decreases in trend, the demographic model will generally give the highest projection of case numbers, potentially overestimating future case numbers.

All invasive cancers combined, excluding non-melanoma skin cancer

males females 600 450 400 500 350 rate age-standardised rate 400 300 age-standardised 250 300 Observed Observed 200 ••••• Fitted ••••• Fitted 150 200 100 100 50 0 0 1994 1995 666 2000 2001 2003 2003 2005 2005 2005 2007 2010 2011 2012 2013 2013 2014 2015 1994 966 1997 1998 1999 2000 2001 2002 2003 2003 2003 2005 2009 2009 2009 2011 2011 2011 2013 2013 2013 014 997 366 20.05 396 Estimated annual percentage change (95% CI) Estimated annual percentage change (95% CI) 1994-2011 1.3 (1.2, 1.5)1994-2010 1.2 (0.9, 1.4)2011-2015 -1.8 (-3.2, -0.5) 2010-2015 0.0 (-1.0, 1.0)

Figure 3.1. All invasive cancers combined, excluding NMSC; age-standardised incidence rates 1994-2015

Trends in incidence rates 1994-2015

Between 1994 and 2011, age-standardised rates for all cancers combined (excluding NMSC) increased significantly for males by, on average, 1.3% per year, followed by a significant decline of 1.8% per year between 2011 and 2015. For females the pattern was similar, though less marked, with the rates increasing significantly from 1994 to 2010, by 1.2% on average per year, before flattening out, with no change in the age-standardised rates in from 2010 to 2015.

Summary of incidence projections to 2045 (Figures 3.2a-3.2b)

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of all cancers combined (excluding NMSC) are projected to increase in males from 11,460 in 2015 to 24,160 in 2045 (+111%) and in females from 10,240 in 2015 to 18,840 in 2045 (+84%) - a doubling of numbers overall (+98%).
- The median of all projections suggests an increase for females, to 18,470 cases in 2045 (+80% from 2015), very similar to the demographic projection, but a much more modest increase for males, to 13,500 in 2045 (+18% from 2015) a 47% increase for both sexes combined.
- However, the full range of projections is wide, especially for males, and implies substantial uncertainty regarding the male projections in particular; this reflects evidence of a recent downturn in male incidence rates, less marked in females, which not all models may capture.

Figure 3.2a. Projections: All invasive cancers, excluding NMSC C00-43, C45-96

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

c	lemographic projection	model median estimate
		projection
2020	21%	6%
2025	39%	11%
2030	58%	15%
2035	76%	17%
2040	95%	18%
2045	111%	18%
projected	I numbers of	cases are

shown in the graph on the right

MALES - ASR

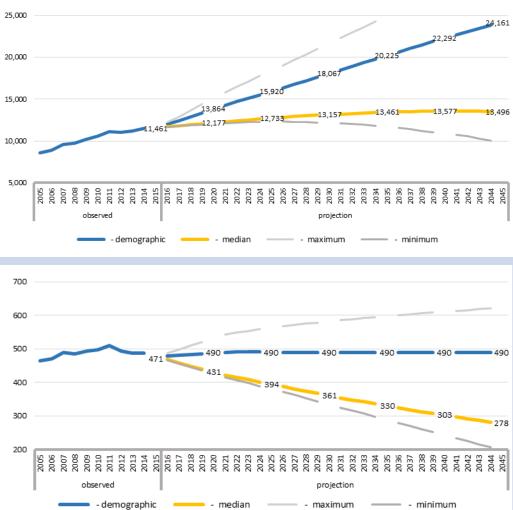
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
2020	-8%
2025	-16%
2030	-23%
2035	-30%
2040	-36%
2045	-41%

projected age-standardised

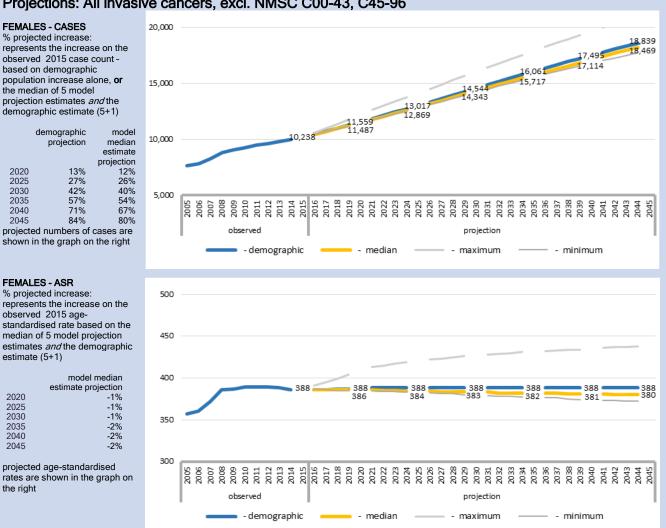
the right

rates are shown in the graph on



- Age-standardised rates have declined for males since 2011 for all cancers combined (excluding NMSC). As a result the median projection of case numbers is lower than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (490 cases per 100,000).
- The median age-standardised rate, on the other hand, is projected to decrease by 41% by 2045, giving a rate of 278 per 100,000.

Figure 3.2b. Projections: All invasive cancers, excl. NMSC C00-43, C45-96



- Age-standardised rates have stayed approximately the same for females since 2010 for all cancers combined (excluding NMSC). As a result the median projection of case numbers is almost identical to the demographic projection which assumes the average 2011-2015 agestandardised rates apply into the future (388 cases per 100,000).
- The median age-standardised rate is projected to decrease by 2% by 2045, giving a rate of 380 per 100,000.

Cancer of the head and neck

Trends in incidence rates 1994-2015

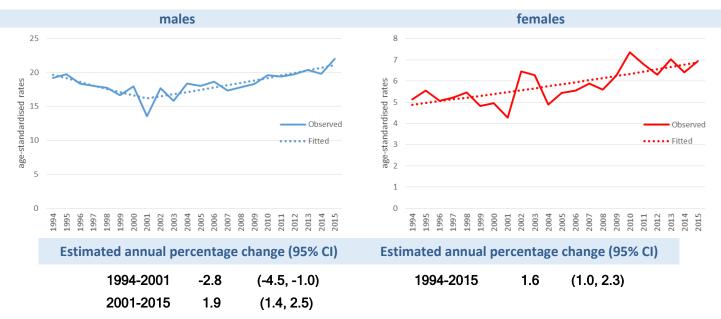


Figure 3.3. Cancer of the head and neck; age-standardised incidence rates 1994-2015

Between 1994 and 2001, age-standardised rates of head and neck cancer declined significantly for males by, on average, 2.8% per year, followed by a significant increase of 1.9% per year between 2001 and 2015. For females the age-standardised rates increased significantly from 1994 to 2015 by, on average, 1.6% per year.

Summary of incidence projections to 2045

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of head and neck cancer are projected to increase in males from 518 in 2015 to 857 in 2045 (+65%) and in females from 182 in 2015 to 304 in 2045 (+67%) - an increase to 1,161 overall (+66%).
- The median of all projections suggest a much greater increase than the demographic projection for both males and females. For males, cases are projected to increase to 1,184 in 2045 (+129%), and for females cases are projected to increase to 407 (+124%) - a 127% increase (to 1,591 cases) for both sexes combined.

Figure 3.4a. Projections: Head and neck C01-14, C30-32

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic projection	model median estimate
		projection
2020	6%	17%
2025	19%	39%
2030	33%	62%
2035	45%	85%
2040	56%	108%
2045	65%	129%

projected numbers of cases are shown in the graph on the right

MALES - ASR

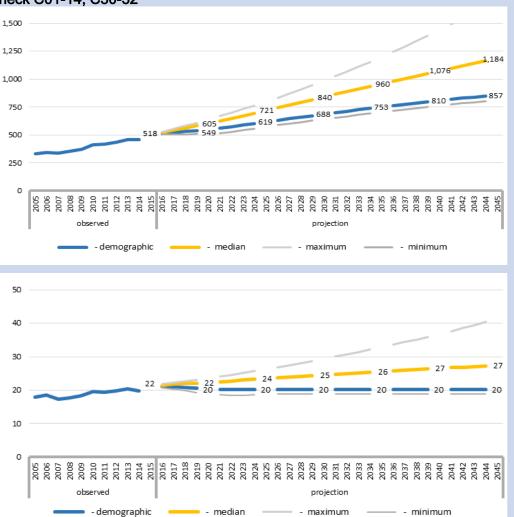
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

2020 2025	model median estimate projection 1% 7%
2030	12%
2035	17%
2040	21%
2045	25%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates increased steadily for males since 2001 for head and neck cancer. As a result the median projection of case numbers is higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (20 cases per 100,000).
- The median age-standardised rates, on the other hand, are projected to increase by 25% by 2045, giving a rate of 27 per 100,000.

Figure 3.4b. Projections: Head and neck C01-14, C30-32

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	6%	16%
2025	19%	37%
2030	32%	61%
2035	45%	83%
2040	57%	103%
2045	67%	124%

projected numbers of cases are shown in the graph on the right

FEMALES - ASR

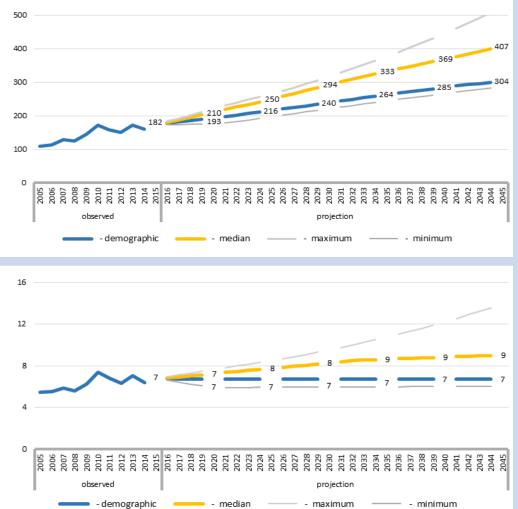
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median
	estimate projection
2020	5%
2025	12%
2030	19%
2035	25%
2040	27%
2045	30%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates increased for females between 1994 and 2015 for head and neck cancer. As a result the median projection is higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (7 cases per 100,000).
- The median age-standardised rates, on the other hand, are projected to increase by 30% by 2045, giving a rate of 9 per 100,000.

Cancer of the oesophagus

Trends in incidence rates 1994-2015

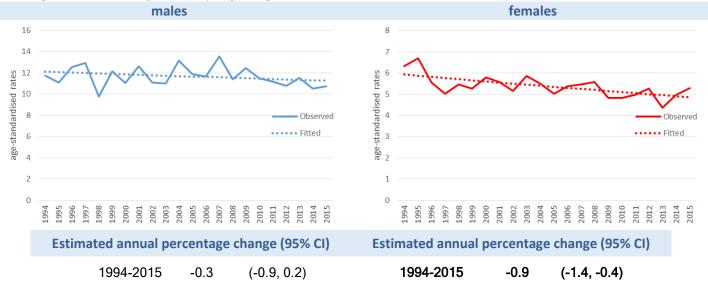


Figure 3.5. Cancer of the oesophagus; age-standardised incidence rates 1994-2015

Between 1994 and 2005, age-standardised rates of oesophageal cancer declined, nonsignificantly, for males by, on average, 0.3% per year. For females the age-standardised rates decreased marginally, but significantly, from 1994 to 2015 by0.9% on average per year.

Summary of incidence projections to 2045

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of oesophageal cancer are projected to increase in males from 259 in 2015 to 558 in 2045 (+115%) and in females from 157 in 2015 to 328 in 2045 (+109%) - an increase to 886 overall (+113%).
- Compared to the demographic projection, the median projection suggests a similar increase for males, but a more modest increase for females. For males, cases are projected to increase to 527 in 2045 (+103%), and for females cases are projected to increase to 251 (+60%) - an 87% increase (to 778 cases) for both sexes combined.

Figure 3.6a. Projections: Oesophagus C15

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	21%	23%
2025	39%	40%
2030	59%	57%
2035	79%	74%
2040	98%	90%
2045	116%	103%

projected numbers of cases are shown in the graph on the right

MALES - ASR

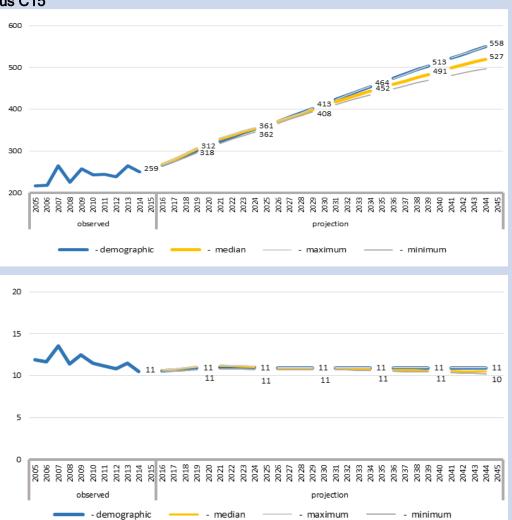
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

2020	model median estimate projection 4%
2020	2%
2030	1%
2035	0%
2040	-1%
2045	-3%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates have decreased steadily for males since 1994 for oesophageal cancer. As a result the median projection is lower than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (11 cases per 100,000).
- The median age-standardised rates, on the other hand, are projected to decrease by 3% by 2045, giving a rate of 10 per 100,000.

Figure 3.6b. Projections: Oesophagus C15

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	8%	3%
2025	26%	14%
2030	46%	26%
2035	67%	39%
2040	88%	50%
2045	109%	60%

projected numbers of cases are shown in the graph on the right

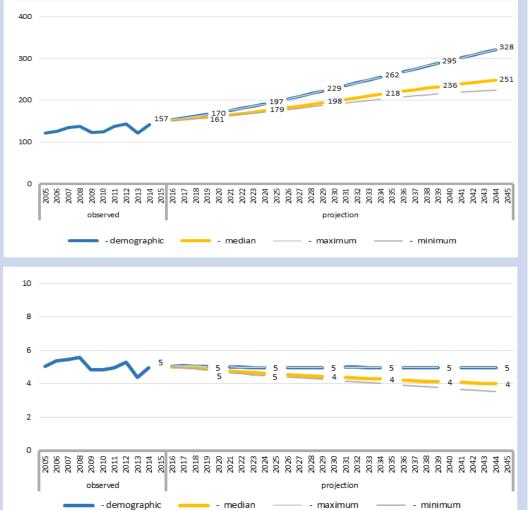
FEMALES - ASR

% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates have decreased steadily for females since 1994 for oesophageal cancer. As a result the median projection is lower than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (5 cases per 100,000).
- The median age-standardised rates, on the other hand, are projected to decrease by 25% by 2045, giving a rate of 4 per 100,000.

Cancer of the stomach

Trends in incidence rates 1994-2015

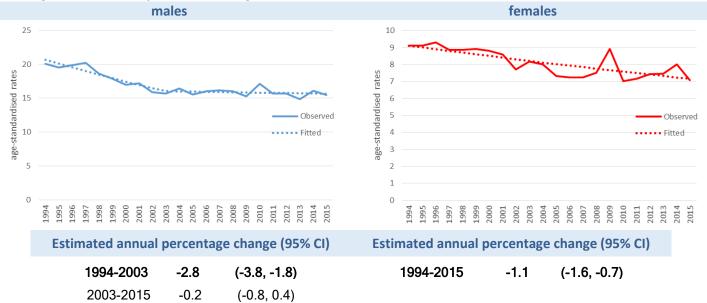


Figure 3.7. Cancer of the stomach; age-standardised incidence rates 1994-2015

Between 1994 and 2003, age-standardised rates of stomach cancer declined significantly for males by, on average, 2.8% per year. Since 2003, rates have been almost unchanged, declining non-significantly by 0.2% on average per year. For females the age-standardised rates decreased steadily and significantly from 1994 to 2015, by 1.1% on average per year.

Summary of incidence projections to 2045

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of stomach cancer are projected to increase in males from 387 in 2015 to 842 in 2045 (+118%) and in females from 204 in 2015 to 452 in 2045 (+122%) - an increase to 1,294 overall (+119%).
- Compared to the demographic projection, the median projection suggests a similar increase for males, but a more modest increase for females. For males, cases are projected to increase to 798 in 2045 (+106%), and for females, cases are projected to increase to 309 (+51%) - an 87% increase (to 1,107 cases) for both sexes combined.

Figure 3.8a. Projections: Stomach C16

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic projection	model median estimate
		projection
		projection
2020	18%	17%
2025	37%	35%
2030	58%	54%
2035	78%	72%
2040	98%	90%
2045	118%	106%

projected numbers of cases are shown in the graph on the right

MALES - ASR

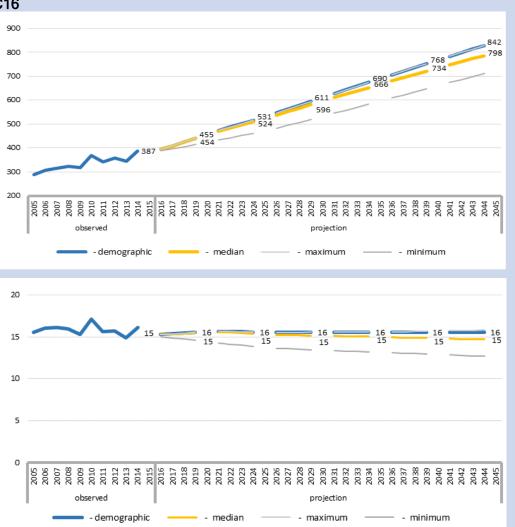
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median
	estimate projection
2020	0%
2025	-1%
2030	-2%
2035	-3%
2040	-4%
2045	-5%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates of stomach cancer in males have decreased significantly between 1994 and 2003. Since 2003 rates have decreased marginally. As a result the median projection is slightly lower than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (16 cases per 100,000).
- The median age-standardised rates, on the other hand, are projected to decrease by 5% by 2045, giving a rate of 15 per 100,000.

Figure 3.8b. Projections: Stomach C16

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic projection	model median estimate
		projection
2020	20%	10%
2025	38%	20%
2030	59%	30%
2035	80%	39%
2040	101%	46%
2045	122%	52%

projected numbers of cases are shown in the graph on the right

FEMALES - ASR

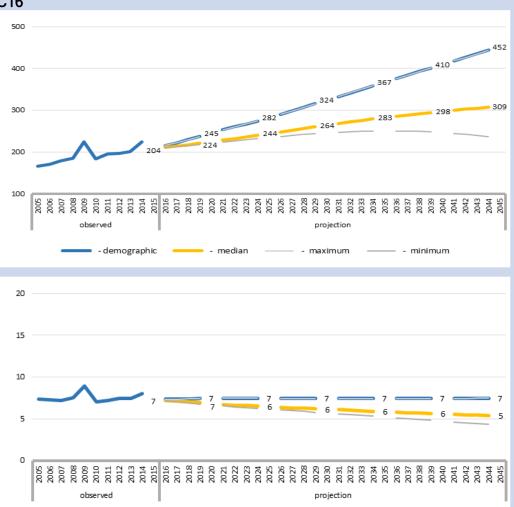
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
2020	-4%
2025	-9%
2030	-13%
2035	-17%
2040	-21%
2045	-24%

projected age-standardised

the right

rates are shown in the graph on



Demographic projection: the average annual rate for the period 2011-2015 was applied to the projected population up to 2045

- demographic

Age-standardised rates of stomach cancer in females have decreased significantly since 1994. As a result the median projection is substantially lower than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (7 cases per 100,000).

- median

maximum

- minimum

The median age-standardised rates, on the other hand, are projected to decrease by 24% by 2045, giving a rate of 5 per 100,000.

Cancer of the colon

Trends in incidence rates 1994-2015

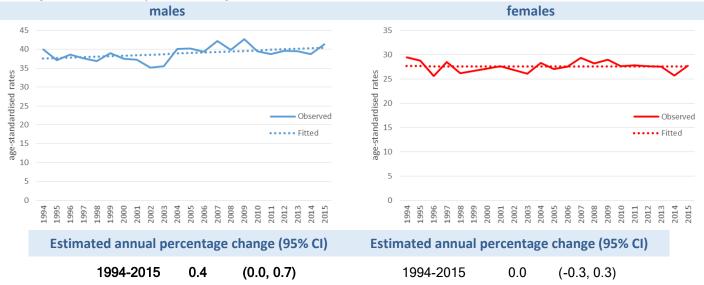


Figure 3.9. Cancer of the colon; age-standardised incidence rates 1994-2015

- Between 1994 and 2015, age-standardised rates of colon cancer increased marginally, but significantly, for males by, on average, 0.4% per year. For females average age-standardised rates showed no significant change between 1994 and 2015.
- The BowelScreen programme, to screen for colorectal cancer in the Irish population aged 55-74, was launched in October 2012. An initial increase in cancer incidence rates, followed by a decline, is generally expected when a new screening programme is introduced. This expected change in incidence has not occurred to date, and there were no changes in trends over the period 1994 to 2015 for either males or females.

Summary of incidence projections to 2045

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of colon cancer are projected to increase in males from 1,021 in 2015 to 2,196 in 2045 (+115%) and in females from 776 in 2015 to 1,617 in 2045 (+108%) - an increase to 3,813 overall (+112%).
- Compared to the demographic projection, the median projection suggests a similar increase for both males and females. For males, cases are projected to increase to 2,338 in 2045 (+129%), and for females, cases are projected to increase to 1,662 (+114%) - a 123% increase (to 4,000 cases) for both sexes combined.

25

Figure 3.10a. Projections: Colon C18

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	13%	16%
2025	33%	37%
2030	53%	59%
2035	75%	83%
2040	95%	106%
2045	115%	129%

projected numbers of cases are shown in the graph on the right

MALES - ASR

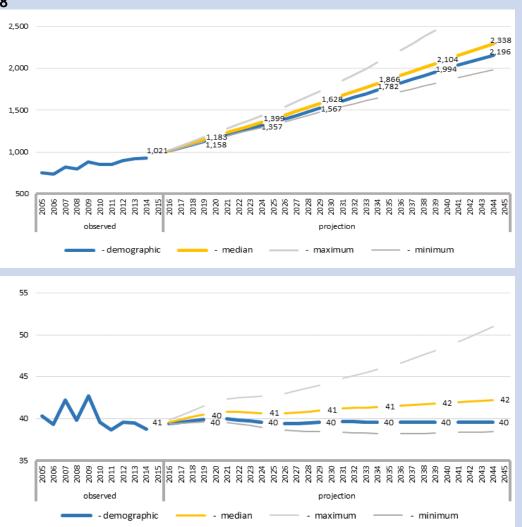
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
2020	-2%
2025	-2%
2030	-2%
2035	0%
2040	1%
2045	2%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates of colon cancer in males have increased steadily since 1994. As a result the median projection is slightly higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (40 cases per 100,000).
- The median age-standardised rates are projected to increase by 5% by 2045, giving a rate of 42 per 100,000.

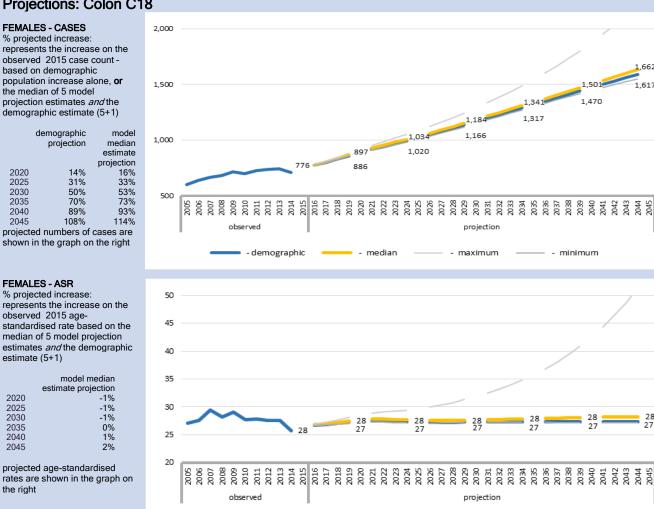
Figure 3.10b. **Projections: Colon C18**

2020

2025

2030

2035 2040 2045



Demographic projection: the average annual rate for the period 2011-2015 was applied to the projected population up to 2045

- demographic

Age-standardised rates of colon cancer in females have not changed significantly since \geq 1994. As a result the median projection is almost identical to the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (27 cases per 100,000).

- median

maximum

 \triangleright The median age-standardised rates are projected to increase by 2% by 2045, giving a rate of 28 per 100,000.

662

1.617

28 27

minimum

Cancer of the rectum and anus

Trends in incidence rates 1994-2015

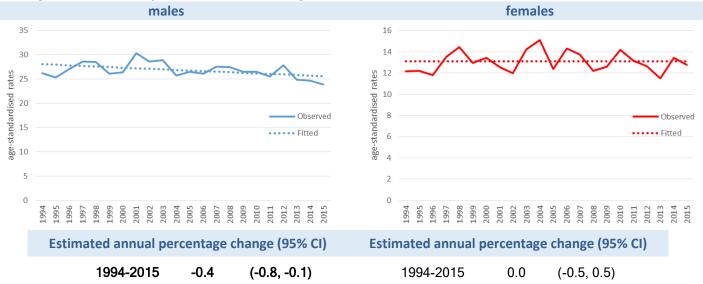


Figure 3.11. Cancer of the rectum and anus; age-standardised incidence rates 1994-2015

- Between 1994 and 2015, age-standardised rates of cancer of the rectum and anus decreased marginally but significantly for males by, on average, 0.4% per year. For females the age-standardised rates showed no trend from 1994 to 2015.
- The BowelScreen programme, to screen for colorectal cancer in the Irish population aged 55-74, was launched in October 2012. An initial increase in cancer incidence rates, followed by a decline, is generally expected when a new screening programme is introduced. This expected change in incidence has not occurred to date, and there were no changes in trends over the period 1994 to 2015 for either males or females.

Summary of incidence projections to 2045

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of cancer of the rectum and anus are projected to increase in males from 585 in 2015 to 1,250 in 2045 (+114%) and in females from 338 in 2015 to 656 in 2045 (+94%) - an increase to 1,906 for males and females combined (+107%).
- Compared to the demographic projection, the median projection suggests a similar increase for females, and a smaller increase for males. For males, cases are projected to increase to 1,126 in 2045 (+92%), and for females, cases are projected to increase to 667 (+97%) - a 94% increase (to 1,793 cases) for both sexes combined.

Figure 3.12a. Projections: Rectum and anus C19-C21

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	23%	22%
2025	42%	39%
2030	61%	54%
2035	80%	69%
2040	97%	81%
2045	114%	93%

projected numbers of cases are shown in the graph on the right

MALES - ASR

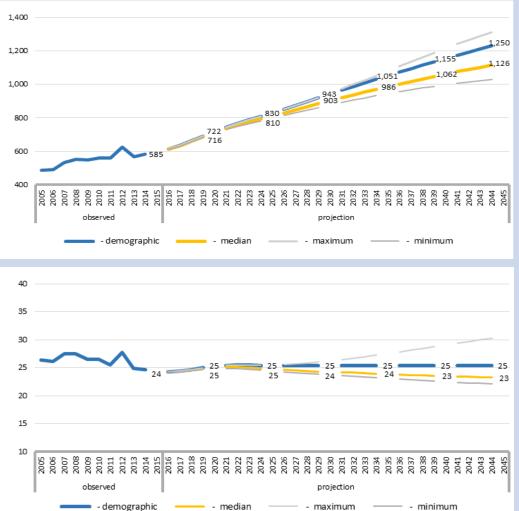
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

2020 2025 2030 2035 2040	model median estimate projection 5% 3% 1% 0% -2%
2040 2045	-2% -3%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates of cancer of the rectum and anus in males have decreased steadily since 1994. As a result the median projection is slightly lower than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (25 cases per 100,000).
- The median age-standardised rates are projected to decrease by 3% by 2045, giving a rate of 23 per 100,000.

Figure 3.12b. Projections: Rectum and anus C19-C21

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic projection	model median estimate
		projection
2020	15%	18%
2025	30%	34%
2030	47%	51%
2035	64%	68%
2040	80%	83%
2045	94%	97%

projected numbers of cases are shown in the graph on the right

FEMALES - ASR

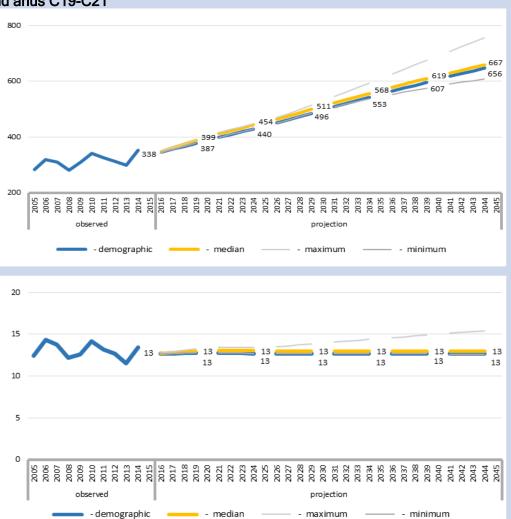
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
2020	2%
2025	2%
2030	2%
2035	1%
2040	1%
2045	1%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates of cancer of the rectum and anus in females have not changed since 1994. As a result the median projection is almost identical to the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (13 cases per 100,000).
- The median age-standardised rates are projected to decrease by 1% by 2045, also giving a rate of 13 per 100,000.

Cancer of the liver, gallbladder and biliary tract

Trends in incidence rates 1994-2015

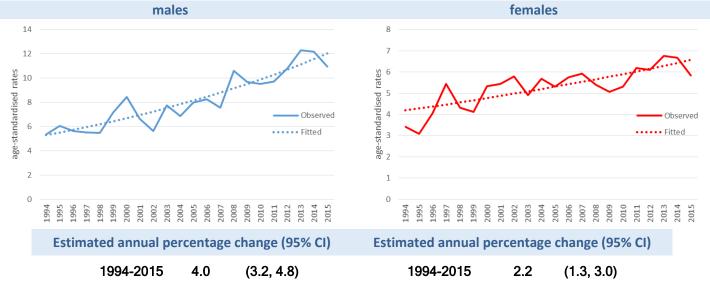
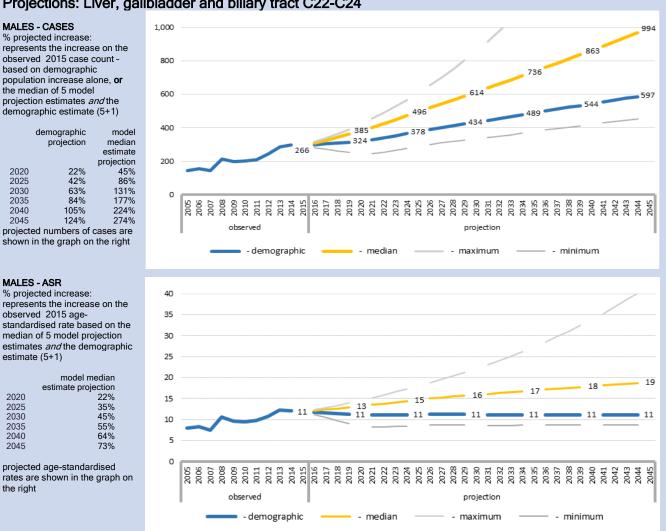


Figure 3.13. Cancer of the liver, gallbladder and biliary tract; age-standardised incidence rates 1994-2015

Between 1994 and 2015, age-standardised rates of cancer of the liver, gallbladder and biliary tract increased significantly for males by, on average, 4.0% per year. For females the agestandardised rates also increased significantly, by 2.2% on average from 1994 to 2015.

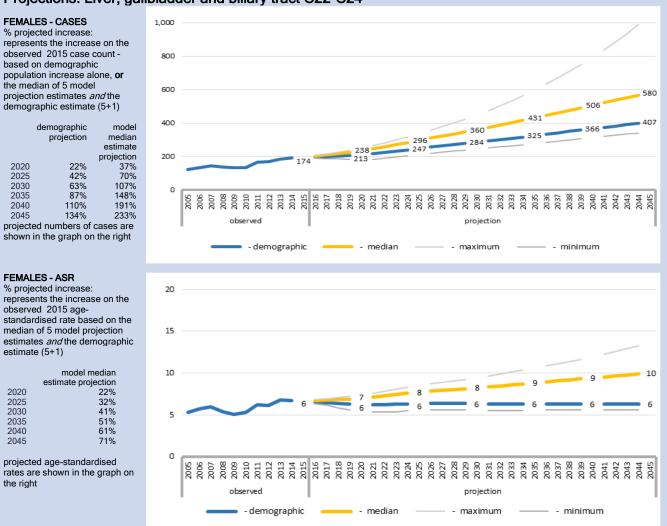
- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of cancer of the liver, gallbladder and biliary tract are projected to increase in males from 266 in 2015 to 597 in 2045 (+124%) and in females from 174 in 2015 to 407 in 2045 (+134%) - an increase to 1,004 for males and females combined (+128%).
- Compared to the demographic projection, the median projection suggests a much greater increase for males and females. For males, cases are projected to increase to 994 in 2045 (+274%), and for females, cases are projected to increase to 580 (+233%) - overall a 258% increase (to 1,574 cases) for both sexes combined.

Figure 3.14a. Projections: Liver, gallbladder and biliary tract C22-C24



- Age-standardised rates of cancer of the liver, gallbladder and biliary tract in males have increased significantly since 1994. This leads to most models projecting higher incidence than the demographic model. The median projection is considerably higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (11 cases per 100,000).
- The median age-standardised rates are projected to increase by 73% by 2045, giving a rate of 19 per 100,000.

Figure 3.14b. Projections: Liver, gallbladder and biliary tract C22-C24



- Age-standardised rates of cancer of the liver, gallbladder and biliary tract in females have increased significantly since 1994. This leads to most models projecting higher incidence than the demographic model. The median projection is considerably higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (6 cases per 100,000).
- The median age-standardised rates are projected to increase by 71% by 2045, giving a rate of 10 per 100,000.

Cancer of the pancreas

Trends in incidence rates 1994-2015

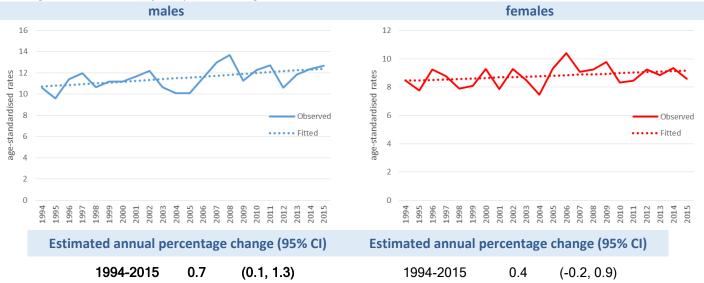


Figure 3.15. Cancer of the pancreas; age-standardised incidence rates 1994-2015

Between 1994 and 2015, age-standardised rates of pancreatic cancer increased significantly for males by, on average, 0.7% per year. For females the average age-standardised rates increased non-significantly, by 0.4% from 1994-2015.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of pancreatic cancer are projected to increase in males from 312 in 2015 to 657 in 2045 (+111%) and in females from 252 in 2015 to 576 in 2045 (+129%) - an increase to 1,233 for males and females combined (+119%).
- Compared to the demographic projection, the median projection suggests a greater increase for males and females. For males, cases are projected to increase to 761 in 2045 (+144%), and for females, cases are projected to increase to 618 (+145%) - overall a 145% increase (to 1,379 cases) for both sexes combined.

Figure 3.16a. Projections: Pancreas C25

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

		demographic	model
		projection	median
			estimate
			projection
2	020	12%	18%
2	025	31%	41%
2	030	51%	66%
2	035	72%	92%
2	040	92%	118%
2	045	111%	144%

projected numbers of cases are shown in the graph on the right

MALES - ASR

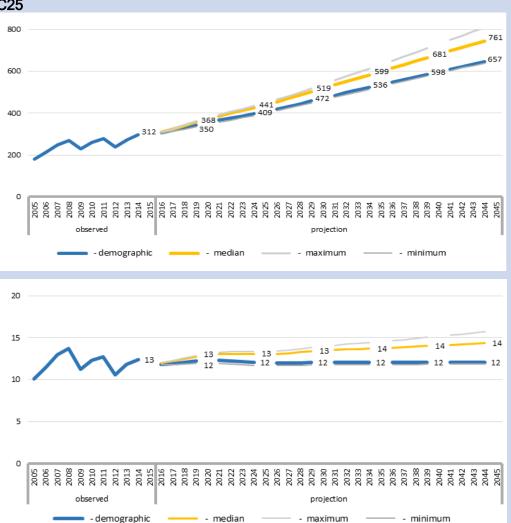
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
2020	0%
2025	3%
2030	6%
2035	8%
2040	11%
2045	14%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates of male pancreatic cancer have increased steadily since 1994. This leads to most models projecting higher incidence than the demographic model. The median projection is higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (12 cases per 100,000).
- The median age-standardised rates are projected to increase by 14% by 2045, giving a rate of 14 per 100,000.

Figure 3.16b. Projections: Pancreas C25

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic projection	model median
	projection	estimate
		projection
2020	19%	23%
2025	38%	43%
2030	60%	67%
2035	83%	93%
2040	106%	119%
2045	129%	145%
and the set.		

projected numbers of cases are shown in the graph on the right

FEMALES - ASR

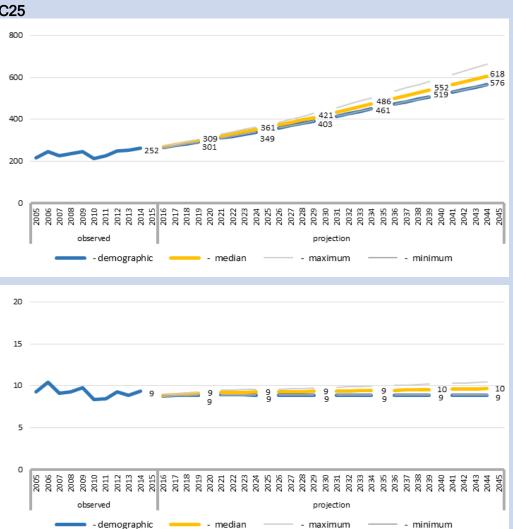
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
	countate projection
2020	6%
2025	8%
2030	9%
2035	10%
2040	11%
2045	13%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates of female pancreatic cancer have increased slightly since 1994. The median projection is higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (9 cases per 100,000).
- The median age-standardised rates are projected to increase by 13% by 2045, giving a rate of 10 per 100,000.

Cancer of the lung

Trends in incidence rates 1994-2015

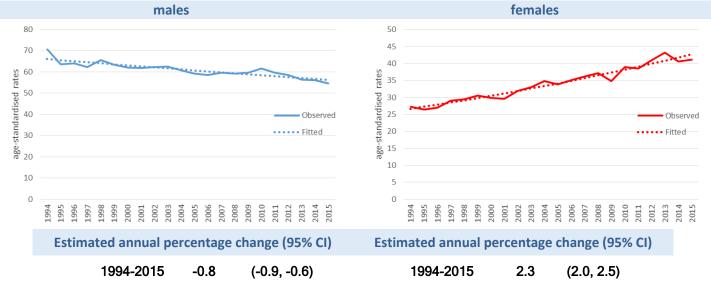


Figure 3.17. Cancer of the lung; age-standardised incidence rates 1994-2015

Between 1994 and 2015, age-standardised rates of lung cancer decreased significantly for males by, on average, 0.8% per year. In contrast, for females the average age-standardised rates increased significantly by 2.3% in the same period.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of lung cancer are projected to increase in males from 1,356 in 2015 to 3,137 in 2045 (+131%) and in females from 1,130 in 2015 to 2,313 in 2045 (+105%) - an increase to 5,450 for males and females combined (+119%).
- Compared to the demographic projection, the median projection suggests a much smaller increase for males and a much larger increase for females. For males, cases are projected to increase to 2,633 in 2045 (+94%), and for females, cases are projected to increase to 3,124 (+176%). Overall this would amount to a 132% increase (to 5,757 cases) for both sexes combined - slightly higher than the overall demographic projection, but with a much higher preponderance of female cases than in the latter.

Figure 3.18a. Projections: Lung C34

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	23%	18%
2025	44%	33%
2030	67%	48%
2035	89%	65%
2040	111%	80%
2045	131%	94%

projected numbers of cases are shown in the graph on the right

MALES - ASR

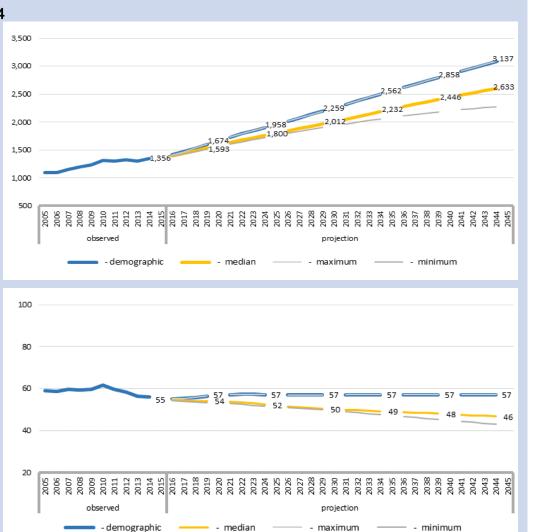
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
2020	-1%
2025	-5%
2030	-8%
2035	-10%
2040	-12%
2045	-15%

projected age-standardised

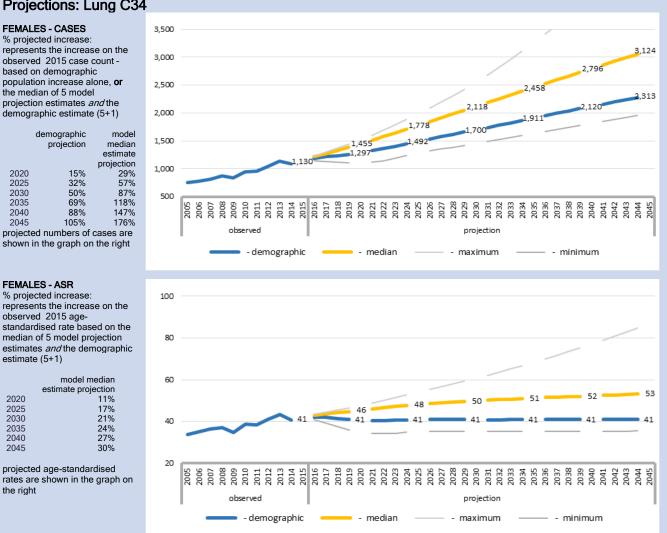
the right

rates are shown in the graph on



- Age-standardised rates of male lung cancer have decreased significantly since 1994. As a result, the median projection is lower than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (57 cases per 100,000).
- The median age-standardised rates are projected to decrease by 15% by 2045, giving a rate of 46 per 100,000.

Figure 3.18b. Projections: Lung C34



- Unlike for males, age-standardised rates of female lung cancer have increased substantially and significantly since 1994.
- For females, the median projection is higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (41 cases per 100,000).
- The median age-standardised rates are projected to increase by 30% by 2045, giving a rate of 53 per 100,000.

Melanoma of the skin

Trends in incidence rates 1994-2015

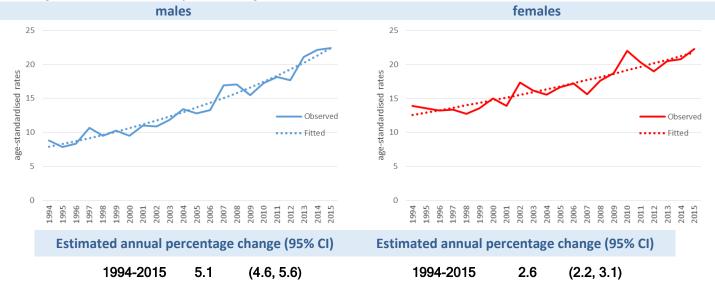


Figure 3.19. Melanoma of the skin; age-standardised incidence rates 1994-2015

Between 1994 and 2015, age-standardised rates of melanoma of the skin increased significantly for males by, on average, 5.1% per year. For females, the average agestandardised rates also increased significantly, by 2.6% from 1994-2015.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of melanoma of the skin are projected to increase in males from 546 in 2015 to 960 in 2045 (+76%) and in females from 584 in 2015 to 925 in 2045 (+58%) - an increase to 1,885 for males and females combined (+67%).
- Compared to the demographic projection, the median projection suggests a much greater increase for males and females. For males, cases are projected to increase to 1,678 in 2045 (+207%), and for females, cases are projected to increase to 1,400 (+140%) - a 172% increase (to 3,078 cases) for both sexes combined.

Figure 3.20a. Projections: Melanoma of skin C43

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	4%	28%
2025	18%	63%
2030	33%	98%
2035	48%	133%
2040	62%	169%
2045	76%	207%

projected numbers of cases are shown in the graph on the right

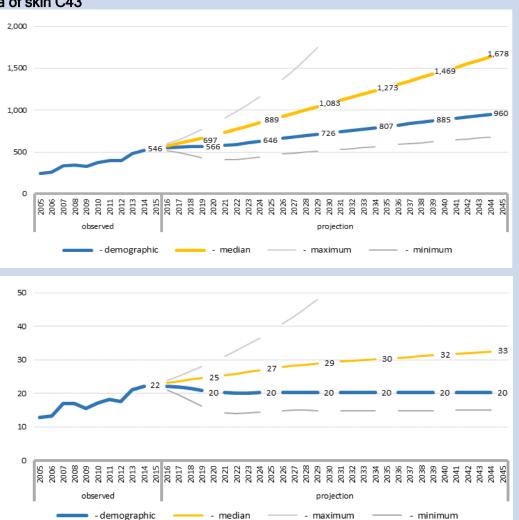
MALES - ASR

% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates of male melanoma of the skin have increased very substantially since 1994. As a result, the median projection is much higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (20 cases per 100,000).
- The median age-standardised rates are projected to increase by 46% by 2045, giving a rate of 33 per 100,000.

Figure 3.20b. Projections: Melanoma of skin C43

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	2%	19%
2025	13%	42%
2030	25%	66%
2035	36%	90%
2040	48%	114%
2045	58%	140%

projected numbers of cases are shown in the graph on the right

FEMALES - ASR

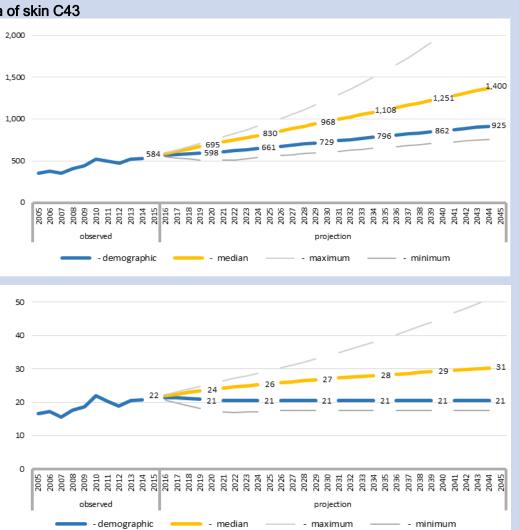
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
2020	7%
2025	15%
2030	21%
2035	27%
2040	32%
2045	37%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates of female melanoma of the skin have increased substantially since 1994. As a result, the median projection is higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (21 cases per 100,000).
- The median age-standardised rates are projected to increase by 37% by 2045, giving a rate of 31 per 100,000.

Non-melanoma skin cancer

Trends in incidence rates 1994-2015

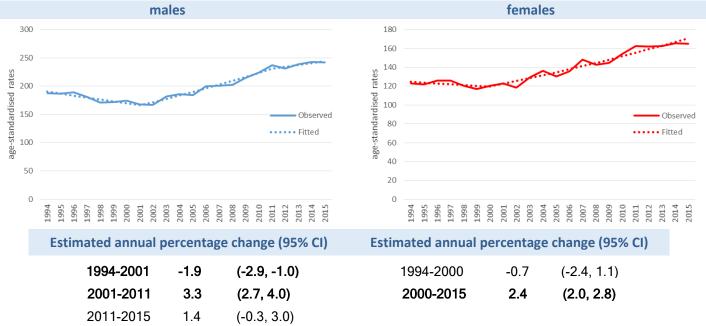


Figure 3.21. Non-melanoma skin cancer; age-standardised incidence rates 1994-2015

Between 1994 and 2001, average age-standardised rates of non-melanoma skin cancer decreased significantly for males, before increasing significantly between 2001 and 2011. Since 2011, the average rates have increased non-significantly, by 1.4% per year. For females, the average age-standardised rates decreased non-significantly between 1994 and 2000 before increasing significantly by an average of 2.4% per year between 2000 and 2015.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of non-melanoma skin cancer are projected to increase in males from 6,004 in 2015 to 13,058 in 2045 (+117%) and in females from 4,669 in 2015 to 9,320 in 2045 (+100%) - an increase to 22,378 for males and females combined (+110%).
- Compared to the demographic projection, the median projection suggests a much greater increase for males and females. For males, cases are projected to increase to 16,623 in 2045 (+177%), and for females, cases are projected to increase to 13,503 (+189%) - an increase to 30,126 cases (+182%) for both sexes combined.

Figure 3.22a. Projections: Non-melanoma skin cancer C44



% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	16%	25%
2025	36%	54%
2030	56%	83%
2035	77%	113%
2040	97%	144%
2045	117%	177%

projected numbers of cases are shown in the graph on the right

MALES - ASR

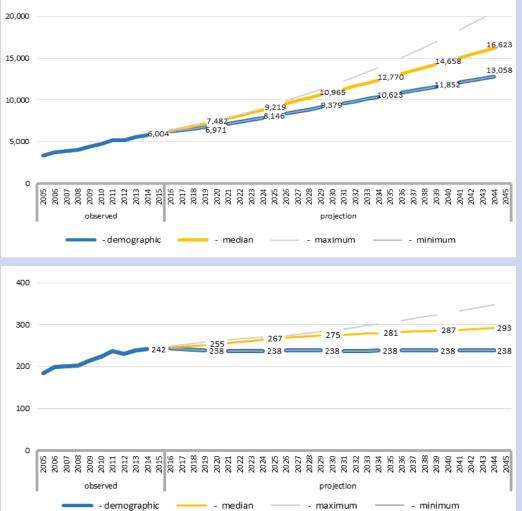
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
2020	5%
2025	10%
2030	14%
2035	16%
2040	19%
2045	21%

projected age-standardised

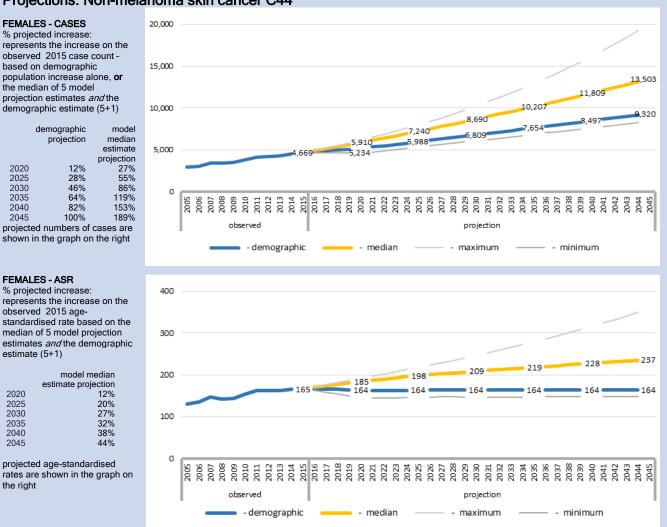
the right

rates are shown in the graph on



- Age-standardised rates of male non-melanoma skin cancer have increased, nonsignificantly, since 2011. As a result, the median projection is higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (238 cases per 100,000).
- The median age-standardised rates are projected to increase by 21% by 2045, giving a rate of 293 per 100,000.

Figure 3.22b. Projections: Non-melanoma skin cancer C44



- Age-standardised rates of female non-melanoma skin cancer have increased significantly since 2000. As a result, the median projection is higher than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (164 cases per 100,000).
- The median age-standardised rates are projected to increase by 44% by 2045, giving a rate of 237 per 100,000.

Female breast cancer

Trends in incidence rates 1994-2015

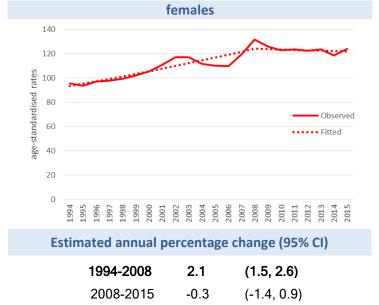


Figure 3.23. Female breast cancer; age-standardised incidence rates 1994-2015

- Between 1994 and 2008, age-standardised rates of female breast cancer increased significantly, on average, by 2.1% per year, before decreasing marginally (and nonsignificantly) by 0.3% per year between 2008 and 2015.
- The breast screening programme, BreastCheck, commenced screening in the North Eastern and Midland areas in 2000, and began screening nationally in 2007. These two time points coincide with observed increases in incidence rates, followed by declines in rates. This pattern is generally observed when screening is introduced.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of female breast cancer are projected to increase from 3,106 in 2015 to 5,050 in 2045 (+63%).
- Compared to the demographic projection, the median projection suggests a smaller increase.
 Cases are projected to increase to 4,650 in 2045 (+50%).

Figure 3.24. Projections: Breast cancer C50

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	11%	6%
2025	23%	16%
2030	35%	26%
2035	45%	35%
2040	54%	42%
2045	63%	50%

projected numbers of cases are shown in the graph on the right

FEMALES - ASR

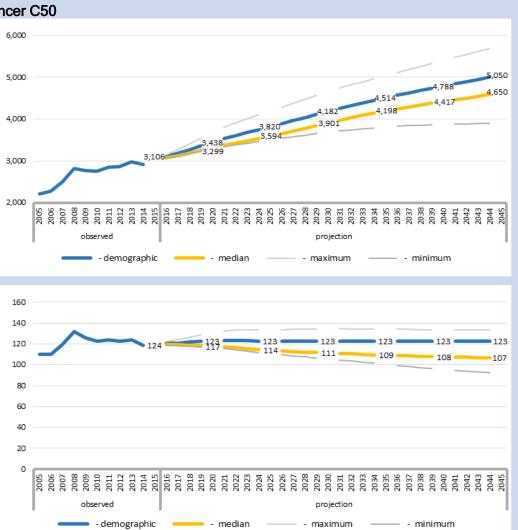
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
	esumate projection
2020	-5%
2025	-8%
2030	-10%
2035	-12%
2040	-13%
2045	-14%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates of female breast cancer increased significantly between 1994 and 2008. Since then rates have begun to decline. The median projection is lower than the demographic projection which assumes the average 2011-2015 age-standardised rates apply into the future (123 cases per 100,000).
- The median age-standardised rates are projected to decrease by 14% by 2045, giving a rate of 107 per 100,000.

Cancer of the cervix uteri

Trends in incidence rates 1994-2015

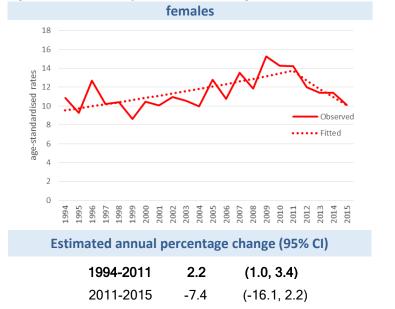


Figure 3.25. Cancer of the cervix uteri; age-standardised incidence rates 1994-2015

- Between 1994 and 2011, age-standardised rates of cervical cancer increased significantly, on average, by 2.2% per year, before decreasing sharply, though non-significantly, by 7.4% per year between 2011 and 2015.
- The decline in rates since 2011 is likely to be in part the result of the population-based screening programme, CervicalCheck, which was launched in 2008. The incidence rate of cervical cancer increased sharply in 2009 and has declined since then, with a steep drop beginning in 2011. HPV testing and vaccination may also lead to significant changes in incidence rates in the future.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of cervical cancer are projected to increase from 251 in 2015 to 392 in 2045 (+56%).
- > The median projection suggests the same increase to 392 cases in 2045 (+56%).

Figure 3.26. Projections: Cervical cancer C53

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 4 model projection estimates *and* the demographic estimate (4+1)*

d	emographic	model
	projection	median
		estimate
		projection
2020	24%	-13%
2025	30%	-8%
2030	37%	24%
2035	44%	44%
2040	51%	51%
2045	56%	56%
projected	numbers of	cases are

shown in the graph on the right * The HD2 model was excluded from this analysis

FEMALES - ASR

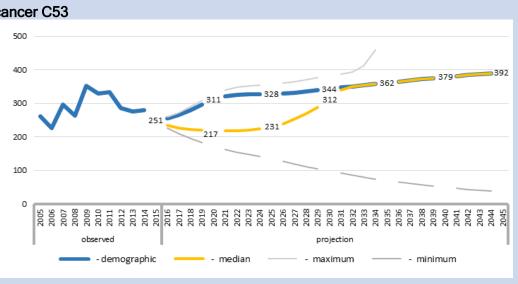
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 4 model projection estimates *and* the demographic estimate (4+1)*

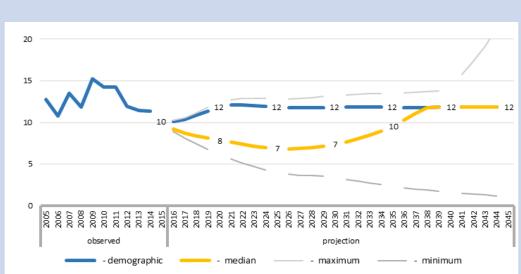
2020 2025 2030 2035 2040 2045	model median estimate projection -23% -32% -27% -5% 17% 17%
2035	-5%
2040	17%

projected age-standardised rates are shown in the graph on the right

* The HD2 model was excluded from this analysis

- The median of all model projections of cervical cancer starts out lower than the demographic projection, before increasing and mirroring the demographic projection from around 2030. The different models produce very different projections of future incidence. HD model 2 was excluded from this analysis as it projected that incidence of cervical cancer would become negative by 2030.
- Although the demographic projection suggests a rise in age-standardised rate between 2015 and 2020, this is because it uses the average rate for 2011-2015 (higher than the 2015 figure because rates declined from 2011 onwards.
- The median age-standardised rates are likewise projected to increase to 12 per 100,000 by 2045, but this would represent no change compared with the 2011-2015 average rate.





Cancer of the corpus uteri

Trends in incidence rates 1994-2015

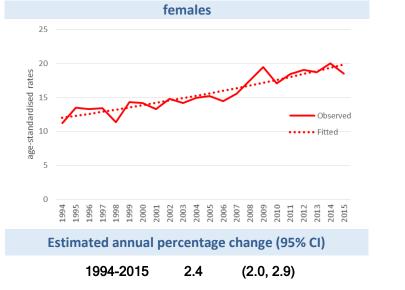


Figure 3.27. Cancer of the corpus uteri; age-standardised incidence rates 1994-2015

Between 1994 and 2015, age-standardised rates of cancer of the corpus uteri increased significantly, on average, by 2.4% per year.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of cancer of the corpus uteri are projected to increase from 460 in 2015 to 846 in 2045 (+84%).
- > The median projection suggests a greater increase to 1,139 cases in 2045 (+148%).

Figure 3.28. Projections: Cancer of the corpus uteri C54



% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	18%	31%
2025	33%	56%
2030	47%	80%
2035	62%	104%
2040	75%	127%
2045	84%	148%

projected numbers of cases are shown in the graph on the right

FEMALES - ASR

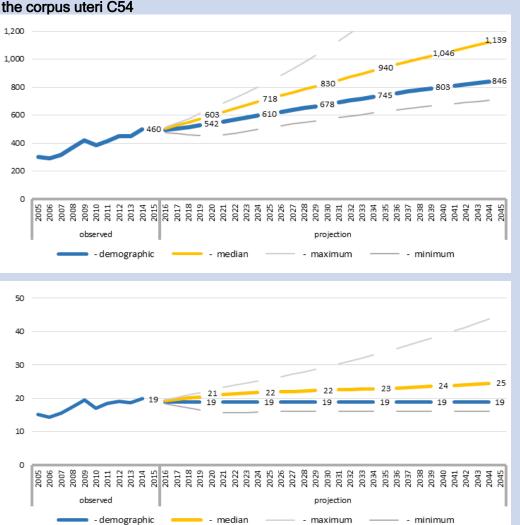
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

2020 2025 2030 2035 2040	model median estimate projection 13% 18% 21% 24% 28% 29%
2045	33%

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates of cancer of the corpus uteri have increased significantly since 1994. The median projection is higher than the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (19 cases per 100,000).
- The median age-standardised rates are projected to increase by 33% by 2045, giving a rate of 25 per 100,000.

Cancer of the ovary

Trends in incidence rates 1994-2015

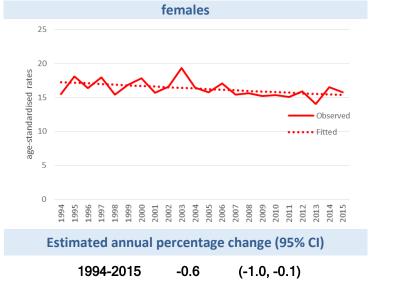


Figure 3.29. Cancer of the ovary; age-standardised incidence rates 1994-2015

➢ Between 1994 and 2015, age-standardised rates of cancer of the ovary decreased significantly, on average, by 0.6% per year.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of cancer of the ovary are projected to increase from 407 in 2015 to 731 in 2045 (+80%).
- > The median projection suggests a smaller increase to 682 cases in 2045 (+68%).

Figure 3.30. Projections: Ovarian cancer C56

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	12%	9%
2025	26%	21%
2030	41%	33%
2035	55%	45%
2040	68%	57%
2045	80%	67%

projected numbers of cases are shown in the graph on the right

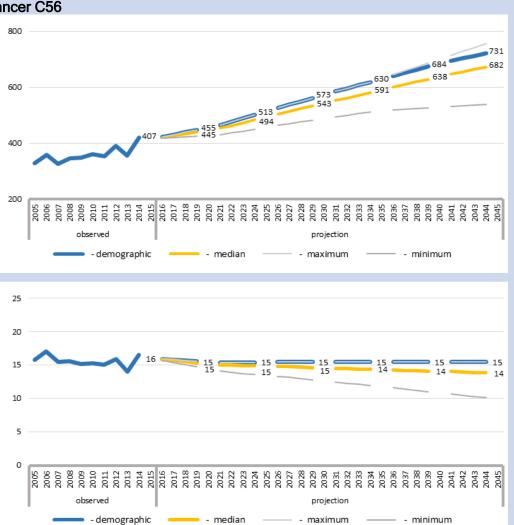
FEMALES - ASR

% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

projected age-standardised

the right

rates are shown in the graph on



- Age-standardised rates of ovarian cancer have declined steadily since 1994. As a result, the median projection is lower than the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (15 cases per 100,000).
- The median age-standardised rates are projected to decrease by 12% by 2045, giving a rate of 14 per 100,000.

Cancer of the prostate

Trends in incidence rates 1994-2015

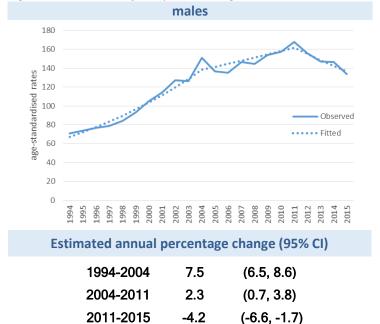


Figure 3.31. Cancer of the prostate; age-standardised incidence rates 1994-2015

- Between 1994 and 2004, age-standardised rates of prostate cancer increased sharply and significantly, on average, by 7.5% per year. Between 2004 and 2011 the average rates continued to increase significantly, but at a slower rate, by 2.3% per year. Since 2011 rates have declined significantly by an average of 4.2% per year.
- The trends in incidence of prostate cancer seen have been affected by major increases in PSA testing of asymptomatic men (in effect, opportunistic screening) since the mid-1990s [11]. The initial increase in rates, and recent decline, are probably in line with what might be expected.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of prostate cancer are projected to increase from 3,214 in 2015 to 6,869 in 2045 (+114%).
- The median projection on the other hand suggests there will be almost no change in the number of cases, with a projection of 3,203 cases by 2045.

Figure 3.32. Projections: Prostate cancer C61

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 4 model projection estimates *and* the demographic estimate (4+1)*

c	lemographic	model
	projection	median
		estimate
		projection
2020	30%	-10%
2025	48%	-20%
2030	66%	-27%
2035	84%	-30%
2040	100%	-24%
2045	114%	0%
projected	I numbers of o	cases are

shown in the graph on the right * The HD2 model was excluded from this analysis

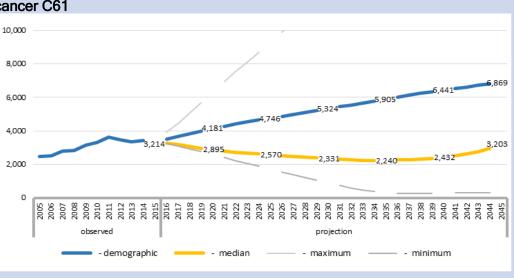
MALES - ASR

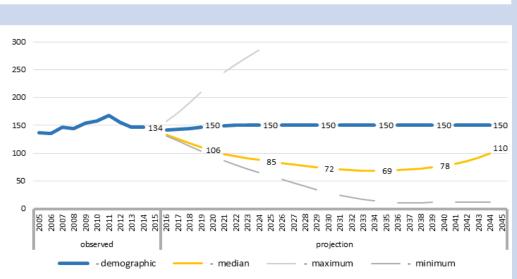
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 4 model projection estimates *and* the demographic estimate (4+1)*

2020 2025 2030 2035 2040	model median estimate projection -21% -36% -46% -49% -42%
	10/0

projected age-standardised rates are shown in the graph on the right

* The HD2 model was excluded from this analysis

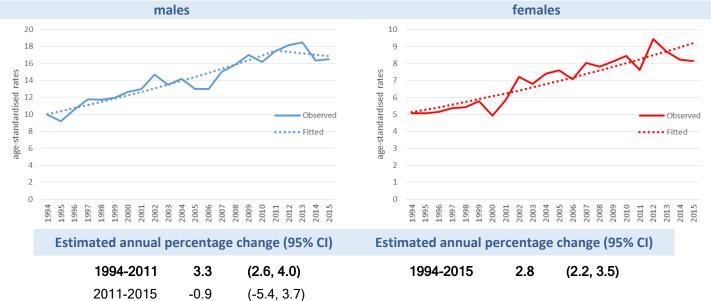




- The full range of projections derived from all models is extremely wide the widest of any cancer presented here. HD model 2 was excluded from this analysis as it projected that incidence of prostate cancer would become negative by 2035.
- Changes in trends, reflecting PSA testing, in combination with age-specific variation, and differing assumptions or constraints of different models, makes the HD and Nordpred models difficult to interpret and contributes to the large differences between the minimum and maximum model estimates, and to the U-shaped curve for the median model estimates.

Cancer of the kidney and renal pelvis

Trends in incidence rates 1994-2015

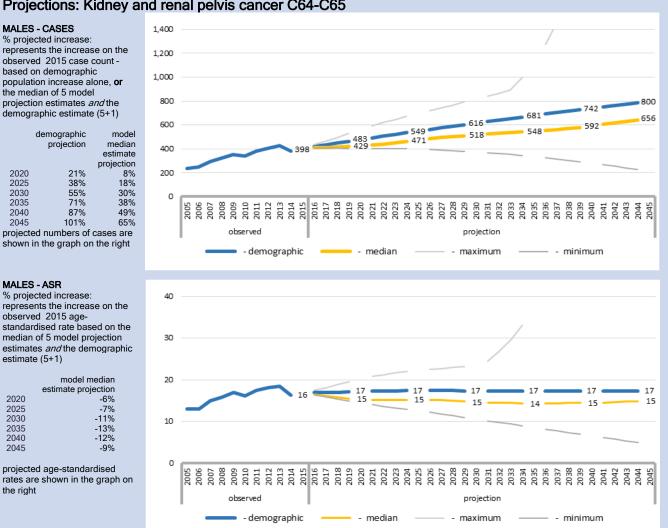




Between 1994 and 2011, age-standardised rates of cancer of the kidney and renal pelvis increased significantly for males by, on average, 3.3% per year, before declining nonsignificantly by an average of 0.9% per year between 2011 and 2015. For females, the average age-standardised rates increased significantly by 2.8% from 1994-2015.

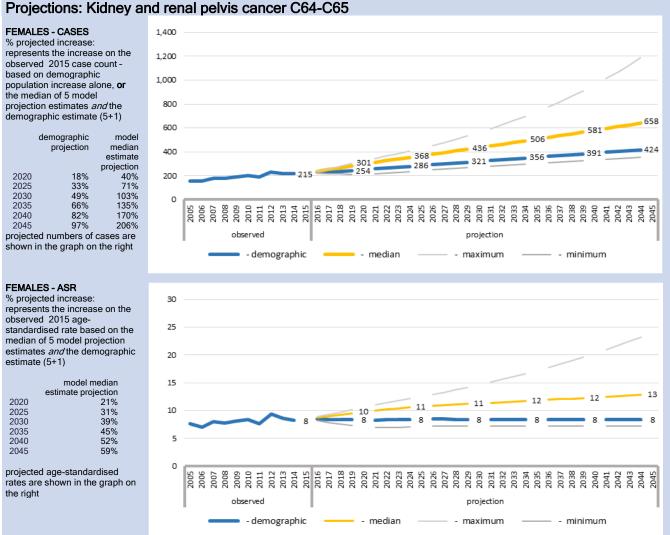
- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of kidney and renal pelvis cancer are projected to increase in males from 398 in 2015 to 800 in 2045 (+101%) and in females from 215 in 2015 to 424 in 2045 (+97%) - an increase to 1,224 for males and females combined (+100%).
- Compared to the demographic projection, the median projection suggests a more modest increase for males, and much greater increase for females. For males, cases are projected to increase to 656 in 2045 (+65%), and for females, cases are projected to increase to 658 (+206%) - a 114% increase for both sexes combined.

Figure 3.34a. Projections: Kidney and renal pelvis cancer C64-C65



- Age-standardised rates of cancer of the kidney and renal pelvis in males increased significantly between 1994 and 2011. Since 2011 rates have declined slightly. As a result, the median projection is slightly lower than the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (17 cases per 100,000).
- The median age-standardised rates are projected to decrease by 9% by 2045, giving a rate of 15 per 100,000.

Figure 3.34b.



- Age-standardised rates of cancer of the kidney and renal pelvis in females increased significantly since 1994. As a result, the median projection is much higher than the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (8 cases per 100,000).
- The median age-standardised rates are projected to increase by 59% by 2045, giving a rate of 13 per 100,000.

Cancer of the bladder

Trends in incidence rates 1994-2015

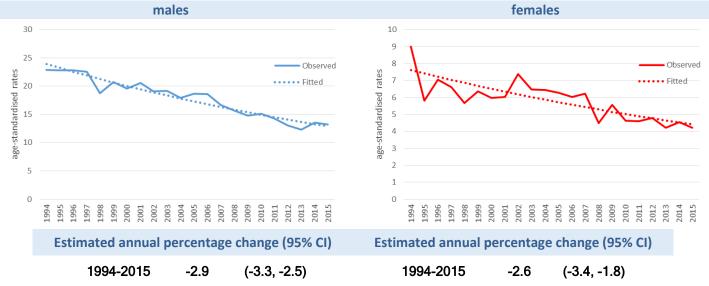


Figure 3.35. Cancer of the bladder; age-standardised incidence rates 1994-2015

- Between 1994 and 2015, age-standardised rates of bladder cancer decreased significantly for males and females by, on average, 2.9% per year and 2.6% per year, respectively.
- However, because of coding inconsistencies over time, these decreases are over-estimated, as some cases registered as invasive bladder cancer in earlier years would not be registrable as invasive cases based on more recent registration criteria. This has implications for projections and therefore results quoted should be treated with some caution.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of bladder cancer are projected to increase in males from 329 in 2015 to 814 in 2045 (+147%) and in females from 128 in 2015 to 305 in 2045 (+138%) - an increase to 1,119 for males and females combined (+145%).
- Compared to the demographic projection, the median projection suggests a much more modest increase for males and females. For males, cases are projected to increase to 438 in 2045 (+33%), and for females, cases are projected to increase to 177 (+38%) - a 35% increase (to 615 cases) for both sexes combined. However, because the long-term (1994-2015) decline in bladder cancer rates is exaggerated by coding issues, <u>median and nondemographic projections of case numbers are likely to be too low for this site.</u>

Figure 3.36a. Projections: Bladder cancer C67

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 4 model projection estimates *and* the demographic estimate (4+1)*

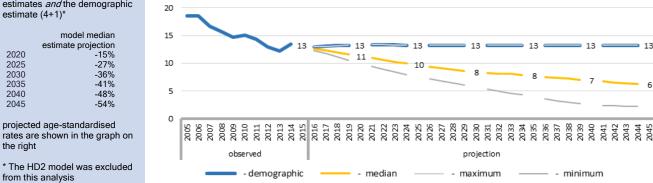
	demographic projection	model median estimate
		projection
2020	21%	1%
2025	44%	3%
2030	69%	12%
2035	96%	23%
2040	122%	29%
2045	147%	33%
projecte	ed numbers of	cases are

shown in the graph on the right * The HD2 model was excluded from this analysis

MALES - ASR % projected increase:

represents the increase on the observed 2015 agestandardised rate based on the median of 4 model projection estimates *and* the demographic estimate (4+1)* 30

25



- Age-standardised rates of male bladder cancer have declined significantly since 1994. As a result, the median projection is considerably lower than the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (13 cases per 100,000).
- HD model 2 was excluded from this analysis as it projected that incidence of bladder cancer would become negative by 2040.
- The median age-standardised rates are projected to decrease by 54% by 2045, giving a rate of 6 per 100,000.
- As noted earlier, the extent of the decline in bladder cancer rates between 1994 and 2015 has been over-estimated because of coding issues, thus the non-demographic projections (and median projection) are likely to underestimate future case numbers.

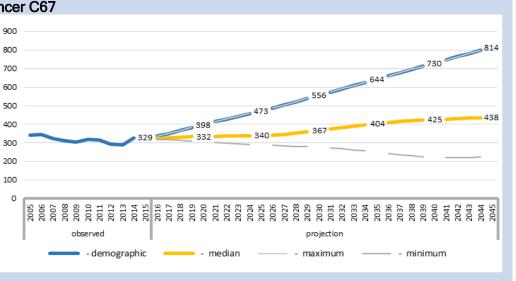


Figure 3.36b. Projections: Bladder cancer C67

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

model	demographic	
median	projection	
estimate		
projection		
7%	22%	2020
8%	42%	2025
12%	65%	2030
19%	90%	2035
29%	114%	2040
38%	138%	2045

projected numbers of cases are shown in the graph on the right

FEMALES - ASR

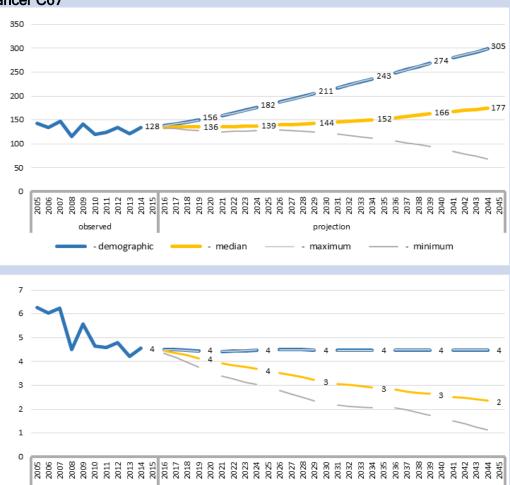
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
0000	
2020	-3%
2025	-15%
2030	-26%
2035	-32%
2040	-39%
2045	-45%

projected age-standardised

the right

rates are shown in the graph on



projection

maximum

- minimum

Demographic projection: the average annual rate for the period 2011-2015 was applied to the projected population up to 2045

- demographic

observed

Age-standardised rates of female bladder cancer have declined significantly since 1994. As a result, the median projection is considerably lower than the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (4 cases per 100,000).

- median

- The median age-standardised rates are projected to decrease by 45% by 2045, giving a rate of 2 per 100,000.
- As for males, over-estimation of the decline in bladder cancer rates between 1994 and 2015 because of coding issues makes it likely that the non-demographic projections (and median projection) of future case numbers are underestimates.

Cancer of the brain and central nervous system

Trends in incidence rates 1994-2015

males females 12 9 8 10 rates age-standardised rates 8 age-standardised 5 6 Observed Observed ••••• Fitted ••••• Fitted 4 2 0 0 2000 2001 2002 2003 2004 2005 2010 2011 2012 2000 2002 2003 2005 2005 2006 2008 2008 2009 2010 2011 2012 1994 997 998 666 2006 2007 2008 2009 2013 2014 2015 1994 1995 966 997 998 999 2001 2013 2014 3661 966 Estimated annual percentage change (95% CI) Estimated annual percentage change (95% CI) 0.4 1994-2015 -0.2 (-0.6, 0.2)1994-2015 (-0.3, 1.1)

Figure 3.37. Cancer of the brain and central nervous system; age-standardised incidence rates 1994-2015

Between 1994 and 2015, age-standardised rates of cancer of the brain and central nervous system did not change significantly for males or females. Rates decreased by, on average, 0.2% per year for males, and rates increased by 0.4% per year, for females.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of cancer of the brain and central nervous system are projected to increase in males from 220 in 2015 to 382 in 2045 (+74%) and in females from 152 in 2015 to 285 in 2045 (+88%) - an increase to 667 for males and females combined (+79%).
- As the rates have not changes significantly since 1994, the median projections are very similar to the demographic projections. For males, cases are projected to increase to 370 in 2045 (+68%), and for females, cases are projected to increase to 308 (+103%) an 82% increase (to 678 cases) for both sexes combined.

370

358

348

2038 2039 2040 2041 2042 2043 2043 2045

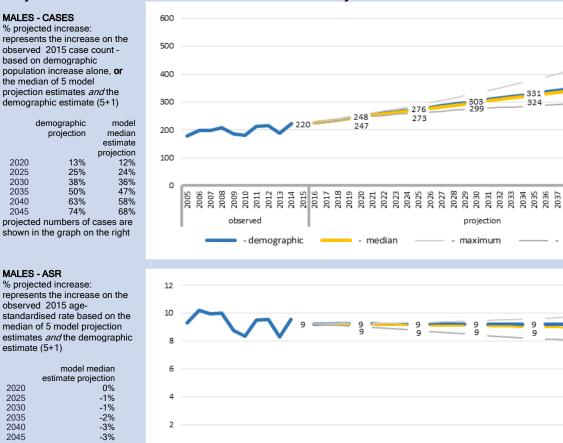
2038 2039 2040 2041 2042 2043 2043 2043

minimum

2045

- minimum

Figure 3.38a. Projections: Cancers of the brain & central nervous system C70-72



projected age-standardised rates are shown in the graph on the right

-3%

0

2005 2006 2007 2008

2009

observed

Demographic projection: the average annual rate for the period 2011-2015 was applied to the projected population up to 2045

2015

2014

2016 2017 2018 2019

2022 2023 2024

- median

2020 2021

2010 2011 2012 2013

- demographic

Age-standardised rates of cancer of the brain and central nervous system in males have \geq stayed approximately steady since 1994. As a result, the median projection is very similar to the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (9 cases per 100,000).

2025 2026 2027 2028 2029 2031 2031 2031

projection

maximum

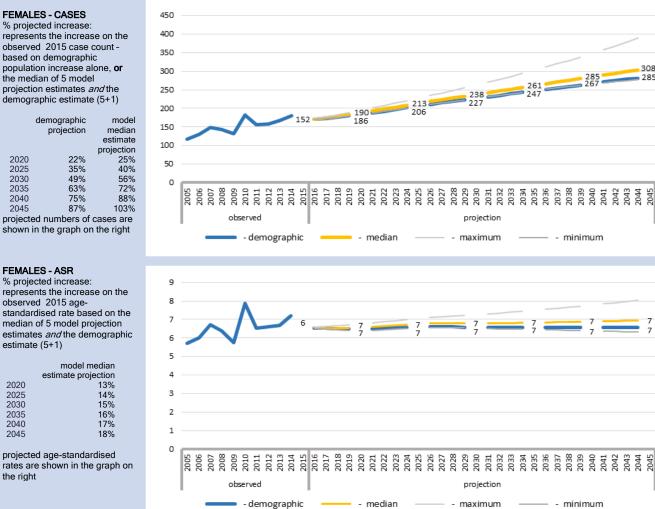
2033 2035 2036

2034

2037

 \triangleright The median age-standardised rates are projected to decrease by 3% by 2045, also giving a rate of 9 per 100,000.

Figure 3.38b. Projections: Cancers of the brain & central nervous system C70-72



- > Age-standardised rates of cancer of the brain and central nervous system in females have stayed fairly steady since 1994. As a result, the median projection is very similar to the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (7 cases per 100,000).
- \geq The median age-standardised rates are projected to increase by 18% by 2045, giving a rate of 7 per 100,000.

Hodgkin lymphoma

Trends in incidence rates 1994-2015

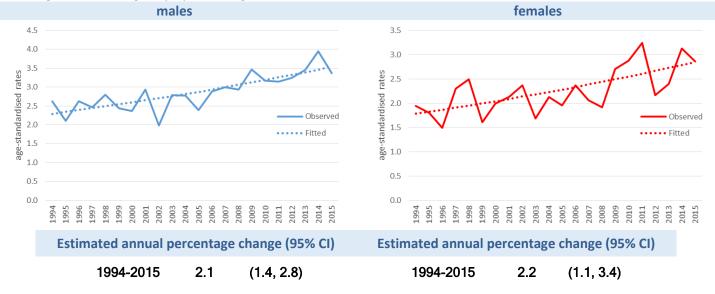


Figure 3.39. Hodgkin lymphoma; age-standardised incidence rates 1994-2015

Between 1994 and 2015, age-standardised rates of Hodgkin lymphoma increased significantly for males and females by, on average, 2.1% per year and 2.2% per year, respectively.

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of Hodgkin lymphoma are projected to increase in males from 79 in 2015 to 111 in 2045 (+41%) and in females from 68 in 2015 to 91 in 2045 (+34%) - an increase to 202 for males and females combined (+37%).
- Compared to the demographic projection, the median projection suggests a greater increase for males and females. For males, cases are projected to increase to 144 in 2045 (+82%), and for females, cases are projected to increase to 112 (+65%) - a 74% increase (to 256 cases) for both sexes combined.

Figure 3.40a. Projections: Hodgkin Lymphoma C81

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic projection	model median
		estimate
		projection
2020	9%	18%
2025	17%	32%
2030	25%	45%
2035	32%	58%
2040	36%	70%
2045	41%	82%

projected numbers of cases are shown in the graph on the right

MALES - ASR

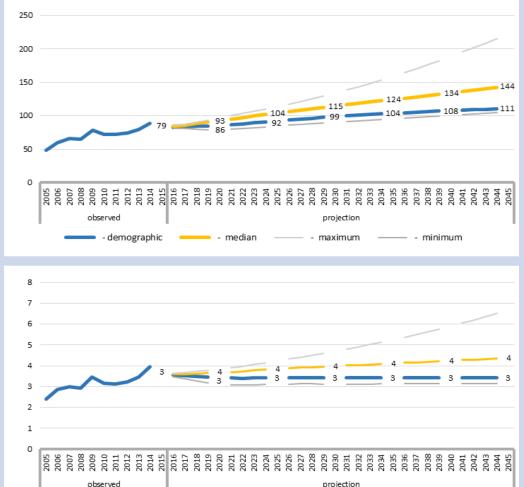
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
2020	9%
	9%
2025	14%
2030	18%
2035	22%
2040	26%
2045	30%

projected age-standardised

the right

rates are shown in the graph on



Demographic projection: the average annual rate for the period 2011-2015 was applied to the projected population up to 2045

- demographic

Age-standardised rates of Hodgkin lymphoma in males have increased significantly since 1994. As a result, the median projection is higher than the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (3 cases per 100,000).

- median

maximum

- minimum

The median age-standardised rates are projected to increase by 30% by 2045, giving a rate of 4 per 100,000.

Figure 3.40b. Projections: Hodgkin Lymphoma C81

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, or the median of 5 model projection estimates and the demographic estimate (5+1)

	demographic projection	model median estimate
		projection
2020	3%	10%
2025	12%	23%
2030	20%	35%
2035	26%	46%
2040	30%	55%
2045	34%	64%

projected numbers of cases are shown in the graph on the right

FEMALES - ASR

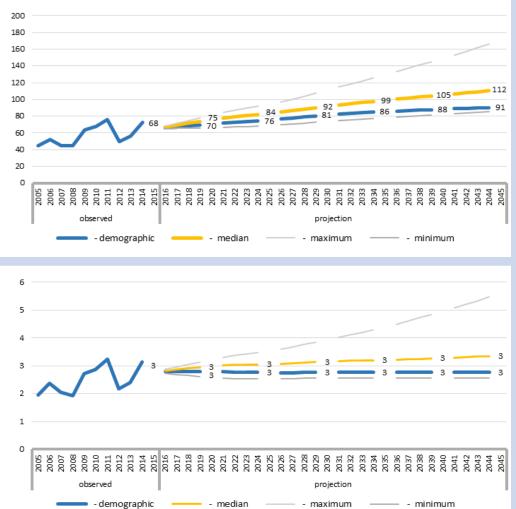
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates and the demographic estimate (5+1)

	model median estimate projection
2020	3%
2025	7%
2030	10%
2035	12%
2040	15%
2045	18%

projected age-standardised

the right

rates are shown in the graph on



maximum

- minimum

Demographic projection: the average annual rate for the period 2011-2015 was applied to the projected population up to 2045

- > Age-standardised rates of Hodgkin lymphoma in females have increased significantly since 1994. As a result, the median projection is higher than the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (3 cases per 100,000).
- \triangleright The median age-standardised rates are projected to increase by 18% by 2045, though the rate is projected to remain at 3 per 100,000.

Non-Hodgkin lymphoma

Trends in incidence rates 1994-2015

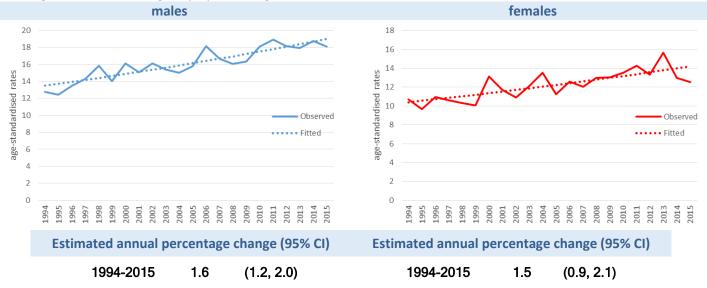


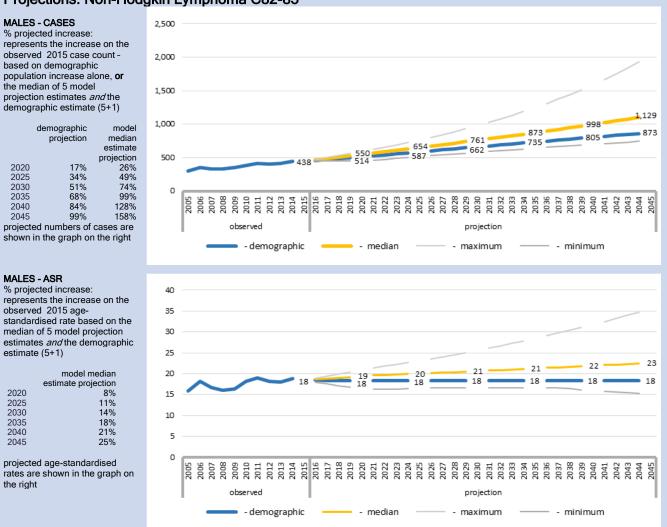
Figure 3.41. Non-Hodgkin lymphoma; age-standardised incidence rates 1994-2015

Between 1994 and 2015, age-standardised rates of non-Hodgkin lymphoma increased significantly for males and females by, on average, 1.6% per year and 1.5% per year, respectively.

Summary of incidence projections to 2045

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of non-Hodgkin lymphoma are projected to increase in males from 438 in 2015 to 873 in 2045 (+99%) and in females from 339 in 2015 to 699 in 2045 (+106%) - an increase to 1,572 for males and females combined (+102 %).
- Compared to the demographic projection, the median projection suggests a greater increase for males and females. For males, cases are projected to increase to 1,129 in 2045 (+158%), and for females, cases are projected to increase to 888 (+162%) - a 160% increase (to 2,017 cases) for both sexes combined.

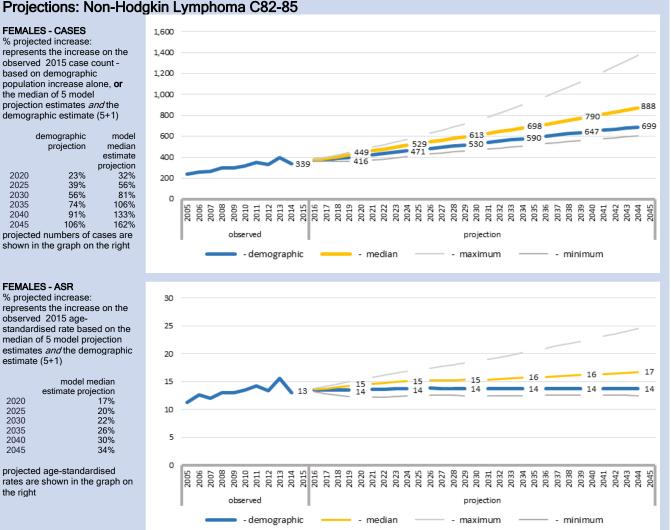
Figure 3.42a. Projections: Non-Hodgkin Lymphoma C82-85



Demographic projection: the average annual rate for the period 2011-2015 was applied to the projected population up to 2045

- Age-standardised rates of male non-Hodgkin lymphoma have increased significantly since 1994. As a result, the median projection is higher than the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (18 cases per 100,000).
- The median age-standardised rates are projected to increase by 25% by 2045, giving a rate of 23 per 100,000.

Figure 3.42b. Projections: Non-Hodgkin Lymphoma C82-85



Demographic projection: the average annual rate for the period 2011-2015 was applied to the projected population up to 2045

- Age-standardised rates of female non-Hodgkin lymphoma have increased significantly since 1994. As a result, the median projection is higher than the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (14 cases per 100,000).
- The median age-standardised rates are projected to increase by 34% by 2045, giving a rate of 17 per 100,000.



Leukaemia

Trends in incidence rates 1994-2015

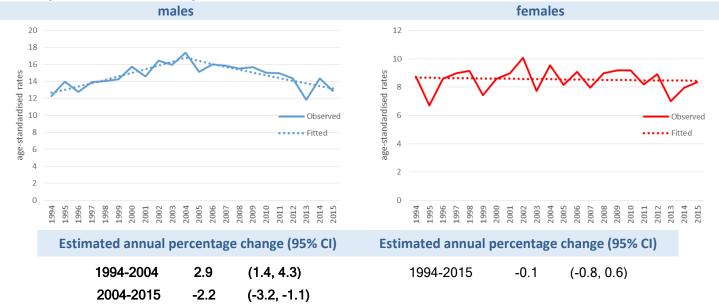


Figure 3.43. Leukaemia; age-standardised incidence rates 1994-2015

Between 1994 and 2004, age-standardised rates of leukaemia increased significantly for males by, on average, 2.9% per year. Since 2004, rates have been falling significantly, with a decline of 2.2% on average per year. For females average age-standardised rates remained more or less unchanged between 1994 and 2015.

Summary of incidence projections to 2045

- Assuming that the average age-standardised rates during 2011-2015 continue to apply ('demographic' projection), annual numbers of cases of leukaemia are projected to increase in males from 315 in 2015 to 681 in 2045 (+116%) and in females from 227 in 2015 to 399 in 2045 (+76%) - an increase to 1,080 overall (+99%).
- Compared to the demographic projection, the median projection suggests a much more modest increase for males. Cases are projected to increase to 369 in 2045 (+17%). For females, the median projection is very similar to the demographic projection. Median cases are projected to increase to 401 (+77%). Overall the median projections suggest a 42% increase (to 770 cases) for both sexes combined.

Figure 3.44a. Projections: Leukaemia C91-95

MALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone, **or** the median of 5 model projection estimates *and* the demographic estimate (5+1)

	demographic	model
	projection	median
		estimate
		projection
2020	22%	6%
2025	40%	10%
2030	59%	14%
2035	79%	16%
2040	98%	17%
2045	116%	17%

projected numbers of cases are shown in the graph on the right

MALES - ASR

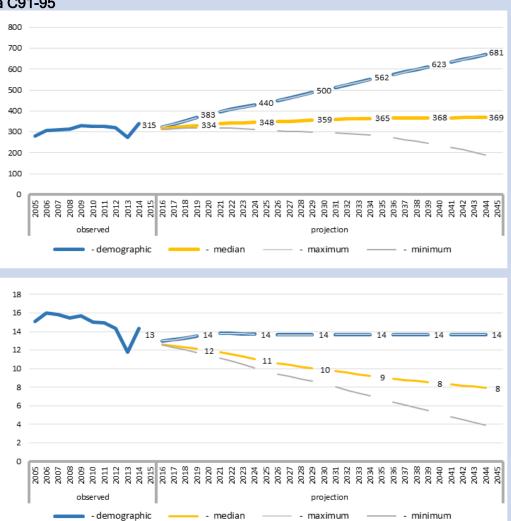
% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates *and* the demographic estimate (5+1)

	model median estimate projection
2020	-7%
2025	-16%
2030	-23%
2035	-29%
2040	-35%
2045	-39%

projected age-standardised

the right

rates are shown in the graph on



Demographic projection: the average annual rate for the period 2011-2015 was applied to the projected population up to 2045

- Age-standardised rates of leukaemia in males increased significantly between 1994 and 2004. Since 2004 rates have been falling significantly. As a result, the Nordpred and HD models all project declining rates into the future, and the median projection is much lower than the demographic projection, which assumes the average 2011-2015 age-standardised rates apply into the future (14 cases per 100,000).
- The median age-standardised rates are projected to decrease by 39% by 2045, giving a rate of 8 per 100,000.

Figure 3.44b. Projections: Leukaemia C91-95

FEMALES - CASES

% projected increase: represents the increase on the observed 2015 case count based on demographic population increase alone. or the median of 5 model projection estimates and the demographic estimate (5+1)

	demographic projection	model median estimate
		projection
2020	6%	10%
2025	18%	22%
2030	32%	35%
2035	47%	49%
2040	61%	63%
2045	76%	77%

projected numbers of cases are shown in the graph on the right

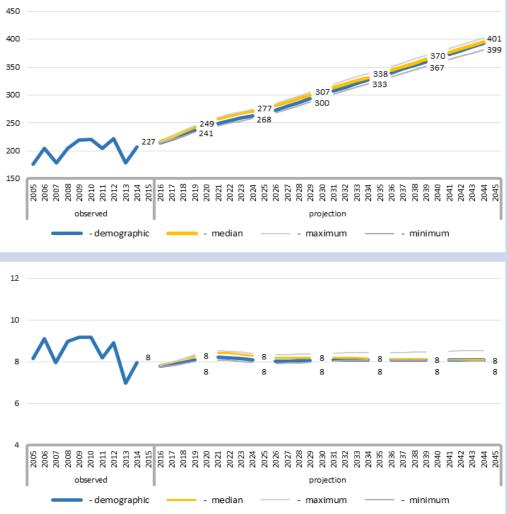
FEMALES - ASR

% projected increase: represents the increase on the observed 2015 agestandardised rate based on the median of 5 model projection estimates and the demographic estimate (5+1)

	model median estimate projection
2020	-1%
2025	-1%
2030	-2%
2035	-3%
2040	-3%
2045	-3%

12 10

projected age-standardised rates are shown in the graph on the right



Demographic projection: the average annual rate for the period 2011-2015 was applied to the projected population up to 2045

- > Age-standardised rates of leukaemia in females stayed approximately the same between 1994 and 2015. As a result, all of the models, as well as the median, project results that are almost identical to that of the demographic model, which assumes the average 2011-2015 age-standardised rates apply into the future (8 cases per 100,000).
- \triangleright The median age-standardised rates are projected to decrease by 3% by 2045, also giving a rate of 8 per 100,000.

4. METHODS

Population projections

The cancer case projections are based on the population projections of the Irish Central Statistics Office (CSO) [10], based on different assumptions regarding mortality, migration (M) and fertility (F). These give expected population numbers for each year 2015-2045, by five year age group and sex.

Mortality rates are assumed to decrease, which will result in gains in life expectancy at birth from:

- > 79.3 years in 2015 to 85.6 years in 2051 for males
- > 83.3 years in 2015 to 88.3 years in 2051 for females.

Two fertility assumptions were considered:

- > F1: Total fertility rate to remain at the 2016 level of 1.8 for the lifetime of the projections
- F2: Total fertility rate to decrease from 1.8 to 1.6 by 2031 and to remain constant thereafter to 2051

Three migration assumptions were considered:

- > M1: Net migration +30,000 per annum to 2051
- > M2: Net migration +20,000 per annum to 2051
- M3: Net migration +10,000 per annum to 2051

Six different population projections, based on combinations of the above assumptions, have been published by the CSO: M1F1, M1F2, M2F1, M2F2, M3F1, and M3F2. The mortality assumptions are the same for all projections. The fertility assumptions, which will affect only the population aged under 30 years by 2045, will have a minimal impact on numbers of cancer cases over the period studied, since cancer is predominantly a disease of the elderly.

Projected 2020 to 2045 populations for the M2F1 assumptions are shown in Table 4.1. These project a 22% increase in the male and female populations between 2020 and 2045. The size of population change ranges from an increase of 3 to 4% in males aged 40-54 to an increase of 268% in those aged over 85. For females the range varied from -1 to 4% for ages 35-54 to 181% in those aged over 85.

The projections presented in this report are based on the M2F1 assumptions, i.e. assuming fertility rate to remain at the 2016 level of 1.8 for the lifetime of the projections, and net migration set at +20,000 per annum to 2051.

males	2020	2025	2030	2035	2040	2045
under 35	1137089	1165949	1193603	1211365	1227019	1229080
35-39	184118	160167	160762	178916	190905	210634
40-44	188339	186258	162532	163188	181332	193329
45-49	175530	188074	186208	162726	163464	181584
50-54	157017	174447	187080	185379	162247	163089
55-59	142940	154560	172011	184724	183241	160603
60-64	126225	138980	150736	168124	180911	179701
65-69	111006	121437	134230	146066	163293	176120
70-74	93881	103721	114238	126969	138801	155689
75-79	64026	82685	92501	102956	115389	127039
80-84	40993	51522	67701	77103	87097	98785
85 and over	28971	38521	51638	70829	88914	106662
females	2020	2025	2030	2035	2040	2045
under 35	1110358	1127340	1152447	1169011	1182916	1184165
35-39	198051	168810	159878	176213	188151	206514
10 11	200002	100010	133070	170215	100101	200314
40-44	194536	200793	171668	162788	179120	191062
40-44 45-49						
	194536	200793	171668	162788	179120	191062
45-49	194536 178035	200793 195126	171668 201458	162788 172505	179120 163707	191062 180032
45-49 50-54	194536 178035 158124	200793 195126 177740	171668 201458 194832	162788 172505 201215	179120 163707 172528	191062 180032 163862
45-49 50-54 55-59	194536 178035 158124 146996	200793 195126 177740 156543	171668 201458 194832 176109	162788 172505 201215 193200	179120 163707 172528 199654	191062 180032 163862 171389
45-49 50-54 55-59 60-64	194536 178035 158124 146996 129136	200793 195126 177740 156543 144412	171668 201458 194832 176109 154047	162788 172505 201215 193200 173515	179120 163707 172528 199654 190581	191062 180032 163862 171389 197130
45-49 50-54 55-59 60-64 65-69	194536 178035 158124 146996 129136 112977	200793 195126 177740 156543 144412 125847	171668 201458 194832 176109 154047 141033	162788 172505 201215 193200 173515 150743	179120 163707 172528 199654 190581 170046	191062 180032 163862 171389 197130 187061
45-49 50-54 55-59 60-64 65-69 70-74	194536 178035 158124 146996 129136 112977 97554	200793 195126 177740 156543 144412 125847 107952	171668 201458 194832 176109 154047 141033 120695	162788 172505 201215 193200 173515 150743 135699	179120 163707 172528 199654 190581 170046 145481	191062 180032 163862 171389 197130 187061 164492

2020 2015 4 ^ .



Cancer sites

Data were modelled for 21 invasive cancer sites or groups of sites, as well as all invasive cancers combined (excluding non-melanoma skin cancer) (Table 4.2). Only the most common invasive cancers are considered in this report, as trends in non-invasive cancers (predominantly in situ cancers) are largely dependent on screening activity rather than underlying risk, and so cannot be accurately modelled. Incidence data are collected and coded by the NCR according to the ICDO3 classification (including translation from ICDO2 codes for older data) [12].

Cancer site	ICD10 codes
All invasive cancers, excl. NMSC	C00-43,C45-96
Head and neck	C01-C14, C30-32
Oesophagus	C15
Stomach	C16
Colon	C18
Rectum and anus	C19-21
Liver, gallbladder and biliary tract	C22-24
Pancreas	C25
Lung	C34
Melanoma of skin	C43
Non-melanoma skin cancer	C44
Female breast	C50
Cervix uteri	C53
Corpus uteri	C54
Ovary	C56
Prostate	C61
Kidney and renal pelvis	C64-65
Bladder	C67
Brain & central nervous system (CNS)	C70-72
Hodgkin lymphoma	C81
Non-Hodgkin lymphoma	C82-85
Leukaemia	C91-95

Calculation of rates

The age-standardised rate (ASR) is the annual rate of newly diagnosed cases in a given population (and year), expressed per 100,000 persons (usually males and females separately), weighted by the age-structure of a defined 'standard' population, to allow meaningful comparisons between different countries over time [13]. Age-standardised rates for incidence and mortality were weighted by the European standard population (ESP) as defined in 1976 [14].



Projection methods

Model fitting

Three different types of model have been used to produce a total of 6 projection models. These were, the demographic method (1 model), Hakulinen-Dyba methods (4 models), and the Nordpred method (1 model).

The median projection was calculated as the median of the 6 projections at each time point 2020-2045.

Demographic projections

Demographic projections were produced by calculating the average age-specific incidence rates for each age group (0-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84 and 85+) for the years 2011-2015 and applying these rates to the projected age-specific populations up to 2045.

Hakulinen-Dyba (HD) age-period methods

Hakulinen and Dyba propose four age-period models to fit and project incidence [1-3]. These are:

Model HD 1. $n_{i,t} = p_{i,t} \times (\alpha_i + \beta_i t)$	where:
Model HD 2. $n_{i,t} = p_{i,t} \times (\alpha_i \times (1 + \beta t))$	- Population and a
Model HD 3. $n_{i,t} = p_{i,t} \times e^{(\alpha_i + \beta t)}$	i=age group t=time period α = intercept
Model HD 4. $n_{i,t} = p_{i,t} \times e^{(\alpha_i + \beta_i t)}$	β =slope

These models use single year of incidence data and calculate projected numbers of cases and agestandardised incidence rates. Hakulinen/Dyba (HD) **model 1** is a linear model, which assumes that the cancer incidence rate increases by a fixed amount (β) annually. It estimates a different slope (β) for each age-group i, which can give a better fit to the data when there are opposing trends for different age groups e.g. an increasing trend for older patients, but a falling trend for younger patients.

Model 2 is a non-linear model. This model tends to be the most conservative of the four HD models, giving projections which are often significantly lower than the other HD models and when incidence rates are increasing this model gives estimates which are closest to the assumption of no change in underlying trend (i.e. demographic change only).

Models 3 and 4 are log-linear models, which assume that the incidence rate increases by a fixed proportion (β) annually. Model 4 allows for a different slope (β) for each age-group i, whereas model 3 does not.

Nordpred

The Nordpred software provides projections for a maximum of five future five-year periods. It fits a power age-period-cohort model [4,5], with a power coefficient of 0.2, to the historic trends, using a different slope parameter for each age group. This model is intermediate in its assumptions between the HD linear and log models. The Nordpred software gives aggregate case numbers for the five five-year periods 2016-2020, 2021-2025, 2026-2030, 2031-2035, 2036-2040. Projected numbers for the years 2020, 2025, 2030, 2035, 2040 and 2045 were derived from these estimates by linear interpolation and extrapolation.

Case projections, and age-standardised rates, are presented graphically (Figure 3.2 to 3.44) where the demographic projections are presented up to 2045, along with the median of all projection estimates (from 1 demographic, 4 HD models and 1 Nordpred model), as well as the upper and lower estimates of the six models.

Historic incidence rates

Projections are based on the assumption that current trends in incidence will continue into the future. The precision of a model is greatest if a long prior period of observation can be used. Where possible, all years of data from the National Cancer Registry, beginning from 1994, were used.

Demographic projections were based on the average annual age-specific incidence rates in the period 2011-2015 inclusive scaled to the future population.

For the Hakulinen and Dyba (HD) models, trends in age-standardised incidence rate for each cancer were tested for linearity over the period 1994-2015, using Joinpoint software [15-16]. Default constraints were applied in Joinpoint with no more than 3 inflexion points allowed, with at least 4 years between each inflexion point and 5 years, inclusive, from either end of the range of years (1994-2015). For cancers with a linear trend in incidence rate over the full period 1994-2015, cancer rates over this period were used to construct the model. For other cancers, the most recent linear trend in the historic incidence rate data (the base of projection) for each cancer site was fitted using four different HD models, for each sex separately, where relevant.

For Nordpred, aggregated incidence data for four five-year periods were used: 1996-2000, 2001-2005, 2006-2010, and 2011-2015. This is the minimum number of periods which is possible using the Nordpred method.

5. DISCUSSION

Summary

Figure 5.1 below shows the projected percentage increase in the number of cancer cases between 2015 and 2045, by cancer site and sex.

For all cancers combined, excluding non-melanoma skin cancer, the demographic model projected an increase of 111% increase for males and an 80% increase for females - a doubling of numbers overall. The median model projections showed a similar picture for females with an 84% increase in incidence, whereas for males the position was very different, showing a much more modest projected increase of only 18% - about a 50% increase overall for males and females combined.

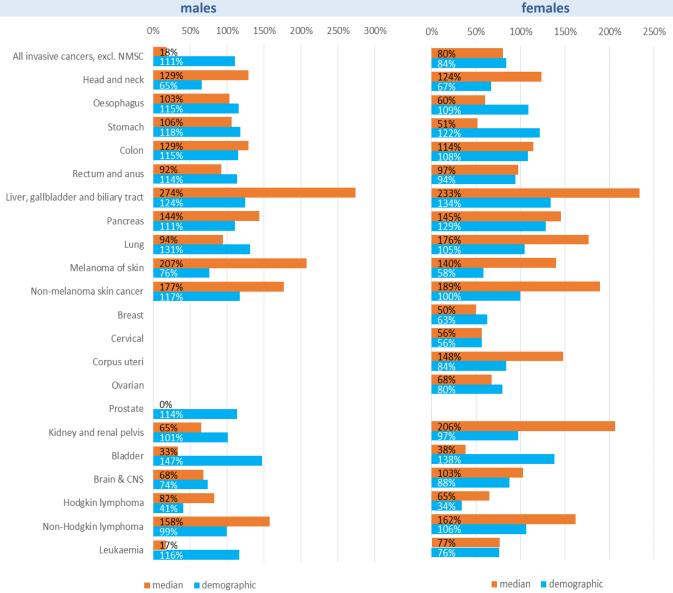


Figure 5.1. Projected percentage increase in number of cancer cases 2015-2045, by cancer site and sex

Across individual cancer types, for males, the increases in case numbers ranged from 41% (Hodgkin lymphoma) to 147% (bladder) using demographic projections, and from 0% (prostate) to 274% (liver, gallbladder and biliary tract) using the median projection.

For females, the increases in case numbers ranged from 34% (Hodgkin lymphoma) to 138% (bladder) using demographic projections, and from 38% (bladder) to 233% (liver, gallbladder and biliary tract) using the median projection.

While the demographic method assumes that the age-standardised rates remain steady from 2015 to 2045, the HD and Nordpred methods assume that recent trends in age-standardised rates will continue into the future. As a result, the age-standardised rates of the median of the projected models, in most cases, will change over time.

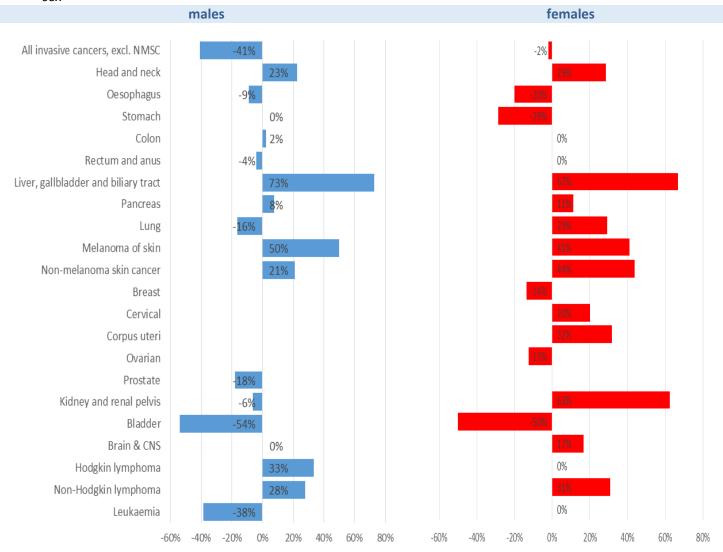


Figure 5.2. Median projected percentage increase in age-standardised rates 2015-2045, by cancer site and sex

Figure 5.2, above, shows the percentage change in age-standardised rates between 2015 and 2045, based on the median of all six models used. For all cancers combined, excluding non-melanoma skin cancer, the median projection showed a decrease of 41% for males and a much more modest 2% decrease for females.

For males, eight sites showed increases in the median age-standardised rates between 2015 and 2045. These were: liver, gallbladder and biliary tract (+73%); melanoma of skin (+50%); Hodgkin lymphoma (+33%); non-Hodgkin lymphoma (+28%); head and neck (+23%); non-melanoma skin cancer (+21%); pancreas (+8%); and colon (+2%).

For males, seven sites showed decreases in the median age-standardised rates between 2015 and 2045. These were: bladder (-54%); leukaemia (-38%); prostate (-18%); lung (-16%); oesophagus (-9%); kidney and renal pelvis (-6%); and rectum and anus (-4%).

There were no projected changes in the median age-standardised rates between 2015 and 2045 for males for two sites: stomach; and brain and central nervous system.

For females, eleven sites showed increases in the median age-standardised rates between 2015 and 2045. These were: liver, gallbladder and biliary tract (+67%); kidney and renal pelvis (+63%); non-melanoma skin cancer (+44%); melanoma of skin (+41%); corpus uteri (+32%); non-Hodgkin lymphoma (+31%); head and neck (+29%); lung (+29%); cervix uteri (+20%); brain and central nervous system (+17%); and pancreas (+11%).

For females, five sites showed decreases in the median age-standardised rates between 2015 and 2045. These were: bladder (-50%); stomach (-29%); oesophagus (-20%); breast (-14%); and ovarian (-13%).

There were no projected changes in the median age-standardised rates between 2015 and 2045 for females for four sites: colon; rectum and anus; Hodgkin lymphoma; and leukaemia.

Comparison with previous reports

The most striking difference between the current report, and the three previous reports [6-8] produced by the NCRI, is that this is the first projections report to observe a recent decline (for males) or flattening off (for females) in the trend in age-standardised rates for all cancers combined (excluding non-melanoma skin cancer).

For males, age-standardised rates have declined significantly from 2011 to 2015, following on from a period of significantly increasing rates between 1994 and 2011. This is due in part to a significant

decline in the incidence of prostate cancer since 2011, which is likely a reflection of PSA testing in previous years having led to earlier detection of cases.

For females, although rates have not declined, there has been no change in age-standardised rates since 2010. This followed a period of significantly increasing rates from 1994 to 2010. This is a very important development, and has significant implications for projections. For the first time, the age standardised rate for males, or the risk to the average Irish male of being diagnosed

with cancer in a given year, is declining. For females, although the overall age-standardised risk is not yet declining, it has not increased in the most recent period.

The HD models, which use the most recent trend for the basis of future projections, show substantial reductions in the age-standardised rates up to 2045 for males. The median age-standardised rates for all cancers combined, excluding non-melanoma skin cancer, for males are estimated to decrease by 41%. For females the reduction is a much more modest 2%, reflecting the stability in recent rates for females.

One notable difference between the 2014 report and this report is that for all cancers combined, excluding non-melanoma skin cancer, the Demographic model no longer produces the most conservative projections of future cases. For males, it gives the second highest estimate of future cases, behind the Nordpred model which does not take the recent downturn in incidence rates into account. For females, the demographic model produces the third highest estimate of future cases, behind the Nordpred model and HD4, which tends to produce the highest estimates of the four HD models.

Projected age-standardised rates were not presented in the most recent reports [7-8] so it was not possible to make a comparison between rates across these reports. Also, in this report, the demographic projection and the median projection were the main results focused on, as the demographic model has the simplest assumptions, and the median represented the middle point of all the projections. In previous reports, more focus was placed on the Nordpred and individual HD model projections.

Implications for treatment

For each registered cancer case, the Registry records whether the patient had a specified modality of treatment (cancer-directed surgery, chemotherapy or radiotherapy) as part of the initial treatment regime. This is typically reported as treatments received from one month before diagnosis to twelve months after diagnosis.



Although this report is not intended to provide detailed treatment projections, the numbers of patients having each treatment modality have been extrapolated in broad terms to 2045. This was done by combining the number of cases projected using the demographic method, assuming:

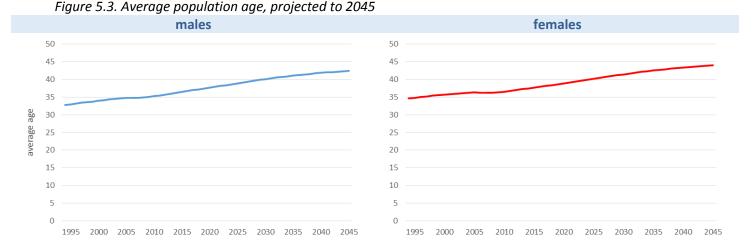
- That the risk of cancer remains the same, i.e. that the number of cases change due only to changes in the population size and age distribution;
- That the average age-specific treatment proportions in the period 2011-2015 remains unchanged;
- For all cancers combined that the case-mix by stage and cancer type remains unchanged.

A fuller analysis could estimate treatment figures using each projection model, as well as the median projection. For technical reasons this analysis was considered beyond the scope of the current report. However, the median projection (for all cancers combined, excluding NMSC) results in fewer projected cases, which would imply fewer treatments if equivalent treatment percentages by age-groups were applied.

Whatever approach is taken, long-term treatment patterns are difficult to project and the figures presented here should be treated with caution. They are dependent on both the projected number of cases, which can vary widely depending on the model used (note that only the demographic model is used for treatment projections here), and on the additional assumptions noted above. In practice, treatment practices may change (i.e. increases or decreases in the use of specific modalities), as may the breakdown of cases by stage and cancer type.

When estimating the proportion of patients treated, the proportion treated in each age group (0-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84 and 85+) has been calculated, and applied to the projected number of cancer cases in each age group.

This results in the overall proportion of cancer patients receiving treatment falling over time, as older patients are less likely to receive treatment, and the average age of the patients is projected to rise over time, reflecting increases in the average age of the population from 1994 to 2045 (Figure 5.3). However, if the proportions of elderly patients, or indeed younger patients, receiving treatment increased in future, an overall decline in the proportion might not occur.



For males, the average age increased from 33.7 in 1994 to 36.5 in 2015. The average age is projected to increase to 42.4 in 2045. For females, the average age increased from 34.6 in 1994 to 37.7 in 2015. The average age is projected to increase to 44.0 in 2045.

However, despite population ageing in Ireland between 1994 and 2015, the average age of cancer patients actually fell slightly (Figure 5.4). This may reflect a shift in case-mix (to cancers less strongly associated with advanced age) or a shift towards diagnosis at earlier ages (perhaps partly influence by breast cancer screening in women and prostate cancer detection through PSA testing in men), sufficient to balance the influence of population ageing.

In contrast, the average age of cancer patients is projected to increase to 72.0 for males and 69.8 for females by 2045 (from 66.9 and 64.3, respectively, in 2015) - but this assumes no change in the breakdown of cancer types or in age-targeted diagnostic activity compared with 2011-2015.

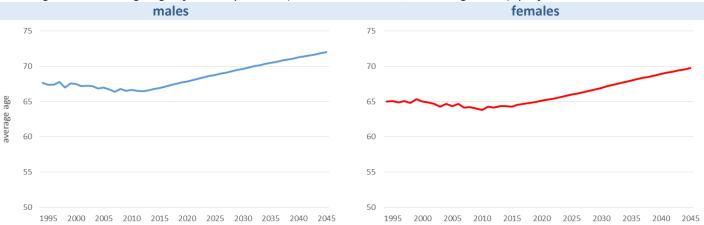
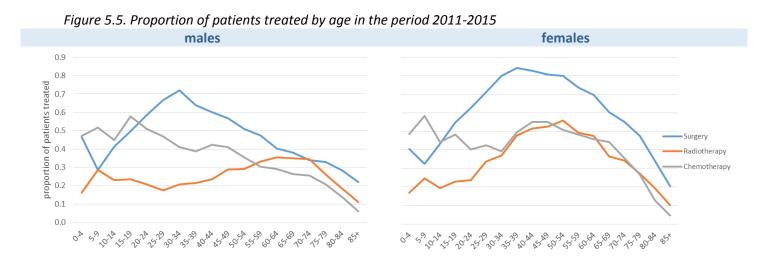


Figure 5.4. Average age of cancer patients (all invasive cancers, excluding NMSC), projected to 2045

Treatment by age

Figure 5.5 shows the proportion of cancer patients (all invasive cancers, excluding non-melanoma skin cancer), who received surgery, radiotherapy and chemotherapy within one year of diagnosis, broken down by age group and sex.



For males, the percentage of patients undergoing surgery ranges from 72% of the 30-34 age group, down to only 22% of the 85+ age group. Men aged 60-64 are the most likely to undergo radiotherapy (36%), compared to only 11% of those aged 85+. For chemotherapy patients aged 15-19 had the highest percentage undergoing chemotherapy (58%). Again the 85+ age group had the lowest percentage, where only 6% received chemotherapy.

For females, the position is broadly similar. The percentage of patients undergoing surgery ranges from 84% of the 35-39 age group, down to only 20% of the 85+ age group. Women aged 50-54 are the most likely to undergo radiotherapy (56%), compared to only 10% of those aged 85+. For chemotherapy patients aged 5-9 had the highest percentage undergoing chemotherapy (58%). Again the 85+ age group had the lowest percentage, where only 5% received chemotherapy.

In general, the percentage of patients being treated declines steadily as patients get older.

Figure 5.6, below, shows the projected number of patients undergoing surgery, radiotherapy and chemotherapy within one year of their diagnosis, up to 2045. These projections use the demographic projections of cancer incidence for all invasive cancers excluding NMSC, and apply the average proportion of patients, within each age group, receiving each type of treatment in the period 2011-2015.

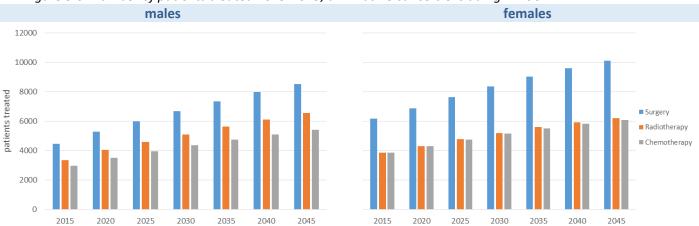
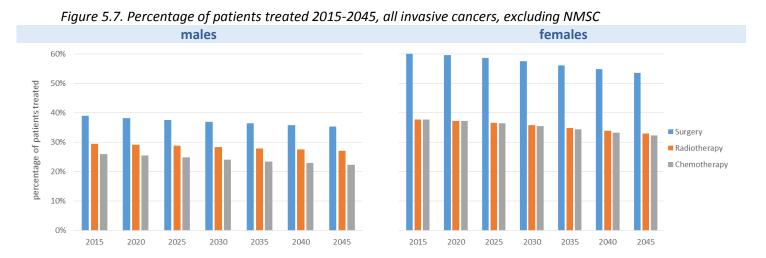


Figure 5.6. Number of patients treated 2015-2045, all invasive cancers excluding NMSC

For males, the number of patients undergoing surgery, radiotherapy and chemotherapy is projected to increase from 4,460, 3,369 and 2,980 in 2015 to 8,520, 6,542 and 5,404 in 2045 respectively.

For females, the number of patients undergoing surgery, radiotherapy and chemotherapy is projected to increase from 6,173, 3,852 and 3,863 in 2015 to 10,096, 6,214 and 6,092 in 2045 respectively.

Figure 5.7, below, shows the projected percentage of patients undergoing surgery, radiotherapy and chemotherapy within one year of their diagnosis, up to 2045, highlighting that a projected ageing in cancer patients could result in a reduction in overall proportions of patients treated (unless age-specific treatment proportions increase).



While Figure 5.6 shows a steady increase in the number of patients treated, Figure 5.7 shows a different picture, with the percentage of patients treated declining between 2015 and 2045.

This reflects the fact that the population is ageing, and the average age of cancer patients is projected to increase over time. This, combined with the fact that older patients are less likely to be treated, results in the decreasing percentage of patients treated in the future.

In the period 2011-2015, 39%, 29% and 26% of males underwent surgery, radiotherapy and chemotherapy respectively. This is projected to decline to 35%, 27% and 22% respectively by 2045.

For females in 2011-2015, 60%, 38% and 38% underwent surgery, radiotherapy and chemotherapy respectively. This is projected to decline to 54%, 33% and 32% respectively by 2045.

If overall treatment proportions (combining all ages for each sex) remain unchanged, projected numbers of patients treated in future would be higher than those shown in Figure 3.4, because this simpler assumption would assume no effect of changing age.

But it is important to re-stress that all these figures assume, in greater or lesser detail, that the current rate of treatment will continue into the future. In reality, a shift in the case-mix to different proportions of specific cancer types, or of stages or age-groups within cancer types, could alter these projections, perhaps substantially. Changes in the standard treatment for specific cancers, or increases in the proportions of patients (including older patients) receiving standard treatment, could further alter these projections.

Strengths and limitations

The strengths of the approach used here are that the methods are robust and widely used, use all the available data and make a minimal number of assumptions about the underlying trends.

By using multiple models however, this does then open up the question of which is the "best model". There are sometimes large discrepancies between the results of different modelling approaches to the same data. Different models may project quite different trends, as can be seen in this report for cancers of the liver, gallbladder and biliary tract, melanoma of the skin and prostate cancer in males, and cancer of the lung in females. Models based on age-specific trends in rates may place too much reliance on apparent trends in these rates; on the other hand ignoring these would be a mistake if there are real differences in trend between different age groups. The Nordpred model has the advantage of using a fixed power relationship for all cancers, and avoiding the exponential trends sometimes fitted by the HD models. However, unlike the HD models, the Nordpred model doesn't take account of significant recent changes in trends, and therefore may overemphasise longer term trends. Demographic projections take no account of trends in incidence rates, which may result in large discrepancies between future incidence rates and projected rates, but on the other hand they don't assume that recent or longer-term rate trends will continue.

As there is no objective way to select a "best model", and no single model that best fits all trends and all cancer sites, we have chosen to present the demographic model (with the simplest assumptions) as well as the median of all the projection models. The 'median model' is the middle

point of all the projections calculated, and may be a useful summary of the fuller range of model results, as it takes account of all the models without leading to estimates that are excessively high or low for any of the sites.

Estimates of future demand for cancer treatments are also provided, though these projections assume that treatment patterns remain stable into the future, which may not be the case.

The most significant limitations of the approaches taken is that they assume that recent incidence trends (or in the case of demographic models, current cancer rates) will continue unchanged into the future. This report itself gives an indication of how substantial these limitations may be - notably, the trends for a number of cancer sites (female breast, cervix uteri, prostate, and male kidney), as well as for all cancers combined, have changed significantly over the past five years, in some cases going from a significantly increasing rate to a significantly decreasing rate. Further changes in incidence trends in years to come - for example, through introduction of new screening programmes or other interventions, such as HPV vaccination, or if trends stabilize following initial screening-related increases - could lead to the projections presented here being substantially different to the actual number of cases of cancer in the future.

While these are limitations in terms of how accurate the projections are likely to be, the projection models can nevertheless be useful in assessing the impact of measures to reduce cancer incidence. If future incidence is in fact substantially lower than the estimates provided in this report, this could represent evidence that measures put in place to reduce cancer incidence had, in fact, been successful.

Models simplify what is a complex combination of changing risk factors, diagnosis, screening and classification. Although historic trends can be fitted using more complex models than those shown here, these models also make more assumptions about the continuity of trends into the future. Even over the relatively short period covered by the National Cancer Registry, incidence trends for quite a few cancers have changed significantly and therefore the assumption of continuity of trends into the future is not firmly based.

In particular, longer-term projections for individual cancer sites can have additional uncertainty when screening programmes are in place, as these can lead to initial increases followed by later decreases in cancer rates. Trends in incidence rates of breast cancer, cervical cancer and prostate cancer have all changed significantly since the introduction of screening (or, for prostate cancers, large-scale PSA testing), and it is not clear if the recent declining trends are likely to continue into the future. Changes in the trends in incidence rates for colon or rectal cancers may also occur, following the recent introduction of the BowelScreen programme, though changes in trend have not yet been observed.



Future Reports

As mentioned in the introduction, the NCRI will produce updated projections on a five yearly basis, with the next full projections report due to be published in 2024.

The NCRI is also intending to follow on from this publication with two further reports this year. These reports will focus on: the risk factors that contribute to cancer incidence; and the economic cost of cancer.

Risk Factors

The NCRI will publish a follow-on report (in November 2019) looking in detail at the contribution of various risk factors to the incidence of cancer, and will look at how these risk factors will contribute to cancer incidence into the future, based on the projected incidence figures presented in this report.

Cost of cancer: economic projections

The NCRI will publish a further report (in December 2019) using a health economics approach to estimate the cost of cancer in the future, based on the projected incidence figures presented in this report. This report will also take a more detailed look at treatment projections.

A final note on future projections reports

It is well known that it is difficult to make predictions or projections, especially about the future. Projecting future incidence of cancer relies on projecting both the number, sex and age distribution of the population and the age-standardised rate of cancer in that population. To make things more difficult, cancer is not a single disease, but a large number of different diseases, each with their own risk factors and underlying rates in populations unexposed to any risk factors.

To reliably predict the rate of cancer in the future, one would need to know how each risk factor was associated with each cancer, and also be able to reliably predict trends in risk factors into the future, and to understand the lag time between a change in a risk factor and a change in the incidence rate. NCRI therefore offers projections, rather than predictions, where current rates or recent trends are used to project case numbers into the future based on the population projections provided by the CSO.

As can be seen in the results in this report, the different projection models often produce vastly different results. The further into the future that incidence is projected, the greater the uncertainty in the population size, the potential for changes in risk factors, and the changes in trends in incidence.



Based on experience gained from compiling this report, the authors <u>recommend that future reports</u> <u>restrict projections to 20 years into the future</u>. While this does not eliminate the uncertainty around the projected incidence of cancer, it makes the results more likely to be reliable.

6. ACKNOWLEDGMENTS

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- Graph templates were provided by Joe McDevitt. Other members of the NCRI staff helped compile and quality-assure the data summarised in this report, or commented on drafts.
- This work uses data provided by patients and collected by the health service as part of their care and support.

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Appendix 1: Projected number of cases of cancer in males, 2015-2045, using 6 models plus median

					-						HD1			
site	2015	2020	2025	Demographi 2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045
All invasive cancers, excl. NMSC	11461	13864	15920	18067	20225	22292	24161	11461	12055	12302	12163	11705	10876	10086
lead and neck	518	549	619	688	753	810	857	518	623	760	907	1061	1217	1360
Desophagus	259	312	361	413	464	513	558	259	317	359	403	442	476	501
tomach	387	455	531	611	690	768	842	387	451	521	590	654	711	755
Colon	1021	1158	1357	1567	1782	1994	2196	1021	1213	1456	1727	2025	2339	2665
ectum and anus	585	722	830	943	1051	1155	1250	585	712	796	879	944	998	1037
iver, gallbladder and biliary tract	266	324	378	434	489	544	597	266	378	493	626	772	930	1101
Pancreas	312	350	409	472	536	598	657	312	369	441	521	605	689	770
ung	1356	1674	1958	2259	2562	2858	3137	1356	1598	1817	2051	2290	2526	2754
Aelanoma of skin	546	566	646	726	807	885	960	546	674	873	1104	1361	1643	1950
Ion-melanoma skin cancer	6004	6971	8146	9379	10623	11852	13058	6004	7477	9236	11239	13385	15727	1823
Prostate	3214	4181	4746	5324	5905	6441	6869	3214	2608	1696	884	312	289	295
idney and renal pelvis	398	483	549	616	681	742	800	398	406	399	394	405	442	513
lladder	329	398	473	556	644	730	814	329	303	290	276	251	222	227
Brain & central nervous system (CNS)	220	248	276	303	331	358	382	220	250	282	316	354	396	439
lodgkin lymphoma	79	86	92	99	104	108	111	79	92	103	115	127	141	154
Non-Hodgkin lymphoma	438	514	587	662	735	805	873	438	570	701	849	1012	1191	138
eukaemia	315	383	440	500	562	623	681	315	319	309	297	280	254	243
canacina	515	565	110	HD2	502	015	001	515	515	505	HD3	200	231	213
ite	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	204
Il invasive cancers, excl. NMSC	11461	12065	12359	12327	11905	11038	9712	11461	12172	12722	13137	13386	13433	1326
	518	509			706					796	982			1673
lead and neck Desophagus	259	509 318	575 362	642 407	706 450	763 489	812 523	518 259	637 319	796 364	982 409	1193 453	1424 494	167:
tomach														
	387	454	524	596	666	733	796	387	454	524	597	667	735	799 2480
iolon	1021	1152	1350	1557	1767	1974	2174	1021	1209	1440	1689	1949	2215	
ectum and anus	585	715	806	896	978	1051	1112	585	718	811	904	990	1068	113
iver, gallbladder and biliary tract	266	249	290	334	378	421	462	266	423	600	837	1149	1554	207
ancreas	312	341	400	462	527	591	652	312	372	450	537	631	729	830
ung	1356	1579	1763	1936	2085	2205	2291	1356	1588	1784	1974	2146	2299	242
Aelanoma of skin	546	408	463	520	578	634	689	546	798	1158	1663	2364	3319	461
Ion-melanoma skin cancer	6004	7005	8205	9467	10745	12015	13271	6004	7488	9202	11139	13266	15565	1803
rostate	3214	-	-	-	-	-	-	3214	2871	2498	2149	1826	1527	1248
idney and renal pelvis	398	406	398	375	336	281	210	398	413	420	420	415	404	389
ladder	329	-	-	-	-	-	-	329	332	340	343	341	332	319
rain & central nervous system (CNS)	220	245	270	294	317	338	357	220	245	270	294	317	339	358
lodgkin lymphoma	79	79	85	90	95	101	106	79	95	108	123	138	156	175
Non-Hodgkin lymphoma	438	455	517	579	640	699	755	438	573	705	857	1026	1214	1423
eukaemia	315	324	321	307	279	236	179	315	334	345	353	356	354	347
				HD4							Nordpred			
ite	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045
Il invasive cancers, excl. NMSC	11461	12182	12744	13176	13537	13721	13728	11461	15186	18362	21648	24910	28172	3135
lead and neck	518	639	800	986	1201	1441	1688	518	586	681	774	859	936	100
Desophagus	259	319	362	408	450	488	518	259	307	356	408	460	511	560
Desophagus Stomach					450 681		518 813	259 387	307 421	356 473	408 532	460 596	511 660	
tomach	259	319	362	408		488								723
tomach	259 387 1021	319 455 1225	362 530 1486	408 608 1789	681 2142	488 751 2539	813 2985	387 1021	421 1152	473 1331	532 1508	596 1682	660 1857	723 2010
tomach Colon Rectum and anus	259 387 1021 585	319 455 1225 718	362 530 1486 810	408 608 1789 902	681 2142 983	488 751 2539 1056	813 2985 1117	387 1021 585	421 1152 715	473 1331 824	532 1508 948	596 1682 1079	660 1857 1216	723 2010 1332
tomach colon tectum and anus iver, gallbladder and biliary tract	259 387 1021 585 266	319 455 1225 718 426	362 530 1486 810 607	408 608 1789 902 857	681 2142 983 1179	488 751 2539 1056 1601	813 2985 1117 2164	387 1021 585 266	421 1152 715 393	473 1331 824 499	532 1508 948 602	596 1682 1079 699	660 1857 1216 795	723 2010 1332 887
tomach colon tectum and anus iver, gallbladder and biliary tract ancreas	259 387 1021 585 266 312	319 455 1225 718 426 373	362 530 1486 810 607 448	408 608 1789 902 857 533	681 2142 983 1179 625	488 751 2539 1056 1601 718	813 2985 1117 2164 811	387 1021 585 266 312	421 1152 715 393 367	473 1331 824 499 441	532 1508 948 602 517	596 1682 1079 699 594	660 1857 1216 795 674	723 2010 1333 887 752
tomach colon lectum and anus iver, gallbladder and biliary tract ancreas ung	259 387 1021 585 266 312 1356	319 455 1225 718 426 373 1614	362 530 1486 810 607 448 1852	408 608 1789 902 857 533 2117	681 2142 983 1179 625 2403	488 751 2539 1056 1601 718 2699	813 2985 1117 2164 811 3002	387 1021 585 266 312 1356	421 1152 715 393 367 1564	473 1331 824 499 441 1759	532 1508 948 602 517 1966	596 1682 1079 699 594 2174	660 1857 1216 795 674 2365	723 2010 1333 887 752 2513
tomach olon dectum and anus iver, gallbladder and biliary tract ancreas ung Aelanoma of skin	259 387 1021 585 266 312 1356 546	319 455 1225 718 426 373 1614 831	362 530 1486 810 607 448 1852 1257	408 608 1789 902 857 533 2117 1895	681 2142 983 1179 625 2403 2826	488 751 2539 1056 1601 718 2699 4187	813 2985 1117 2164 811 3002 6189	387 1021 585 266 312 1356 546	421 1152 715 393 367 1564 720	473 1331 824 499 441 1759 904	532 1508 948 602 517 1966 1062	596 1682 1079 699 594 2174 1185	660 1857 1216 795 674 2365 1295	723 2010 1333 887 752 2513 1409
tomach colon lectum and anus iver, gallbladder and biliary tract lancreas ung Aelanoma of skin Ion-melanoma skin cancer	259 387 1021 585 266 312 1356 546 6004	319 455 1225 718 426 373 1614 831 7527	362 530 1486 810 607 448 1852 1257 9443	408 608 1789 902 857 533 2117 1895 11776	681 2142 983 1179 625 2403 2826 14467	488 751 2539 1056 1601 718 2699 4187 17661	813 2985 1117 2164 811 3002 6189 21437	387 1021 585 266 312 1356 546 6004	421 1152 715 393 367 1564 720 7640	473 1331 824 499 441 1759 904 9247	532 1508 948 602 517 1966 1062 10790	596 1682 1079 699 594 2174 1185 12273	660 1857 1216 795 674 2365 1295 13751	723 2010 1333 887 752 2513 1409 1520
tomach colon tectum and anus iver, gallbladder and biliary tract ancreas ung Aelanoma of skin kon-melanoma skin cancer trostate	259 387 1021 585 266 312 1356 546 6004 3214	319 455 1225 718 426 373 1614 831 7527 2895	362 530 1486 810 607 448 1852 1257 9443 2570	408 608 1789 902 857 533 2117 1895 11776 2331	681 2142 983 1179 625 2403 2826 14467 2240	488 751 2539 1056 1601 718 2699 4187 17661 2432	813 2985 1117 2164 811 3002 6189 21437 3203	387 1021 585 266 312 1356 546 6004 3214	421 1152 715 393 367 1564 720 7640 6399	473 1331 824 499 441 1759 904 9247 9273	532 1508 948 602 517 1966 1062 10790 12570	596 1682 1079 699 594 2174 1185 12273 16105	660 1857 1216 795 674 2365 1295 13751 19912	723 2010 1333 887 752 2513 1409 1520 2390
tomach bolon kectum and anus iver, gallbladder and biliary tract ancreas ung Melanoma of skin kon-melanoma skin cancer rorstate idney and renal pelvis	259 387 1021 585 266 312 1356 546 6004 3214 398	319 455 1225 718 426 373 1614 831 7527 2895 445	362 530 1486 810 607 448 1852 1257 9443 2570 523	408 608 1789 902 857 533 2117 1895 11776 2331 691	681 2142 983 1179 625 2403 2826 14467 2240 1122	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257	813 2985 1117 2164 811 3002 6189 21437 3203 5549	387 1021 585 266 312 1356 546 6004 3214 398	421 1152 715 393 367 1564 720 7640 6399 566	473 1331 824 499 441 1759 904 9247 9273 695	532 1508 948 602 517 1966 1062 10790 12570 816	596 1682 1079 699 594 2174 1185 12273 16105 931	660 1857 1216 795 674 2365 1295 13751 19912 1045	723 2010 1333 887 752 2513 1409 1520 2390 115
tomach colon lectum and anus iver, gallbladder and biliary tract anarceas ung Aelanoma of skin lon-melanoma skin cancer irostate lidney and renal pelvis bladder	259 387 1021 585 266 312 1356 546 6004 3214 398 329	319 455 1225 718 426 373 1614 831 7527 2895 445 344	362 530 1486 810 607 448 1852 1257 9443 2570 523 364	408 608 1789 902 857 533 2117 1895 11776 2331 691 387	681 2142 983 1179 625 2403 2826 14467 2240 1122 409	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257 425	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438	387 1021 585 266 312 1356 546 6004 3214 398 329	421 1152 715 393 367 1564 720 7640 6399 566 317	473 1331 824 499 441 1759 904 9247 9273 695 336	532 1508 948 602 517 1966 1062 10790 12570 816 367	596 1682 1079 699 594 2174 1185 12273 16105 931 404	660 1857 1216 795 674 2365 1295 13751 19912 1045 429	723 2011 1333 887 752 2511 1400 1520 2390 115 447
itomach Colon Lectum and anus iver, gallbladder and biliary tract ancreas ung Melanoma of skin Non-melanoma skin cancer Prostate Cidney and renal pelvis Jadader Brain & central nervous system (CNS)	259 387 1021 585 266 312 1356 546 6004 3214 398 329 220	319 455 1225 718 426 373 1614 831 7527 2895 445 344 253	362 530 1486 810 607 448 1852 1257 9443 2570 523 364 290	408 608 1789 902 857 533 2117 1895 11776 2331 691 387 331	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257 425 436	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499	387 1021 585 266 312 1356 546 6004 3214 398 329 220	421 1152 715 393 367 1564 720 7640 6399 566 317 243	473 1331 824 499 441 1759 904 9247 9273 695 336 262	532 1508 948 602 517 1966 1062 10790 12570 816 367 275	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298	723 2010 1333 887 752 2513 1409 1520 2390 1153 447 305
itomach Colon Lectum and anus iver, gallbladder and biliary tract Pancreas ung Melanoma of skin Non-melanoma skin cancer Prostate Cidney and renal pelvis Bladder Tarin & central nervous system (CNS) Hodgkin lymphoma	259 387 1021 585 266 312 1356 546 6004 3214 398 329 220 79	319 455 1225 718 426 373 1614 831 7527 2895 445 344 253 97	362 530 1486 810 607 448 1852 1257 9443 2570 523 364 290 113	408 608 1789 902 857 533 2117 1895 11776 2331 691 387 331 134	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380 159	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257 425 436 189	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499 222	387 1021 585 266 312 1356 546 6004 3214 398 329 220 79	421 1152 715 393 367 1564 720 7640 6399 566 317 243 94	473 1331 824 499 441 1759 904 9247 9247 9273 695 336 262 106	532 1508 948 602 517 1966 1062 10790 12570 816 367 275 115	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287 121	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298 128	723 2010 1333 887 752 2513 1409 1520 2390 1153 447 305 134
itomach Colon Lectum and anus ver, gallbladder and biliary tract Pancreas ung Velanoma of skin Non-melanoma skin cancer rostate Kidney and renal pelvis Bladder Tarin & central nervous system (CNS) Hodgkin lymphoma	259 387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438	319 455 1225 718 426 373 1614 831 7527 2895 445 344 253 344 253 97 595	362 530 1486 810 607 448 1852 1257 9443 2570 523 364 290 113 763	408 608 1789 902 857 533 2117 1895 11776 2331 691 387 331 134 978	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380 159 1248	488 751 2539 1056 1601 718 2699 4187 17661 2432 2432 2432 2432 2435 436 189 1589	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499 222 2026	387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438	421 1152 715 393 367 1564 720 7640 7640 566 317 243 94 530	473 1331 824 499 441 1759 904 9247 9247 9273 695 336 262 106 607	532 1508 948 602 517 1966 1062 10790 12570 816 367 275 115 673	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287 121 721	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298 128 763	560 723 2010 1332 887 752 2513 1409 1520 2390 1153 447 305 134 800
tomach colon lectum and anus lectum and anus larcreas ung Aelanoma of skin kon-melanoma skin cancer rostate cidney and renal pelvis lladder train & central nervous system (CNS) kodgkin lymphoma kon-Hodgkin lymphoma	259 387 1021 585 266 312 1356 546 6004 3214 398 329 220 79	319 455 1225 718 426 373 1614 831 7527 2895 445 344 253 97	362 530 1486 810 607 448 1852 1257 9443 2570 523 364 290 113	408 608 1789 902 857 533 2117 1895 11776 2331 691 387 331 134 978 365	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380 159	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257 425 436 189	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499 222	387 1021 585 266 312 1356 546 6004 3214 398 329 220 79	421 1152 715 393 367 1564 720 7640 6399 566 317 243 94	473 1331 824 499 441 1759 904 9247 9247 9273 695 336 262 106	532 1508 948 602 517 1966 1062 10790 12570 816 367 275 115	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287 121	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298 128	723 2010 1332 887 752 2513 1409 1520 2390 1155 447 305 134
itomach colon colon vert mand anus iver, gallbladder and biliary tract ancreas ung Velanoma of skin Non-melanoma skin cancer Prostate Gidney and renal pelvis Nadder vrain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma eukaemia	259 387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438 315	319 455 1225 718 426 373 1614 831 7527 2895 445 344 253 97 595 335	362 530 1486 810 607 448 1852 1257 9443 2570 523 364 290 113 763 350	408 608 1789 902 857 533 2117 1895 11776 2331 691 387 331 134 691 387 331 134 695 Median	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380 159 1248 375	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257 425 436 189 1589 383	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499 222 2026 390	387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438	421 1152 715 393 367 1564 720 7640 7640 566 317 243 94 530	473 1331 824 499 441 1759 904 9247 9247 9273 695 336 262 106 607	532 1508 948 602 517 1966 1062 10790 12570 816 367 275 115 673	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287 121 721	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298 128 763	723 2010 1332 887 752 2513 1409 1520 2390 1155 447 305 134 800
tomach colon colon lectum and anus iver, gallbladder and biliary tract ancreas ung Aelanoma of skin Jon-melanoma skin cancer brostate lidney and renal pelvis liadder train & central nervous system (CNS) todgkin lymphoma eukaemia ite	259 387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438 329 220 79 438	319 455 1225 718 426 373 1614 831 7527 2895 445 344 253 97 595 335	362 530 1486 810 607 448 1852 1257 9443 2570 9443 2570 523 364 290 113 763 350	408 608 1789 902 857 533 2117 1895 11776 2331 691 387 331 134 978 365 Median 2030	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380 159 1248 375 2035	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257 425 436 189 1589 383 2040	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499 222 2026 399 222 2026	387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438	421 1152 715 393 367 1564 720 7640 7640 566 317 243 94 530	473 1331 824 499 441 1759 904 9247 9247 9273 695 336 262 106 607	532 1508 948 602 517 1966 1062 10790 12570 816 367 275 115 673	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287 121 721	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298 128 763	723 2010 1333 887 752 2513 1409 1520 2390 1155 447 305 134 800
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tomach colon colon lectum and anus iver, gallbladder and biliary tract arancreas ung Aelanoma of skin lon-melanoma skin cancer irostate idander irostate idadder lidadder irain & central nervous system (CNS) todgkin lymphoma lon-Hodgkin lymphoma eukaemia ite Il invasive cancers, excl. NMSC lead and neck Desophagus tomach colon lectum and anus iver, gallbladder and biliary tract lancreas ung Melanoma of skin lon-melanoma skin cancer	259 387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438 315 79 438 315 79 438 315 5015 11461 518 259 387 1021 585 266 312 1356 546 312 1356 546	319 455 1225 718 426 373 1614 831 7527 2895 445 344 253 344 253 344 253 344 253 344 253 345 344 253 348 353 335 2020 12177 605 318 454 1183 716 385 368 1593 368 1593 3697 7482	362 530 1486 810 607 448 1852 12570 523 364 290 523 364 290 113 763 350 113 763 350 113 763 350 113 763 350 12733 721 362 524 12733 721 362 524 12733 721 362 524 810 496 441 1399 810 496 441 1399 810 496 441 1399 810 889 9219	408 608 1789 902 857 533 2117 1895 2331 691 387 331 134 978 365 Median 2030 13157 840 408 596 1628 903 614 519 2012 2083 10965	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380 159 1248 380 159 1248 380 159 1248 380 159 1248 380 159 1248 380 159 1248 380 159 1248 380 159 1248 380 159 1248 380 159 1248 380 159 1246 1467 2035 13461 960 455 986 736 599 2232 1273 12770	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257 425 436 189 383 289 383 289 1589 383 289 1589 383 2040 13577 1076 491 734 2104 1062 863 681 2446 1465	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499 222 2026 300 2045 13496 1184 527 798 2338 1126 994 761 2633 1678 16623	387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438	421 1152 715 393 367 1564 720 7640 7640 566 317 243 94 530	473 1331 824 499 441 1759 904 9247 9247 9273 695 336 262 106 607	532 1508 948 602 517 1966 1062 10790 12570 816 367 275 115 673	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287 121 721	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298 128 763	723 201 133 887 752 251 140 1520 2390 115 447 305 134 800
tomach bloon leterum and anus iver, gallbladder and biliary tract ancreas ung delanoma of skin lon-melanoma skin cancer rorstate didney and renal pelvis lladder rorstate didney and renal pelvis lladder didney and anus ver, gallbladder and biliary tract llancreas ung Aelanoma of skin lon-melanoma skin cancer	259 387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438 315 11461 518 259 387 1021 585 266 312 1356 546 6004 3214	319 455 1225 718 426 373 1614 831 752 2895 445 344 253 344 253 344 253 344 253 344 253 345 344 255 335 2020 12177 605 318 454 1183 716 385 368 1593 693 1693 693 1693 693	362 530 1486 810 607 448 1852 1257 9443 2570 523 364 290 523 364 290 113 362 12733 350 2025 12733 721 362 524 1399 810 496 441 1800 89219 9219	408 608 1789 902 857 533 2117 1895 11776 2331 691 387 331 134 978 365 Median 2030 13157 840 408 596 1628 903 614 519 2012 1083 2012	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380 1124 809 1248 375 1248 1248 375 1248 375 1248 1248 1246 1246 1247 1247 1247 1247 1247 1247 1247 1247	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257 425 425 425 425 425 425 425 189 383 383 2040 13577 1076 491 734 2104 1056 863 681 2446 14658 2432	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499 2025 2026 390 2045 13496 13496 1184 527 798 2338 1126 994 761 2633 16623 3203	387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438	421 1152 715 393 367 1564 720 7640 7640 566 317 243 94 530	473 1331 824 499 441 1759 904 9247 9247 9273 695 336 262 106 607	532 1508 948 602 517 1966 1062 10790 12570 816 367 275 115 673	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287 121 721	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298 128 763	723 201 133 887 752 251 140 1520 2390 115 447 305 134 800
tomach bolon lectum and anus iver, gallbladder and biliary tract ancreas ung delanoma of skin aon-melanoma skin cancer irostate didney and renal pelvis diadder varia & central nervous system (CNS) dodgkin lymphoma leukaemia dodgkin lymphoma leukaemia bolon-Hodgkin lymphoma eukaemia ite tectum and eneuk bosophagus tomach comach bolon user, gallbladder and biliary tract varceas ung delanoma of skin bon-melanoma skin cancer rostate didney and renal pelvis	259 387 1021 585 266 312 1356 546 3214 398 329 220 79 438 315 79 438 315 79 438 315 11461 518 259 387 1021 585 266 312 1356 546 546 546 546	319 455 1225 718 426 373 1614 831 7527 2895 445 344 253 97 595 335 7595 335 705 595 335 705 12177 605 318 454 1183 716 388 368 1593 697 782 2895 429	362 530 1486 810 607 448 1852 1257 9443 2570 523 364 290 113 763 350 721 362 524 1399 810 496 441 1800 889 92570 2570	408 608 1789 902 857 533 2117 1895 2331 691 387 331 134 978 365 Median 2030 13157 840 408 596 1628 903 614 408 596 1628 903 614 408 596 1628 903 614 408 596 1628 903 13157	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380 1124 809 1248 375 2035 13461 960 452 666 1866 986 1866 986 599 2232 1273 12773 12773	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257 425 436 1889 383 2257 425 436 1889 383 1589 383 1589 383 1589 383 1589 383 1589 425 1076 491 734 2104 1066 863 681 2446 14669 14669 2432 592	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499 222 2026 390 2026 390 2026 390 2026 390 2026 390 2026 390 2045 13496 1184 527 798 2338 1126 994 761 2633 1678 1662 3203 656	387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438	421 1152 715 393 367 1564 720 7640 7640 566 317 243 94 530	473 1331 824 499 441 1759 904 9247 9247 9273 695 336 262 106 607	532 1508 948 602 517 1966 1062 10790 12570 816 367 275 115 673	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287 121 721	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298 128 763	723 201 133 887 752 251 140 1520 2390 115 447 305 134 800
tomach iolon iolon adverse allbladder and biliary tract ancreas ung Aelanoma of skin ton-melanoma skin cancer rostate idney and renal pelvis ladder rain & central nervous system (CNS) lodgkin lymphoma lon-Hodgkin lymphoma lon-Hodgkin lymphoma eukaemia ter tomach solon ill invasive cancers, excl. NMSC lead and neck besophagus tomach comach bilon solon and neck solon tomach bilon tomach bilon solon and neck solon tomach bilon solon and neck solon tomach bilon solon ancreas ung Aelanoma of skin con-melanoma skin cancer rostate idney and renal pelvis	259 387 1021 585 266 312 1356 546 3214 398 329 220 79 220 79 438 315 11461 518 518 266 387 1021 585 266 312 1356 546 6004 3214	319 455 1225 718 426 373 1614 831 75295 445 344 253 344 253 344 253 344 253 344 253 344 253 344 253 344 253 344 253 344 253 344 253 345 12177 605 318 454 1183 716 385 454 1183 716 385 459 7482 2895 7482 2895 332	362 530 1486 810 607 448 1852 1257 9443 2570 523 364 290 113 763 350 763 350 763 350 763 350 723 12733 763 350 2524 1399 810 496 441 1800 889 9219 2570 471 340	408 608 1789 902 857 533 2117 1895 11776 2331 387 331 387 331 387 331 387 331 387 387 365 Median 2030 13157 840 8408 596 1628 903 614 8903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 905 905 905 905 905 905 905 905 905 905	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380 159 1228 375 2035 13461 960 452 666 1866 986 1866 986 599 2232 1273 12770 2240 548 404	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257 425 436 189 383 2257 425 436 189 383 259 2040 13577 1076 13577 1076 13577 1076 1457 1062 863 681 2446 1469 14658 2432 2592 425	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499 222 2026 390 222 2026 390 222 2026 390 223 8 13496 1184 527 798 2338 1126 994 2338 1126 994 1263 3107 8 16623 3203 1678	387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438	421 1152 715 393 367 1564 720 7640 7640 566 317 243 94 530	473 1331 824 499 441 1759 904 9247 9247 9273 695 336 262 106 607	532 1508 948 602 517 1966 1062 10790 12570 816 367 275 115 673	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287 121 721	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298 128 763	723 201 133 887 752 251 140 1520 2390 115 447 305 134 800
tomach ionach iolon iolon iolon iver, gallbladder and biliary tract anarceas ung Aelanoma of skin ion-melanoma skin cancer irostate idadder irain & central nervous system (CNS) iologkin lymphoma ion-Hodgkin lymphoma ieukaemia ite	259 387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438 315 79 438 315 505 505 516 312 1356 546 6004 3214 398 329 220	319 455 1225 718 426 373 1614 831 7527 2895 445 344 253 344 253 344 253 344 253 345 365 318 454 12177 605 318 454 1183 716 385 368 1593 697 7482 2895 429 542 2895	362 530 1486 810 607 448 1852 12570 523 364 290 113 763 350 80 113 763 350 80 80 80 80 80 80 80 80 80 80 80 80 80	408 608 1789 902 857 533 2117 1895 2331 691 387 331 134 978 365 Media 2330 13157 840 408 13157 840 408 596 1628 903 614 408 599 1628 903 614 519 2012 1083 10965 2331 518 367 239	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380 159 1248 375 2035 13461 960 452 736 1866 986 1866 986 1866 986 1866 986 599 2232 1273 12770 2240 2404 404	488 751 2539 1056 1601 718 2699 4187 2432 2257 425 436 189 1589 383 283 2040 13577 1076 491 7377 1076 491 7377 1076 491 736 863 681 2104 1062 863 681 2446 14658 2432 592 5425 548	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499 222 2026 390 222 2026 390 222 2026 390 223 8 13496 1184 527 798 2338 1126 994 761 2633 1126 994 761 2633 1126 994 761 2633 1678 16623 3203 656 438 370	387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438	421 1152 715 393 367 1564 720 7640 7640 566 317 243 94 530	473 1331 824 499 441 1759 904 9247 9247 9273 695 336 262 106 607	532 1508 948 602 517 1966 1062 10790 12570 816 367 275 115 673	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287 121 721	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298 128 763	723 2010 1333 887 752 2513 1409 1520 2390 1155 447 305 134 800
tomach colon colon lectum and anus iver, gallbladder and biliary tract ancreas ung Aelanoma of skin Aon-melanoma skin cancer irostate idiney and renal pelvis Uadder vrain & central nervous system (CNS) Hodgkin lymphoma Joan-Hodgkin lymphoma eukaemia	259 387 1021 585 266 312 1356 546 3214 398 329 220 79 220 79 438 315 11461 518 518 266 387 1021 585 266 312 1356 546 6004 3214	319 455 1225 718 426 373 1614 831 75295 445 344 253 344 253 344 253 344 253 344 253 344 253 344 253 344 253 344 253 344 253 344 253 345 12177 605 318 454 1183 716 385 454 1183 716 385 459 7482 2895 7482 2895 332	362 530 1486 810 607 448 1852 1257 9443 2570 523 364 290 113 763 350 763 350 763 350 763 350 723 12733 763 350 2524 1399 810 496 441 1800 889 9219 2570 471 340	408 608 1789 902 857 533 2117 1895 11776 2331 387 331 387 331 387 331 387 331 387 387 365 Median 2030 13157 840 8408 596 1628 903 614 8903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 903 61528 905 905 905 905 905 905 905 905 905 905	681 2142 983 1179 625 2403 2826 14467 2240 1122 409 380 159 1228 375 2035 13461 960 452 666 1866 986 1866 986 599 2232 1273 12770 2240 548 404	488 751 2539 1056 1601 718 2699 4187 17661 2432 2257 425 436 189 383 2257 425 436 189 383 259 2040 13577 1076 13577 1076 13577 1076 1457 1062 863 681 2446 1469 14658 2432 2592 425	813 2985 1117 2164 811 3002 6189 21437 3203 5549 438 499 222 2026 390 222 2026 390 222 2026 390 223 8 13496 1184 527 798 2338 1126 994 2338 1126 994 1263 3107 8 16623 3203 1678	387 1021 585 266 312 1356 546 6004 3214 398 329 220 79 438	421 1152 715 393 367 1564 720 7640 7640 566 317 243 94 530	473 1331 824 499 441 1759 904 9247 9247 9273 695 336 262 106 607	532 1508 948 602 517 1966 1062 10790 12570 816 367 275 115 673	596 1682 1079 699 594 2174 1185 12273 16105 931 404 287 121 721	660 1857 1216 795 674 2365 1295 13751 19912 1045 429 298 128 763	723 2010 1332 887 752 2513 1409 1520 2390 1155 447 305 134 800

Appendix 2: Projected ASRs in males, 2015-2045, using 6 models plus median

				demographic							HD1			
	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045
Il invasive cancers, excl. NMSC	471	490	490	490	490	490	490	471	429	385	341	297	254	216
lead and neck	22	20	20	20	20	20	20	22	23	25	27	29	31	33
Desophagus	11	11	11	11	11	11	11	11	11	11	11	11	10	10
tomach	15	16	16	16	16	16	16	15	15	15	15	15	15	15
colon	41	40	40	40	40	40	40	41	41	42	43	43	44	45
ectum and anus	24	25	25	25	25	25	25	24	25	24	24	23	23	22
iver, gallbladder and biliary tract	11	11	11	11	11	11	11	11	13	15	16	18	19	21
ancreas	13	12	12	12	12	12	12	13	13	13	14	14	14	15
ung	55	57	57	57	57	57	57	55	54	52	49	47	45	43
Aelanoma of skin	22	20	20	20	20	20	20	22	24	27	31	34	37	40
Non-melanoma skin cancer	242	238	238	238	238	238	238	242	254	265	276	287	298	309
Prostate	134	150	150	150	150	150	150	134	96	59	30	12	12	12
idney and renal pelvis	16	17	17	17	17	17	17	16	15	13	12	11	12	12
lladder	13	13	13	13	13	13	13	13	10	8	6	4	3	2
Brain & central nervous system (CNS)	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Hodgkin lymphoma	3	3	3	3	3	3	3	3	4	4	4	4	5	5
Non-Hodgkin lymphoma	18	18	18	18	18	18	18	18	20	22	23	24	25	27
Leukaemia	13	14	14	14	14	14	14	13	11	10	8	7	6	6
				HD2							HD3			
ite	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045
Il invasive cancers, excl. NMSC	471	426	380	335	289	243	197	471	430	392	357	325	296	269
lead and neck	22	19	19	19	19	19	197	22	23	26	29	325	35	39
Desophagus	11	19	19	19	19	19	19	11	11	11	11	11	10	10
itomach	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Colon	41	39	39	40	40	40	40	41	41	42	43	44	45	45
tectum and anus	24	25	24	24	23	23	22	24	25	25	24	24	23	23
iver, gallbladder and biliary tract	11	9	9	9	9	9	9	11	15	18	22	26	32	39
ancreas	13	12	12	12	12	12	12	13	13	13	14	14	15	15
ung	55	54	52	49	47	45	43	55	54	52	50	49	47	45
Aelanoma of skin	22	15	15	15	15	15	15	22	29	37	48	61	78	100
Ion-melanoma skin cancer	242	239	240	240	241	242	242	242	256	269	283	298	313	329
rostate	134	-	-	-	-	-	-	134	103	79	61	46	36	27
idney and renal pelvis	16	15	13	11	9	7	5	16	15	13	12	11	9	8
lladder	13	-	-		-	-	-	13	11	10	8	7	6	5
Brain & central nervous system (CNS)	9	9	9	9	9	9	9	9	9	9	9	9	9	9
łodgkin lymphoma	3	3	3	3	3	3	3	3	4	4	4	5	5	5
Non-Hodgkin lymphoma	18	16	17	17	17	17	17	18	21	23	25	27	29	31
eukaemia	13	12	10	8	7	5	4	13	12	11	10	9	8	7
	15	14	10	HD4	,	5	-	15	12		Nordpred	5	0	,
site	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045
All invasive cancers, excl. NMSC	471	433	397	365	336	310	2045	471	535	563	583	598	611	624
	22	24	26	29	33	37	41	22		22	22	22	22	22
lead and neck									22					
Desophagus	11	11	11	11	11	11	11	11	11	11	11	11	11	11
tomach	15	16	16	16	16	16	16	15	14	14	13	13	13	13
Colon	41	42	43	44	46	49	52	41	39	39	38	38	38	38
Rectum and anus	24	25	25	24	24	24	24	24	25	25	26	28	29	31
iver, gallbladder and biliary tract	11	15	18	22	27	34	42	11	14	15	16	16	17	17
ancreas	13	13	13	14	15	15	16	13	13	13	13	14	14	14
ung	55	55	53	51	50	49	48	55	53	51	50	49	49	49
Aelanoma of skin	22	29	39	51	67	89	118	22	25	27	28	27	26	25
Ion-melanoma skin cancer	242	255	270	287	306	329	354	242	262	272	275	276	276	277
rostate	134	106	85	72	69	78	110	134	232	297	359	411	459	507
idney and renal pelvis	16	16	17	23	38	77	179	16	20	22	23	24	25	26
Bladder	13	11	10	9	8	7	6	13	10	9	8	8	7	7
Brain & central nervous system (CNS)	9	9	9	9	10	10	10	9	9	9	8	8	8	8
					5	6	7	3	4	4	4	4	4	4
lodgkin lymphoma	3	4	4	5						•		17	4	15
lodgkin lymphoma	3 18	4	4 23	5 26			36		19	19	18		10	13
Non-Hodgkin lymphoma	18	21	23	26	28	32	36 9	18	19 14	19 14	18 14		14	1/
				26 10			36 9		19 14	19 14	18 14	14	14	14
Ion-Hodgkin lymphoma eukaemia	18 13	21 12	23 11	26 10 Median	28 10	32 9	9	18					14	14
ion-Hodgkin lymphoma eukaemia ite	18 13 2015	21 12 2020	23 11 2025	26 10 Median 2030	28 10 2035	32 9 2040	9 2045	18					14	14
Ion-Hodgkin lymphoma eukaemia i te III invasive cancers, excl. NMSC	18 13 2015 471	21 12 2020 431	23 11 2025 394	26 10 Median 2030 361	28 10 2035 330	32 9 2040 303	9 2045 278	18					14	14
Ion-Hodgkin lymphoma eukaemia i te III invasive cancers, excl. NMSC Iead and neck	18 13 2015 471 22	21 12 2020 431 22	23 11 2025 394 24	26 10 Median 2030 361 25	28 10 2035 330 26	32 9 2040 303 27	9 2045 278 27	18					14	14
Ion-Hodgkin lymphoma eukaemia ite III invasive cancers, excl. NMSC lead and neck Desophagus	18 13 2015 471 22 11	21 12 2020 431 22 11	23 11 2025 394 24 11	26 10 Median 2030 361 25 11	28 10 2035 330 26 11	32 9 2040 303 27 11	9 2045 278 27 10	18					14	14
Ion-Hodgkin lymphoma eukaemia Ite II invasive cancers, excl. NMSC lead and neck lesophagus tomach	18 13 2015 471 22 11 15	21 12 2020 431 22 11 15	23 11 2025 394 24 11 15	26 10 Median 2030 361 25 11 15	28 10 2035 330 26 11 15	32 9 2040 303 27 11 15	9 2045 278 27 10 15	18					14	14
Ion-Hodgkin lymphoma eukaemia ite II invasive cancers, excl. NMSC lead and neck lesophagus tomach olon	18 13 2015 471 22 11 15 41	21 12 2020 431 22 11 15 40	23 11 2025 394 24 11 15 41	26 10 Median 2030 361 25 11 15 41	28 10 2035 330 26 11 15 41	32 9 2040 303 27 11 15 42	9 2045 278 27 10 15 42	18					14	14
ion-Hodgkin lymphoma eukaemia ite II invasive cancers, excl. NMSC lead and neck lesophagus tomach olon ectum and anus	18 13 2015 471 22 11 15 41 24	21 12 2020 431 22 11 15 40 25	23 11 2025 394 24 11 15 41 25	26 10 Median 2030 361 25 11 15 41 24	28 10 2035 330 26 11 15 41 24	32 9 2040 303 27 11 15 42 23	9 2045 278 27 10 15 42 23	18					14	14
ion-Hodgkin lymphoma eukaemia ite II invasive cancers, excl. NMSC lead and neck lesophagus tomach olon ectum and anus	18 13 2015 471 22 11 15 41	21 12 2020 431 22 11 15 40	23 11 2025 394 24 11 15 41	26 10 Median 2030 361 25 11 15 41	28 10 2035 330 26 11 15 41	32 9 2040 303 27 11 15 42	9 2045 278 27 10 15 42	18					14	14
on-Hodgkin lymphoma eukaemia te II invasive cancers, excl. NMSC ead and neck esophagus tomach olon ectum and anus ver, gallbladder and biliary tract	18 13 2015 471 22 11 15 41 24	21 12 2020 431 22 11 15 40 25	23 11 2025 394 24 11 15 41 25	26 10 Median 2030 361 25 11 15 41 24	28 10 2035 330 26 11 15 41 24	32 9 2040 303 27 11 15 42 23	9 2045 278 27 10 15 42 23	18					14	14
Ion-Hodgkin lymphoma eukaemia ite II invasive cancers, excl. NMSC lead and neck tesophagus tomach olon ectum and anus ver, gallbladder and biliary tract ancreas	18 13 2015 471 22 11 15 41 24 11	21 12 2020 431 22 11 15 40 25 13	23 11 2025 394 24 11 15 41 25 15	26 10 Median 2030 361 25 11 15 41 24 24	28 10 2035 330 26 11 15 41 24 17	32 9 2040 303 27 11 15 42 23 18	9 2045 278 27 10 15 42 23 19	18					14	14
Ion-Hodgkin lymphoma eukaemia ite II invasive cancers, excl. NMSC lead and neck besophagus tomach olon ectum and anus iver, gallbladder and biliary tract ancreas ung	18 13 2015 471 22 11 15 41 24 11 13 55	21 12 2020 431 22 11 15 40 25 13 13 13 54	23 11 2025 394 24 11 15 41 25 15 13	26 10 Median 2030 361 25 11 15 41 24 24 16 13 50	28 10 2035 330 26 11 15 41 24 24 17 14 49	32 9 2040 303 27 11 15 42 23 18 14 48	9 2045 278 27 10 15 42 23 19 14	18					14	14
Ion-Hodgkin lymphoma eukaemia ite II invasive cancers, excl. NMSC leada and neck lesophagus tomach olon ectum and anus iver, gallbladder and biliary tract ancreas ung Aelanoma of skin	18 13 2015 471 22 11 15 41 24 11 13 55 22	21 12 2020 431 22 11 15 40 25 13 13 13 54 25	23 11 2025 394 24 11 15 41 25 15 13 52 27	26 10 Median 2030 361 25 11 15 41 24 16 13 50 50 29	28 10 2035 330 26 11 15 41 24 17 14 49 30	32 9 2040 303 27 11 15 42 23 18 14 48 32	9 2045 278 27 10 15 42 23 19 14 46 33	18					14	14
Ion-Hodgkin lymphoma eukaemia ite III invasive cancers, excl. NMSC lead and neck besophagus tomach oloon eectum and anus iver, gallbladder and biliary tract ancreas ung Aelanoma of skin Ion-melanoma skin cancer	18 13 2015 471 22 11 15 41 24 11 13 55 22 242	21 12 2020 431 22 11 15 40 25 13 13 54 25 255	23 11 2025 394 24 11 15 41 25 15 13 52 27 267	26 10 Median 2030 361 15 41 41 24 16 13 50 29 275	28 10 2035 26 11 15 41 24 17 14 49 30 281	32 9 2040 303 27 11 15 42 23 18 14 48 32 287	9 2045 278 27 10 15 42 23 19 14 46 33 293	18					14	14
Ion-Hodgkin lymphoma eukaemia ite III invasive cancers, excl. NMSC lead and neck Jesophagus tomach iolon deetum and anus iver, gallbladder and biliary tract ancreas ung Alelanoma of skin Ion-melanoma skin cancer rostate	18 13 2015 471 22 11 15 41 24 11 13 55 22 242 134	21 12 2020 431 22 11 15 40 25 13 13 13 54 25 255 106	23 11 2025 394 24 11 15 41 25 15 13 52 27 267 85	26 10 Median 2030 361 25 11 15 41 24 16 13 50 29 29 275 72	28 10 2035 26 11 15 41 24 17 14 49 30 281 69	32 9 2040 303 27 11 15 42 23 18 14 48 14 48 2287 78	9 2045 278 27 10 15 42 23 19 14 46 33 293 110	18					14	14
Ion-Hodgkin lymphoma eukaemia ite UII invasive cancers, excl. NMSC lead and neck Desophagus tomach iolon ecctum and anus ecctum and anus ecctum and anus iver, gallbladder and biliary tract ancreas ung Aelanoma of skin Ion-melanoma skin cancer rostate idney and renal pelvis	18 13 2015 471 22 11 15 41 24 11 13 55 22 242 134 16	21 12 2020 431 22 11 15 40 25 13 13 54 25 255 106 15	23 11 2025 394 24 11 15 41 55 15 13 52 27 267 85 15	26 10 Median 2361 25 11 15 41 41 41 6 13 50 29 275 72 72 15	28 10 2035 330 26 11 15 41 15 41 41 24 17 14 49 30 281 69 14	32 9 2040 303 27 11 15 42 23 18 14 48 32 287 78 15	9 2045 278 27 10 15 42 23 19 14 46 33 293 110 15	18					14	14
Ion-Hodgkin lymphoma eukaemia ite III invasive cancers, excl. NMSC lead and neck besophagus tomach tolon eectum and anus viver, gallbladder and biliary tract ancreas ung Aelanoma of skin Ion-melanoma skin cancer rostate idney and renal pelvis ladder	18 13 2015 471 22 11 15 41 15 41 11 13 55 22 242 242 134 16 13	21 12 2020 431 22 11 15 40 25 13 13 13 54 255 255 106 15 11	23 11 2025 394 24 11 15 41 55 15 13 52 27 267 85 15 10	26 10 Median 2030 25 11 15 41 41 6 13 50 29 275 72 72 15 8	28 10 2035 330 26 11 15 41 24 17 14 49 30 281 30 281 69 14 8	32 9 2040 303 27 11 15 42 23 18 14 48 32 287 78 15 7	9 2045 278 27 10 15 42 23 19 14 46 33 293 110 15 6	18					14	14
Ion-Hodgkin lymphoma eukaemia ite II invasive cancers, excl. NMSC lead and neck lead and neck lead and neck leasophagus tomach olon ectum and anus ver, gallbladder and biliary tract ancreas ung delanoma of skin lon-melanoma skin cancer rostate idney and renal pelvis ladder rain & central nervous system (CNS)	18 13 2015 471 22 11 15 41 24 11 13 55 22 242 134 16 13 9	21 12 2020 431 22 11 15 40 25 13 13 13 13 54 25 255 106 15 11 9	23 11 2025 394 24 11 15 41 25 15 13 52 27 267 85 15 10 9	26 10 Median 2030 25 11 15 41 24 16 13 50 29 275 72 15 8 8 9	28 10 2035 330 26 11 15 41 24 17 14 9 30 281 69 14 8 9	32 9 2040 303 27 11 15 42 23 18 14 48 32 287 78 57 7 9	9 2045 277 10 15 42 23 19 14 46 33 293 110 15 6 9	18					14	14
Ion-Hodgkin lymphoma eukaemia ite II invasive cancers, excl. NMSC lead and neck besophagus tomach olon ectum and anus ver, gallbladder and biliary tract ancreas ung delanoma of skin lon-melanoma skin cancer rostate idney and renal pelvis ladder	18 13 2015 471 22 11 15 41 15 41 11 13 55 22 242 242 134 16 13	21 12 2020 431 22 11 15 40 25 13 13 13 54 255 255 106 15 11	23 11 2025 394 24 11 15 41 55 15 13 52 27 267 85 15 10	26 10 Median 2030 25 11 15 41 16 13 50 29 275 72 72 15 8	28 10 2035 330 26 11 15 41 24 17 14 49 30 281 30 281 69 14 8	32 9 2040 303 27 11 15 42 23 18 14 48 32 287 78 15 7	9 2045 278 27 10 15 42 23 19 14 46 33 293 110 15 6	18					14	14

Appendix 3: Projected number of cases of cancer in females, 2015-2045, using 6 models plus median

				Demographi	c						HD1			
site	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045
All invasive cancers, excl. NMSC	10238	11559	13017	14544	16061	17495	18839	10238	11473	12824	14246	15547	16848	18098
Head and neck	182	193	216	240	264	285	304	182	208	244	281	319	355	389
Oesophagus	157 204	170	197 282	229	262	295 410	328	157	161	176 235	193	209 250	224 247	234 233
Stomach Colon	776	245 886	1020	324 1166	367 1317	410 1470	452 1617	204 776	220 894	1031	246 1180	1338	1501	233 1670
Rectum and anus	338	387	440	496	553	607	656	338	398	448	498	545	582	614
Liver, gallbladder and biliary tract	174	213	247	284	325	366	407	174	242	306	383	474	575	687
Pancreas	252	301	349	403	461	519	576	252	315	371	435	507	580	654
Lung	1130	1297	1492	1700	1911	2120	2313	1130	1461	1823	2245	2714	3221	3743
Melanoma of skin	584	598	661	729	796	862	925	584	695	842	1006	1189	1392	1613
Non-melanoma skin cancer	4669	5234	5988	6809	7654	8497	9320	4669	5977	7469	9191	11089	13163	15415
Female breast	3106	3438	3820	4182	4514	4788	5050	3106	3276	3529	3768	3962	4046	4249
Cervix uteri Corpus uteri	251 460	311 542	328 610	344 678	362 745	379 803	392 846	251 460	171 610	139 748	144 901	175 1067	216 1237	257 1393
Ovary	400	455	513	573	630	684	731	400	446	497	551	607	667	725
Kidney and renal pelvis	215	254	286	321	356	391	424	215	305	380	464	558	663	775
Bladder	128	156	182	211	243	274	305	128	131	131	134	150	175	198
Brain & central nervous system (CNS)	152	186	206	227	247	267	285	152	195	221	251	282	313	347
Hodgkin lymphoma	68	70	76	81	86	88	91	68	77	86	97	106	116	126
Non-Hodgkin lymphoma	339	416	471	530	590	647	699	339	459	558	671	796	934	1077
Leukaemia	227	241	268	300 HD2	333	367	399	227	248	275	303 HD3	332	360	385
site	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045
All invasive cancers, excl. NMSC	10238	11468	12814	14189	15540	16789	17951	10238	11466	12812	14187	15538	16789	17955
Head and neck	182	175	12814	221	244	267	287	182	212	256	306	363	423	486
Oesophagus	157	159	175	191	206	217	225	157	160	177	196	214	230	244
Stomach	204	221	236	250	260	264	263	204	223	242	262	280	295	308
Colon	776	899	1037	1188	1345	1502	1653	776	902	1042	1196	1356	1516	1672
Rectum and anus	338	400	454	511	567	621	672	338	400	454	511	568	622	673
Liver, gallbladder and biliary tract	174	183	211	244	278	313	347	174	250	324	418	533	670	830
Pancreas	252	303	352	408	467	527	586	252	315	371	435	505	577	651
Lung Melanoma of skin	1130 584	1108 499	1276 552	1455 605	1637 661	1817 715	1986 768	1130 584	1521 737	1958 935	2493 1176	3133 1472	3885 1828	4745 2253
Non-melanoma skin cancer	4669	4677	5359	6107	6888	7668	8432	4669	6172	7957	10199	12939	16202	20042
Female breast	3106	3275	3502	3681	3810	3871	3902	3106	3279	3514	3709	3860	3950	4019
Cervix uteri	251	-	-	-	-	-	-	251	188	136	98	70	50	36
Corpus uteri	460	455	512	570	627	675	711	460	640	813	1023	1268	1541	1834
Ovary	407	444	488	531	570	603	629	407	445	490	534	575	610	638
Kidney and renal pelvis	215	215	243	273	303	332	360	215	322	420	544	697	881	1100
Bladder	128	133	130	123	110	89	62	128	140	146	151	155	156	156
Brain & central nervous system (CNS) Hodgkin lymphoma	152 68	185 65	206 69	227 74	249 78	269 82	288 87	152 68	194 81	219 92	246 105	274 120	301 137	328 155
Non-Hodgkin lymphoma	339	370	418	469	519	568	613	339	467	573	697	837	994	1164
Leukaemia	227	250	280	312	345	377	407	227	250	280	312	345	377	408
				HD4							Nordpred			
site	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045
All invasive cancers, excl. NMSC														21374
	10238	11500	12914	14439	15887	17381	18893	10238	12206	14118	16034	17890	19672	
Head and neck	182	218	265	318	378	446	525	182	221	265	308	348	384	426
Head and neck Oesophagus	182 157	218 162	265 180	318 201	378 222	446 242	525 257	182 157	221 167	265 188	308 213	348 240	384 261	426 277
Head and neck Oesophagus Stomach	182 157 204	218 162 225	265 180 246	318 201 267	378 222 285	446 242 300	525 257 311	182 157 204	221 167 229	265 188 255	308 213 290	348 240 331	384 261 374	426 277 416
Head and neck Oesophagus Stomach Colon	182 157 204 776	218 162 225 918	265 180 246 1085	318 201 267 1288	378 222 285 1543	446 242 300 1875	525 257 311 2329	182 157 204 776	221 167 229 881	265 188 255 1008	308 213 290 1149	348 240 331 1302	384 261 374 1445	426 277 416 1575
Head and neck Oesophagus Stomach Colon Rectum and anus	182 157 204	218 162 225	265 180 246	318 201 267 1288 514	378 222 285	446 242 300	525 257 311	182 157 204	221 167 229	265 188 255 1008 456	308 213 290	348 240 331	384 261 374	426 277 416
Head and neck Oesophagus Stomach Colon	182 157 204 776 338	218 162 225 918 402	265 180 246 1085 457	318 201 267 1288	378 222 285 1543 569	446 242 300 1875 618	525 257 311 2329 663	182 157 204 776 338	221 167 229 881 394	265 188 255 1008	308 213 290 1149 529	348 240 331 1302 609	384 261 374 1445 691	426 277 416 1575 771
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract	182 157 204 776 338 174	218 162 225 918 402 254	265 180 246 1085 457 336	318 201 267 1288 514 446	378 222 285 1543 569 597	446 242 300 1875 618 794	525 257 311 2329 663 1049	182 157 204 776 338 174	221 167 229 881 394 234	265 188 255 1008 456 286	308 213 290 1149 529 337	348 240 331 1302 609 389	384 261 374 1445 691 436	426 277 416 1575 771 474
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin	182 157 204 776 338 174 252 1130 584	218 162 225 918 402 254 317 1529 746	265 180 246 1085 457 336 375 1980 958	318 201 267 1288 514 446 441 2553 1228	378 222 285 1543 569 597 518 3259 1570	446 242 300 1875 618 794 597 4115 2008	525 257 311 2329 663 1049 681 5109 2577	182 157 204 776 338 174 252 1130 584	221 167 229 881 394 234 302 1449 696	265 188 255 1008 456 286 351 1733 819	308 213 290 1149 529 337 406 1992 930	348 240 331 1302 609 389 463 2202 1026	384 261 374 1445 691 436 523 2371 1110	426 277 416 1575 771 474 582 2504 1186
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer	182 157 204 776 338 174 252 1130 584 4669	218 162 225 918 402 254 317 1529 746 6178	265 180 246 1085 457 336 375 1980 958 7991	318 201 267 1288 514 446 441 2553 1228 10249	378 222 285 1543 569 597 518 3259 1570 12940	446 242 300 1875 618 794 597 4115 2008 16178	525 257 311 2329 663 1049 681 5109 2577 20093	182 157 204 776 338 174 252 1130 584 4669	221 167 229 881 394 234 302 1449 696 5844	265 188 255 1008 456 286 351 1733 819 7011	308 213 290 1149 529 337 406 1992 930 8189	348 240 331 1302 609 389 463 2202 1026 9325	384 261 374 1445 691 436 523 2371 1110 10454	426 277 416 1575 771 474 582 2504 1186 11591
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast	182 157 204 776 338 174 252 1130 584 4669 3106	218 162 225 918 402 254 317 1529 746 6178 3319	265 180 246 1085 457 336 375 1980 958 7991 3659	318 201 267 1288 514 446 441 2553 1228 10249 4035	378 222 285 1543 569 597 518 3259 1570 12940 4433	446 242 300 1875 618 794 597 4115 2008 16178 4817	525 257 311 2329 663 1049 681 5109 2577 20093 5327	182 157 204 776 338 174 252 1130 584 4669 3106	221 167 229 881 394 234 302 1449 696 5844 3675	265 188 255 1008 456 286 351 1733 819 7011 4196	308 213 290 1149 529 337 406 1992 930 8189 4651	348 240 331 1302 609 389 463 2202 1026 9325 5043	384 261 374 1445 691 436 523 2371 1110 10454 5402	426 277 416 1575 771 474 582 2504 1186 11591 5750
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri	182 157 204 776 338 174 252 1130 584 4669 3106 251	218 162 225 918 402 254 317 1529 746 6178 3319 217	265 180 246 1085 457 336 375 1980 958 7991 3659 231	318 201 267 1288 514 446 441 2553 1228 10249 4035 312	378 222 285 1543 569 597 518 3259 1570 12940 4433 518	446 242 300 1875 618 794 597 4115 2008 16178 4817 980	525 257 311 2329 663 1049 681 5109 2577 20093 5327 1912	182 157 204 776 338 174 252 1130 584 4669 3106 251	221 167 229 881 394 234 302 1449 696 5844 3675 328	265 188 255 1008 456 286 351 1733 819 7011 4196 356	308 213 290 1149 529 337 406 1992 930 8189 4651 382	348 240 331 1302 609 389 463 2202 1026 9325 5043 411	384 261 374 1445 691 436 523 2371 1110 10454 5402 441	426 277 416 1575 771 474 582 2504 1186 11591 5750 467
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri	182 157 204 776 338 174 252 1130 584 4669 3106 251 460	218 162 225 918 402 254 317 1529 746 6178 3319 217 651	265 180 246 1085 457 336 375 1980 958 7991 3659 231 841	318 201 267 1288 514 446 441 2553 1228 10249 4035 312 1078	378 222 285 1543 569 597 518 3259 1570 12940 4433 518 1372	446 242 300 1875 618 794 597 4115 2008 16178 4817 980 1726	525 257 311 2329 663 1049 681 5109 2577 20093 5327 1912 2125	182 157 204 776 338 174 252 1130 584 4669 3106 251 460	221 167 229 881 394 234 302 1449 696 5844 3675 328 596	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687	308 213 290 1149 529 337 406 1992 930 8189 4651 382 758	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri	182 157 204 776 338 174 252 1130 584 4669 3106 251	218 162 225 918 402 254 317 1529 746 6178 3319 217	265 180 246 1085 457 336 375 1980 958 7991 3659 231	318 201 267 1288 514 446 441 2553 1228 10249 4035 312	378 222 285 1543 569 597 518 3259 1570 12940 4433 518	446 242 300 1875 618 794 597 4115 2008 16178 4817 980	525 257 311 2329 663 1049 681 5109 2577 20093 5327 1912	182 157 204 776 338 174 252 1130 584 4669 3106 251	221 167 229 881 394 234 302 1449 696 5844 3675 328	265 188 255 1008 456 286 351 1733 819 7011 4196 356	308 213 290 1149 529 337 406 1992 930 8189 4651 382	348 240 331 1302 609 389 463 2202 1026 9325 5043 411	384 261 374 1445 691 436 523 2371 1110 10454 5402 441	426 277 416 1575 771 474 582 2504 1186 11591 5750 467
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407	218 162 225 918 402 254 317 1529 746 6178 3319 217 651 451	265 180 246 1085 336 375 1980 958 7991 3659 231 841 507	318 201 267 1288 514 446 441 2553 1228 10249 4035 312 1078 568	378 222 285 1543 569 597 518 3259 1570 12940 4433 518 1372 632	446 242 300 1875 618 794 597 4115 2008 16178 4817 980 1726 700	525 257 311 2329 663 1049 681 5109 2577 20093 5327 1912 2125 770	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457	308 213 290 1149 529 337 406 1992 930 8189 4651 382 758 488	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 515	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Ovary Kidney and renal pelvis Bladder	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215	218 162 225 918 402 254 317 1529 746 6178 3319 217 651 451 325	265 180 246 1085 457 336 375 1980 958 7991 3659 231 841 507 430	318 201 267 1288 514 446 441 2553 1228 10249 4035 312 1078 568 563	378 222 285 1543 569 597 518 3259 1570 12940 4433 518 1372 632 735	446 242 300 1875 618 794 597 4115 2008 16178 4817 980 1726 700 961	525 257 311 2329 663 1049 681 5109 2577 20093 5327 1912 2125 770 1252	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356	308 213 290 1149 529 337 406 1992 930 8189 4651 382 758 488 488 407	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 515 454	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin Iymphoma	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 68	218 162 225 918 402 254 317 1529 746 6178 3319 217 651 3319 217 651 325 145 197 81	265 180 246 1085 457 336 375 1980 958 7991 3659 231 841 507 430 159 227 94	318 201 267 1288 514 446 441 22553 1228 10249 4035 312 1078 568 563 175 263 111	378 222 285 1543 569 597 518 3259 1570 12940 4433 518 1372 632 735 194 303 130	446 242 300 1875 618 794 4115 2008 16178 4817 980 1726 4817 980 1726 16178 4817 980 1726 16178 4817 980 1724 4817 1700 961 214 348 348	525 257 311 2329 663 1049 681 5109 2577 20093 5327 1912 2125 770 1252 233 400 172	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 68	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 290 1149 529 337 406 1992 930 8189 4651 382 758 485 488 407 137 229 87	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 515 454 149 248 92	384 261 374 436 523 2371 10454 5402 441 855 529 499 154 265 95	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 251 128 152 128 152 68 339	218 162 225 918 402 254 317 1529 746 6178 3319 217 651 451 325 145 197 145 197	265 180 246 1085 457 336 375 1980 958 7991 3659 231 841 507 430 159 227 430 159 227 94 599	318 201 267 1288 544 441 2553 1228 10249 4035 312 1078 568 568 568 568 563 1175 263 1175 263 1175	378 222 285 1543 569 597 1570 12940 4433 518 1372 632 518 1372 632 518 1372 632 194 303 130 939	446 242 300 1875 618 794 4115 2008 16178 4817 980 1726 700 961 214 348 481	525 257 311 2329 663 1049 681 5109 2577 20093 5327 1912 2125 770 1252 233 400 1252 233 400	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin Iymphoma	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 68	218 162 225 918 402 254 317 1529 746 6178 3319 217 651 3319 217 651 325 145 197 81	265 180 246 1085 457 336 375 1980 958 7991 3659 231 841 507 430 159 227 94	318 201 267 1288 514 441 2553 1228 10249 4035 312 1078 568 568 568 568 568 568 568 563 175 263 111 752 263 111	378 222 285 1543 569 597 518 3259 1570 12940 4433 518 1372 632 735 194 303 130	446 242 300 1875 618 794 4115 2008 16178 4817 980 1726 4817 980 1726 16178 4817 980 1726 16178 4817 980 1724 4817 1700 961 214 348 348	525 257 311 2329 663 1049 681 5109 2577 20093 5327 1912 2125 770 1252 233 400 172	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 68	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 290 1149 529 337 406 1992 930 8189 4651 382 758 485 488 407 137 229 87	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 515 454 149 248 92	384 261 374 436 523 2371 10454 5402 441 855 529 499 154 265 95	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 251 460 407 215 128 68 339 252 68 339	218 162 225 918 402 254 317 1529 746 6178 3319 217 651 325 145 197 81 477 81 477 250	265 180 246 1085 457 336 375 1980 958 7991 3659 231 841 507 430 159 227 94 599 227	318 201 267 1288 514 446 441 2553 1228 4035 312 1078 568 563 175 263 111 752 263 111 752	378 222 285 1543 569 597 518 3259 1570 12940 4433 518 1372 632 735 194 303 130 939 342	446 242 300 1875 618 597 4115 2008 16178 4817 980 1726 700 961 214 348 149 1166 374	525 257 311 2329 663 5109 2577 20093 5327 1912 2125 770 1252 233 400 172 1435 404	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, galibladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 68 339 227 2015	218 162 254 402 254 402 254 402 254 402 1529 746 617 617 3319 217 651 325 145 145 145 145 145 145 145 14	265 180 246 1085 457 336 958 7991 3659 231 841 507 430 159 227 430 159 227 94 599 278	318 201 267 1288 514 446 441 22553 1228 10249 4035 312 1078 568 563 175 568 563 175 263 175 263 111 752 2310 Median 2030	378 222 285 1543 569 597 518 3259 1570 12940 4433 518 1372 632 735 194 303 130 939 342 2035	446 242 300 1875 618 794 4115 2008 16178 4817 980 1726 700 961 214 348 179 61 214 348 149 1166 374	525 257 311 2329 663 5109 2577 20093 5327 1912 2125 770 1252 233 400 172 1435 404	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia site All invasive cancers, excl. NMSC	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 68 339 227 2015	218 162 225 918 402 254 317 1529 746 6178 3319 217 651 451 325 145 197 81 477 250 2020 11487	265 180 246 1085 457 336 1980 958 231 841 507 430 159 227 94 307 430 159 227 94 207 841 599 278 207 278 208 208 208 208 208 208 208 20	318 207 267 1288 514 441 2553 1228 10249 4035 312 1078 568 568 568 568 563 175 263 117 52 263 117 52 310 Median 2030	378 222 225 1543 569 597 1570 12940 4433 1372 632 735 194 303 130 339 342 2035	446 242 347 597 4115 2008 16178 4817 980 1726 700 961 214 348 149 214 348 149 1166 374 2040 17114	525 257 311 2329 663 1049 2681 5109 2577 20093 5327 2125 770 2525 770 1252 233 400 172 233 400 174 35 404 2045	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 68 339 227 2015	218 162 254 402 254 402 254 402 254 402 1529 746 617 617 3319 217 651 325 145 145 145 145 145 145 145 14	265 180 246 1085 457 336 958 7991 3659 231 841 507 430 159 227 430 159 227 94 599 278	318 201 267 1288 514 446 441 22553 1228 10249 4035 312 1078 568 563 175 568 563 175 263 175 263 111 752 2310 Median 2030	378 222 285 1543 569 597 518 3259 1570 12940 4433 518 1372 632 735 194 303 130 939 342 2035	446 242 300 1875 618 794 4115 2008 16178 4817 980 1726 700 961 214 348 179 61 214 348 149 1166 374	525 257 311 2329 663 5109 2577 20093 5327 1912 2125 770 1252 233 400 172 1435 404	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Leukaemia Site All invasive cancers, excl. NMSC Head and neck Oesophagus	182 157 204 776 338 174 252 1130 58 4669 3106 251 460 407 215 128 460 407 215 128 460 407 215 122 68 339 227 2015	218 162 255 918 402 254 317 1529 746 6178 3319 217 6178 3319 217 451 325 1451 325 1451 255 197 81 477 250 2020 11487 210	265 180 246 1085 457 336 375 1980 958 7991 3659 231 507 430 159 227 94 599 227 94 599 227 94 599 278 225	318 201 267 1288 514 441 2553 1028 10249 4035 312 1078 568 568 563 175 263 111 111 732 310 Median 2030 14343 294	378 222 285 1543 569 597 1570 12940 4433 518 1372 632 735 632 735 194 303 130 939 342 2035	446 242 300 1875 618 597 4115 2008 16178 4817 980 1726 700 961 214 348 149 1166 374 249 1166 374	525 257 311 2329 663 1049 2577 20093 5327 1912 2125 2125 2125 2125 2125 2125 2125	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia Site All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 68 3152 68 3227 2015 10238 182 157 205 10238 182 157 207 2015 10238 182 157 205 10238 182 157 205 10238 182 157 205 10238 182 157 205 10238 182 157 205 10238 182 157 205 10238 182 105 105 105 105 105 105 105 105	218 162 255 918 402 254 317 1529 746 6178 3319 217 451 325 1451 325 1451 325 1457 210 11487 210 161 224 887	265 180 246 1085 457 336 958 7991 3659 231 841 507 430 159 227 94 599 278 229 24 599 278 225 12869 250 179	318 201 267 1288 514 441 2553 1028 4035 312 4035 312 1078 568 568 568 568 563 175 5263 111 111 2030 14343 294 198 204 1184	378 222 285 1543 569 597 518 3259 1570 12940 4433 518 1372 632 632 735 194 303 303 939 342 2035 15717 333 218	446 242 300 1875 618 597 4115 2008 16178 4817 980 1726 700 961 214 348 149 1166 374 2040 17114 369 236 298 295	525 257 311 2329 663 1049 681 5109 2577 20093 5327 1912 2125 770 1252 233 404 172 1435 404 2045 18469 407 251	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Leukaemia Ste All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus	182 157 204 276 338 174 252 1130 584 4669 3106 251 460 251 102 68 339 152 68 339 2015 10238 182 157 204 776 338	218 162 255 918 402 254 402 254 402 1529 746 6178 3319 217 651 83 451 325 145 197 81 477 81 477 2020 11487 210 161 224 897 399	265 180 246 1085 457 336 958 7991 3659 231 841 507 430 1597 237 94 507 430 1599 227 94 599 227 94 599 227 94 599 227 94 599 278 278 94 599 278 279 94 599 279 244 454	318 201 267 1288 514 441 2553 1228 10249 4035 312 4035 312 1078 568 563 175 263 111 752 263 111 752 263 111 752 263 1144 294 198 264 198	378 222 285 1543 569 597 1570 12940 4433 518 1372 632 735 194 303 130 939 339 339 339 339 2035 15717 333 218 283 1341 568	446 242 300 1875 618 597 4115 2008 16178 4817 980 1726 700 961 214 348 149 1166 374 2040 17114 369 236 298 1501 619	525 257 311 2329 663 5109 2577 20093 5327 1912 2125 770 1252 233 400 172 1435 400 172 1435 400 172 1435 409 251 309 407 251 309 266 70 251 309 266 30 266 30 267 30 266 30 267 30 267 30 267 30 267 30 267 30 267 30 267 30 267 30 267 30 267 30 277 277 2009 277 2009 2009 2009 2009 2	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia site All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 68 339 227 2015 10238 182 10238 182 182 204 776	218 162 225 918 402 402 402 402 402 402 402 402	265 180 246 1085 457 336 375 1980 958 7991 3659 231 841 507 430 159 227 94 227 94 239 278 2025 12869 259 248 205 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 12869 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250	318 207 1288 514 441 2553 1228 10249 4035 312 1078 568 568 568 568 563 117 52 263 117 52 263 117 52 310 Median 2030 14343 294 14343 294 14343 294 1184 518	378 222 1543 569 597 518 3259 1570 4433 1372 632 735 1372 632 735 1394 303 130 939 342 2035 15717 333 218 283 1341 568 283	446 242 342 397 4115 2008 16178 4817 980 1726 700 961 1726 700 961 214 348 149 214 348 149 1166 374 2040 17114 369 226 298 1501 619 506	525 257 311 2329 663 1049 2577 20093 5327 1912 2125 770 1252 233 400 172 233 400 172 233 400 172 233 400 172 533 404	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia site All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract	182 157 204 776 338 174 252 1130 584 4669 3106 251 4669 3106 251 106 251 106 251 102 68 339 227 2015 10238 182 152 68 339 227 2015 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 182 182 182 182 182 182 18	218 162 255 918 402 254 317 1529 746 6178 3319 217 651 451 325 1451 325 1451 325 1457 250 2020 11487 210 161 477 250 2020 11487 210 162 214 897 399 238 309	265 180 246 1085 457 336 958 231 841 507 430 1507 430 227 94 507 430 227 94 599 278 2025 12869 250 179 244 1034 454 256 361	318 201 267 1288 514 441 2553 1028 4035 312 1078 568 568 568 568 563 175 263 111 752 263 111 752 310 Median 2030 14343 294 198 264 1184 511	378 222 1543 569 597 1570 12940 4433 518 1372 632 735 12940 4433 518 1372 632 735 12940 4433 1372 632 735 129400 12940 129400 129400 1294000000000000000000000000000000000000	446 242 300 1875 618 597 4115 2008 16178 4817 980 1726 700 961 1726 700 961 214 348 149 1166 374 224 214 348 149 1166 374 225 2040 17114 369 225 228 1501 619 552	525 257 311 2329 663 1049 2577 20093 5327 1912 2125 770 1252 2125 770 1252 2125 400 172 403 125 404 172 1435 404 172 1436 9 407 251 18469 407 251 18469 407 251 580 680 580 580 580 580 580 580 580 580 580 5	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Coryus uteri Coryus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia Site All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung	182 157 204 776 338 174 252 1130 584 4669 3106 251 4669 3106 251 128 4669 3106 251 128 4669 3106 251 128 152 68 339 227 2015 10238 182 157 204 157 204 157 205 10238 157 205 10238 157 205 10238 157 205 10238 157 205 10238 157 205 1025 1025 105 105 105 105 105 105 105 10	218 162 255 918 402 254 402 254 402 1529 746 6178 3319 217 651 83 197 81 477 81 477 81 477 250 2020 11487 220 161 224 897 399 238 309 238 309 238 309 238 309 238 309 238 309 238 309 238 309 238 309 238 309 238 309 238 309 238 309 238 309 237 309 238 309 247 250 200 200 200 200 200 200 200	265 180 246 1085 457 336 958 7991 3659 231 841 507 430 1597 430 1597 243 94 599 278 278 94 599 278 278 278 278 278 278 278 278	318 201 267 1288 514 441 2553 1228 10249 4035 312 1078 568 563 175 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 755 263 111 755 263 111 755 263 111 755 263 111 755 263 111 755 263 111 755 263 111 755 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 263 111 752 753 111 752 753 111 752 753 111 752 753 111 752 753 111 752 753 111 752 753 111 755 755 753 111 755 755 757 757 757 757 757 757 757	378 222 285 1543 569 597 1570 12940 4433 518 1372 632 735 632 735 194 433 303 130 939 342 2035 15717 333 218 283 218 283 1341 568 431 486 431	446 242 300 1875 618 597 4115 2008 16178 4817 980 1726 700 961 214 348 149 1166 374 248 149 1166 374 214 348 149 1166 374 236 236 236 236 236 236 236 236 236 236	525 257 311 2329 663 5109 2577 20093 5327 1912 2125 770 1252 233 400 172 1435 404 172 1435 404 2045 18469 407 251 309 1662 667 580 6618 3124	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Leukaemia Este All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 68 339 227 2015 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 152 153 154 152 152 153 154 155 155 155 155 155 155 155	218 162 225 918 402 402 402 402 402 402 402 402	265 180 246 1085 457 3375 1980 958 7991 3659 231 841 507 430 159 227 94 459 278 2025 12869 250 1799 244 1034 454 296 361 1778 830	318 207 267 1288 514 441 2553 1228 10249 4035 312 1078 568 568 568 563 117 52 263 1175 264 1184 264 1184 264 1184 264 1184 266 266 1184 266 266 266 1184 266 266 266 266 266 266 266 266 266 26	378 222 1543 569 597 518 3259 1590 4433 1372 632 735 1372 632 735 1374 303 130 939 342 2035 15717 333 128 15717 333 128 15717 333 1341 568 431 486 2458	446 242 342 397 4115 2008 16178 4817 980 1726 700 961 1726 700 961 214 348 149 921 214 348 149 96 374 214 348 149 506 5298 1501 619 506 552 2796 2255	525 257 311 2329 663 1049 2577 20093 5327 2125 770 1252 233 400 172 233 400 172 233 400 172 233 400 172 533 400 172 533 400 172 533 400 1662 662 662 580 668 3124 4400	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia site All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin	182 157 204 776 338 174 252 1130 584 4669 3106 251 4669 3106 251 130 584 4669 407 215 152 68 339 227 2015 10238 182 157 204 776 338 174 252 1130 584 4669 3106 251 10238 182 152 10238 182 154 155 10238 182 155 10238 182 154 154 155 10238 152 10238 152 10238 152 10238 152 10238 152 10238 152 10238 152 10238 154 154 154 154 155 10238 154 154 154 155 10238 154 154 154 155 10238 154 154 154 155 10238 154 154 154 154 155 10238 154 154 154 154 154 155 155 155	218 162 255 918 402 254 317 1529 746 6178 3319 217 651 451 325 197 81 451 325 197 81 477 250 2020 11487 210 164 897 399 238 309 1455 695 5910	265 180 246 1085 457 336 958 7991 3659 231 841 507 430 227 94 507 430 227 94 507 430 227 94 509 278 228 228 227 94 509 278 227 94 509 228 227 94 509 238 238 250 12869 250 178 260 178 260 1778 8361 1778 8361 1778 8361 1778 8361 1778 8361 1778 8361 1778 1780 1780 1780 1780 1780 1780 1780 1780 1780 1780 1780 1780 1778 1780 1780 1780 1778 1780 1778 1780 1780 1778 1780 1780 1780 1780 1780 1778 1780 1780 1780 1780 1780 1780 1780 1780 1780 1780 1780 1778 1780 1780 1778 1780 1780 1778 1780 17780 17780 17780 17780 17780 17780 17780 177000 17700 177000 177000 1770000 177000000 1	318 201 267 1288 514 441 2553 1228 10249 4035 312 1078 568 568 568 568 563 175 263 111 752 263 111 752 310 Median 2030 14343 294 184 514 294 1184 511 204 1184 516 264	378 222 1543 569 597 1570 12940 4433 518 1372 632 735 1372 632 735 130 303 130 933 203 130 130 342 2035 15717 333 218 283 1341 568 431 486 2458 1108	446 242 300 00 1875 618 597 4115 2008 16178 4817 980 1726 700 961 1726 700 961 1726 700 961 214 348 149 1726 374 2040 17114 369 236 374 2040 17114 369 238 1501 619 552 2796 1251 1809	525 257 311 2329 663 1049 2577 20093 5327 1912 2125 770 1252 2125 770 1252 2125 400 172 1435 400 172 1435 404 2045 18469 407 251 18469 407 251 309 1662 667 580 618 3124 1400 13503	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Non-Hodgkin lymphoma Anon-Hodgkin lymphoma Anon-Hodgkin lymphoma Anon-Hodgkin lymphoma Anon-Hodgkin lymphoma Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast	182 157 204 207 338 174 252 1130 584 4669 3106 251 4669 3106 251 128 68 339 227 2015 10238 182 157 204 776 338 177 205 10238 182 157 205 10338 177 205 10338 177 205 10338 177 205 10338 177 205 10338 177 205 10338 177 205 10338 177 205 103 103 105 103 105 105 105 105 105 105 105 105	218 162 255 918 402 254 317 1529 746 6178 3319 217 651 451 325 145 197 81 477 250 2020 11487 210 161 224 897 399 238 309 1455 695 59510 3299	265 180 246 1085 457 336 958 7991 3659 231 841 507 430 159 231 847 94 507 430 159 227 94 507 430 159 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 507 227 94 12869 250 1799 248 1085 1799 228 12869 250 1799 248 1095	318 201 267 1288 514 441 2553 1028 4035 312 1078 568 563 563 563 175 263 111 112 732 310 Median 203 14343 294 198 264 1184 511 360 421 2118 9680 8690 3901	378 222 285 1543 569 597 1570 12940 4433 518 1372 632 735 632 735 194 433 130 939 342 2035 15717 333 218 283 1341 568 431 31341 568 431 1368 10207 4198	446 242 300 1875 618 597 4115 2008 16178 4817 980 1726 700 961 1726 700 961 1726 348 149 1166 374 214 348 149 1166 374 2040 17114 369 236 298 1501 619 552 23796 1251 11809 94417	525 257 311 2329 663 1049 2577 20093 5327 1912 2125 270 1252 233 400 172 2125 233 400 172 2143 5404 407 251 18469 407 251 18469 407 251 309 1662 667 580 667 580 668 8 3124 1400 13503	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Cervix uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia ste All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Colon Colon Colon Cector and anus Liver, gallbladder and biliary tract Pancreas Colon Colon Cector and anus Liver, gallbladder and biliary tract Pancreas Colon Colon Cector and anus Liver, gallbladder and biliary tract Pancreas Colon Colon Cector and anus Liver, gallbladder and biliary tract Pancreas Colon Colon Cector and anus Liver, gallbladder and biliary tract Pancreas Colon Cector and anus Liver, gallbladder and biliary tract Pancreas Colon Cector and anus Liver, gallbladder and biliary tract Pancreas Colon Cector and anus Liver, gallbladder and biliary tract Pancreas Colon Cector and tract Cector and tract Cector and tract Cector and tract Cervix uteri Cervix uteri	182 157 204 776 338 174 252 1130 584 4669 3106 251 4669 3106 251 130 584 4669 407 215 152 68 339 227 2015 10238 182 157 204 776 338 174 252 1130 584 4669 3106 251 10238 182 152 10238 182 154 155 10238 182 155 10238 182 154 154 155 10238 152 10238 152 10238 152 10238 152 10238 152 10238 152 10238 152 10238 154 154 154 154 155 10238 154 154 154 155 10238 154 154 154 155 10238 154 154 154 155 10238 154 154 154 154 155 10238 154 154 154 154 154 155 155 155	218 162 225 918 402 254 317 1529 746 6178 3319 217 651 451 325 197 81 451 325 197 81 477 250 2020 11487 210 164 897 399 238 309 1455 695 5910	265 180 246 1085 457 336 958 7991 3659 231 841 507 430 227 94 507 430 227 94 507 430 227 94 509 278 228 228 227 94 509 278 227 94 509 228 227 94 509 238 238 250 12869 250 178 260 178 260 1778 8361 1778 8361 1778 8361 1778 8361 1778 8361 1778 8361 1778 1780 1780 1780 1780 1780 1780 1780 1780 1780 1780 1780 1780 1778 1780 1780 1780 1778 1780 1778 1780 1780 1778 1780 1780 1780 1780 1780 1778 1780 1780 1780 1780 1780 1780 1780 1780 1780 1780 1780 1778 1780 1780 1778 1780 1780 1778 1780 17780 17780 17780 17780 17780 17780 17780 177000 17700 177000 177000 1770000 177000000 1	318 201 267 1288 514 441 2553 1228 10249 4035 312 1078 568 568 568 568 563 175 263 111 752 263 111 752 310 Median 2030 14343 294 184 514 294 1184 511 204 1184 516 264	378 222 1543 569 597 1570 12940 4433 518 1372 632 735 1372 632 735 130 303 130 933 203 130 130 342 2035 15717 333 218 283 1341 568 431 486 2458 1108	446 242 300 00 1875 618 597 4115 2008 16178 4817 980 1726 700 961 1726 700 961 1726 700 961 214 348 149 1726 374 2040 17114 369 236 374 2040 17114 369 238 1501 619 552 2796 1251 1809	525 257 311 2329 663 1049 2577 20093 5327 1912 2125 770 1252 2125 770 1252 2125 400 172 1435 400 172 1435 404 2045 18469 407 251 18469 407 251 309 1662 667 580 618 3124 1400 13503	182 157 204 776 338 174 252 1130 584 4669 251 460 251 460 407 215 128 152 128 158 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Corvix uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Leukaemia ste All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Corpus uteri Corpus uteri Corpus uteri	182 157 204 776 338 174 252 1130 584 4669 3106 251 106 251 106 251 107 84 4669 3106 251 10238 182 10238 182 10238 182 10238 182 10238 182 10238 182 10238 182 10238 182 10238 182 10238 182 10238 182 10238 182 10238 182 10238 182 182 10238 182 182 182 182 183 184 185 184 174 252 184 174 252 185 185 185 185 185 185 185 185	218 162 225 918 402 402 402 402 402 402 402 402	265 180 246 1085 457 3375 1980 958 7991 3659 231 841 507 430 159 227 94 430 159 227 94 237 244 1084 250 1798 244 1085 12869 250 1799 244 1034 454 296 361 1778 830 7240 3594 231	318 207 267 1288 514 441 2553 1228 10249 4035 312 568 563 117 52 63 117 52 263 117 52 310 Median 2030 14343 294 14343 294 14343 294 14343 204 14343 204 14343 204 14343 204 14343 204 14343 204 14343 205 14343 205 14343 205 14343 205 14343 205 14343 205 14343 205 14343 205 1434 205 145 205 100 205 205 205 205 205 205 205 205 205 2	378 222 225 1543 569 597 518 3259 12940 4433 1372 632 735 1372 632 735 1372 632 735 1374 303 130 939 342 2035 15717 333 228 15717 333 228 15717 333 1341 568 431 486 2458 2458 1108 10207 4198	446 242 342 397 4115 2008 16178 4817 980 1726 700 961 1726 700 961 214 348 149 921 348 149 96 374 2040 17114 369 236 298 1501 619 236 506 552 2796 22796 1251 1809 4417 379	525 257 311 2329 663 1049 2577 20093 5327 2125 770 1252 233 400 172 233 400 172 233 400 172 233 400 172 533 400 172 533 400 172 533 400 1667 580 667 580 668 3124 4400 13503 4650 392	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 128 158 8 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Non-Hodgkin lymphoma Iueukaemia Ste All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary	182 157 204 776 338 174 252 1130 584 4669 3106 251 10238 182 152 68 339 227 2015 10238 182 157 204 776 338 182 157 204 776 338 174 252 1130 584 4669 3106 251 158 158 158 158 158 158 158 1	218 162 225 918 402 254 317 1529 746 6178 3319 217 651 451 451 451 451 451 197 81 747 250 2020 11487 210 1687 224 897 399 1455 659 10 228 309 1455 5910 3299 217 603	265 180 246 1085 457 336 958 231 841 507 430 159 227 94 509 278 227 94 509 278 227 94 509 278 227 94 509 278 227 94 509 278 227 94 509 278 227 94 509 278 231 430 159 227 94 509 278 279 246 361 159 227 94 509 278 278 279 278 279 278 279 278 279 278 278 279 278 279 278 278 278 279 278 278 279 278 279 278 279 278 279 278 279 278 279 278 279 278 279 278 279 278 279 278 279 274 279 279 278 279 278 279 274 279 274 279 274 279 274 279 274 279 274 279 274 279 274 279 274 279 274 279 274 279 274 279 274 279 274 279 274 279 274 279 277 274 279 274 279 277 274 279 277 274 277 277 274 277 277 274 277 277	318 201 267 1288 514 446 403 10249 4035 312 1078 568 563 175 263 117 52 63 117 52 63 117 752 263 118 4 1184 3 264 1184 3 360 421 21 8 8 8690 301 201 8 8 8690 301 201 8 8 8690 301 201 8 8 8690 301 201 8 8 8690 301 201 8 8 8690 301 201 8 8 809 8 8091 8 80 800 8 800 8 800 8 800 800 800 800	378 222 569 577 518 3259 1570 4433 518 1372 632 735 15717 333 342 2035 15717 333 218 283 1341 568 431 486 2458 1341 568 431 486 2458	446 242 343 794 4115 2008 16178 4817 980 1726 700 961 1726 700 961 1726 700 961 374 214 348 149 1726 374 224 348 149 17114 369 236 374 2040 17114 369 236 552 2796 555 22796 555 22796 555 22751 11809 4417 379 1046	525 257 311 2329 663 1049 2577 20093 5327 1912 2125 770 1252 2125 770 1252 2125 770 1252 3400 172 233 400 172 233 400 172 533 400 172 533 400 172 530 661 8309 1662 667 580 618 3124 1400 13503 4650 392 1139	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 128 158 8 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Corvus uteri Ovary Kidney and renal pelvis Bladder Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Leukaemia Stomach All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Kideney and renal pelvis Bilbadder Stomach Colon Rectum and anus Civer, gallbladder and biliary tract Pancreas Lung Kidenay and skin cancer Female breast Corpus uteri Corpus uteri Corpus uteri Corpus uteri Corpus uteri Biadder Biadder Biadder Biadder Biadder Biader Biader Biader Biadder Biadder Biadder Biader Biader Biadder Biader Biadder Biader Bia	182 157 204 776 338 174 252 1130 584 4669 3106 251 10238 182 152 68 339 227 2015 10238 182 157 204 776 338 182 174 252 1130 584 4669 3106 251 128 174 252 1130 584 4669 3106 251 128 174 252 1130 174 252 1130 174 252 1130 174 252 175 178 178 178 178 178 178 178 178	218 162 225 918 402 254 317 1529 746 6178 3319 217 651 451 451 451 145 197 81 745 145 197 81 74 897 220 11487 220 11487 220 11487 220 11487 220 11487 220 11487 220 11487 220 11487 200 207 207 207 207 207 207 20	265 180 246 1085 457 336 958 7991 3659 231 841 507 430 159 227 94 231 227 94 237 94 237 244 1034 454 250 1798 244 1034 454 256 361 1778 366 361 1778 366 361 1778 366 361 1778 366 361 1778 366 361 1778 365 365 365 365 365 375 375 365 365 365 365 365 365 375 365 365 365 365 365 365 365 36	318 201 267 1288 514 441 2553 1228 10249 4035 312 1078 568 563 175 263 1184 3 264 1184 3 360 421 298 8 968 8690 301 291 295 293 294 294 294 294 294 294 294 295 295 295 295 295 295 295 295 295 295	378 222 569 579 579 1570 4433 518 3259 12940 4433 518 1372 632 735 1394 303 130 339 342 2035 15717 333 218 283 1341 568 2431 486 2458 11341 568 11341 568 11341 569 11341 569 1129 1129 1129 1129 1129 1129 1129 11	446 242 347 597 4115 2008 16178 4817 980 1726 700 961 1726 700 961 1726 700 961 214 348 149 226 374 2214 348 149 17114 369 236 374 2040 17114 369 236 552 2796 555 2296 1501 619 555 2251 11809 4417 379 506 552 2251 11809 4417 379 506 552 2596 552 2596 552 2596 555 2597 555 255 2597 555 255 255 255 255 255 255 255 255 25	525 257 311 2329 663 1049 2577 20093 5327 1912 2125 770 1252 233 400 172 233 400 172 233 400 172 233 400 172 530 400 172 530 407 251 8469 407 251 18469 407 251 580 618 312 409 1662 667 580 618 3124 400 13503 4650 392 1139 682 682 662 667 580 618 312 580 618 312 580 618 580 618 580 618 580 618 580 580 580 580 580 580 580 580 580 58	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 128 158 8 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia Este All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Cervix uteri Cervix uteri Cervix uteri Corpus uteri Bidader Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS)	182 157 204 276 338 174 252 1130 584 4669 3106 251 460 407 215 152 68 339 227 2015 10238 182 157 204 776 338 182 157 204 257 10238 182 157 204 257 10338 182 157 204 205 10238 182 157 205 10238 182 157 205 10238 182 157 205 10238 182 157 205 103 105 105 105 105 105 105 105 105	218 162 253 918 402 254 402 254 317 1529 746 6178 3319 217 81 451 325 1451 325 1451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 455 197 81 455 591 309 1487 220 11487 210 161 1529 200 11487 210 1529 200 11487 250 1529 200 11487 250 1529 200 11487 250 1529 200 11487 200 1529 200 1529 200 1529 200 1529 200 1529 200 1529 200 1529 200 1529 200 1529 200 1529 200 1529 200 1548 200 15487 200 15487 200 15487 200 15487 200 15487 200 15487 200 15487 200 15487 200 15487 200 15487 200 155 695 5910 3299 217 603 603 190 190 197 197 197 197 197 197 197 197	265 180 246 1085 457 336 958 7991 3659 231 841 507 430 231 231 232 227 94 232 227 94 227 94 227 94 227 94 227 94 227 94 227 94 227 94 227 94 365 12869 250 1799 240 361 1778 830 3594 231 778 839 231 778 839 235 1778 839 235 1778 830 3594 231 778 839 231 778 839 231 778 839 7791 779 7791 779 7791 7791 7791 7791	318 201 267 1288 514 441 2553 1028 4035 312 1078 568 563 175 263 111 75 263 111 75 263 111 175 263 111 2030 14343 294 198 264 204 1184 511 204 204 1184 254 300 14343 294 1188 264 264 2118 265 263 1111 200 200 200 200 200 200 200 200 20	378 222 285 1543 569 597 1570 12940 4433 518 1372 632 735 632 735 130 303 130 939 342 2035 15717 333 218 283 1341 568 436 2458 10207 4198 362 940 591 505 261	446 242 300 1875 618 597 4115 2008 16178 4817 980 1726 700 961 214 348 149 1166 374 226 234 374 149 1166 374 225 2214 348 149 1161 374 225 225 2296 1251 11809 255 2796 1251 11809 4417 379 4417 379 1046 638 581	525 257 237 3229 663 1049 2577 20093 5327 1912 2125 770 1252 233 400 172 1435 404 172 1435 404 172 1435 404 172 1435 400 172 1435 400 172 1435 400 172 18469 407 251 309 1662 667 567 568 618 3124 1400 13503 4650 392 1139 682 658 1139	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 128 158 8 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Corvus uteri Ovary Kidney and renal pelvis Biadder All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Liver, gallbladder and biliary tract Pancreas Cervix uteri Corpus uteri Biadder Brain & central nervous system (CNS) Biadder Brain & central nervous system CNS Biadder Brain & central nervous system C	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 68 339 227 2015 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 10238 182 152 152 153 10238 152 152 152 152 152 152 152 152	218 162 225 918 402 424 317 1529 746 6178 3319 217 651 451 451 451 451 451 145 197 81 477 250 2020 11487 210 161 224 897 238 309 238 309 238 309 238 309 238 309 217 603 445 5510 3219 217 603 445 301 136 136 136 136 136 136 136 13	265 180 246 1085 457 357 1980 958 7991 3659 231 841 507 430 159 227 94 454 259 278 2025 12869 250 179 244 1034 454 296 361 1778 830 7240 359 244 1034 454 296 361 1778 830 7240 359 231 718 830 7240 359 251 178 830 7240 359 251 178 830 724 261 759 245 769 251 769 278 769 244 1034 454 250 779 244 1034 454 250 779 244 1078 250 779 244 1077 250 779 244 1078 250 779 244 1078 250 779 244 1078 250 779 244 1078 830 729 250 759 244 1078 830 729 250 759 250 779 244 368 739 759 250 759 250 779 244 1078 830 729 250 759 250 759 250 759 250 759 250 759 250 759 250 759 250 759 250 759 250 759 250 759 250 759 250 759 250 759 250 759 251 758 758 758 758 758 758 758 758	318 207 1288 514 441 2553 1228 10249 4035 312 1078 568 563 117 52 63 117 52 63 117 52 63 117 52 63 117 52 63 117 52 264 117 211 22 21 22 22 22 22 22 22 22 22 22 22	378 222 225 1543 569 597 518 3259 1570 12940 4433 1372 632 735 1372 632 735 1374 303 130 939 342 2035 15717 333 218 2035 15717 333 228 15717 333 248 2458 1108 10207 4198 2458 1108 10207 4198 10207 4198 10207 4199 506 152 261 506 152 261 599	446 242 342 3597 4115 2008 16178 4817 980 1726 700 961 214 348 149 961 214 348 149 961 214 348 149 961 214 348 149 1166 374 226 298 1501 619 506 552 2796 1251 11809 4417 379 1046 6551 1809 4417 379 1046 6551 1809 4417 379 1046 6551 1809 4417 379 1046 6551 1809 4417 379 1046 581 1605 285 105	525 257 311 2329 663 1049 2577 20093 5327 2125 770 1252 2125 770 1252 233 400 172 233 400 172 233 400 172 533 400 172 533 400 177 530 667 580 618 309 1662 667 580 618 3124 1400 13503 4650 392 1139 658 177 308	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 128 158 8 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660
Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma Leukaemia Este All invasive cancers, excl. NMSC Head and neck Oesophagus Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Cervix uteri Cervix uteri Cervix uteri Corpus uteri Bidader Stomach Colon Rectum and anus Liver, gallbladder and biliary tract Pancreas Lung Melanoma of skin Non-melanoma skin cancer Female breast Cervix uteri Corpus uteri Ovary Kidney and renal pelvis Bladder Brain & central nervous system (CNS)	182 157 204 276 338 174 252 1130 584 4669 3106 251 460 407 215 152 68 339 227 2015 10238 182 157 204 776 338 182 157 204 257 10238 182 157 204 257 10338 182 157 204 205 10238 182 157 205 10238 182 157 205 10238 182 157 205 10238 182 157 205 103 105 105 105 105 105 105 105 105	218 162 253 918 402 254 402 254 317 1529 746 6178 3319 217 81 451 325 1451 325 1451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 451 325 197 81 455 197 81 455 591 309 1487 220 11487 210 161 1529 200 11487 210 1529 200 11487 250 1529 200 11487 250 1529 200 11487 250 1529 200 11487 200 1529 200 1529 200 1529 200 1529 200 1529 200 1529 200 1529 200 154 154 200 154 154 200 154 155 695 5910 3299 217 603 309 1455 695 5910 3299 217 603 197 103 104 104 105 105 107 104 107 107 107 107 107 107 107 107	265 180 246 1085 457 336 958 7991 3659 231 841 507 430 231 231 232 227 94 232 227 94 227 94 227 94 227 94 227 94 227 94 227 94 227 94 227 94 365 12869 250 1799 240 361 1778 830 3594 231 778 839 231 778 839 235 1778 839 235 1778 830 3594 231 778 839 231 778 839 231 778 839 7791 779 7791 779 7791 7791 7791 7791	318 201 267 1288 514 441 2553 1028 4035 312 2078 568 568 563 175 263 111 75 263 111 2078 263 111 2030 14343 294 198 264 204 1184 511 204 205 203 1114 203 204 128 204 205 203 1128 205 203 1128 205 203 1128 205 203 1128 205 203 1128 205 203 1128 205 205 205 205 205 205 205 205 205 205	378 222 285 1543 569 597 1570 12940 4433 518 1372 632 735 632 735 130 303 130 939 342 2035 15717 333 218 283 1341 568 436 2458 10207 4198 362 940 591 505 261	446 242 300 1875 618 597 4115 2008 16178 4817 980 1726 700 961 214 348 149 1166 374 226 234 374 149 1166 374 225 2214 348 149 1161 374 225 225 2296 1251 11809 255 2796 1251 11809 4417 379 4417 379 1046 638 581	525 257 237 3229 663 1049 2577 20093 5327 1912 2125 770 1252 233 400 172 1435 404 172 1435 404 172 1435 404 172 1435 400 172 1435 400 172 1435 400 172 18469 407 251 309 1662 667 567 568 618 3124 1400 13503 4650 392 1139 682 658 1139	182 157 204 776 338 174 252 1130 584 4669 3106 251 460 407 215 128 152 128 158 8 339	221 167 229 881 394 234 302 1449 696 5844 3675 328 596 426 296 127 186 73 438	265 188 255 1008 456 286 351 1733 819 7011 4196 356 687 457 356 129 207 81	308 213 200 1149 529 327 406 1992 930 8189 4651 382 758 488 407 758 488 407 137 229 87 555	348 240 331 1302 609 389 463 2202 1026 9325 5043 411 814 814 515 454 149 248 92 600	384 261 374 1445 691 436 523 2371 1110 10454 5402 441 855 529 499 154 265 95 636	426 277 416 1575 771 474 582 2504 1186 11591 5750 467 884 540 541 156 280 98 660

Appendix 4: Projected ASRs in females, 2015-2045, using 6 models plus median

site	2015	2020	2025	Demographi 2030	c 2035	2040	2045	2015	2020	2025	HD1 2030	2035	2040	2045
All invasive cancers, excl. NMSC	388	388	388	388	388	388	388	388	385	382	380	377	374	371
Head and neck	7	7	7	7	7	7	7	7	7	8	8	9	9	10
Oesophagus Stomach	5	5	5	5	5	5	5	5	5	5	4	4 5	4	4
Colon	28	27	27	27	27	27	27	28	27	27	27	27	27	27
Rectum and anus	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Liver, gallbladder and biliary tract	6	6	6	6	6	6	6	6	7	8	8	9	9	10
Pancreas	9	9	9	9	9	9	9	9	9	9	10	10	10	10
Lung Melanoma of skin	41 22	41 21	41 21	41 21	41 21	41 21	41 21	41 22	46 24	50 26	54 28	57 31	61 33	65 35
Non-melanoma skin cancer	165	164	164	164	164	164	164	165	187	204	221	239	256	273
Female breast	124	123	123	123	123	123	123	124	116	111	106	101	95	92
Cervix uteri	10	12	12	12	12	12	12	10	6	4	4	4	4	4
Corpus uteri	19	19	19	19	19	19	19	19	21	23	25	27	29	30
Ovary Kidney and renal pelvis	16 8	15 8	15 8	15 8	15 8	15 8	15 8	16 8	15 10	14 11	14 12	14 13	13 14	13 15
Bladder	4	4	4	4	4	4	4	4	4	3	2	2	2	2
Brain & central nervous system (CNS)	6	7	7	7	7	7	7	6	7	7	7	7	7	7
Hodgkin lymphoma	3	3	3	3	3	3	3	3	3	3	3	4	4	4
Non-Hodgkin lymphoma	13 8	14 8	14 8	14 8	14 8	14 8	14 8	13 8	15 8	16 8	17 8	18 8	19 8	20 8
Leukaemia	0	0	0	o HD2	0	0	0	0	0	0	HD3	0	0	0
site	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045
All invasive cancers, excl. NMSC	388	385	382	380	377	374	371	388	385	382	380	377	374	371
Head and neck	7	6	6	6	6	6	6	7	7	8	8	9	10	10
Oesophagus Stomach	5	5	4	4	4 5	4	3	5	5	5	4	4 6	4	4
Stomach Colon	28	28	28	28	28	5 28	4 28	28	28	6 28	28	28	28	28
Rectum and anus	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Liver, gallbladder and biliary tract	6	5	6	6	6	6	6	6	8	8	9	11	12	13
Pancreas	9	9	9	9	9	9	9	9	9	9	10	10	10	10
Lung Melanoma of skin	41 22	35 17	35 17	35 17	35 18	35 18	35 18	41 22	48 26	54 30	60 34	67 39	76 45	85 52
Non-melanoma skin cancer	165	17	17	17	18	18	18	165	193	218	34 246	277	45 312	352
Female breast	124	117	113	109	104	100	96	124	117	113	109	106	102	98
Cervix uteri	10	-	-	-	-	-	-	10	7	5	3	2	2	1
Corpus uteri	19	16	16	16	16	16	16	19	23	26	29	33	37	42
Ovary	16	15	15	15	14	14	14	16	15	15	15	14	14	14
Kidney and renal pelvis Bladder	8	7	7 3	7	7	7	7	8	11 4	12 4	14 3	17 3	19 3	22 3
Brain & central nervous system (CNS)	6	7	7	7	7	7	7	6	7	7	7	7	7	8
Hodgkin lymphoma	3	3	3	3	3	3	3	3	3	3	4	4	4	5
Non-Hodgkin lymphoma	13	12	12	12	13	13	13	13	16	17	19	20	22	24
Leukaemia	8	8	8	8 HD4	8	8	8	8	8	8	8 Nordered	8	8	8
site	2015	2020	2025	HD4 2030	2035	2040	2045	2015	2020	2025	Nordpred 2030	2035	2040	2045
All invasive cancers, excl. NMSC	388	386	385	386	387	390	394	388	409	420	427	431	435	439
Head and neck	7	8	9	10	11	12	14	7	8	8	9	9	8	8
Oesophagus	5	5	5	4	4	4	4	5	5	5	4	4	4	4
Stomach	7	7	7	6	6	6	6	7	7	7	7	7	7	8
Colon Rectum and anus	28 13	28 13	30 13	32 14	36 14	43 14	54 15	28 13	27 13	27 13	27 14	28 14	28 15	29 16
Liver, gallbladder and biliary tract	6	7	8	9	11	12	14	6	7	8	8	9	9	10
Pancreas	9	9	10	10	10	10	10	9	9	9	9	9	9	9
Lung	41	48	54	61	68	77	87	41	45	47	46	45	43	42
Melanoma of skin	22	25	29	34	39 279	45	53	22	24	25	26	26	26	26
Non-melanoma skin cancer Female breast	165 124	193 117	218 115	247 113	113	316 113	359 115	165 124	183 131	192 134	197 134	199 134	200 134	202 133
Cervix uteri	10	8	7	7	10	14	24	10	12	13	13	14	14	14
Corpus uteri	19	23	26	30	34	39	45	19	20	21	20	19	18	17
Ovary	16	15	15	15	14	14	14	16	14	13	13	12	11	10
Kidney and renal pelvis	8	11	13	15	17	20	24	8	10	10	10	11	11	11
Bladder Brain & central nervous system (CNS)	4	4	4	3	3	3	3	4	4	3	3	3 6	2	2
Hodgkin lymphoma	3	3	4	4	4	5	6	3	3	3	3	3	3	3
Non-Hodgkin lymphoma	13	16	17	19	21	23	25	13	14	14	14	13	13	12
Leukaemia	8	8	8	8	8	8	9	8	8	8	8	8	8	8
Sito	2015	2020	2025	Median	2025	2040	2045							
Site All invasive cancers, excl. NMSC	2015 388	2020 386	2025 384	2030 383	2035 382	2040 381	2045 380							
Head and neck	7	7	8	8	9	9	9							
Oesophagus	5	5	5	4	4	4	4							
Stomach	7	7	6	6	6	6	5							
Colon	28	28	28	28	28	28	28							
Rectum and anus Liver, gallbladder and biliary tract	13 6	13 7	13 8	13 8	13 9	13 9	13 10							
Pancreas	9	9	8	9	9	10	10							
Lung	41	46	48	50	51	52	53							
Melanoma of skin	22	24	26	27	28	29	31							
Non-melanoma skin cancer	165	185	198	209	219	228	237							
Female breast Cervix uteri	124 10	117 8	114 7	111 7	109 10	108 12	107 12							
Corpus uteri	10	8 21	22	22	10 23	12 24	12 25							
Ovary	16	15	15	15	14	14	14							
Kidney and renal pelvis	8	10	11	11	12	12	13							
		4	4	3	3	3	2							
Bladder	4													
Bladder Brain & central nervous system (CNS)	6	7	7	7	7	7	7							
Bladder Brain & central nervous system (CNS) Hodgkin lymphoma Non-Hodgkin lymphoma														

			M	1F1			M1F2								
	2020	2025	2030	2035	2040	2045	2020	2025	2030	2035	2040	2045			
under 35	1151667	1198585	1241993	1274124	1304770	1322326	1150862	1191295	1221730	1235037	1245281	1241316			
35-39	186296	165856	172289	194711	207802	228229	186296	165856	172289	194711	207802	228229			
40-44	190087	190638	170375	176852	199249	212346	190087	190638	170375	176852	199249	212346			
45-49	176373	191030	191695	171662	178194	200553	176373	191030	191695	171662	178194	200553			
50-54	157469	175858	190577	191388	171680	178273	157469	175858	190577	191388	171680	178273			
55-59	143269	155427	173793	188568	189569	170314	143269	155427	173793	188568	189569	170314			
60-64	126474	139619	151873	170160	184965	186197	126474	139619	151873	170160	184965	186197			
65-69	111265	122005	135179	147494	165597	180386	111265	122005	135179	147494	165597	180386			
70-74	94081	104220	115055	128147	140437	158162	94081	104220	115055	128147	140437	158162			
75-79	64163	83027	93134	103880	116646	128720	64163	83027	93134	103880	116646	128720			
80-84	41104	51777	68150	77800	88045	100029	41104	51777	68150	77800	88045	100029			
85 and over	29072	38762	52078	71507	89897	108000	29072	38762	52078	71507	89897	108000			
			M	2F1					M	2F2					
	2020 2025 2030		2035	2040	2045	2020	2025	2030	2035	2040	2045				
under 35	1137089	1165949	1193603	1211365	1227019	1229080	1136292	1158849	1174166	1174276	1170917	1152975			
35-39	184118	160167	160762	178916	190905	210634	184118	160167	160762	178916	190905	210634			
40-44	188339	186258	162532	163188	181332	193329	188339	186258	162532	163188	181332	193329			
45-49	175530	188074	186208	162726	163464	181584	175530	188074	186208	162726	163464	181584			
50-54	157017	174447	187080	185379	162247	163089	157017	174447	187080	185379	162247	163089			
55-59	142940	154560	172011	184724	183241	160603	142940	154560	172011	184724	183241	160603			
60-64	126225	138980	150736	168124	180911	179701	126225	138980	150736	168124	180911	179701			
65-69	111006	121437	134230	146066	163293	176120	111006	121437	134230	146066	163293	176120			
70-74	93881	103721	114238	126969	138801	155689	93881	103721	114238	126969	138801	155689			
75-79	64026	82685	92501	102956	115389	127039	64026	82685	92501	102956	115389	127039			
80-84	40993	51522	67701	77103	87097	98785	40993	51522	67701	77103	87097	98785			
85 and over	28971	38521	51638	70829	88914	106662	28971	38521	51638	70829	88914	106662			
			M	3F1			M3F2								
	2020	2025	2030	2035	2040	2045	2020	2025	2030	2035	2040	2045			
under 35	1122526	1133117	1144546	1147681	1148476	1135355	1121739	1126204	1125920	1112553	1095671	1064036			
35-39	181942	154537	149440	163193	173762	192603	181942	154537	149440	163193	173762	192603			
40-44	186587	181702	154496	149481	163234	173811	186587	181702	154496	149481	163234	173811			
45-49	174689	185069	180328	153386	148475	162223	174689	185069	180328	153386	148475	162223			
50-54	156567	173005	183490	178939	152368	147599	156567	173005	183490	178939	152368	147599			
55-59	142606	153652	170097	180694	176394	150348	142606	153652	170097	180694	176394	150348			
60-64	125970	138287	149457	165859	176573	172596	125970	138287	149457	165859	176573	172596			
65-69	110747	120908	133283	144549	160818	171637	110747	120908	133283	144549	160818	171637			
70-74	93684	103276	113570	125899	137192	153167	93684	103276	113570	125899	137192	153167			
75-79	63892	82372	91988	102235	114298	125451	63892	82372	91988	102235	114298	125451			
80-84	40884	51338	67395	76625	86434	97802	40884	51338	67395	76625	86434	97802			
85 and over	28881	38356	51420	70495	88391	105893	28881	38356	51420	70495	88391	105893			

Appendix 5: Projected male population, 2020-2045, M1F1-M3F2

			M	LF1			M1F2								
	2020	2025	2030	2035	2040	2045	2020	2025	2030	2035	2040	2045			
	1124894	1160096	1201180	1231852	1260236	1276325	1124132	1153193	1181990	1194833	1203893	1199587			
	199875	173766	170628	191559	204762	223927	199875	173766	170628	191559	204762	223927			
	195974	204438	178437	175345	196267	209473	195974	204438	178437	175345	196267	209473			
	178718	197539	206032	180193	177171	198068	178718	197539	206032	180193	177171	198068			
	158502	178902	197719	206249	180663	177747	158502	178902	197719	206249	180663	177747			
	147268	157271	177604	196402	204987	179794	147268	157271	177604	196402	204987	179794			
	129351	144951	155024	175249	193997	202653	129351	144951	155024	175249	193997	202653			
	113214	126351	141854	151994	172036	190704	113214	126351	141854	151994	172036	190704			
	97735	108413	121432	136741	146940	166666	97735	108413	121432	136741	146940	166666			
	70277	89950	100485	113238	128170	138387	70277	89950	100485	113238	128170	138387			
	50585	60459	78160	88291	100460	114653	50585	60459	78160	88291	100460	114653			
•	50006	59601	73711	96410	118657	141617	50006	59601	73711	96410	118657	141617			
			M2	2F1			M2F2								
	2020	2025	2030	2035	2040	2045	2020	2025	2030	2035	2040	2045			
	1110358	1127340	1152447	1169011	1182916	1184165	1109603	1120613	1134034	1133859	1129741	1112030			
	198051	168810	159878	176213	188151	206514	198051	168810	159878	176213	188151	206514			
	194536	200793	171668	162788	179120	191062	194536	200793	171668	162788	179120	191062			
	178035	195126	201458	172505	163707	180032	178035	195126	201458	172505	163707	180032			
	158124	177740	194832	201215	172528	163862	158124	177740	194832	201215	172528	163862			
	146996	156543	176109	193200	199654	171389	146996	156543	176109	193200	199654	171389			
	140330	130343	1/0105	155200	133034	171505	110550	2000.0	1,0100	100100	20000.	171505			

Appendix 6: Projected female popul

under 35 35-39

40-44

45-49

50-54

55-59	147268	157271	177604	196402	204987	179794	147268	157271	177604	196402	204987	179794			
60-64	129351	144951	155024	175249	193997	202653	129351	144951	155024	175249	193997	202653			
65-69	113214	126351	141854	151994	172036	190704	113214	126351	141854	151994	172036	190704			
70-74	97735	108413	121432	136741	146940	166666	97735	108413	121432	136741	146940	166666			
75-79	70277	89950	100485	113238	128170	138387	70277	89950	100485	113238	128170	138387			
80-84	50585	60459	78160	88291	100460	114653	50585	60459	78160	88291	100460	114653			
85 and over	50006	59601	73711	96410	118657	141617	50006	59601	73711	96410	118657	141617			
			M	2F1			M2F2								
	2020	2025	2030	2035	2040	2045	2020 2025 2030 2035 2040 2								
under 35	1110358	1127340	1152447	1169011	1182916	1184165	1109603	1120613	1134034	1133859	1129741	1112030			
35-39	198051	168810	159878	176213	188151	206514	198051	168810	159878	176213	188151	206514			
40-44	194536	200793	171668	162788	179120	191062	194536	200793	171668	162788	179120	191062			
45-49	178035	195126	201458	172505	163707	180032	178035	195126	201458	172505	163707	180032			
50-54	158124	177740	194832	201215	172528	163862	158124	177740	194832	201215	172528	163862			
55-59	146996	156543	176109	193200	199654	171389	146996	156543	176109	193200	199654	171389			
60-64	129136	144412	154047	173515	190581	197130	129136	144412	154047	173515	190581	197130			
65-69	112977	125847	141033	150743	170046	187061	112977	125847	141033	150743	170046	187061			
70-74	97554	107952	120695	135699	145481	164492	97554	107952	120695	135699	145481	164492			
75-79	70149	89625	99886	112378	127025	136841	70149	89625	99886	112378	127025	136841			
80-84	50471	60194	77706	87598	99530	113464	50471	60194	77706	87598	99530	113464			
85 and over	49884	59301	73181	95610	117523	140090	49884	59301	73181	95610	117523	140090			
				3F1		M3F2									
			IVI:) I I											
	2020	2025	2030	2035	2040	2045	2020	2025	2030	2035	2040	2045			
under 35				2035							2040 1056387				
			2030	2035											
	1095811	1094697	2030 1104142	2035 1106803	1106433	1093131	1095063	1088150	1086495	1073512	1056387	1025530			
35-39 40-44	1095811 196230	1094697 163927	2030 1104142 149280	2035 1106803 161186	1106433 171927	1093131 189428	1095063 196230	1088150 163927	1086495 149280	1073512 161186	1056387 171927	1025530 189428			
35-39 40-44	1095811 196230 193102	1094697 163927 197071	2030 1104142 149280 164889	2035 1106803 161186 150313	1106433 171927 162220	1093131 189428 172967	1095063 196230 193102	1088150 163927 197071	1086495 149280 164889	1073512 161186 150313	1056387 171927 162220	1025530 189428 172967			
35-39 40-44 45-49	1095811 196230 193102 177347	1094697 163927 197071 192706	2030 1104142 149280 164889 196719	2035 1106803 161186 150313 164721	1106433 171927 162220 150247	1093131 189428 172967 162156	1095063 196230 193102 177347	1088150 163927 197071 192706	1086495 149280 164889 196719	1073512 161186 150313 164721	1056387 171927 162220 150247	1025530 189428 172967 162156			
35-39 40-44 45-49 50-54	1095811 196230 193102 177347 157739	1094697 163927 197071 192706 176564	2030 1104142 149280 164889 196719 191942	2035 1106803 161186 150313 164721 196016	1106433 171927 162220 150247 164302	1093131 189428 172967 162156 149986	1095063 196230 193102 177347 157739	1088150 163927 197071 192706 176564	1086495 149280 164889 196719 191942	1073512 161186 150313 164721 196016	1056387 171927 162220 150247 164302	1025530 189428 172967 162156 149986			
35-39 40-44 45-49 50-54 55-59	1095811 196230 193102 177347 157739 146718	1094697 163927 197071 192706 176564 155789	2030 1104142 149280 164889 196719 191942 174560	2035 1106803 161186 150313 164721 196016 189954	1106433 171927 162220 150247 164302 194120	1093131 189428 172967 162156 149986 162854	1095063 196230 193102 177347 157739 146718	1088150 163927 197071 192706 176564 155789	1086495 149280 164889 196719 191942 174560	1073512 161186 150313 164721 196016 189954	1056387 171927 162220 150247 164302 194120	1025530 189428 172967 162156 149986 162854			
35-39 40-44 45-49 50-54 55-59 60-64	1095811 196230 193102 177347 157739 146718 128919	1094697 163927 197071 192706 176564 155789 143847	2030 1104142 149280 164889 196719 191942 174560 153000	2035 1106803 161186 150313 164721 196016 189954 171683	1106433 171927 162220 150247 164302 194120 187077	1093131 189428 172967 162156 149986 162854 191369	1095063 196230 193102 177347 157739 146718 128919	1088150 163927 197071 192706 176564 155789 143847	1086495 149280 164889 196719 191942 174560 153000	1073512 161186 150313 164721 196016 189954 171683	1056387 171927 162220 150247 164302 194120 187077	1025530 189428 172967 162156 149986 162854 191369			
35-39 40-44 45-49 50-54 55-59 60-64 65-69	1095811 196230 193102 177347 157739 146718 128919 112744	1094697 163927 197071 192706 176564 155789 143847 125364	2030 1104142 149280 164889 196719 191942 174560 153000 140208	2035 1106803 161186 150313 164721 196016 189954 171683 149451	1106433 171927 162220 150247 164302 194120 187077 167981	1093131 189428 172967 162156 149986 162854 191369 183361	1095063 196230 193102 177347 157739 146718 128919 112744	1088150 163927 197071 192706 176564 155789 143847 125364	1086495 149280 164889 196719 191942 174560 153000 140208	1073512 161186 150313 164721 196016 189954 171683 149451	1056387 171927 162220 150247 164302 194120 187077 167981	1025530 189428 172967 162156 149986 162854 191369 183361			
35-39 40-44 45-49 50-54 55-59 60-64 65-69 70-74	1095811 196230 193102 177347 157739 146718 128919 112744 97371	1094697 163927 197071 192706 176564 155789 143847 125364 107518	2030 1104142 149280 164889 196719 191942 174560 153000 140208 120040	2035 1106803 161186 150313 164721 196016 189954 171683 149451 134712	1106433 171927 162220 150247 164302 194120 187077 167981 144043	1093131 189428 172967 162156 149986 162854 191369 183361 162303	1095063 196230 193102 177347 157739 146718 128919 112744 97371	1088150 163927 197071 192706 176564 155789 143847 125364 107518	1086495 149280 164889 196719 191942 174560 153000 140208 120040	1073512 161186 150313 164721 196016 189954 171683 149451 134712	1056387 171927 162220 150247 164302 194120 187077 167981 144043	1025530 189428 172967 162156 149986 162854 191369 183361 162303			
35-39 40-44 45-49 50-54 55-59 60-64 65-69 70-74 75-79	1095811 196230 193102 177347 157739 146718 128919 112744 97371 70019	1094697 163927 197071 192706 176564 155789 143847 125364 107518 89300	2030 1104142 149280 164889 196719 191942 174560 153000 140208 120040 99342	2035 1106803 161186 150313 164721 196016 189954 171683 149451 134712 111630	1106433 171927 162220 150247 164302 194120 187077 167981 144043 125956	1093131 189428 172967 162156 149986 162854 191369 183361 162303 135348	1095063 196230 193102 177347 157739 146718 128919 112744 97371 70019	1088150 163927 197071 192706 176564 155789 143847 125364 107518 89300	1086495 149280 164889 196719 191942 174560 153000 140208 120040 99342	1073512 161186 150313 164721 196016 189954 171683 149451 134712 111630	1056387 171927 162220 150247 164302 194120 187077 167981 144043 125956	1025530 189428 172967 162156 149986 162854 191369 183361 162303 135348			

Appendix 7: Projected incidence and treatment figures for males, 2020-2045

	Incidence								Surgery							
site	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045		
All invasive cancers, excl. NMSC	11461	13864	15920	18067	20225	22292	24161	4460	5295	5983	6680	7353	7980	8520		
Head and neck	518	549	619	688	753	810	857	222	236	265	294	320	343	363		
Oesophagus	259	312	361	413	464	513	558	64	74	82	90	97	103	108		
Stomach	387	455	531	611	690	768	842	146	172	197	222	246	269	291		
Colon	1021	1158	1357	1567	1782	1994	2196	803	899	1045	1195	1343	1490	1629		
Rectum and anus	585	722	830	943	1051	1155	1250	420	510	578	647	710	771	824		
Liver, gallbladder and biliary tract	266	324	378	434	489	544	597	70	79	89	98	107	115	123		
Pancreas	312	350	409	472	536	598	657	45	50	56	62	67	72	76		
Lung	1356	1674	1958	2259	2562	2858	3137	247	297	338	375	411	447	476		
Melanoma of skin	546	566	646	726	807	885	960	514	532	606	681	755	828	898		
Non-melanoma skin cancer	6004	6971	8146	9379	10623	11852	13058	5411	6281	7339	8448	9566	10669	11750		
Prostate	3214	4181	4746	5324	5905	6441	6869	905	1140	1270	1404	1527	1623	1680		
Kidney and renal pelvis	398	483	549	616	681	742	800	269	315	348	378	406	430	451		
Bladder	329	398	473	556	644	730	814	241	293	346	403	462	521	577		
Brain & central nervous system (CNS)	220	248	276	303	331	358	382	109	120	130	139	147	155	161		
Hodgkin lymphoma	79	86	92	99	104	108	111	1	1	1	1	1	1	1		
Non-Hodgkin lymphoma	438	514	587	662	735	805	873	42	48	54	60	66	71	77		
Leukaemia	315	383	440	500	562	623	681	3	3	4	4	5	5	6		
			F	Radiotherap	vy			Chemotherapy								
site	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045		
All invasive cancers, excl. NMSC	3369	4049	4582	5112	5633	6127	6542	2980	3524	3948	4356	4742	5101	5404		
Head and neck	354	373	416	458	497	530	553	172	179	197	213	227	238	243		
Oesophagus	135	162	186	211	234	257	277	131	156	174	192	209	225	237		
Stomach	81	95	109	124	137	150	163	173	202	228	252	275	297	316		
Colon	22	24	27	31	34	37	39	376	402	451	498	543	586	621		
Rectum and anus	275	334	380	427	470	511	548	324	388	434	479	520	557	588		
Liver, gallbladder and biliary tract	15	18	20	23	25	28	30	88	101	113	125	136	147	157		
Pancreas	34	37	41	45	49	53	56	114	128	143	158	172	185	195		
Lung	527	643	740	839	934	1025	1107	464	555	626	692	757	817	866		
Melanoma of skin	25	26	30	34	37	41	45	29	30	33	35	38	40	42		
Non-melanoma skin cancer	136	162	195	232	271	310	349	6	7	8	9	9	10	11		
Prostate	1289	1676	1887	2093	2305	2506	2663	32	40	46	52	57	61	65		
Kidney and renal pelvis	38	46	51	56	61	65	69	63	74	81	89	95	101	107		
Bladder	57	71	86	103	119	135	152	93	114	131	148	164	181	195		
Brain & central nervous system (CNS)	143	158	173	187	201	214	223	96	105	114	121	129	135	139		
Hodgkin lymphoma	24	25	27	28	29	29	30	68	75	80	85	89	92	94		
Non-Hodgkin lymphoma	71	82	93	105	115	125	135	296	346	392	438	480	521	560		
Leukaemia	8	9	9	10	10	11	11	137	162	181	200	218	235	252		

Appendix 8: Projected incidence and treatment figures for females, 2020-2045

				Incidence							Surgery			
site	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045
All invasive cancers, excl. NMSC	10238	11559	13017	14544	16061	17495	18839	6173	6881	7633	8352	9013	9590	10096
Head and neck	182	193	216	240	264	285	304	97	104	115	127	138	148	157
Oesophagus	157	170	197	229	262	295	328	23	26	29	31	34	37	39
Stomach	204	245	282	324	367	410	452	71	86	98	110	121	132	141
Colon	776	886	1020	1166	1317	1470	1617	614	693	794	901	1004	1109	1208
Rectum and anus	338	387	440	496	553	607	656	231	261	294	328	359	388	412
Liver, gallbladder and biliary tract	174	213	247	284	325	366	407	37	48	54	60	65	70	75
Pancreas	252	301	349	403	461	519	576	33	39	44	48	53	56	60
Lung	1130	1297	1492	1700	1911	2120	2313	262	293	331	367	403	436	462
Melanoma of skin	584	598	661	729	796	862	925	559	573	633	696	759	821	880
Non-melanoma skin cancer	4669	5234	5988	6809	7654	8497	9320	4072	4568	5225	5941	6679	7412	8129
Female breast	3106	3438	3820	4182	4514	4788	5050	2639	2903	3198	3457	3674	3834	3978
Cervix uteri	251	311	328	344	362	379	392	166	198	205	212	221	231	235
Corpus uteri	460	542	610	678	745	803	846	434	507	568	630	689	739	774
Ovary	407	455	513	573	630	684	731	271	296	329	358	383	404	419
Kidney and renal pelvis	215	254	286	321	356	391	424	151	173	191	210	227	244	257
Bladder	128	156	182	211	243	274	305	88	106	123	142	160	179	196
Brain & central nervous system (CNS)	152	186	206	227	247	267	285	68	82	88	95	100	104	108
Hodgkin lymphoma	68	70	76	81	86	88	91	1	1	1	2	2	2	2
Non-Hodgkin lymphoma	339	416	471	530	590	647	699	33	41	46	52	57	63	67
Leukaemia	227	241	268	300	333	367	399	1	1	1	2	2	2	2
			F	Radiotherap	y			Chemotherapy						
site	2015	2020	2025	2030	2035	2040	2045	2015	2020	2025	2030	2035	2040	2045
All invasive cancers, excl. NMSC	3852	4300	4767	5207	5603	5931	6214	3863	4300	4749	5156	5516	5828	6092
Head and neck	111	118	132	145	158	169	177	48	51	56	61	65	69	71
Oesophagus	81	87	100	114	127	141	153	67	71	81	90	99	107	115
Stomach	29	35	40	45	51	56	62	75	89	101	112	122	132	140
Colon	15	17	19	22	24	27	29	265	292	329	363	395	424	449
Rectum and anus	148	167	188	210	231	251	267	177	194	217	238	257	273	285
Liver, gallbladder and biliary tract	8	9	10	11	11	12	12	53	65	74	81	88	94	100
Pancreas	25	30	34	38	41	45	47	83	98	111	123	134	145	153
Lung	410	468	533	601	665	726	780	383	431	484	536	585	628	661
Melanoma of skin	12	12	13	15	17	19	21	13	13	14	15	17	18	18
Non-melanoma skin cancer	80	90	105	125	146	168	190	4	4	5	5	6	6	7
Female breast	2218	2437	2682	2897	3075	3199	3306	1478	1606	1739	1844	1922	1977	2030
Cervix uteri	135	174	186	196	207	216	224	96	123	130	134	139	144	148
Corpus uteri	195	226	255	283	311	335	352	92	104	116	128	139	148	153
Ovary	12	13	14	16	17	18	18	275	304	340	374	403	429	450
Kidney and renal pelvis	16	19	22	24	27	29	32	26	31	34	37	40	43	46
Bladder	24	30	35	41	47	54	60	34	40	46	52	57	62	66
Brain & central nervous system (CNS)	83	102	112	121	130	137	143	54	67	73	78	83	87	89
Hodgkin lymphoma	15	16	18	19	20	20	21	56	60	65	69	72	73	74
Non-Hodgkin lymphoma	59	71	80	90	101	111	120	208	255	287	322	355	388	416
Leukaemia	6	6	7	7	7	7	7	97	104	114	124	133	143	151