CANCERS IN EAST SUSSEX

Introduction

This document is a high level review of the published epidemiological information on common cancers and how this relates to the health needs of the East Sussex population.

This report is part of the Joint Strategic Needs and Asset Assessment for the county.

Why is cancer important?

Cancer is when abnormal cells divide in an uncontrolled way. Some cancers may eventually spread into other tissues. There are more than 200 different types of cancer.

One in two people in the UK will get cancer in their lifetime.

The number of elderly people in the UK diagnosed each year with cancer is set to rise by 80% in less than 20 years, according to Cancer Research UK. By 2035 about 234,000 over-75s will get cancer each year, up from 130,000 now. Furthermore, the elderly are more likely to have multiple health conditions, potentially leading to later diagnosis of cancers.

As the population changes, health and social care services must adapt to make sure they are

meeting every person's needs. Now and in the future, it is crucial that older people with cancer get the support they need to access the most appropriate treatment for them, and have the best possible experience of care.

A diagnosis of cancer comes as a shock. Following a malignant cancer diagnosis people are at a markedly greater risk of serious mental health problems than the general population.[1]

The UK currently lags behind Europe and other developed nations in terms of **outcomes for cancer patients.**[2,3,4]

Who is most at risk? What are the known risk factors for cancers?

A person's risk of developing cancer depends on many factors, including age, genetics, and exposure to risk factors (including some potentially avoidable lifestyle factors).

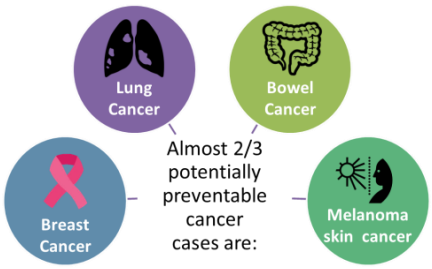
Older age is the main risk factor for cancer, largely reflecting cell DNA damage accumulated over time. However, the risk of some cancers can be reduced by adopting a healthy lifestyle.

Around 4 in 10 UK cancer cases every year could potentially be prevented as they are attributable to modifiable risk factors.[5]

Changing people's exposure to modifiable risk factors is a key driver in reducing the burden of new cancers arising. Lung cancer, bowel [colorectal] cancer, melanoma skin cancer, and breast cancer

together account for almost two-thirds of all potentially preventable cancer cases in the UK.

Nearly two thirds of potentially preventable cancers are in the following groups:



The proportion of all cancers caused by smoking is 15% for all persons [compared to the proportion attributable to overweight/obesity 6% which is the next most common cause].

3-4% of cancer cases in the UK are estimated to be caused by:

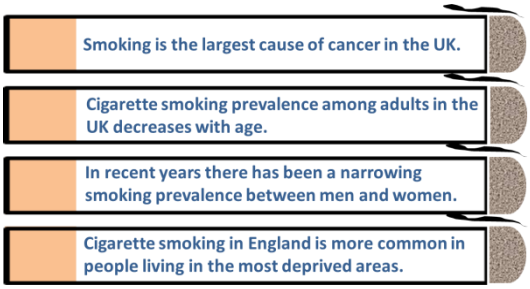
- overexposure to ultraviolet (UV) radiation from the Sun,
- exposure to certain substances at work,
- exposure to certain infections,
- drinking alcohol and
- eating too little fibre

1-2% cancer cases in the UK are estimated to be caused by:

- exposure to ionising radiation and
- eating processed meat

Air pollution was recently recognised by the **IARC** as a direct cause of cancer. Too little physical activity is also considered a risk factor for some cancers.[6]

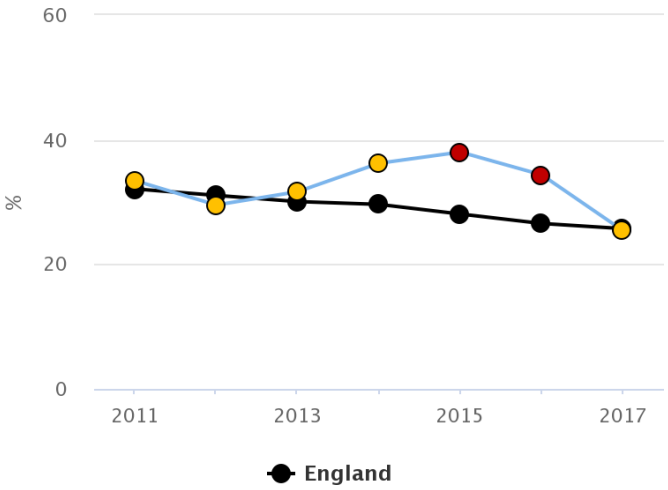
Smoking



The prevalence of smoking in adults aged 18 and over was 14% in East Sussex in 2017 compared to 15% nationally (17% of men and 13% of women). The prevalence of current smoking is much higher in Hastings local authority [22%] than in Rother [17%] or Lewes [13%] local authorities. Source: PHE tobacco profiles.

Until recently, there have been significantly higher rates of smoking in people in the routine and manual occupations in East Sussex compared to England, Figure 1.

Figure 1: Current smoking prevalence in adults in routine and manual occupations



Source: PHE Tobacco profiles

Alcohol

Alcohol is a well-established cause of cancer [because of the way the body metabolises alcohol], yet general awareness of this link is poor.

Between 2011 and 2014 in East Sussex, 27% adults drink over 14 units a week compared to 26% in England. PHE local alcohol profiles, England

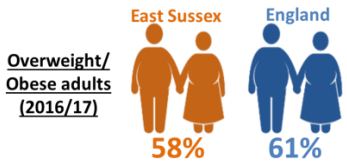
More than a third of adults **drink alcohol every week.**

More males drink alcohol, more regularly and at higher risk levels (1 in 3 males) than females (1 in 10) who drink.

Local information about alcohol related harms can be found on the JSNAA website.

Excess weight

Cancers in the UK are linked to excess weight. The proportion of the East Sussex population that are overweight or obese is lower than in England. The proportion of cancers attributable to overweight/obesity is estimated to be 6.3%.



Fruit and vegetables

Eating a healthy diet with the recommended 5 a day fruit and vegetables can prevent getting some cancers. The proportion eating a healthy diet with 5 a day is higher in East Sussex than in England.

Eating recommended 5-a-day (2016/17)

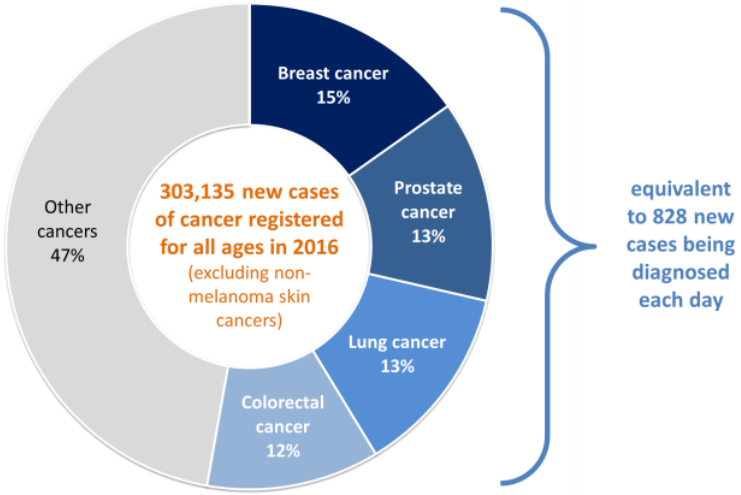
East Sussex 63% England 57%

Physical activity

Being physically active can reduce the risk of cancer. In 2016/17 in East Sussex, [66.8%]of adults were physically active, similar to England [66%]. The proportion of adults who were physically inactive [21.5%] is similar to England [22.2%]. Source: PHE Fingertips Public health Outcomes Framework.

Cancer incidence [new cases]

The number of new cases of cancers registered (cancer incidence) in England is rising.



More cancers were registered in males (155,019) than females (148,116) and across the majority of cancer sites in the body, more males were diagnosed with cancer than females.

Adults aged 65 years and over account for 65.3% of the total cancers registered in 2016.

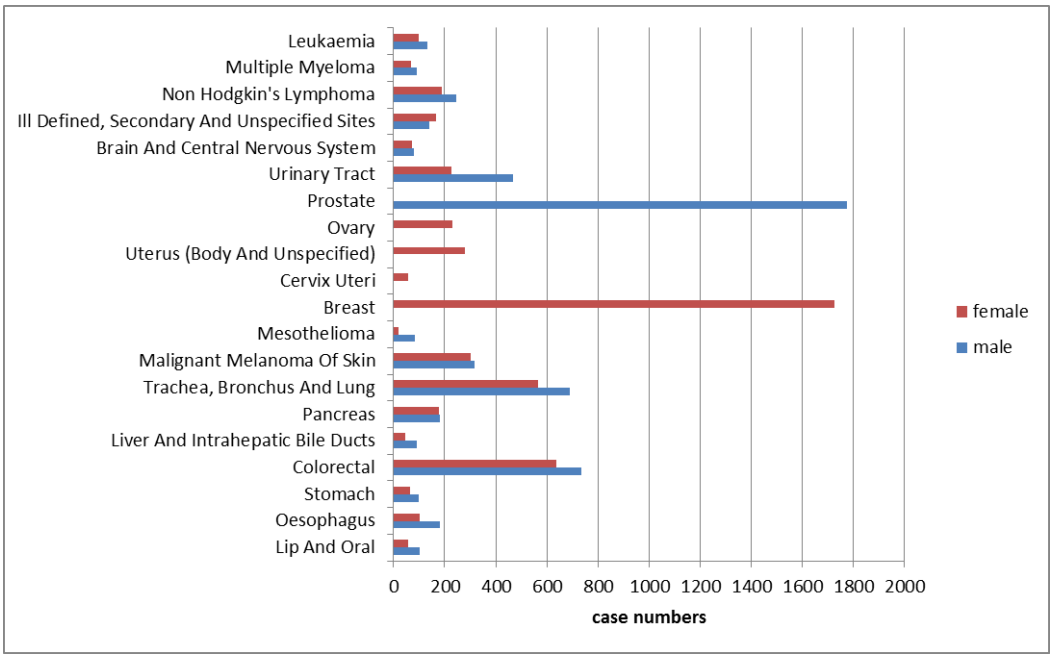
Most types of cancer are more common in older people, and with a generally ageing population, the number of **cancer cases will likely increase.**

There were a total of 5,877 *newly diagnosed* cancers in males and 5,448 cancers in females in East Sussex diagnosed in the period 2014-16.

How many new cases of cancer [cancer incidence] are diagnosed in East Sussex?

The number of new cases in East Sussex for the leading causes of cancer in the period 2014-16 are shown in Figure 2.

Figure 2: Number of new cases of the leading causes of cancer in East Sussex 2014-16



Source: https://nww.cancerstats.nhs.uk

In line with regional trends, there has been an increase in the incidence [total numbers] of cancers in East Sussex over the past 10 years. The greatest increase in the number of cases in males has been for prostate cancer. For females, the greatest increase in the number of cases has been for breast cancer.

The number of colorectal cancers diagnosed has increased over the past decade. Some of this increase is due to the introduction of the bowel screening programme which operates from the age of 60 years. There have also been increases in the numbers of lung cancers being diagnosed, with females having a larger increase than males.

Males - cancer incidence in East Sussex

Table 1 Directly shows age-standardised cancer incidence rates per 100,000 males, for the period 2014-2016.

Significantly better	Not significantly different	Significantly worse

Table 1 : Cancer incidence rates in East Sussex local authorities [males] 2014-16

								males
Location	England	South East	East Sussex	Eastbourne	Hastings	Lewes	Rother	Wealden
All cancers all ages	674	672	665	645	664	666	684	669
All cancers <75	432	433	436	449	427	449	452	415
Prostate all ages	178	194	198	176	189	185	217	212
Prostate <75	119	130	135	133	128	124	150	138
Lung all ages	91	78	78	80	105	67	73	75
Lung <75	51	43	44	48	58	43	37	41
Colorectal all ages	85	83	82	80	66	86	93	80
Colorectal <75	51	50	48	53	37	53	56	41

Source: https://nww.cancerstats.nhs.uk

The incidence rate of prostate cancer, all age groups and under 75s, is significantly higher in East Sussex overall compared to England, as are the prostate cancer incidence rates in Rother and Wealden LAs.

Females - cancer incidence in East Sussex

Table 2 shows that in females, the incidence rates of all cancers at all ages and in the under 75 age group are lower in East Sussex than in England, and also significantly lower in Lewes LA. The incidence rate of lung cancer is lower in East Sussex and also in Lewes and Wealden LAs compared to England.

Table 2: Cancer incidence rates in East Sussex local authorities [females] in 2014-16

								females
	England	South East	East Sussex	Eastbourne	Hastings	Lewes	Rother	Wealden
All cancers all ages	547	543	522	523	539	499	534	523
All cancers <75	404	402	386	397	391	357	393	395
Breast	171	180		173	157	181	164	184	181
Breast<75	145	153		148	134	153	141	158	154

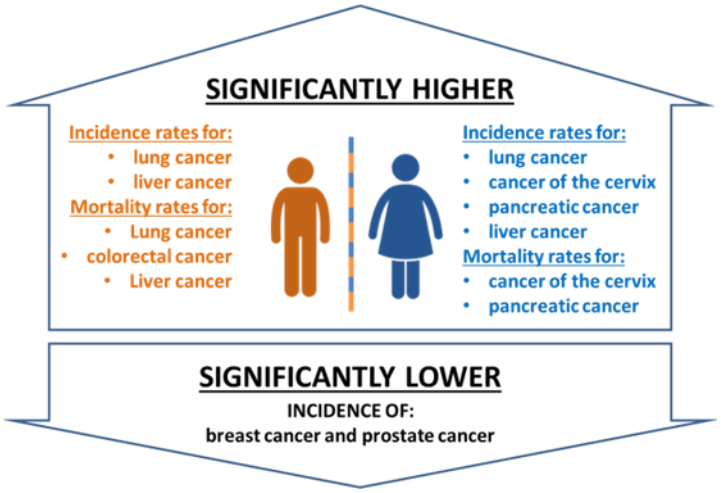
Lung all ages	66	56	52	60	67	42	58	41		
Lung <75	43	36	32	44	42	23	34	25		
Colorectal all ages	57	59	57	56	56	60	55	56		
Colorectal <75	34	35	32	33	29	31	29	35		

Source: https://nww.cancerstats.nhs.uk

Are there health inequalities in people who get cancers?

The influence of deprivation on cancer incidence and mortality is discussed further in: Cancer in Surrey and Sussex September 2017.[7]

When we compare the most deprived quintile to the least deprived quintile in the South East, there are:



Cancers contribute significantly to the absolute gap in life expectancy between the most and least deprived areas in East Sussex:

- 21% of the gap for men
- 22% of the gap for women.

Please see the PHE segment tool.

Cancer Mortality

Despite the increasing trend in cancer incidence over time, cancer mortality rates continue to

decrease. Cancers (defined as ICD-10 codes C00-D48) accounted for 28.5% of all deaths registered in England in 2016 and remained the most common broad cause of death for both males and females (30.9% and 26.2% respectively). The age-standardised mortality rate from cancers decreased between 2006 and 2016, from 366.7 to 323.7 per 100,000 males, and from 244.3 to 226.7 per 100,000 females.

The age-standardised mortality rate for *prostate cancer* decreased from 52.7 per 100,000 males in 2006 to 47.5 per 100,000 males in 2016, whilst mortality from *breast cancer* decreased from 41.5 to 34.1 per 100,000 females. This decreasing mortality contrasts with the increase in incidence, indicating that the number of patients surviving breast and prostate cancer has improved.

Early detection and medical advances have both contributed to improved cancer survival. Recent advances in molecular biology may widen and improve the therapeutic options of available cancer treatments, as well as identifying those at greater risk.

Nationally, lung, bowel, breast and prostate cancers together accounted for almost half (45%) of all cancer deaths in the UK in 2016.

- Around a fifth of all cancer deaths are from lung cancer.
- Liver cancer has shown the fastest increase in mortality in both males and females over the past decade in the UK.
- Stomach cancer has shown the fastest decrease in mortality over the past decade in the UK for both males and females.
- For lung cancer the mortality trend differs between the sexes.
- Mortality rates are projected to fall for most types of cancer in the UK between 2014 and 2035.
- Among cancer types where mortality rates are projected to rise in the UK between 2014 and 2035, the size of the increase ranges from 7% (thyroid cancer) to 58% (liver cancer).
- Among cancer types where rates are projected to fall in the UK between 2014 and 2035, the size of the decrease ranges from less than 1% (laryngeal cancer) to 46% (mesothelioma).

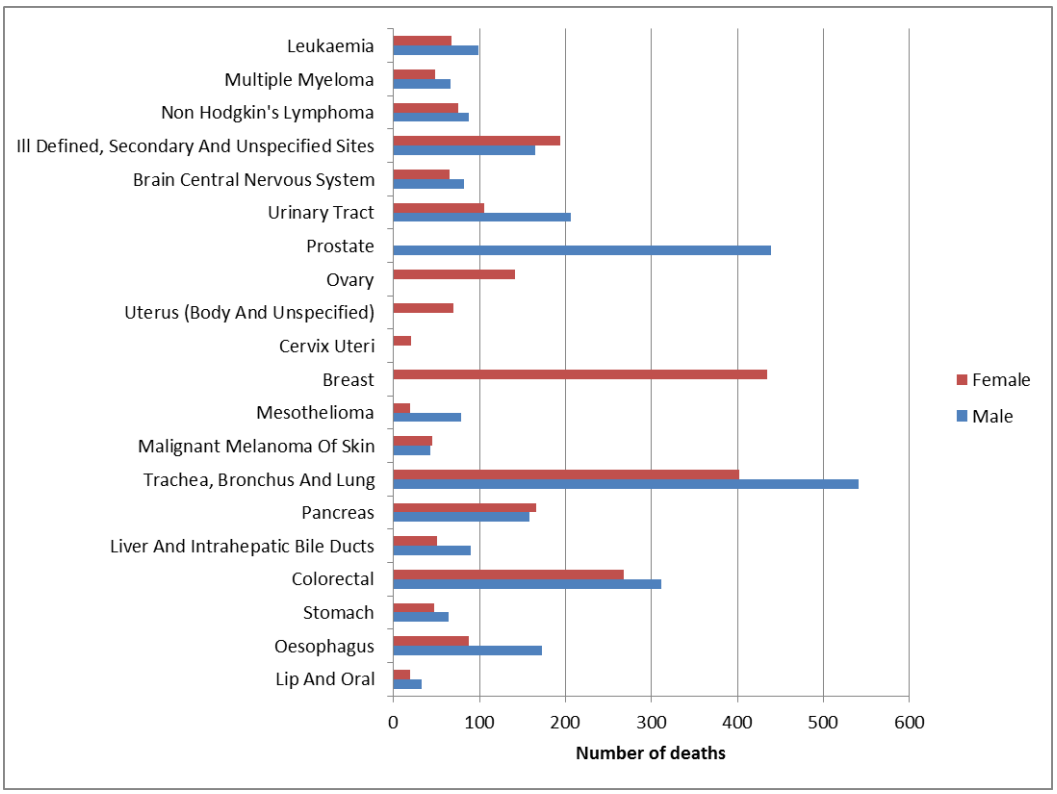
How many people die from cancer in East Sussex?

A total of 2,797 males and 2,504 females were recorded as having died from cancer [of all types] in East Sussex in the period 2014-16.

What did they die from?

The leading causes of mortality from cancer [number of deaths] in East Sussex are shown below for 2014-16, Figure 3.

Figure 3: Leading causes of mortality from cancer in East Sussex in 2014-16



Source: https://nww.cancerstats.nhs.uk

Males - cancer mortality in East Sussex

For males, mortality rates for all cancers [all ages] and under 75 were significantly lower for East Sussex as a whole, when compared to England for the period 2014-16, Table 3. However, the mortality rate from all cancers in *Hastings LA for males under 75 is significantly worse*, while significantly better than England in Wealden LA. Hastings LA also has a higher rate of colorectal cancer mortality in males under 75, while Wealden LA is significantly better.

Table 3 shows directly age-standardised mortality rates per 100,000 males for the period 2014-2016.

Areas with significantly (95% confidence) lower and higher incidence/mortality rates than England, for the period 2014-16, are highlighted in green and red respectively. Similar data are available at CCG level.

Significantly better	Not significantly different	Significantly worse

Table 3: Cancer mortality rates [ASR per 100,000] males in East Sussex local authorities 2014-16

	England	South East	East Sussex	Eastbourne	Hastings	Lewes	Rother	Wealden
All cancers	328	311	315	300	349	299	315	319
All cancers 0-74	151	139	139	144	178	136	134	124
Prostate	48	48	49	44	36	54	51	53
Prostate 0-74	11	10	10	9	12	10	6	11
Lung	71	61	61	57	73	59	60	60
Lung 0-74	37	31	31	34	39	34	29	25
Colorectal	33	32	35	31	39	35	34	37
Colorectal 0-74	151	139	139	144	178	136	134	124

Source: https://nww.cancerstats.nhs.uk

Females - cancer mortality in East Sussex

For females, mortality for all cancers was significantly better than England in East Sussex overall and in Lewes and Wealden LAs, Table 4. However, breast cancer mortality [all ages] is significantly worse in East Sussex than in England. Mortality rates for all cancers [all ages] and for the under 75 age group are significantly better in Lewes and Wealden LAs. There is significantly lower lung cancer mortality in females in Lewes and Wealden LAs.

Table 4 : Cancer mortality rates [ASR per 100,000] females in East Sussex local authorities 2014-16

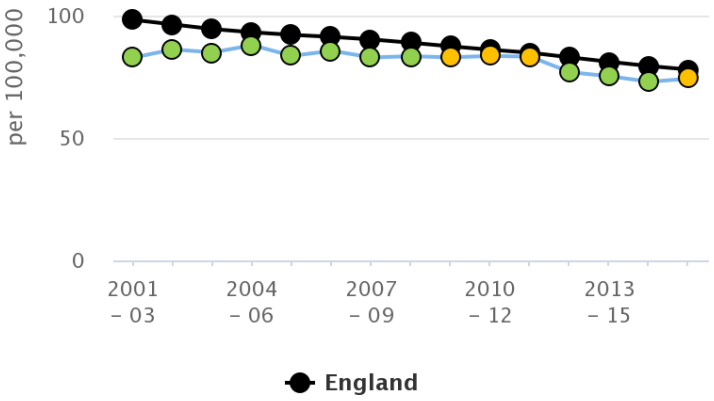
	England	South East	East Sussex	Eastbourne	Hastings	Lewes	Rother	Wealden
All cancers	227	217	216	233	235	191	228	207
All cancers 0-74	122	115		115	139	134	90	121	104
Breast	34	35	39		38	38	36	42	41
Breast 0-74	21			22	24	26	26	22	26	23
Lung	48	40	35	40	43	30	38	31
Lung 0-74	28	23	20	29	24	14	21	17
Colorectal	21			22	22	25	26	20	21	20
Colorectal 0-74	9			9	7	10	9	7	7	6

Source: https://nww.cancerstats.nhs.uk

Potentially preventable cancer deaths

A death is defined as preventable if, all or most deaths from that cause (subject to age limits if appropriate) could be avoided by public health interventions in the broadest sense. In East Sussex, under-75 mortality from cancer considered preventable has remained significantly less than in England, Figure 4.

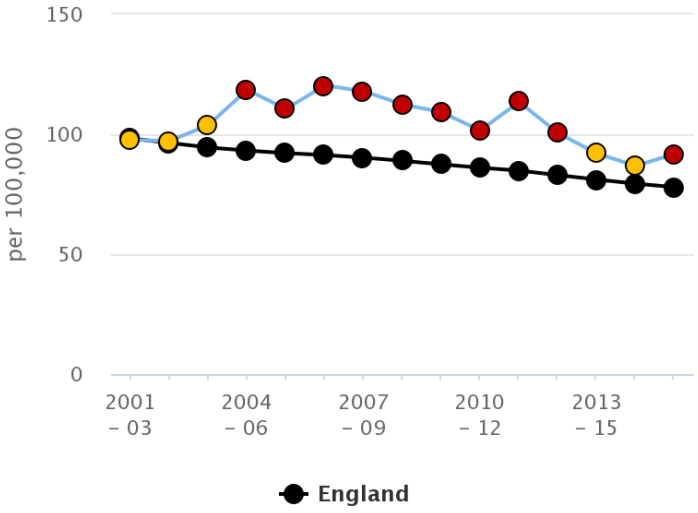
Figure 4: Under-75 standardised mortality rate [persons] from cancer considered preventable in East Sussex 2001-2017



Source: PHE Fingertips PHOF

However, there is a very different picture at district and borough level, Figure 5. Hastings LA has a significantly higher rate of death from preventable cancers than the South East (though not when compared to England). Lewes and Wealden LAs have significantly lower rates of potentially preventable cancers. Please also see the later section Cancer mortality in East Sussex local authorities.

Figure 5: Under 75 standardised mortality rate [persons] from cancer considered preventable Hastings LA compared to South East Region 2001-2017



Source: PHE Fingertips PHOF

Under-75 mortality from cancer that is considered preventable rises with increasing levels of deprivation. The rates are shown in Figure 6. Local data also indicate this association is true for Districts and Boroughs in East Sussex.

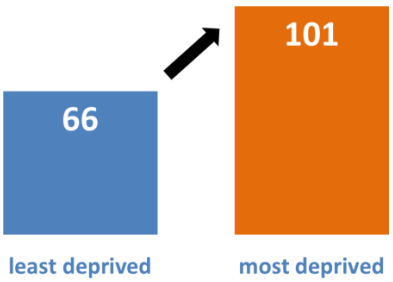
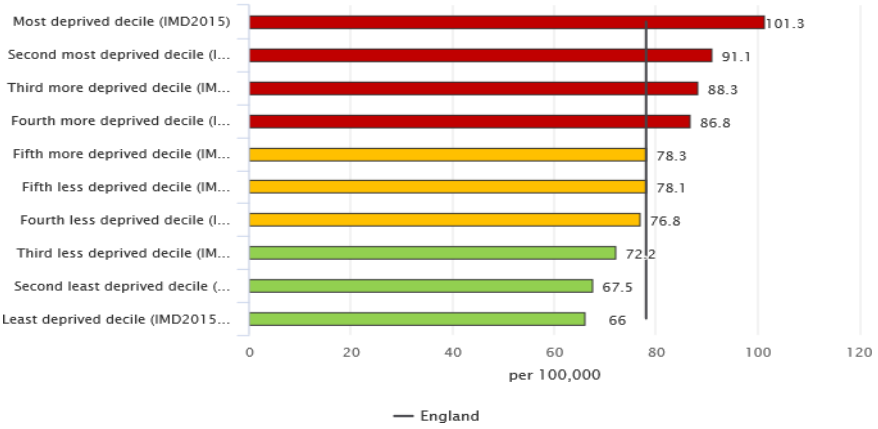


Figure 6: Under 75 mortality rate [persons] from cancer considered preventable, by deprivation decile, England 2015-17



Source: PHE Fingertips PHOF

Cancer Screening

Screening is an important process for detecting malignant disease (or potentially malignant changes) in people who do not have any symptoms, with the aim of improving the success of treatment.

Across the region there was statistically significant variation for all cancer screening programmes. People living in the most deprived quintiles of areas are significantly less likely to receive cancer screening than those living in the least deprived quintiles.

Bowel cancer screening programme coverage has gradually been increasing and is better in East Sussex overall than in England in 2017. Coverage is better in Lewes, Rother and Wealden LAs.

Hastings has been consistently worse than England, although this has been improving.

Breast cancer screening programme coverage has been static in East Sussex and is the same as in England in 2017. Coverage has been consistently lower in Eastbourne and Hastings LAs, whilst consistently higher in Lewes, Rother and Wealden LAs.

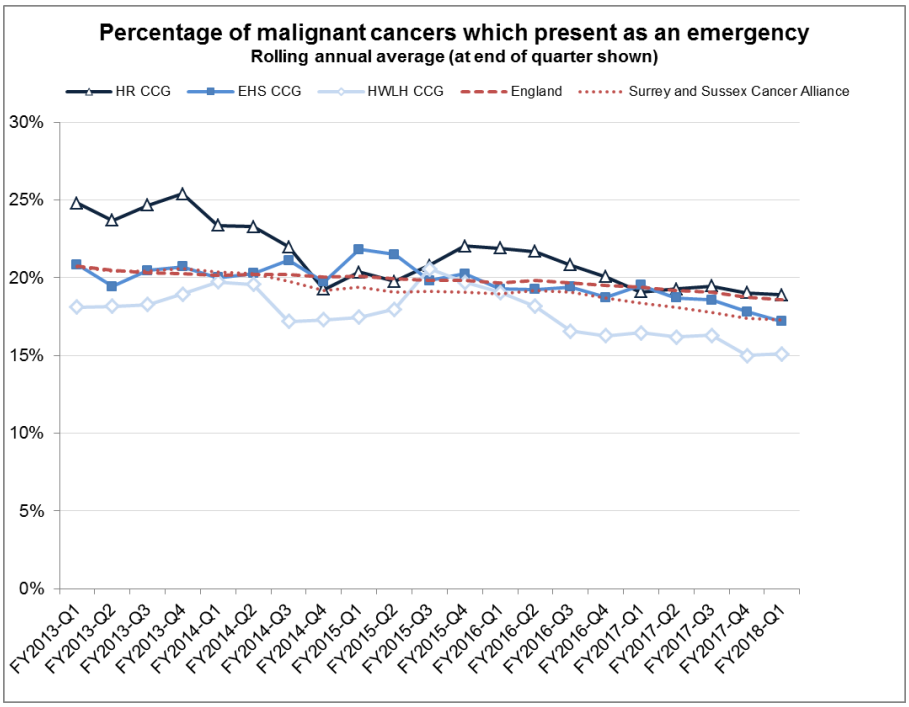
Routes to diagnosis

Where in the health care system a person's cancer is first diagnosed [known as the route to diagnosis] is associated with how likely it is that the cancer will be detected at an early stage. The stage of the

cancer significantly influences whether it can be successfully treated.[8] Cancer patients receiving their diagnosis through screening (where available) or managed routes (via two week rule referrals from GPs) have better outcomes than those diagnosed through emergency presentations.

The percentage of cancers presenting as an emergency for all East Sussex CCGs has fallen over the last five years reported. Local trends in the proportion of cancers diagnosed as an emergency during the first admission to hospital over the last five years are shown in Figure 7.

Figure 7: Percentage of malignant cancers which present as an emergency by quarter



Source: National Cancer Analysis and Registration Service **NCRAS**

In the period 2006-2013, patients in the Surrey and Sussex Cancer Alliance had their cancers diagnosed through emergency presentations for 4% of breast cancers, 9% of prostate cancers, 24% of colorectal cancers and 36% of lung cancers.

In 2015, across the Surrey and Sussex Cancer Alliance, patients had their cancers diagnosed at early stages (stage 1 or 2) for 86% of breast cancers, 54% of prostate cancers, 48% of colorectal cancers, but only 25% of lung cancers. For breast, colorectal and lung cancers there were no statistically significant differences between the CCGs and no CCGs had statistically significantly lower percentages than England. There was some statistically significant variation between CCGs for early stage diagnosis of prostate cancer, with Eastbourne, Hailsham and Seaford CCG statistically significantly lower than the average for England.

Cancer Survival

A recently published ONS bulletin summarises cancer survival in England for adults diagnosed between 2001 and 2016 and followed up to 2017.

For each calendar year, the cancer survival index provides a single number summarising the overall pattern of cancer survival for all cancers combined. It combines the net survival estimates for each sex, age group and type of cancer. The survival index can be compared over time, because it is adjusted for any changes in the profile of cancer patients by age, sex or type of cancer in a given area. This adjustment is necessary because survival varies widely by all three of these factors.

Prostate cancer and non-melanoma skin cancer are excluded from the index.

There has been steady improvement in the 1 year survival index in the period 2001-16. During this period the survival index for Hastings and Rother CCG has been, and remains consistently lower than England [72.8%], Table 5.

Table 5: Cancer survival index

CCG	1 year survival index % in 2016
EHS	72%
H and R	71%
HWLH	73%
STP	73%
England	73%

Source: ONS

For Sussex and East Surrey STP area, Tables 6 and 7 show the annual *change* in net survival, as well as one and five year, age-standardised net survival for breast, colorectal and lung cancers in females, and for prostate, colorectal and lung cancers in males. The data are for the Sussex and East Surrey STP area for the period 2011-15. [9]

Table 6: One year and five year survival from breast, colorectal and lung cancer (females)

Females	*Breast*	*Colorectal*	*Lung*
Annual change in net survival	+0.2%	+1.0%	+1.6%
1 year survival 2011-15	96%	78%	42%
5 year survival 2011-15	86%	59%	17%

Source: ONS geographic patterns of cancer survival

Table 7: One year and five year survival from prostate, colorectal and lung cancer (males)

MALES	PROSTATE	COLORECTAL	LUNG
Annual change in net survival	+0.2%	+1.2%	+1%
1 year survival 2011-15	96%	79%	35%
5 year survival 2011-15	87%	58%	12%

Source: ONS geographic patterns of cancer survival

Colorectal cancer: the one and five year survival for females and males for Sussex and East Surrey are very similar to England.

Lung cancer: the one and five year survival rates Sussex and East Surrey are very similar to England. It is interesting to note the higher one year survival for females. Five year survival remains poor although a little higher in women.

Breast cancer: the one and five year survival rates Sussex and East Surrey are very similar to England.

Prostate cancer: the one and five year survival rates Sussex and East Surrey are very similar to England.

In the eight year period 2008 to 2015 one year survival for breast cancer in women and prostate cancers in men have increased. In the same period, one year survival for lung cancer has notably increased in women and to a lesser extent in men. For colorectal cancer one year survival in men and women have marginally increased

Actions required to improve cancer outcomes across the SE Region:

The following actions were identified to improve cancer outcomes in the Public Health England Regional report:

- Increase planning and resources for the expected increases in numbers of new cases of cancer and the numbers of people living with and beyond cancer diagnoses.
- increase action to tackle behavioural risk factors, to reduce rising incidence.
- increase uptake of human papilloma virus vaccine (via the national programme).[1]
- increase *uptake of NHS health checks* to help individuals identify and modify their risks of some common cancers.
- increase uptake of cancer screening, particularly in more deprived populations.
- increase the proportion of patients receiving earlier diagnoses of lung and colorectal cancers through managed routes, to increase early stage diagnoses.
- improve understanding of the preferences of people coming to the end of their lives and support end-of-life care in the community.

[1] In addition to cervical cancer, HPV is causally associated with less common cancers at other sites, including cancer of the vulva, vagina, penis and anus, and some cancers of the head and neck. The HPV vaccine is protective against the majority of HPV virus strains.

Links to main evidence sources:

- Cancer Research UK; www.cancerdata.nhs.uk
- https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/cancerregistrationstatisticsengland/final2016
- https://www.gov.uk/guidance/national-cancer-registration-and-analysis-service-ncras
- https://nww.cancerstats.nhs.uk
- The indicators which describe trends in cancer screening programmes and access to diagnostic services can be found at the following link to PHE Fingertips

The most recent cancer registration information for England in 2017 can be found at: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/cancerregistrationstatisticsengland/2017#cancer-incidence-varies-by-region-of-england

Please see the later sections (on pages 16-28 below) for a more detailed discussion about: Breast cancer ; Bowel cancer; Lung cancer; Prostate cancer.

These summarise information from Cancer Research UK website which we most gratefully acknowledge and which we have put into a local context.

Breast cancer:

Why is breast cancer important?

1 in 7 women will be diagnosed with breast cancer during their lifetime.

Breast cancer was the most common cancer diagnosed in England in 2016.Breast cancer accounts for nearly one in three of all malignant female cancer registrations.[10]

Breast cancers can be broadly subdivided into ductal breast carcinoma in situ, and invasive breast cancers. Ductal carcinoma in situ (DCIS) is a non-invasive cancer

where abnormal cells have been found in the lining of the breast milk duct. The atypical cells have not spread outside of the ducts into the surrounding breast tissue. Ductal carcinoma in situ is very early cancer that is highly treatable, but if it's left untreated or undetected, it can spread into the surrounding breast tissue. Invasive breast cancer is where the cancer has begun to invade local tissues and may spread to more distant sites in the body.

Research into the genetics and classification of breast cancers is increasingly recognising that this is more than one disease process.

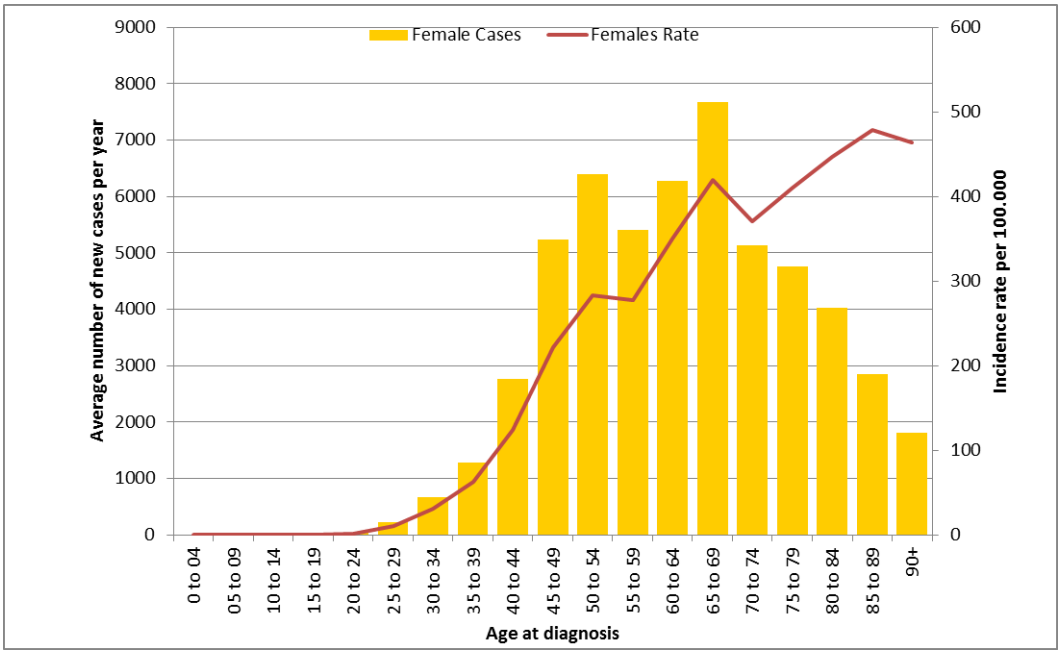
Breast cancer incidence [invasive breast cancer]

In 2016, there were 45,960 cases of invasive breast cancer registered in England; 45,656 of these cases were in females.

The age-standardised incidence rate for breast cancer has increased from 162 per 100,000 females in 2006 to 168 cases per 100,000 in 2016.[11] Incidence rates for invasive breast cancer are projected to *rise by 2%* in the UK between 2014 and 2035, to 210 cases per 100,000 females by 2035.

Figure 8 shows how the age specific incidence rates per 100,000 for invasive cancer of the breast [female] increase with age.

Figure 8 : Age-specific incidence rates of invasive cancer of the breast (females) and number of new cases per year (UK)

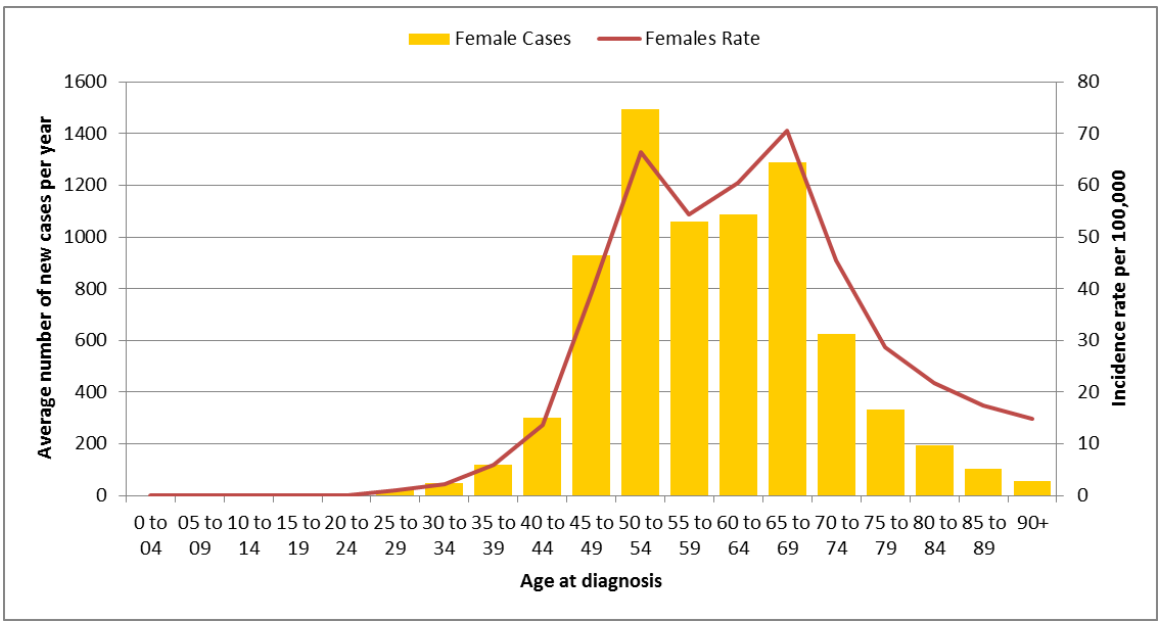


Source: Redrawn from Cancer Research UK data

Breast cancer incidence [ductal carcinoma-in-situ, DCIS]

There were around 6,800 new breast carcinoma in situ cases diagnosed in England in 2016. Figure 9 shows the average number of new cases per year and age-specific incidence rates per 100,000 breast ductal carcinoma-in-situ [DCIS] in the UK.

Figure 9: Average number of new cases per year and age-specific incidence rates per 100,000 breast ductal carcinoma-in-situ [DCIS] in the UK.



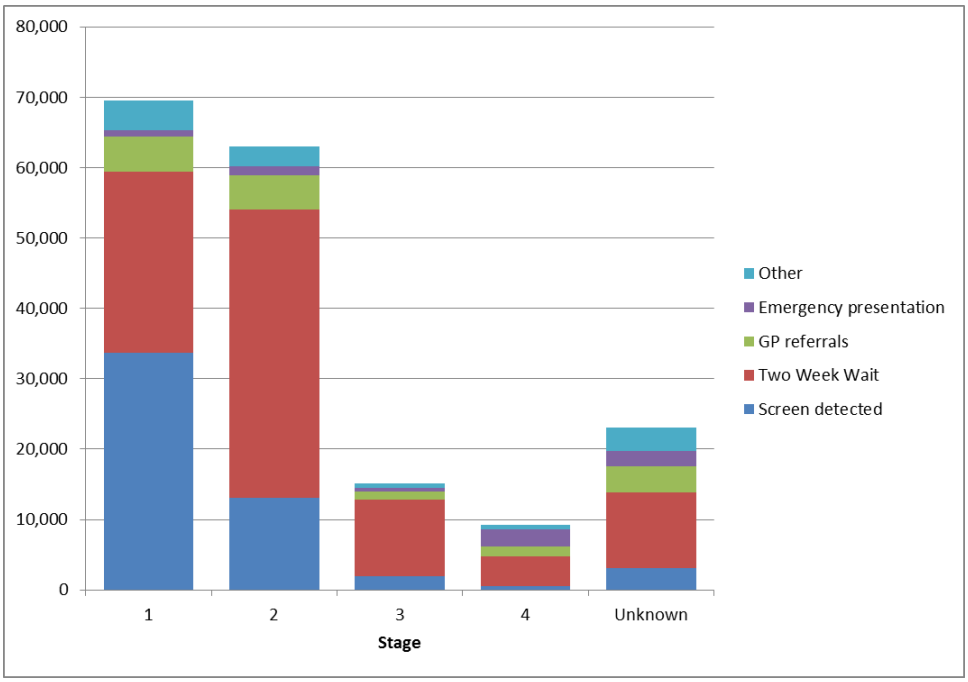
Source: Redrawn from Cancer Research UK data

Incidence *rates* for breast carcinoma in situ in England are highest in people aged 65 to 69 (2014-2016). Over the last decade, breast carcinoma in situ incidence rates have increased by almost half in the UK.

Breast cancer routes to diagnosis

National data [for England]showing the total number of all breast cancers diagnosed at each stage between 2012-16, and the route through which they were diagnosed are shown in Figure 10.

Figure 10: Total number of all breast cancers diagnosed at each stage between 2012-16, and the route through which they were diagnosed



Source: National Cancer Analysis and Registration Service **NCRAS**

Around half (51%) of female invasive breast cancer cases in England are diagnosed via the 'two-week wait' referral route. Almost a third (29%) of female invasive breast cancer cases in England are detected by screening. Around a tenth (9%) of female invasive breast cancer cases in England are diagnosed following a routine or urgent GP referral (but not under the two week wait referral route). Around 5 in 100 (4%) of female invasive breast cancer cases in England are diagnosed after presenting as an emergency.

Breast cancer mortality

The age-standardised mortality rate for breast cancer decreased from 41 in 2006 to 34 per 100,000 females in 2016.

- In females in the UK, breast cancer is the 2nd most common cause of cancer death with around 11,500 deaths in 2016, after lung cancer.
- Mortality rates for breast cancer in the UK are highest in people aged 90+ (2014-2016).
- Mortality rates for breast cancer are projected to fall by 26% in the UK between 2014 and 2035, to 31 deaths per 100,000 females by 2035.

Who is most at risk? How many cases of breast cancer are preventable?

It is estimated that 23% of breast cancer cases in the UK are preventable.[12]

- 8% of breast cancer cases in the UK are caused by overweight and obesity.
- 8% of breast cancer cases in the UK are caused by drinking alcohol.
- 5% of breast cancer cases in the UK are caused by not breastfeeding.
- 2% of breast cancer cases in the UK are caused by post-menopausal hormones.
- Less than 1% of breast cancer cases in the UK are caused by oral contraceptives.

Are there health inequalities?

- Breast cancer is more common in White females than in Asian or Black females.
- Breast cancer incidence [the rate of new cases per 100,000] in England is less common in females living in the most deprived areas.
- Breast cancer deaths in England are more common in females living in the most deprived areas. This largely reflects the late stage at first presentation with breast cancer which is associated with a poorer prognosis.

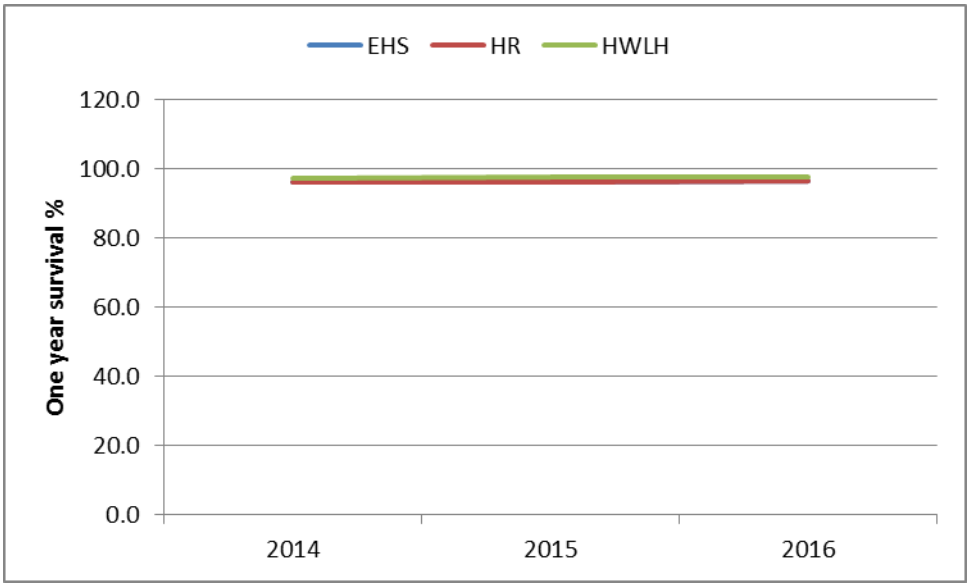
What are the local trends in incidence, mortality and survival from

breast cancer in East Sussex?

In East Sussex in 2014-16 there were:

- 1,727 women diagnosed with malignant carcinoma of the breast
- 263 women diagnosed with breast carcinoma-in-situ
- 435 women died from breast cancer in the period 2014-16.
- The trend in percentage survival at one year from breast cancer shows improvement, although has been very similar in the past three years.

Figure 11: Survival at one year from breast cancer East Sussex CCGs



Source: ONS

The trend in *mortality* from breast cancer in under75s is decreasing [improving] over the same 15 year period

Bowel [colorectal] cancer

Why is colorectal cancer important?

Colorectal cancer was the third most common malignant cancer for males and females in the UK [as a proportion of all newly diagnosed cancer cases].

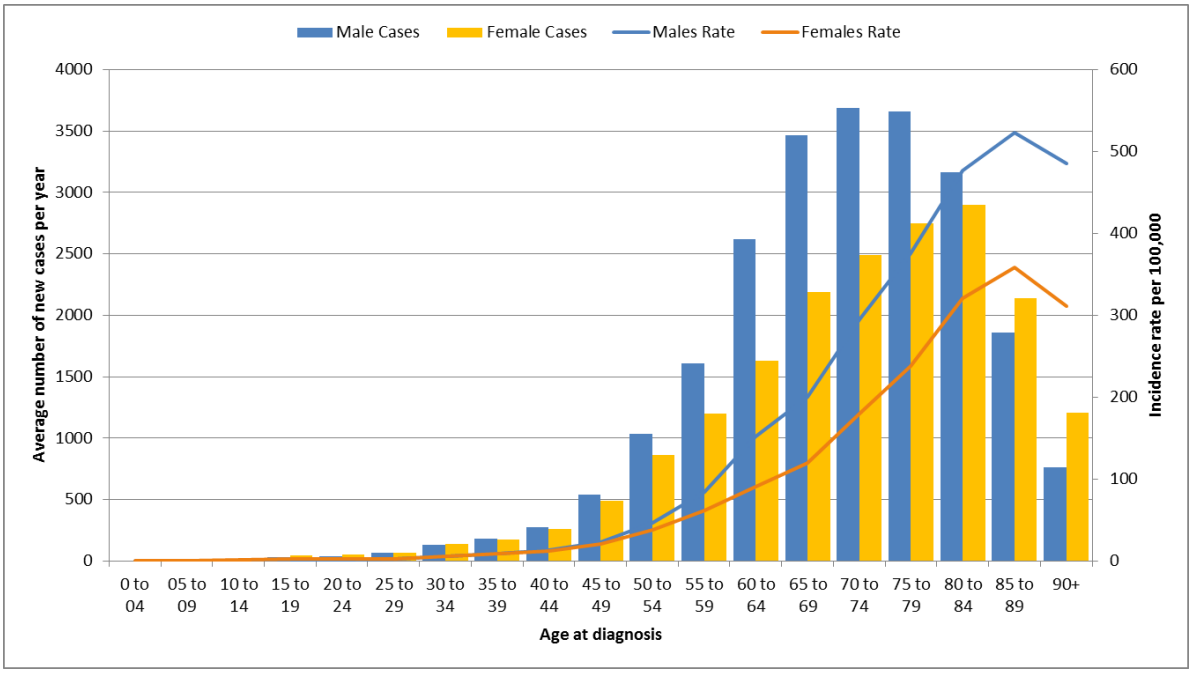
In 2016, there were 34,952 new cases [19,581 males and 15,371 females] diagnosed with colorectal cancer in the UK.[12]

Incidence:

Bowel cancer incidence is strongly related to age, with the highest incidence rates being in older

people. Figure 12 shows the age-sex specific incidence rates for colorectal cancer in the UK.

Figure 12: Age specific incidence rates of colorectal cancers and numbers of new cases per year in the UK



Source: Redrawn from Cancer Research UK

Colorectal cancer has decreased in both males and females. The age-standardised rate for colorectal cancer was 84.4 cases per 100,000 males and 55.4 cases per 100,000 females in 2016, compared with 89.5 cases per 100,000 males and 57.1 cases per 100,000 females in 2006.

Incidence trends largely reflect changing prevalence of risk factors, improvements in diagnosis and data recording. Recent incidence trends are influenced by risk factor prevalence in years past. Trends by age group reflect the differing levels of risk factor exposure for people born in different decades. The introduction of the bowel screening programmes in the mid-2000s has probably also influenced incidence rates.

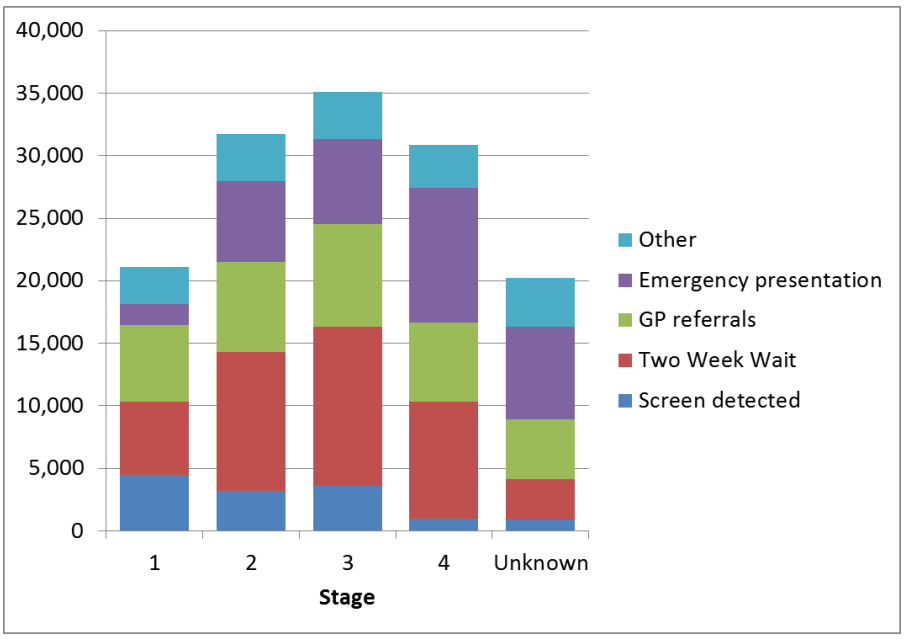
Incidence rates for bowel cancer are projected to fall by 11% in the UK between 2014 and 2035, to 74 cases per 100,000 people by 2035. This includes a larger decrease for males than for females.

Over half of bowel cancer cases were diagnosed at a late stage in England (2014).The stage distribution will reflect many factors including how the cancer type develops, the way symptoms appear, public awareness of symptoms, how quickly a person goes to see their doctor and how quickly the cancer is recognised and diagnosed by a doctor. It might also relate to the extent of uptake of the screening programme.

Routes to diagnosis: colorectal cancer

National data showing the total number of all colorectal cancers diagnosed at each stage between 2012-16, and the route through which they were diagnosed are shown in Figure 13.

Figure 13: Total number of all colorectal cancers diagnosed at each stage between 2012-16, and the route through which they were diagnosed



Source: NCRAS

Almost a third (30%) of bowel cancer cases in England are diagnosed via the 'two-week wait' referral route. Around a quarter (24%) of bowel cancer cases in England are diagnosed after presenting as an emergency. Around a quarter (24%) of bowel cancers cases in England are diagnosed following a routine or urgent GP referral (but not under the 'two-week wait' referral route). A tenth (10%) of bowel cancer cases in England are diagnosed by screening.

Mortality:

Bowel cancer mortality is strongly related to age, with the highest mortality rates being in older people. In the UK in 2014-2016, on average each year almost 6 in 10 (58%) deaths were in people aged 75 and over. This largely reflects higher incidence and lower survival for bowel cancer in older people.

- Bowel cancer is the 2nd most common cause of cancer death in the UK, accounting for 10% of all cancer deaths (2016).
- In males in the UK, bowel cancer is the 3rd most common cause of cancer death, with around 8,900 deaths in 2016.
- In females in the UK, bowel cancer is the 3rd most common cause of cancer death, with around 7,500 deaths in 2016.
- Mortality rates for bowel cancer are projected to fall by 23% in the UK between 2014 and 2035, to 25 deaths per 100,000 people by 2035.

Who is most at risk? What are the risk factors for bowel

[colorectal] cancer?

1 in 15 UK males and 1 in 18 UK females will be diagnosed with bowel cancer in their lifetime. It is estimated that 54% of bowel cancer cases in the UK are preventable. [12]

- 28% of bowel cancer cases in the UK are caused by eating too little fibre.
- 13% of bowel cancer cases in the UK are caused by eating processed meat.
- 11% of bowel cancer cases in the UK are caused by overweight and obesity.
- 6% of bowel cancer cases in the UK are caused by alcohol drinking.
- 7% of bowel cancer cases in the UK are caused by smoking.
- 5% of bowel cancer cases in the UK are caused by too little physical activity.
- 2% of bowel cancer cases in the UK are caused by ionising radiation.

Are there health inequalities?

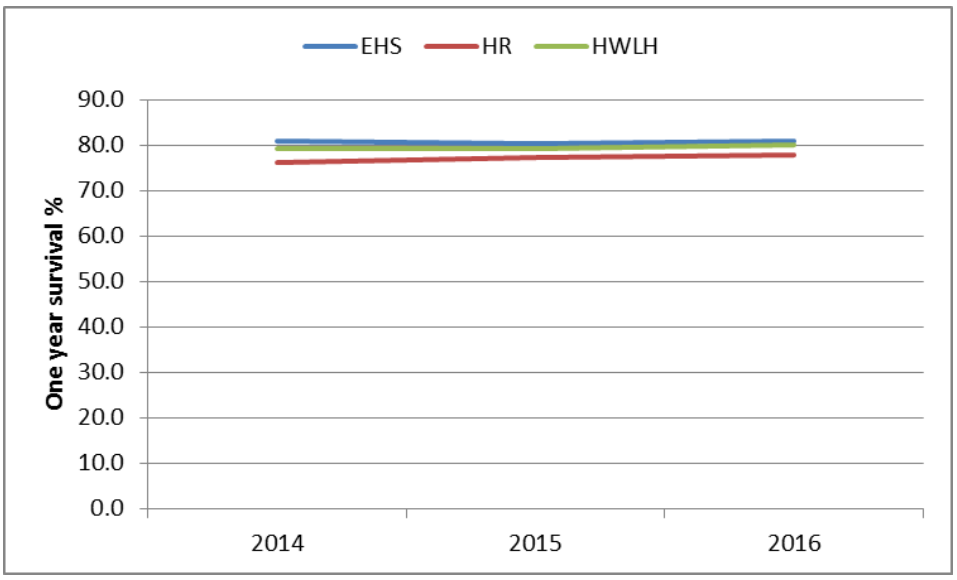
- Bowel cancer deaths in England are more common in people living in the most deprived areas.

What are the local data on incidence, mortality, and survival from bowel cancer?

In East Sussex in the period 2014-16:

- 734 new cases of colorectal cancer were diagnosed in men and 639 new cases in women
- 311 men and 268 women died from colorectal cancer in East Sussex in 2014-16.
- There has been a gradual increase in one year survival from colorectal cancer, although one year survival in H and R CCG is consistently lower.

Figure 14: One year survival from colorectal cancer East Sussex CCGs



Source: ONS

The trend in mortality under 75 from colorectal cancer between 2001 and 2014 has generally been downward in all three East Sussex CCGs.

Lung cancer

Why is lung cancer important?

1 in 13 men (8%) and 1 in 15 (7%) women born since 1960 will be diagnosed with lung cancer during their lifetime. [13]

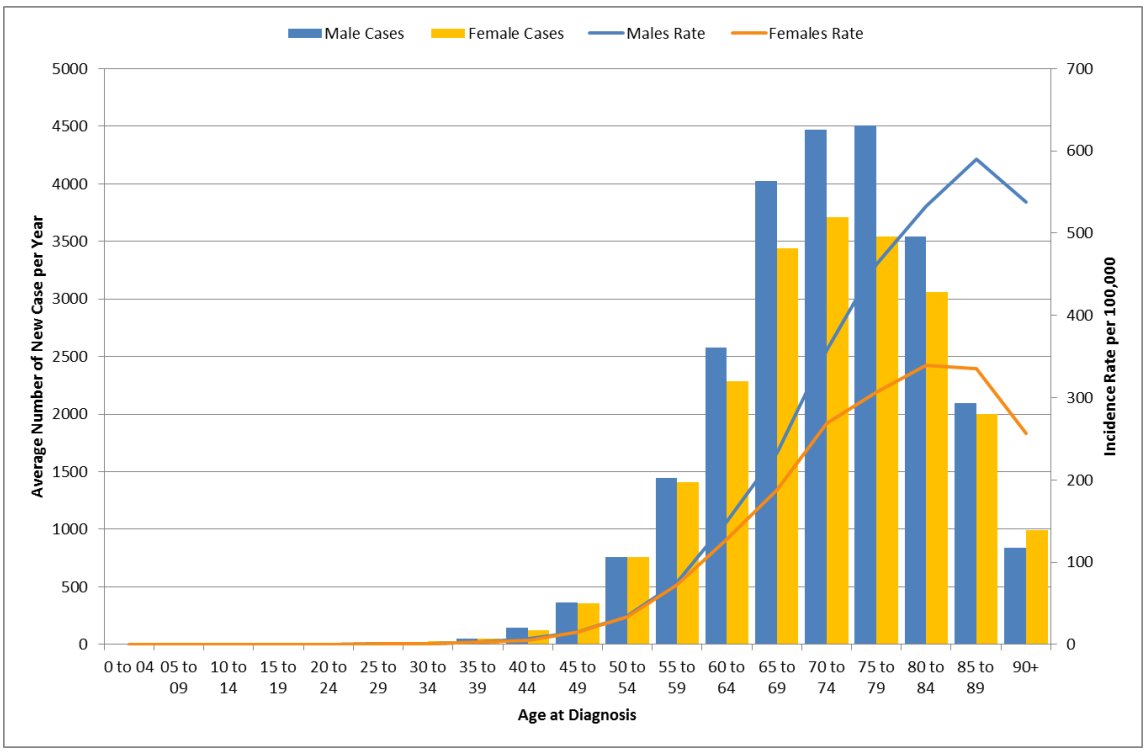
In 2016 the second most common malignant cancer for both males and females was lung cancer. There were 38,381 (20,560 males and 17,821 females) new cases of lung cancer registered in England. Lung cancer accounted for 13% of total cancer registrations for males and 12% for females.

Around *three-quarters* of lung cancer cases were diagnosed at a late stage in England (2014).

Lung cancer incidence [new cases]

Lung cancer incidence is strongly related to age. Figure 15 shows the age-sex specific incidence rates for lung cancer in the UK.

Figure 15: Age-specific incidence rates of lung cancer and number of new cases per year in the UK



Source: Redrawn from Cancer Research UK

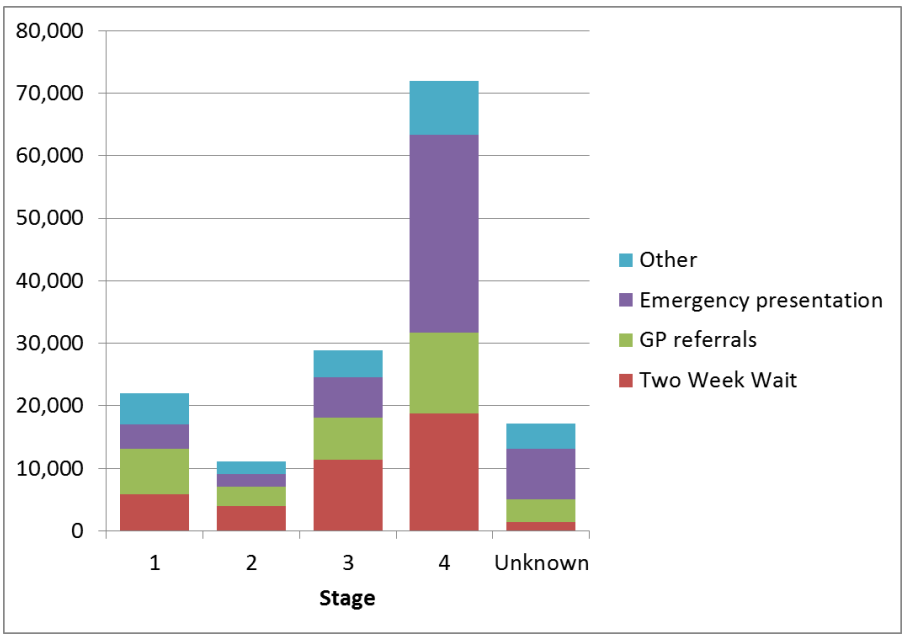
The gap between lung cancer incidence in males and females continues to narrow. The age-standardised rate (for lung cancer) has *decreased in males* from 101 per 100,000 males in 2006 to 90 cases per 100,000 in 2016. Lung cancer in *females has increased* in this same period, from 58 cases per 100,000 females in 2006 to 65 per 100,000 in 2016.

Incidence rates for lung cancer are projected to fall by 7% in the UK between 2014 and 2035, to 88 cases per 100,000 people by 2035.

Lung cancer routes to diagnosis

National data showing the total number of all lung cancers diagnosed at each stage between 2012-16, and the route through which they were diagnosed are shown in Figure 16.

Figure 16: Total number of all lung cancers diagnosed at each stage between 2012-16, and the route through which they were diagnosed



Source: NCRAS

More than a third (35%) of lung cancer cases in England are diagnosed after presenting as an emergency. More than a quarter (27%) of lung cancer cases in England are diagnosed via the 'two-week wait' referral route. Around a fifth (21%) of lung cancer cases in England are diagnosed following a routine or urgent GP referral (but not under the 'two-week wait' referral route). Currently there is no national screening programme for lung cancer.

Lung cancer mortality

Lung cancer mortality is strongly related to age.

- In males in the UK, lung cancer is the most common cause of cancer death, with around 19,300 deaths in 2016. In females in the UK, lung cancer is the most common cause of cancer death, with around 16,300 deaths in 2016.
- Over the last decade, lung cancer mortality rates have decreased by around a tenth (9%) in the UK for males and females combined. Age standardised rates in males have decreased by around a fifth (19%), and rates in females have increased by (2%).
- Mortality rates for lung cancer are projected to fall by 21% in the UK between 2014 and 2035, to 58 deaths per 100,000 people by 2035.

Who is most at risk? How many cases are preventable?

It is estimated that 79% of lung cancer cases in the UK are preventable. [12]

- 72% of lung cancer cases in the UK are caused by smoking.
- 5% of lung cancer cases in the UK are caused by ionising radiation.
- 13% of lung cancer cases in the UK are caused by workplace exposures.

- 8% of lung cancer cases in the UK are caused by air pollution.

Are there health inequalities?

There are clear inequalities in the incidence of lung cancer with those in the most deprived communities at much higher risk, largely attributable to smoking prevalence.

There are also inequalities in the risks of occupational exposures to cancer causing chemicals [carcinogens], as well as from indoor and outdoor air pollution.

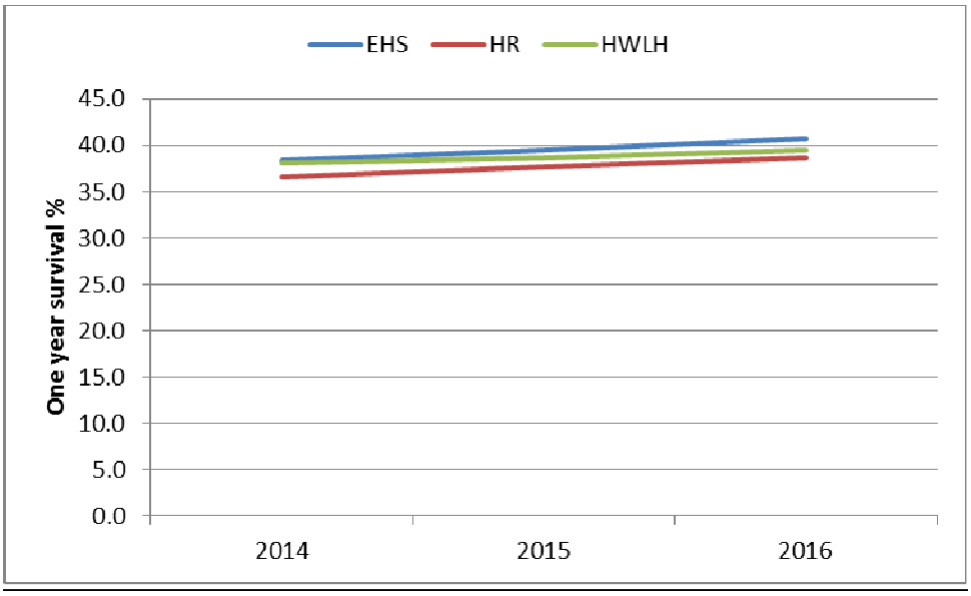
As smokers' underlying risk of lung cancer is already much higher, smokers who are also exposed to Radon from the environment have much higher lung cancer risks than do non-smokers.

Local trends in incidence, mortality and survival from lung cancer

In East Sussex in the period 2014-16 there were:

- 692 new cases in males and 567 in females
- 541 men and 402 women who died from lung cancer
- There has been a notable increase of 140 cases of cancer of the trachea, bronchus and lung in females in 2014-16 compared to 2004-6.
- There has been a very gradual improvement in percentage one year survival from lung cancer in all CCGs, although survival in H and R CCG has been consistently lower.

Figure 17: One year survival from lung cancer in East Sussex CCGs



Source: ONS

Mortality under 75 from lung cancer has generally been better than England for the period 2001 to 2014 in EHS and HWLH CCGs.

Prostate cancer

Why is it important?

The lifetime risk of being diagnosed with prostate cancer was 1 in 8 for men, in 2012 in the UK.

Prostate cancer was the most common cancer diagnosed in males in 2016 with 40,489 cases registered in England. It accounted for one in four (26.1%) male malignant cancer registrations.

Prostate cancer incidence

The incidence of prostate cancer increases with age. Figure 18 shows the age specific incidence rates for prostate cancer.

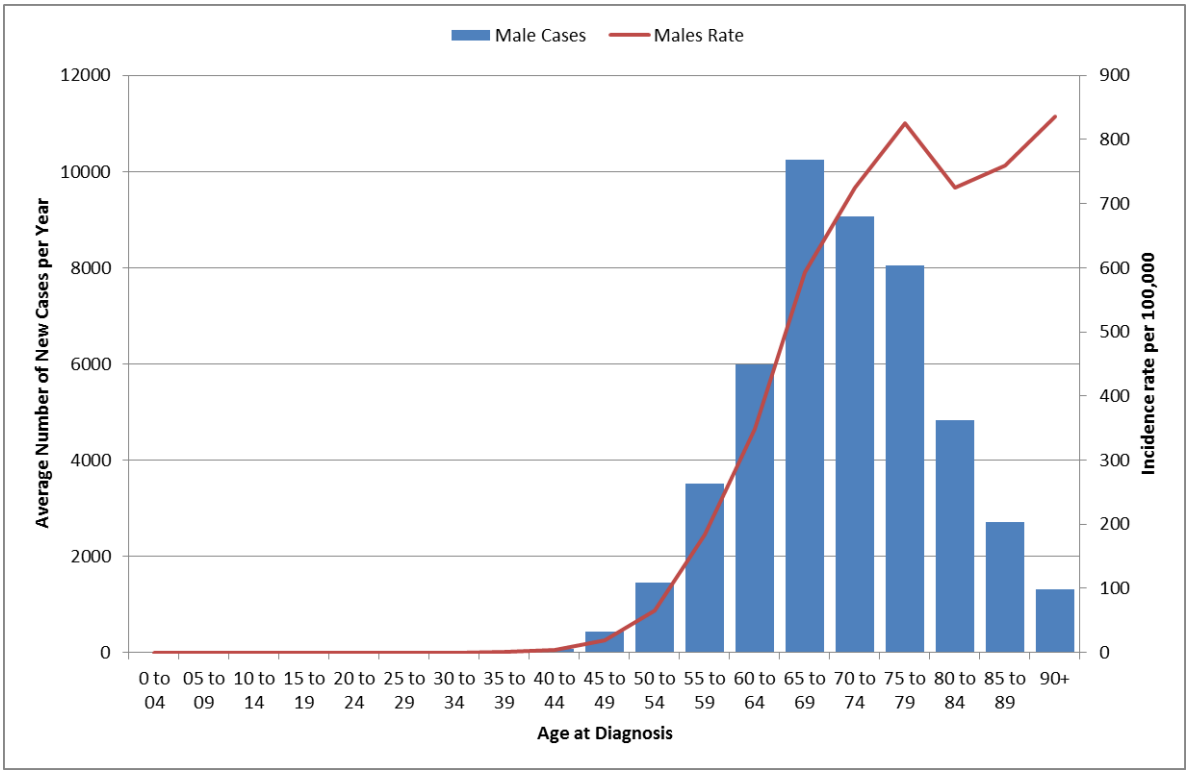


Figure 18: Age specific incidence rates of cancer of the prostate and number of new cases per year in the UK

Source: redrawn from Cancer Research UK

- Over the last decade, prostate cancer incidence rates have increased by around a twentieth (6%) in males in the UK. This may be as a result of an increase in the uptake of Prostate-Specific Antigen (PSA) testing.[2]

[2] The PSA test is a blood test that measures the amount of prostate specific antigen (PSA) in your blood. PSA is a protein produced by normal cells in the prostate and also by prostate cancer cells. It's

normal to have a small amount of PSA in your blood, and the amount rises slightly as you get older and your prostate gets bigger. A raised PSA level may suggest you have a problem with your prostate, but not necessarily cancer.

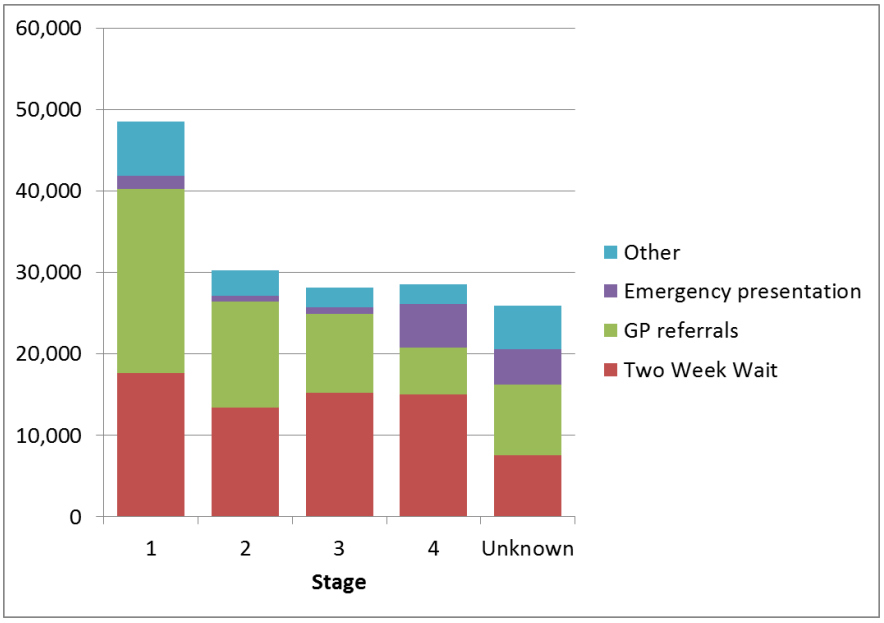
[Source: https://prostatecanceruk.org/prostate-information/prostate-tests/psa-test]

Incidence rates for prostate cancer are projected to rise by 12% in the UK between 2014 and 2035, to 233 cases per 100,000 males by 2035.

Prostate cancer routes to diagnosis

National data showing the total number of all prostate cancers diagnosed at each stage between 2012-16, and the route through which they were diagnosed are shown Figure19.

Figure 19: Total number of all prostate cancers diagnosed at each stage between 2012-16, and the route through which they were diagnosed



Source: NCRAS

Around 4 in 10 (43%) prostate cancer cases in England are diagnosed via the 'two-week wait' referral route. Almost 4 in 10 (37%) prostate cancer cases in England are diagnosed following a routine or urgent GP referral (but not under the 'two-week wait' referral route). Almost a tenth (8%) of prostate cancer cases in England are diagnosed after presenting as an emergency.

Prostate cancer mortality

- In males in the UK, prostate cancer is the 2nd most common cause of cancer death, with around 11,600 deaths in 2016.
- Prostate cancer accounts for 13% of all cancer deaths in males in the UK (2016). Mortality rates for prostate cancer in the UK are highest in males aged 90+ (2014-2016).

- Over the last decade, prostate cancer mortality rates have decreased by more than a tenth (12%) in males in the UK.
- Mortality rates for prostate cancer are projected to fall by 16% in the UK between 2014 and 2035, to 48 deaths per 100,000 males by 2035.

Prostate cancer survival

Most men diagnosed with prostate cancer survive at least one year [96%], (2008-12 NCRAS data).

- 85% of men diagnosed with prostate cancer in England and Wales survive their disease for five years or more (2010-11 data).
- Prostate cancer survival falls only slightly beyond five years after diagnosis, which means most patients can be considered cured after five years.
- Prostate cancer five year survival in England is highest for men diagnosed aged 60-69 years old, probably because of PSA testing detecting latent, earlier, slow-growing cancers (2009- 2013).
- Almost 95% of men in England diagnosed with prostate cancer aged 50-59 or 60-69 survive their disease for five years or more, compared with two thirds of men diagnosed aged 80 and over (2009-2013).

Who is most at risk/risk factors? How many cases are preventable?

Prostate cancer is currently not clearly linked to any known preventable risk factors.

Are there health inequalities?

The lifetime risk of being diagnosed with prostate cancer is 13-15% for White males, while in Black males it is *significantly higher* (23-37%), and in Asian males it is *significantly lower* (6-10%).

Prostate cancer deaths in England are **not** associated with deprivation.

What are the local trends in incidence, mortality and survival from prostate cancer?

Between 2014-16 in East Sussex there were:

- 1,777 new cases of carcinoma of the prostate
- 439 deaths from prostate cancer

Prostate cancer incidence and mortality data are also available at LA and CCG level. As in England, trends in prostate cancer mortality under 75 for the period 2001 to 2014 are generally downwards in East Sussex. Similarly, trends in *incidence* in East Sussex have shown an *increase* over the same period.

[1] https://www.gov.uk/government/news/cancer-patients-at-increased-risk-of-suicide

[2]https://www.sciencedirect.com/science/article/pii/S0140673614620389 [3] https://www.nature.com/articles/bjc2015265

[4]https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)33326-3/fulltext

[5] https://www.nature.com/articles/s41416-018-0029-6

[6] https://www.nature.com/articles/s41416-018-0029-6/tables/1

[7] PHE Cancer in Surrey and Sussex September 2017

8

http://www.ncin.org.uk/cancer_type_and_topic_specific_work/topic_specific_work/cancer_outcome_metrics

9

https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/datasets/geographicpatternsofca

ncersurvivalinengland

[10]https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/cancerregistrationstatis

ticsengland/final2016

11

https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/cancerregistrationstati

sticsengland/final2016

[12] Brown KF, Rumgay H, Dunlop C, et al. The fraction of cancer attributable to known risk factors in England, Wales, Scotland, Northern Ireland, and the UK overall in 2015. British Journal of Cancer 2018

13

Lifetime risk estimates calculated by the Statistical Information Team at Cancer Research UK. Based on Office for National Statistics

(ONS) 2016-based Life expectancies and population projections. Accessed December 2017, and Smittenaar CR, Petersen KA, Stewart K,

Moitt N. Cancer Incidence and Mortality Projections in the UK Until 2035. Brit J Cancer 2016.