



# Cancer in West Yorkshire

Summary Report

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## 1. Summary

This report has been produced by Yorkshire Cancer Research to give an overview the cancer pathway in West Yorkshire. It focuses on prevention, screening, early diagnosis and follow up care, and summarises publically available data on the current and changing cancer landscape in the region.

Identifying and summarising key data will be a driver in becoming aware of local problems and commissioning services to make change happen and improve cancer outcomes.

The report is not intended to provide answers or solutions to the issues we see across the localities in West Yorkshire.

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## 2. Introduction

### 2.1. Introduction

This report, prepared by Yorkshire Cancer Research, presents data on cancer in West Yorkshire. It highlights key incidence and mortality cancer statistics for the West Yorkshire region, as well as taking a look at preventable risk factors for cancer, stage of diagnosis and the cost implications of late stage diagnosis.

Publically available information has been gathered from sources such as the Office for National Statistics (ONS), Public Health England (PHE), the Cancer Commissioning Toolkit (part of the National Cancer Intelligence Network or NCIN), CancerData, and NHS England. All relevant data

for Yorkshire has been extracted and where necessary our own calculations have been applied to give more detailed information. Unless otherwise stated, age-standardised rates have been calculated using the 2013 European Standard Population (ESP).

Where possible, the data is broken down by Clinical Commissioning Group (CCG), and all areas across the West Yorkshire region are taken into account. For the purposes of this report, the West Yorkshire region is considered to include the 10 West Yorkshire CCGs plus NHS Harrogate and Rural District CCG. Where data is included that refers to Yorkshire, the Charity considers the Yorkshire region to include all of North, South, East and West Yorkshire, together with South Tees to the north, but not including parts of Cumbria to the west, North and North East Lincolnshire to the east, or Bassetlaw to the south.

## **2.2. The West Yorkshire cancer landscape**

There is variation in cancer epidemiology and outcomes across the West Yorkshire region and in Yorkshire cancer is the biggest cause of death from illness in every age group.

- Around 69,000 people in the West Yorkshire region are currently living with or beyond cancer<sup>1</sup>.
- In 2013, around 13,000 people<sup>2</sup> in West Yorkshire were newly diagnosed with cancer – about 44% of all cases diagnosed in Yorkshire. This means around 250 people are receiving a new diagnosis of cancer each week. The total number of new cases diagnosed each year is expected to rise to around 17,500 by 2030.
- Many more people are referred with suspicion of cancer under the Two Week Wait pathway. In 2014/2015 the West Yorkshire region handled over 41,500 referrals for suspected breast, lower GI, lung and skin cancers alone<sup>3</sup>.
- Over 6,000 people<sup>4</sup> died from cancer in West Yorkshire in 2013 (115 people each week).
- Most common cancers are lung, prostate, breast and bowel cancer – but they aren't always worse than the England averages<sup>2</sup>. These cancers are sometimes called "the big four" and this report focuses on these cancer types.
- Around 42% of cancers are due to preventable lifestyle and environmental factors such as tobacco, diet, alcohol, obesity and exposure to UV light<sup>5,9</sup> - particularly preventable cancers include lung, malignant melanoma, bowel, bladder, and kidney cancer.
- Early diagnosis saves lives but screening uptake for breast, cervical and bowel cancers is often low.

West Yorkshire is heterogeneous with a diverse population.

- Significant variation exists across the region in access to and uptake of screening, treatment, support, palliative care and clinical trials.
- When looking at ethnicity 17.36% of the West Yorkshire population is non-white<sup>6</sup>, which equates to around 413,801 people. NHS Bradford City CCG has the highest percentage of non-white residents in England at 72.2%<sup>7</sup>.
- There are some areas of West Yorkshire which have high levels of social deprivation<sup>8</sup> which may influence people's behaviour, their knowledge and symptom awareness, and their access to healthcare.

### 3. At a glance – cancer incidence and mortality in West Yorkshire

#### 3.1. Introduction

The following section summarises incidence and mortality in England and across the 21 Yorkshire CCGs, with a focus on West Yorkshire for "all cancer (excluding non-melanoma skin cancer)", as well as the four most common cancers – lung, breast, colorectal and prostate<sup>2,4</sup>. It includes the number of cases or deaths and the age-standardised rate (ASR). The ASR gives the number of people per 100,000 of the population who were diagnosed or died in the stated year.

The numbers highlighted in green indicate that the ASR for incidence or mortality is lower than the England average while those numbers highlighted in red indicate that the ASR for incidence or mortality is higher than the England average [significance not calculated]. The data shows that many CCGs in West Yorkshire have ASRs higher than the England national average in both incidence and mortality. This means that given the population size for each CCG, a higher number of people than expected are either being diagnosed with, or dying from cancer compared to the national average. Only a couple of cancer types have lower than England national average rates for both incidence and mortality. Compared to England, overall West Yorkshire has:

- higher incidence and mortality rates for all cancers combined and lung cancer
- lower incidence and mortality rates for breast and prostate cancer
- for colorectal cancer, incidence rates are lower but mortality rates are higher than the equivalent rates for England.

The data tables are presented on the following pages. It is interesting to note that lung cancer is the most common cancer in West Yorkshire (also the case for Yorkshire), however data for England shows it to be the third most common behind breast and prostate cancer. Also of interest is that the gender profile of lung cancer is changing. In the last decade or so there has been a 14% decrease in the incidence rates of cancer in men, but a 26% increase in incidence in women<sup>2</sup> – however each year a higher number of men are still diagnosed with the disease. In 2013, 250 more women died from lung cancer in Yorkshire than from breast, ovarian, and uterine cancers combined<sup>4</sup>. A similar story is seen for men – in 2013, 920 more men died from lung cancer in Yorkshire than from prostate, penile and testicular cancers combined<sup>4</sup>.

#### 3.2. Incidence and mortality rates in West Yorkshire

### 3.2.1. Incidence and mortality rates – 2013

**Table 1a:** 2013 incidence and mortality data for all cancer sites and lung cancer for West Yorkshire CCGs<sup>2,4</sup>

	All cancers				Lung			
	Number of cases	Incidence per 100,000	Number of deaths	Mortality per 100,000	Number of cases	Incidence per 100,000	Number of deaths	Mortality per 100,000
<b>England</b>	<b>293,936</b>	<b>614.93</b>	<b>132,379</b>	<b>281.71</b>	<b>37,005</b>	<b>80.70</b>	<b>28,543</b>	<b>61.33</b>
<b>Yorkshire</b>	<b>29,872</b>	<b>631.15</b>	<b>13,789</b>	<b>298.23</b>	<b>4,438</b>	<b>96.13</b>	<b>3,430</b>	<b>73.58</b>
<b>West Yorkshire</b>	<b>13,023</b>	<b>625.01</b>	<b>6,028</b>	<b>296.56</b>	<b>1,939</b>	<b>96.13</b>	<b>1,506</b>	<b>72.91</b>
Airedale, Wharfedale & Craven	1,020	628.66	485	294.62	125	77.71	96	59.78
Bradford City	221	572.67	102	289.11	36	106.76	21	63.87
Bradford Districts	1,510	586.84	758	308.35	235	97.00	177	73.84
Calderdale	1,170	644.84	556	315.32	175	98.70	134	74.08
Greater Huddersfield	1,242	600.90	588	289.58	165	82.32	144	71.40
Harrogate & Rural District	1,005	611.64	414	253.20	120	71.35	68	41.58
Leeds North	1,126	594.50	523	275.25	150	81.62	115	61.48
Leeds South & East	1,217	674.33	558	320.46	211	121.26	172	97.94
Leeds West	1,609	685.52	728	320.29	263	114.63	215	95.77
North Kirklees	970	636.65	408	284.31	151	101.60	112	76.80
Wakefield	1,933	638.50	908	311.71	308	104.52	252	85.44

**Table 1b:** 2013 incidence and mortality data for breast, colorectal and prostate cancers for West Yorkshire CCGs<sup>2,4</sup>

	Breast				Colorectal				Prostate			
	Number of cases	Incidence per 100,000	Number of deaths	Mortality per 100,000	Number of cases	Incidence per 100,000	Number of deaths	Mortality per 100,000	Number of cases	Incidence per 100,000	Number of deaths	Mortality per 100,000
<b>England</b>	<b>42,930</b>	<b>165.54</b>	<b>9,545</b>	<b>35.43</b>	<b>33,851</b>	<b>71.63</b>	<b>12,999</b>	<b>27.55</b>	<b>40,467</b>	<b>185.71</b>	<b>9,187</b>	<b>45.58</b>
<b>Yorkshire</b>	<b>4,204</b>	<b>160.20</b>	<b>874</b>	<b>33.32</b>	<b>3,295</b>	<b>69.92</b>	<b>1,329</b>	<b>28.52</b>	<b>3,964</b>	<b>180.05</b>	<b>848</b>	<b>44.08</b>
<b>West Yorkshire</b>	<b>1,863</b>	<b>162.47</b>	<b>377</b>	<b>32.63</b>	<b>1,398</b>	<b>67.33</b>	<b>584</b>	<b>28.15</b>	<b>1,671</b>	<b>173.61</b>	<b>374</b>	<b>45.22</b>
Airedale, Wharfedale & Craven	154	173.88	38	39.17	104	62.17	48	29.35	143	191.36	33	47.43
Bradford City	35	156.35	7	36.97	15	43.86	6	18.98	18	111.27	1-5	-
Bradford Districts	201	134.78	44	29.50	163	66.10	70	28.10	168	145.54	43	42.03
Calderdale	186	180.17	34	32.27	139	78.97	51	29.14	157	190.20	35	48.27
Greater Huddersfield	161	136.91	35	29.60	143	72.12	57	28.85	180	190.14	33	39.03
Harrogate & Rural District	198	226.24	33	34.48	103	64.13	51	30.68	151	203.52	39	54.85
Leeds North	130	122.15	39	36.47	140	73.23	64	32.93	150	176.76	38	46.64
Leeds South & East	187	181.93	33	32.50	125	72.06	48	26.60	135	165.88	39	53.64
Leeds West	234	174.42	49	36.37	169	74.28	65	29.22	189	189.84	34	36.18
North Kirklees	128	151.03	23	26.59	102	67.51	35	24.84	113	159.83	23	38.02
Wakefield	249	149.28	42	25.05	195	66.28	89	30.98	267	185.33	57	46.10

The big four cancers account for a significant proportion of all cancer cases and cancer deaths that occur each year, both in West Yorkshire, Yorkshire and nationally. To summarise:

- Of the 293,936 cancers diagnosed in England in 2013, 154,253 of these were in the big four cancers = 52.5% (139,683 cases were in all other cancers)<sup>2</sup>.
- Of the 29,872 cancers diagnosed in Yorkshire in 2013, 15,901 of these were in the big four cancers = 53.2% (13,971 cases were diagnosed in all other cancers)<sup>2</sup>.
- Of the 13,023 cancers diagnosed in West Yorkshire in 2013, 6,871 of these were in the big four cancers = 52.8% (6,152 cases were diagnosed in all other cancers)<sup>2</sup>.
- Of the 132,379 cancer deaths that occurred in England in 2013, 60,274 of these were in the big four cancers = 45.5% (72,105 deaths occurred in all other cancers)<sup>4</sup>.
- Of the 13,789 cancer deaths that occurred in Yorkshire in 2013, 6,481 of these were in the big four cancers = 47.0% (7,308 deaths occurred in all other cancers)<sup>4</sup>.
- Of the 6,028 cancer deaths that occurred in West Yorkshire in 2013, 2,841 of these were in the big four cancers = 47.1% (3,187 deaths occurred in all other cancers)<sup>4</sup>.

This summary indicates that the big four cancers accounted for over half of all cancer cases diagnosed in 2013, and almost half of all cancer deaths. In West Yorkshire and in Yorkshire, slightly more cancer cases and cancer deaths are in the big four cancers compared to percentages for England and importantly, many of these cancers are considered to be preventable. The preventability of cancer is explored further in the following section.

## 4. How preventable is cancer?

### 4.1. Introduction

Around 42% of all cancers are considered preventable<sup>5,9</sup> however, the level of preventability varies greatly between different cancers. According to Parkin, Boyd and Walker (2011)<sup>9</sup> the following percentages of the big four cancers are considered to be due to lifestyle and environmental factors: lung - 89%, breast - 27%, and colorectal - 54%. Prostate cancer is not thought to be linked to any preventable risk factors.

This indicates that there is a potential to reduce the number of people diagnosed with cancers related to preventable risk factors (particularly in some of the most common cancers). However, as many of the risk factors are lifestyle related, this would require behaviour change at an individual level. This may be difficult to achieve in some instances, particularly when the recommended limit is zero – such as for tobacco and consumption of red and processed meats.

There are a number of caveats to consider regarding this information. First it is estimated that for the majority of risk factors, the latent period is about 10 years, meaning that cancer incidence rates for 2010 are based on risk factor rates and behaviours from 2000. Therefore, it follows that looking at the most recent data for levels of certain risk factors across West Yorkshire now, will not impact cancer incidence rates for at least another 10 years from the point of data collection. In

addition, the Parkin, Boyd and Walker (2011) supplement<sup>9</sup> concludes that simply reducing risk factors will not directly relate to a reduction in cancer. For example, around 54% of bowel cancers are attributable to lifestyle and environmental factors, but it has been estimated that only about half of this number is preventable in a reasonable (20 year) timescale. It should be stated, perhaps obviously, that we will not be able to change each individual's behaviour so they achieve optimal levels of each risk factor but these caveats should not be seen as a reason not to help people stop engaging in these behaviours. Interventions focused on young people may be particularly important in order to prevent them starting the behaviour in the first instance. It is apparent that reducing the general population's engagement with risk factors will have long-term health benefits and should therefore be considered as a potential priority area.

Some preventable lifestyle risk factors for cancer are more prevalent within the West Yorkshire region than expected given national averages. It is important that individuals are made aware of the risks associated with certain behaviours, and are encouraged and supported in their efforts to change them. For some risk factors there are relatively low levels of awareness of the links between them and cancer (for example alcohol) and therefore awareness needs to be raised among the general population, including younger people. This will require local collaborations which are targeted to address specific local problems.

Some of the main risk factors and their impact on cancer in West Yorkshire are discussed below. A full summary of lifestyle and environment related risk factors can be found in the Parkin, Boyd and Walker (2011) supplement<sup>9</sup>.

#### **4.2. Tobacco**

Tobacco is the leading preventable cause of cancer, estimated to cause 19% of all cases each year<sup>9</sup> (including lung, larynx, oesophagus, bladder, and pancreatic cancer). In West Yorkshire, it is estimated to have caused over 2,300 cancers in 2010<sup>2</sup>. Smoking rates are above the national average (18%) in West Yorkshire at 20.1%<sup>10</sup> (21.6% if Harrogate is excluded), meaning there are around 379,836 smokers in the West Yorkshire region.

Not only does smoking have a significant impact on the development of cancer but it also impacts on many other debilitating diseases (two-thirds of long-term smokers will die as a result of smoking if they do not quit<sup>11</sup>). Each year in West Yorkshire it is estimated that smoking costs society approximately £646.1m<sup>12</sup>.

Although national smoking rates are falling, the Cancer Taskforce strategy<sup>13</sup> recommends a standard of achieving smoking rates of 13% by 2020 and 5% by 2030 [Recommendation 2]. To achieve this, significant behaviour change is required among tobacco smokers.

Importantly, smoking is increasingly concentrated in disadvantaged and deprived populations, and therefore strategies to drive down smoking must target the groups most in need. Products available to aid quitting include nicotine patches, gum, or e-cigarettes, as well as pharmacotherapies such as Zyban and Champix. Evidence shows that a combination of treatment and support (such as that provided through the NHS stop smoking services) often has the most



positive outcome<sup>14</sup>. The number of people in Yorkshire and the Humber using NHS stop smoking services has more than halved in the last 5 years despite the region having reported the highest proportion of successful quitters in 2015<sup>15</sup>.

### **4.3. Overweight and obesity**

An estimated 5% of all cancers are linked to being overweight or obese<sup>9</sup> (including uterine, kidney, oesophagus, colorectal, pancreatic, and breast cancer). In West Yorkshire, being overweight or obese is estimated to have caused 668 cancers in 2010<sup>2</sup>. A higher percentage of adults in West Yorkshire are estimated to be overweight or obese (65.2% compared to the England average of 63.8% and a Yorkshire average of 65.9%<sup>16</sup>). This means there are nearly 1.3 million adults in West Yorkshire who are overweight or obese.

As with smoking, obesity is not only linked to cancer, but is also linked to other conditions such as diabetes and heart disease – it is the second most important preventable cause of ill health and death after smoking. Being obese may also mean that patients are limited in the treatment options they are offered, and therefore their cancer outcomes may be poorer. In 2015 the estimated cost to the NHS in Leeds of diseases related to overweight and obesity was £219.1 million<sup>17</sup>. National costs are predicted to reach £9.7 billion by 2050 and pose a large threat to the NHS<sup>18</sup>. The Cancer Taskforce strategy<sup>13</sup> recommends the development and delivery of a national action plan to address obesity which should focus on things like sugar reduction, food marketing, local weight management services and children [Recommendation 3].

### **4.4. Alcohol**

An estimated 4% of all cancers are linked to excess alcohol consumption<sup>9</sup> (including oral cavity and pharynx, larynx, oesophagus, colorectal, liver and breast cancer). In West Yorkshire, excess alcohol consumption is estimated to have caused 486 cancers in 2010<sup>2</sup>. The estimated percentage of adults in West Yorkshire who binge drink is 22.7% (compared to an England average of 20.1% and a Yorkshire average of 24.3%<sup>19</sup>). This means there are around 455,000 adults in West Yorkshire who binge drink.

Again excess alcohol consumption may impact on many aspects of an individual's health, not just cancer. Awareness of alcohol consumption as a risk factor for cancer is relatively low and therefore there is an opportunity to educate people on some of the less well known risk factors of alcohol consumption. The Cancer Taskforce strategy<sup>13</sup> suggests the development of a national strategy to address alcohol consumption, which should include some marketing campaigns to raise awareness [Recommendation 4].

Currently, cancer incidence is increasing year on year - without significant intervention and advances in treatments and surgery it will continue to do so. The next section explores the current predictions for how cancer will look by 2030.

## 5. What might cancer rates look like by 2030?

Nationally, the number of new cases of cancer being diagnosed annually is growing by an average 2% each year<sup>2</sup>. By 2030 the annual number of new cancer cases is expected to reach over 360,000<sup>13</sup>.

For Yorkshire, the average rate of increase year on year is slightly lower at 1.8%. This takes us from a figure of 29,872 cases diagnosed in 2013 to a predicted number of around 40,500 cases in 2030. For West Yorkshire, the rate of increase follows that of Yorkshire, and so the number of cases diagnosed annually is expected to rise from 13,023 in 2013 to over 17,600 in 2030. This means there will be an estimated 4500 additional patients going through cancer diagnosis, treatment and follow-up each year.

In terms of cancer prevalence, there are currently around 150,000 people living with and beyond cancer in Yorkshire, with around 69,000 living in West Yorkshire<sup>1</sup>. If prevalence in Yorkshire increases at the same predicted rate as national prevalence (2 million in 2015 to 3.4 million by 2030) then we could expect somewhere in the region of 255,000 people in Yorkshire, and 117,000 people in West Yorkshire to be living with and beyond cancer by 2030 (an additional 48,000 people in West Yorkshire alone). As discussed in Section 2 above, around half of these cancers will be in the big four, and the other half across all remaining cancer types.

Using the average percentage increase in the number of cancers diagnosed each year (from 2001 to 2013<sup>2</sup>), figures have been produced showing the estimated number of new cancers diagnosed each year in 2015, 2020 and 2030, for all cancers combined and the big four cancers (assuming the number of new cases continues to increase at the same rate as they have over the previous 13 years of available data). The data gives proxy figures that can be used to give a rough indication of how many cancers we may expect to see in the future.

Table 1 below shows that the greatest increase is in prostate cancer (likely due to increased PSA testing over recent years), whereas the increase in colorectal cancer is relatively small in comparison. It should be noted that as the average of the year on year percentage change in cancer cases diagnosed has been used (2001 to 2013), this does not take into account any decreases in cancer incidence (as was seen in the 2013 data for colorectal cancer<sup>2</sup>). If these predictions are directionally correct, it is likely that prostate cancer will become the most common cancer in England, Yorkshire and West Yorkshire. For Yorkshire only, lung cancer will maintain its position ahead of breast cancer.

**Table 1:** Predicted incidence rates for 2030, based on average annual increase in numbers of new cancers diagnosed between 2001 and 2013.

	Area	Annual average % increase	2013 incidence (actual)	2015 incidence (predicted)	2020 incidence (predicted)	2030 incidence (predicted)
All cancer	West Yorkshire	1.5%	13,023	13,417	14,454	16,774
	Yorkshire	1.8%	29,872	30,957	33,845	40,455
	England	2.0%	293,936	305,811	337,640	411,581
Lung	West Yorkshire	1.2%	1,939	1,986	2,108	2,375
	Yorkshire	1.5%	4,438	4,572	4,925	5,716
	England	1.4%	36,853	37,892	40,620	46,679
Breast	West Yorkshire	1.6%	1,863	1,923	2,082	2,440
	Yorkshire	1.8%	4,204	4,357	4,763	5,693
	England	2.0%	55,591	46,392	51,221	62,438
Colorectal	West Yorkshire	0.6%	1,398	1,415	1,458	1,548
	Yorkshire	0.9%	3,295	3,355	3,508	3,837
	England	1.6%	33,851	34,943	37,829	44,337
Prostate	West Yorkshire	3.2%	1,671	1,780	2,083	2,855
	Yorkshire	3.5%	3,964	4,246	5,043	7,114
	England	3.2%	40,467	43,098	50,450	69,128

The analysis above demonstrates the extent to which the number of people being diagnosed with cancer each year could increase over the next 15 or so years. As outlined in the Cancer Taskforce Report<sup>13</sup>, these increases are likely to be due to many contributing factors such as an ageing and growing population, improvements in the healthcare system and advancements in treatments for other conditions (meaning that people are less likely to die from other conditions), along with lifestyle and environmental changes which expose people to risk factors for cancer. Both the increase in number of cancer diagnoses and the expected increase in people living with and beyond cancer, mean the healthcare system will be put under increasing pressure in future years. Diagnosing cancers as early as possible will help to alleviate some of this pressure, as treatment of early stage cancers often costs less and has less severe long-term impact on patients, meaning they can go on to live a healthy life after a cancer diagnosis. These topics are explored in the following sections.

## 6. Early diagnosis of cancer leads to better outcomes

### 6.1. Introduction

When cancer is diagnosed at an early stage, treatment options and chances of full recovery are greater. For example, it is estimated that around 95% of men diagnosed with bowel cancer at the earliest stage of disease survive at least 5 years compared with around 7% of those diagnosed with the most advanced stage of disease<sup>20</sup>. This disparity is huge and many variables will impact on the stage of diagnosis. It is important to think about factors that contribute to early diagnosis of cancer which may include (amongst others):

- raising awareness and knowledge of cancer signs and symptoms among the public and how this is translated into help-seeking behaviour
- increasing engagement with GPs and HCPs
- getting more people through screening
- tackling negative attitudes to cancer
- tackling barriers to seeing a GP or going for tests
- supporting primary care to manage and refer patients when necessary
- increasing access to diagnostic tests for primary care practitioners
- planning adequate diagnostic capacity and making the most effective use of the capacity we have across the region
- need to organise our diagnostic capacity to get a rapid yes/no answer for patients (diagnosis within 28 days as standard).

### 6.2. Staging data

We know that for some cancers early diagnosis at Stage 1 or 2 leads to better survival for patients, however many patients are not diagnosed until their cancer has reached Stage 3 or 4. Table 2 below shows the stage of diagnosis for all cancers combined, as well as for breast, colorectal, lung and prostate cancers for England, Yorkshire and West Yorkshire<sup>21</sup>, and includes actual patient numbers and percentages for 2012.

This is the best data that is currently available, despite the seemingly large percentage of unknown stage of diagnosis data (labelled as "X" in the tables). This is likely to be skewed by a small number of CCGs across Yorkshire, as very few have higher than national average occurrences of unknown stage of diagnosis data.

**Table 2:** Stage of diagnosis for England, Yorkshire and West Yorkshire for all cancers combined, breast, colorectal, lung and prostate cancer<sup>21</sup>.

	Stage of Diagnosis					Total
	1	2	3	4	X	
<b>England: All Cancer</b>	65932	43712	37161	54514	92425	293744
	22.45%	14.88%	12.65%	18.56%	31.46%	
<b>Yorkshire: All Cancer</b>	6939	4186	3817	5848	9065	29855
	23.24%	14.02%	12.79%	19.59%	30.36%	
<b>West Yorkshire: All Cancer</b>	3188	1892	1829	2623	3482	13014
	24.50%	14.54%	14.05%	20.16%	26.76%	
<b>England: Breast</b>	16645	15073	3707	2141	7119	44685
	37.25%	33.73%	8.30%	4.79%	15.93%	
<b>Yorkshire: Breast</b>	1650	1494	333	235	508	4220
	39.10%	35.40%	7.89%	5.57%	12.04%	
<b>West Yorkshire: Breast</b>	764	715	173	101	113	1866
	40.94%	38.32%	9.27%	5.41%	6.06%	
<b>England: Colorectal</b>	4945	7508	8036	7358	6004	33851
	14.61%	22.18%	23.74%	21.74%	17.74%	
<b>Yorkshire: Colorectal</b>	544	747	823	770	411	3295
	16.51%	22.67%	24.98%	23.37%	12.47%	
<b>West Yorkshire: Colorectal</b>	251	328	356	353	110	1398
	17.95%	23.46%	25.46%	25.25%	7.87%	
<b>England: Lung</b>	4846	2615	6867	17430	5070	36828
	13.16%	7.10%	18.65%	47.33%	13.77%	
<b>Yorkshire: Lung</b>	677	366	831	2142	422	4438
	15.25%	8.25%	18.72%	48.26%	9.51%	
<b>West Yorkshire: Lung</b>	367	159	328	953	132	1939
	18.93%	8.20%	16.92%	49.15%	6.81%	
<b>England: Prostate</b>	11804	7726	6814	6744	7379	40467
	29.17%	19.09%	16.84%	16.67%	18.23%	
<b>Yorkshire: Prostate</b>	1212	683	818	777	474	3964
	30.60%	17.24%	20.65%	19.62%	11.97%	
<b>West Yorkshire: Prostate</b>	491	261	433	354	132	1671
	29.38%	15.62%	25.91%	21.18%	7.90%	

### 6.3. Cost implications

In 2014, Incisive Health produced a report for Cancer Research UK analysing the financial implications of achieving earlier diagnosis of colorectal, lung and ovarian cancer<sup>22</sup>. Data from this report has been reviewed and re-analysed for Yorkshire. In order to allocate the un-staged patients categorised as "X" in the data presented in Table 2 above, a methodology used by the authors of the Incisive Health Report has been adopted. The methodology involves allocating un-staged patients to a stage in accordance with the proportions observed with staged patients. A summary of the methodology used by the Charity is presented in Appendix 1.

We consider that the data produced using this approach serves to give an estimation of staging allocation only – the data should not be interpreted as exact. Therefore costing are presented for staging data as we see it now (and as shown above in Table 2), and are also presented separately for the inclusion of the reallocated, previously un-staged patients. This applies to patients with colon, rectal and non-small cell lung cancers (NSCLC) only.

The Incisive Health Report estimates the cost of treatment for colon cancer, rectal cancer and NSCLC by stage to be the following (not including the cost of recurrence).

**Table 3:** Cost of treatment by stage<sup>22</sup>

	Colon cancer	Rectal cancer	Non-small cell lung cancer
Stage 1	£3,373	£4,449	£5,328
Stage 2	£7,809	£6,944	£10,217
Stage 3	£9,220	£8,302	£11,207
Stage 4	£12,519	£11,815	£15,081

Following the reallocation of the un-staged patients to one of stages 1 to 4 based on the proportions observed with staged patients, the estimated patient numbers for these three cancer types for Yorkshire and West Yorkshire are presented below in Table 4. The numbers are estimates as Yorkshire staging data was available for colorectal cancer and lung cancer only – not by the specific cancer type. The methods used to calculate these estimates are shown in Appendix 1.

**Table 4:** Estimated patient numbers in Yorkshire and West Yorkshire

	Estimated patient numbers – based on known staging data <sup>20</sup>			Estimated patient numbers – based on un-staged patients re-allocated to stage		
	Colon	Rectal	NSCLC	Colon	Rectal	NSCLC
<b>Yorkshire</b>						
Stage 1	271	273	594	307	308	733
Stage 2	559	188	321	644	218	396
Stage 3	572	251	729	661	290	912
Stage 4	528	242	1880	595	273	2346
<b>West Yorkshire</b>						
Stage 1	125	126	322	135	135	384
Stage 2	245	83	140	268	91	168
Stage 3	247	109	288	271	119	354
Stage 4	242	111	836	260	119	1017

The patient numbers (shown in Table 4) have been used to calculate the estimated cost of treatment for colon cancer, rectal cancer, and NSCLC in Yorkshire and West Yorkshire (using the costs in Table 3). These are presented in Table 5 below and clearly show that the costs of treating patients with early stage disease are lower than treatment costs for late stage disease.

**Table 5:** Estimated cost of treatment for colon, rectal and non-small cell lung cancer in Yorkshire and West Yorkshire.

	Estimated cost – based on known staging data <sup>20</sup>			Estimated cost – based on un-staged patients re-allocated to stage		
	Colon	Rectal	NSCLC	Colon	Rectal	NSCLC
<b>Yorkshire</b>						
Stage 1	£915,114	£1,213,217	£5,383,504	£1,036,576	£1,368,220	£5,824,840
Stage 2	£4,361,583	£1,308,716	£3,055,734	£5,032,141	£1,513,425	£3,302,864
Stage 3	£5,274,895	£2,082,852	£7,257,123	£6,092,156	£2,405,468	£7,967,989
Stage 4	£6,610,762	£2,858,541	£28,013,076	£7,443,025	£3,222,679	£30,674,449
Total	<b>£17,162,354</b>	<b>£7,463,326</b>	<b>£43,709,437</b>	<b>£19,603,899</b>	<b>£8,509,792</b>	<b>£47,770,143</b>
<b>West Yorkshire</b>						
Stage 1	£422,231	£559,775	£2,918,384	£454,679	£601,417	£3,056,749
Stage 2	£1,915,126	£574,644	£1,327,491	£2,094,264	£629,640	£1,404,970
Stage 3	£2,281,728	£900,966	£2,864,424	£2,500,058	£987,639	£3,087,290
Stage 4	£3,030,648	£1,310,474	£12,463,334	£3,252,986	£1,408,302	£13,297,710
Total	<b>£7,649,734</b>	<b>£3,345,859</b>	<b>£19,573,633</b>	<b>£8,301,987</b>	<b>£3,626,999</b>	<b>£20,846,719</b>

However, the costs of recurrence should also be taken into account. For lung cancer in particular, due to the high level of recurrence, increasing rates of early stage diagnosis would likely lead to a cost increase to the NHS, however many patients would benefit and increased delivery of early stage lung cancer diagnosis would be highly cost-effective, generating many additional years of life. As discussed in Section 4, a significant number of lung cancers are preventable and therefore by reducing incidence through better lifestyle choices, it follows that the impact of recurrence would be reduced, again highlighting the importance of effectively tackling lifestyle related risk factors for cancer.

The Incisive Health Report gives the following average cost per patient of treatment for recurrence of their cancer (taken from Tables 3, 27, 31 and 35 of the Incisive Health Report).

**Table 6:** Average cost per patient of recurrence, by stage and percentage of patients by stage expected to have a recurrence (shown in brackets)<sup>22</sup>

	Colon cancer	Rectal cancer	Non-small cell lung cancer
Stage 1	£376 (10%)	£354 (3%)	£8,457 (52%)
Stage 2	£2,003 (20%)	£1,890 (16%)	£10,346 (55%)
Stage 3	£4,757 (34%)	£4,490 (38%)	£12,251 (58%)
Stage 4	n/a	n/a	n/a

#### 6.4. Matching the best in England

Continuing to treat patients that are diagnosed following the stage of diagnosis profile outlined above will continue to cost the NHS large amounts, particularly if the incidence of these cancers increases at rates similar to those predicted in Section 5 of this report. Table 7 below gives a summary of the local and national averages for the proportion of patients diagnosed with early stage cancer (Stage 1 and 2 combined), as well as the percentages for the best CCGs in England. Despite the average for early stage diagnosis in West Yorkshire being above the average rates for both England and Yorkshire, there are still around 12% fewer patients are being diagnosed with

early stage cancer when compared to the best performing CCG in England. This is summarised in terms of patient numbers and cost implications in Table 8.

**Table 7:** Percentage of patients diagnosed with early stage cancer (Stage 1 and 2) in 2013

	England average	Yorkshire average	West Yorkshire average	Best in England
Colorectal cancer	35.88%	39.77%	42.05%	54.39% (NHS Great Yarmouth & Waverley)
Lung cancer	20.79%	23.92%	27.21%	39.43% (NHS Dorset)

**Table 8:** Summary of patient impact and NHS cost implications of achieving the best in England

	Additional patients diagnosed with early stage cancer	Additional cost
<b>Yorkshire</b>		
Colorectal cancer	<b>482</b> <ul style="list-style-type: none"> <li>Estimated 325 colon cancers</li> <li>Estimated 157 rectal cancers</li> </ul>	<b>Colon</b> <ul style="list-style-type: none"> <li>-£1,732,004</li> </ul> <b>Rectal</b> <ul style="list-style-type: none"> <li>-£899,163</li> </ul>
Lung cancer	<b>689</b> <ul style="list-style-type: none"> <li>Estimated 605 NSCLC</li> </ul>	<b>NSCLC</b> <ul style="list-style-type: none"> <li>£1,129,095</li> </ul>
<b>West Yorkshire</b>		
Colorectal cancer	<b>173</b> <ul style="list-style-type: none"> <li>Estimated 117 colon cancers</li> <li>Estimated 56 rectal cancers</li> </ul>	<b>Colon</b> <ul style="list-style-type: none"> <li>-£621,653</li> </ul> <b>Rectal</b> <ul style="list-style-type: none"> <li>-£322,729</li> </ul>
Lung cancer	<b>236</b> <ul style="list-style-type: none"> <li>Estimated 207 NSCLC</li> </ul>	<b>NSCLC</b> <ul style="list-style-type: none"> <li>£386,744</li> </ul>

As in the Incisive Health Report, we have predicted the cost implications for if the rates of early diagnosis in Yorkshire and West Yorkshire were in line with the best CCG in England.

Creating a shift in stage of diagnosis towards more early stage diagnoses would benefit many patients across the region and for colon and rectal cancer lead to annual cost savings of around £2,631,167 in Yorkshire and £944,381 in West Yorkshire.

As there is a high level of recurrence in patients with NSCLC, matching the best CCG in England would lead to an increase in costs of £1,129,095 in Yorkshire and £386,744 in West Yorkshire. However, many patients would benefit and attaining an overall earlier stage of diagnosis for lung cancer would be cost saving as survival rates would improve and therefore additional life years gained.

The methodology for calculating these costs is included in Appendix 1. The calculations show that despite increased costs for increased early stage diagnosis for lung cancer, these would easily be



recuperated through cost savings for other cancers (colorectal being the example used here, however the Incisive Health Report also showed large savings for ovarian cancer).

### 6.5. Impact on survival

As well as looking at the cost implication, we can also estimate the impact earlier diagnosis has on survival. The figures for one year survival for patients diagnosed in 2012 by stage of diagnosis<sup>23</sup> and five year survival for patients diagnosed 2002-2006 for colorectal cancer<sup>20</sup> and 2003-2006 for lung cancer<sup>24</sup> are presented below.

**Table 9:** Survival by stage of diagnosis<sup>23,24</sup>

One year survival (persons) <sup>23</sup>		
	Colorectal cancer	Lung cancer
Stage 1	98.2%	86.8%
Stage 2	95.0%	73.4%
Stage 3	90.3%	48.0%
Stage 4	46.4%	19.3%
Unknown	64.4%	31.6%
Five year survival (persons) <sup>20, 24</sup>		
Stage 1	97.5%	35.0%
Stage 2	85.0%	21.0%
Stage 3	63.0%	6.0%
Stage 4	7.5%	n/a
Unknown	26.5%	6.0%

#### Yorkshire

Using the current number of patients diagnosed with each stage of colorectal cancer in Yorkshire, as shown in Table 2 above<sup>21</sup>, and the survival by stage data shown in Table 9, of the 3,295 patients, 2,609 would be alive one year after diagnosis and 1,851 alive five years after diagnosis. If the staging profile for colorectal cancer matched the best CCG in England at around 54% then survival rates would improve with around 2,728 patients alive one year after diagnosis (an additional 119 patients) and 2,095 patients alive five years after diagnosis (an additional 244 patients).

Applying the same method to lung cancer patients, of the 4,438 patients, 1,802 would be alive one year after diagnosis and 389 alive five years after diagnosis. If the staging profile for lung cancer matched the best CCG in England at around 39% then survival rates would improve with around 2,132 patients alive one year after diagnosis (an additional 330 patients) and 561 patients alive five years after diagnosis (an additional 172 patients).

#### West Yorkshire

The same method was applied to the number of patients diagnosed with each stage of colorectal cancer in West Yorkshire, shown in Table 2 above<sup>21</sup>, and the survival by stage data shown in Table 9. Of the 1,398 patients, 1,114 would be alive one year after diagnosis and 803 alive five years after diagnosis. If the staging profile for colorectal cancer matched the best CCG in England at around 54% then survival rates would improve with around 1,157 patients alive one year after

diagnosis (an additional 43 patients) and 889 patients alive five years after diagnosis (an additional 86 patients).

Applying the same method to lung cancer patients, of the 1,939 patients, 818 would be alive one year after diagnosis and 189 alive five years after diagnosis. If the staging profile for lung cancer matched the best CCG in England at around 39% then survival rates would improve with around 931 patients alive one year after diagnosis (an additional 113 patients) and 248 patients alive five years after diagnosis (an additional 59 patients).

## 7. Summary of National Screening Programmes

### 7.1. Introduction

There is a need to increase the number of people engaging with screening services, whilst ensuring they make an informed decision, and are educated about the purpose, outcomes, and potential risks of screening. In particular, people need to:

- attend screening appointments for breast screening
- make and attend screening appointments for cervical screening
- complete home screening kits for bowel screening.

In many areas of West Yorkshire, screening coverage rates (i.e. the number of eligible people who have recorded a screening result in the target time period) are in line with, or above, the national average. However, in the case of screening, the national average may be relatively low, and we should be aiming beyond this, trying to get as many people as possible into the national screening programmes. This would help patients receive an earlier diagnosis of cancer, or even avoid the need for a cancer diagnosis at all if abnormal cells are detected early enough and can therefore be treated.

Understanding why people do not attend, or take part in screening, both within and between communities in West Yorkshire, and ensuring people are aware of the different purposes of screening is extremely important. Understanding these factors may help service providers in targeting information to specific communities in a more persuasive and effective manner.

Current screening coverage rates are shown in Figures 1, 2 and 3 below – the data has been taken from the National General Practice Profiles – Cancer dataset<sup>3</sup> and covers the period 2014/2015.

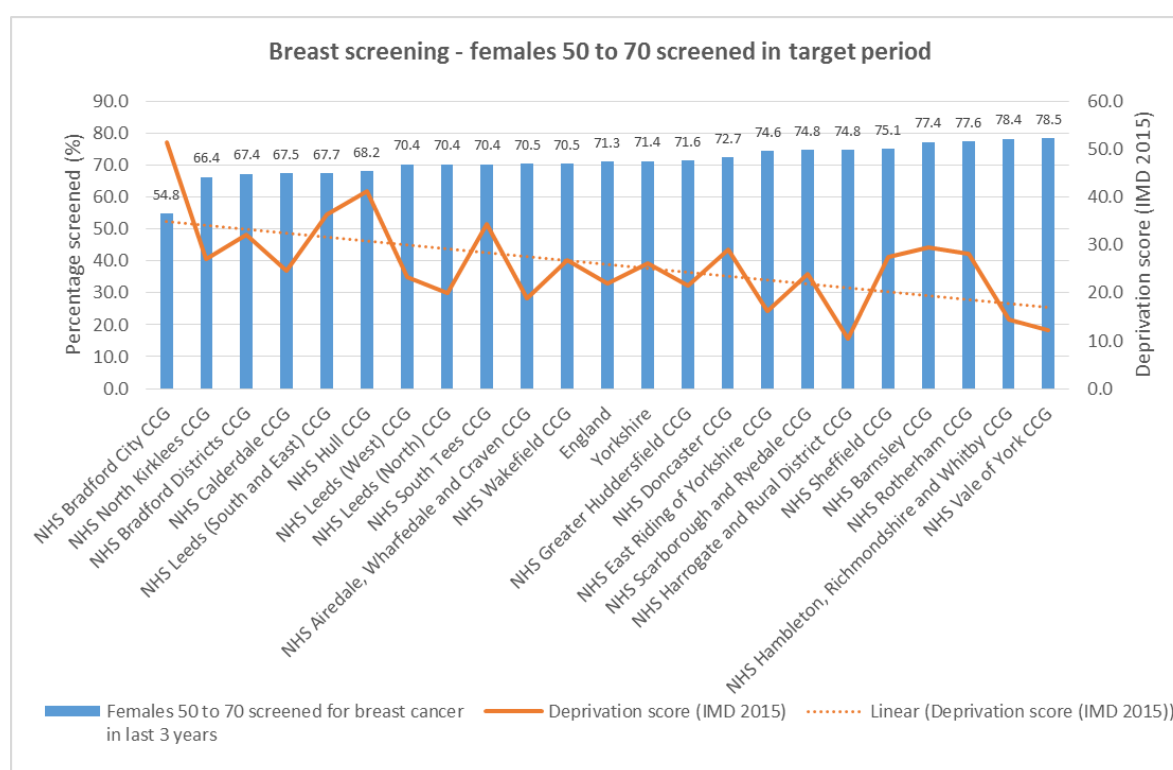
The percentages refer to the proportion of the eligible population who have undergone screening within the target period for each screening programme. Work is already being carried out at a local level to address poor screening uptake, for example in Bradford City CCG which has some of the worst screening rates in the country.

### 7.2. Breast screening

Offered to women aged 50 to 70 every 3 years (after the age of 70 women can request screening appointments through their local screening centre). Breast screening aims to detect cancers when they are too small to see or feel i.e. before they might otherwise be detectable.

Breast screening rates are shown in Figure 1. Nine of the 11 CCGs in West Yorkshire have breast screening coverage rates lower than the national average for England – the lowest being Bradford City at 54.8%. Only Greater Huddersfield CCG and Harrogate and Rural District CCG have breast screening rates above the England average. Evidence from the literature tells us that South Asian women are less likely to attend breast screening services, and are more likely to be diagnosed at a later stage<sup>25</sup>. This indicates a key need to get women from this demographic into the national breast screening programme.

Figure 1 also shows the rate of deprivation in each CCG i.e. the average deprivation score according to the Indices of Multiple Deprivation (2015)<sup>26</sup> (IMD 2015) – the higher the number the greater the level of deprivation. A line of best fit is included and the data indicates that uptake of breast screening tends to be lower in areas of higher deprivation.

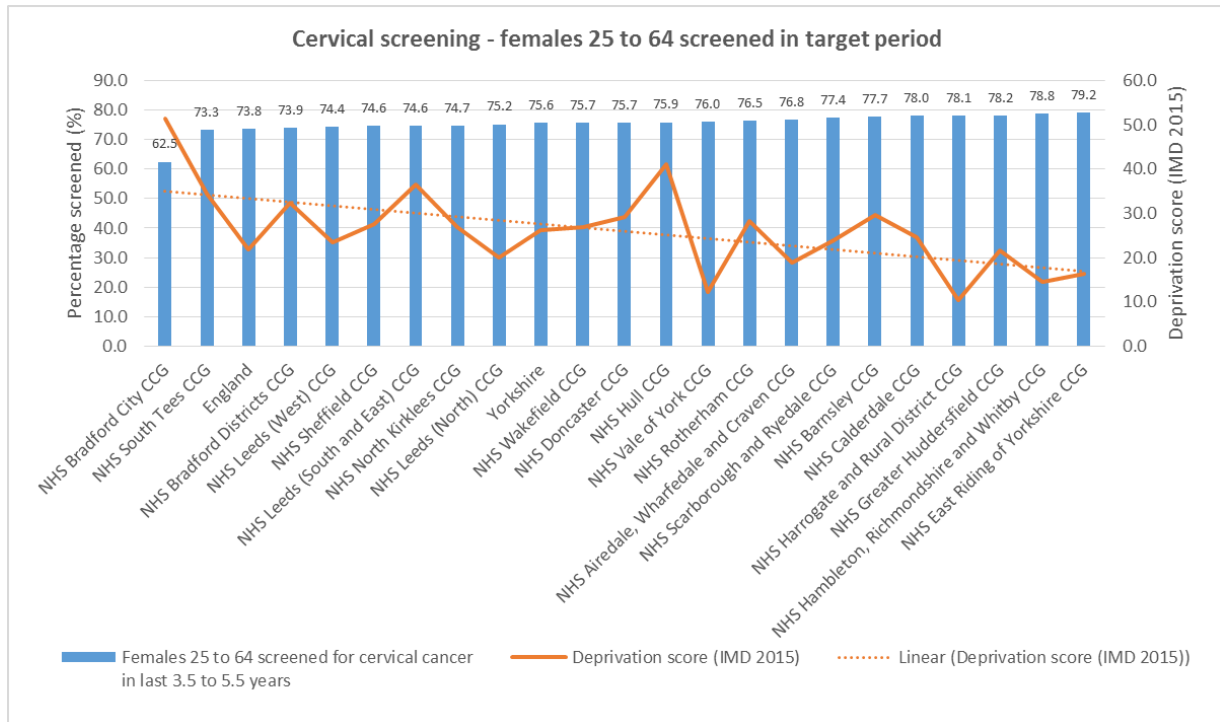


**Figure 1:** The percentage of women aged 50 to 70 who have attended breast screening services within the last 3 years<sup>3</sup>, plotted alongside deprivation rates<sup>26</sup> in each CCG.

Overall around 29% of all breast cancers are detected through screening nationally, and in Yorkshire and West Yorkshire<sup>27</sup>. Of those screen detected the national staging breakdown is as follows: 62% stage 1, 23% stage 2, 4% stage 3, 1% stage 4 and 10% unknown<sup>28</sup>.

### 7.3. Cervical screening

Cervical screening is offered to women aged 25 to 49 every 3 years and women aged 50 to 64 every 5 years. It involves testing apparently healthy women and looks for changes and abnormal cells in the cervix. These cells could lead to cancer if left untreated, but as a result of early detection through screening, the person can be treated and the cancer prevented from developing. Cervical screening rates are shown in Figure 2. Within West Yorkshire, only Bradford City CCG has an average cervical screening coverage rate below the national average at 62.5%. The data indicates that uptake of cervical screening tends to be lower in areas of higher deprivation.



**Figure 2:** Percentage of females aged 25 to 64 who have attended cervical screening services within the target period (3.5 to 5.5 years)<sup>3</sup>, plotted alongside deprivation rates<sup>26</sup> in each CCG.

Around 17% of all cervical cancers (including those in-situ) are diagnosed through screening nationally<sup>29</sup>.

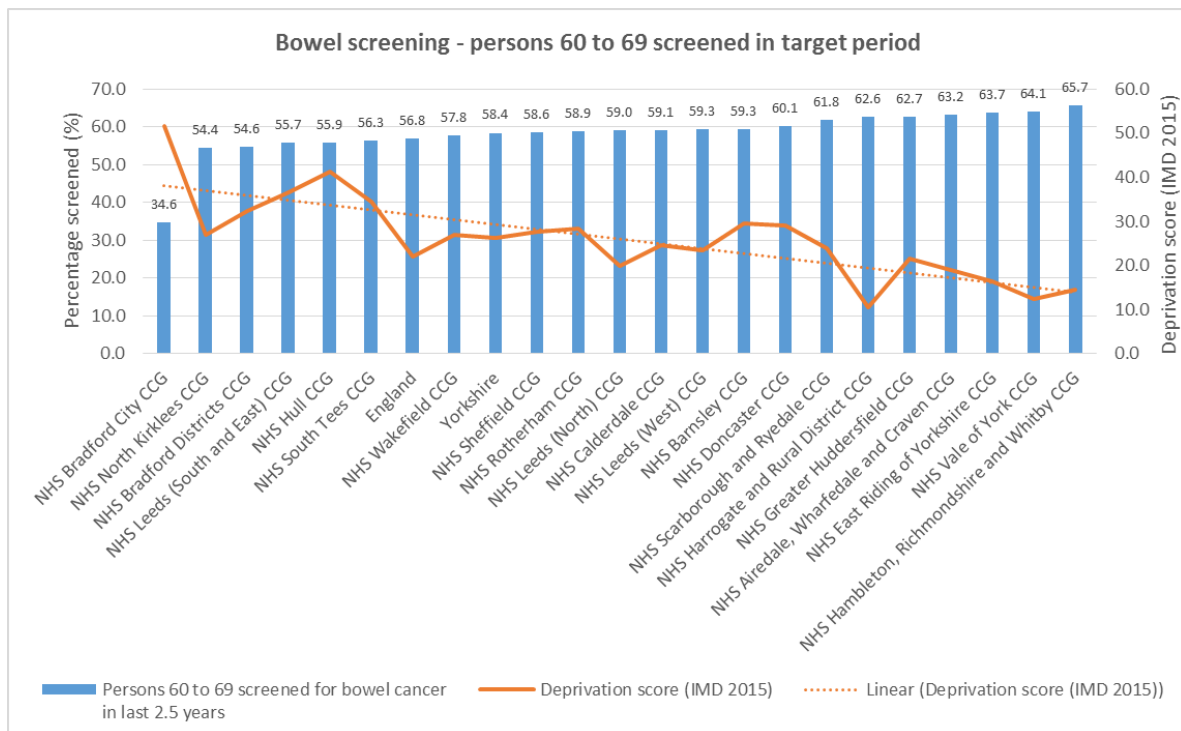
### 7.4. Bowel screening

FOBT (faecal occult blood testing) bowel screening is offered to men and women aged 60 to 74 every 2 years. The Faecal Immunochemical Test (or FIT) is currently being piloted in England and rolled out in Scotland. Screening with FIT involves only a single stool sample and therefore screening rates are expected to improve given the greater acceptability of the test to people. After the age of 75 you can still request a test.

Another type of test called a flexible sigmoidoscopy is also offered to men and women at the age of 55 in a few areas across the country. It involves a doctor or nurse using a thin flexible

instrument to look inside the lower part of the bowel and remove any small growths, called polyps, which could eventually turn into cancer.

The bowel screening rates presented in Figure 3 below relate to uptake of FOBT in 2014/2015. Figure 3 also shows the rate of deprivation in each CCG i.e. the average deprivation score according to IMD (2015). A line of best fit is included and the data indicates that uptake of bowel screening tends to be lower in areas of higher deprivation. However, although previous research in the field also shows the association between low levels of screening in BME populations, the association with socio-economic factors is less clear<sup>30</sup>.



**Figure 3:** Percentage of persons aged 60 to 69 who have undergone bowel screening within the target period (2.5 years)<sup>3</sup>, plotted alongside deprivation rates<sup>26</sup> in each CCG.

Four of the 11 CCGs in West Yorkshire have bowel screening coverage rates lower than the national average for England – the lowest being Bradford City at 34.6% - the lowest in England. The remaining 7 CCGs all have bowel cancer screening rates above the England average.

Overall around 7% of all colorectal cancers are detected through screening nationally, around 6.5% in Yorkshire and around 5.8% in West Yorkshire<sup>27</sup>. Of those screen detected the national staging breakdown is as follows: 34% stage 1, 25% stage 2, 28% stage 3, 8% stage 4 and 6% unknown<sup>28</sup>.

### 7.5. Other diagnostic tools and methods

In addition to increasing uptake of the three national screening programmes across West Yorkshire, people must also be aware of and able to act upon potential cancer symptoms for other types of cancer.

Initiatives such as the national Be Clear on Cancer campaign highlight to people symptoms of common cancers and encourage them to seek medical help. Localised versions of these have been shown to be effective, for example the Leeds based "Got a cough? Get a check" campaign which signposts people to their GP or a walk-in x-ray service (and therefore the patient is able to bypass a referral from their GP).

A different type of innovative approach to referring from general practice to support early diagnosis of cancer is being run in Denmark and is centred on a three-legged strategy<sup>31</sup>. It acknowledges the need for diagnostic routes for what GPs recognise as alarm symptoms (the obvious cancer suspicion), the nonspecific symptoms (the difficult diagnosis) and the vague symptoms (the common symptoms):

- *Urgent referral pathway (obvious cancer suspicion)* – the risk of having cancer given a single alarm symptom is relatively low (often in the range of 3-8%), and only 40-45% of all cancer patients are primarily referred to specific pathways – this forms the platform for introducing further diagnostic possibilities.
- *Urgent referral for unspecific, serious symptoms and the diagnostic centres (the difficult diagnosis)* – implemented nationally in Denmark in 2012. Where cancer is one of several diagnostic possibilities, the patient can be referred to a diagnostic centre. This is a two-step approach with a filter conducted by the GP (blood and urine tests and diagnostic imaging with results within 4 days), then referral to the diagnostic centre if still relevant. When referred to the diagnostic centre the GP no longer has the diagnostic responsibility for the patient. A diagnostic centre is a medical unit with comprehensive facilities for medical investigation, including easy access to expertise in a wide range of relevant specialities. Around 15-20% of those referred to a diagnostic centre go on to receive a cancer diagnosis.
- *The NYC (the common symptoms)* - Services are conducted in hospitals or specialist clinics but the GP retains responsibility of diagnosis and they have direct access to fast investigations. The patient is not admitted to hospital to avoid repetition of tests, history taking, blood tests and other general admin.

Pathways such as these allow the patient to receive a much faster diagnosis and help to reduce the demand on resources within both primary and secondary care.

## 8. Time to treatment and patient experience

The Danish Model outlined in Section 7 above outlines one example of a well-designed pathway that results in earlier diagnosis for patients and ultimately faster access to treatment. Currently, Trusts across NHS England work to a 62 day target from the point of urgent referral from a GP to starting their treatment for cancer if cancer is confirmed.

### 8.1. Cancer waiting times

There are a number of standards relating to cancer waiting times<sup>32</sup>:

1. Maximum of two weeks from urgent GP referral for suspected cancer to first outpatient attendance (or to first hospital assessment for any patients with breast symptoms) [Operational Standard of 93%].
2. Maximum one month (31 days) from decision to treat to:
  - first definitive treatment [Operational Standard of 96%] or to
  - start of second or subsequent treatments for all cancer patients including those diagnosed with a recurrence where the subsequent treatment is surgery [Operational Standard of 94%], drug treatment [Operational Standard of 98%], radiotherapy [Operational Standard of 94%].
3. Maximum two months (62 days) from:
  - **Urgent GP referral for suspected cancer to first treatment (62 day classic) [Operational Standard of 85%]**
  - Urgent referral from a NHS Cancer Screening Programme for suspected cancer to first treatment [Operational Standard of 90%]
  - Consultant upgrade of urgency of a referral to first treatment [currently no Operational Standard]
  - Maximum one month (31 days) from urgent GP referral to first treatment for acute leukaemia, testicular cancer and children's cancers [monitored within 62 day classic Operational Standard].

The national cancer waiting times monitoring dataset guidance<sup>32</sup> states:

*"It is not expected that all patients will be seen and treated within these time frames. Some patients will choose to wait longer and others will not be clinically fit to be seen/treated within these time frames. To take account of this, 'operational standards' have been set that allow for a proportion of patients to breach these standards due to medical reasons or choice. These operational standards are for all tumours taken together. Some tumour areas will exceed these standards; others (where there are complex diagnostic pathways and treatment decisions to make) are likely to be below these operational standards. However, when taking a typical provider's case mix as a whole, the operational standards should be achievable if providers have streamlined and efficient patient centred pathways in place."*

## 8.2. Breach Allocation Policy

The 62 day target is one of the most challenging targets relating to cancer waiting times. However, because cancer patients are often seen in a number of hospitals while having investigations, tests and treatment, if the patient does not start their treatment within 62 days it can often be difficult to determine where in the pathway the hold-up has been and therefore who needs to take responsibility for that patient not receiving treatment within the target timeframe (providing the patient has not chosen to delay their treatment). The Breach Reallocation Policy (effective as of 1 April 2016)<sup>33</sup> recommends day 38 as a maximum handover date from referring trust to treating trust.

The following summary is taken from the Breach Allocation Policy, April 2016.

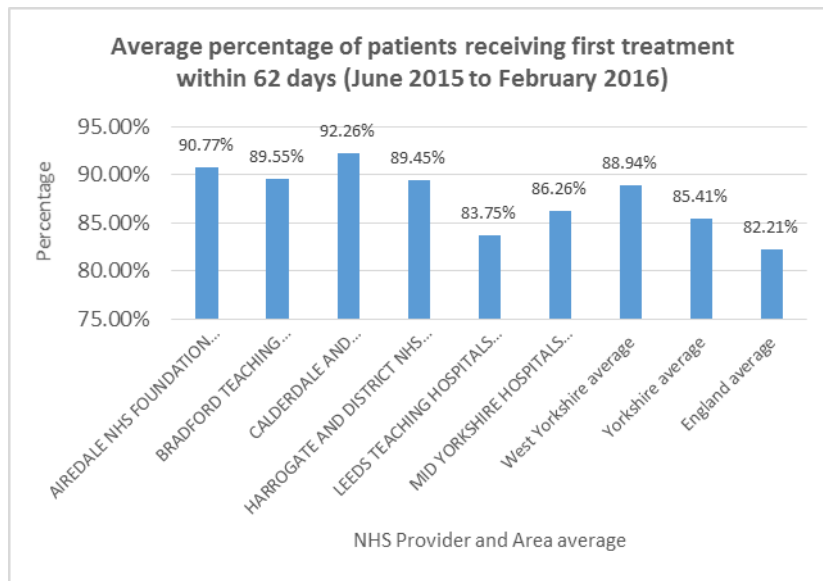
**Table 10:** Summary of breach allocation scenarios from the April 2016 Breach Allocation Policy<sup>33</sup>

Scenario	Referral timeframe	Total timeframe	Allocation
1	> 38 days	< 62 days	100% of success allocated to the treating provider
2	< 38 days	< 62 days	50% of success allocated to the referring provider and 50% allocated to the treating provider
3	< 38 days	> 62 days	100% of breach allocated to the treating provider
4	> 38 days	> 62 days, but treating trust treats within 24 days	100% of breach allocated to the referring provider
5	> 38 days	> 62 days and treating trust treats in > 24 days	50% of breach allocated to the referring provider and 50% allocated to the treating provider

## 8.3. NHS Providers in West Yorkshire - achieving the 62 day target

Data is presented below for West Yorkshire NHS providers on the percentage of patients who are treated within the 62 day target. The data shows the average rate between June 2015 and February 2016, as taken from the HSCIC Cancer Waiting Times datasets<sup>34</sup> and refers to all cancers and all types of care. As stated above, the Operational Standard for the 62 day classic is 85% - we can see the majority of NHS providers meet this standard on average, despite monthly fluctuations (the detailed data set can be found in Appendix 2).



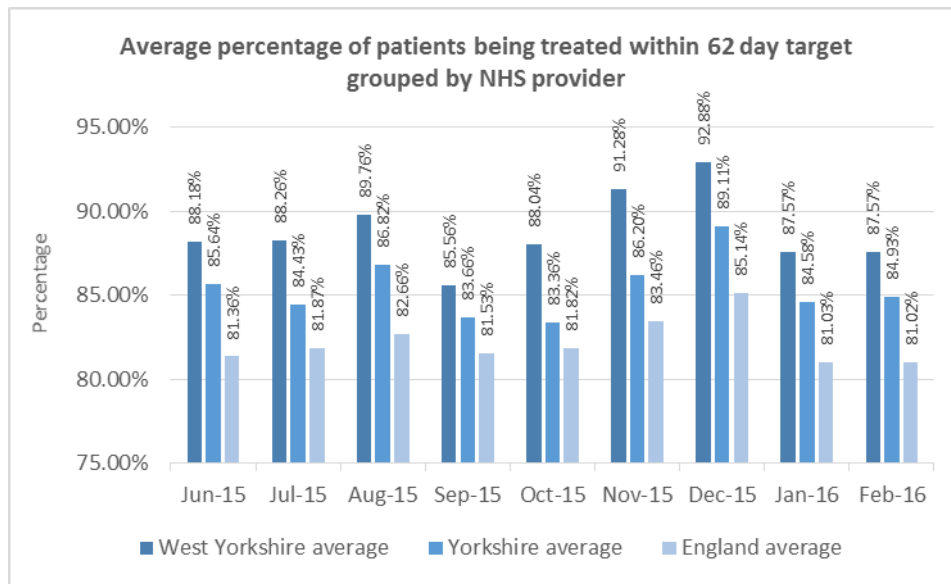


**Figure 4:** Average percentage of patients receiving first treatment within 62 days of urgent GP referral between June 2015 and February 2016, by NHS Provider<sup>34</sup>.

From the chart above we can see that between June 2015 and February 2016, all West Yorkshire NHS Providers achieved rates better than the England average. However, Leeds Teaching Hospitals NHS Trust did not meet the Operational Standard of 85%. Looking at the larger dataset presented in Table 1, Appendix 2, it can be seen that of the nine data points recorded, the five most recent have been above 85%, indicating that Leeds may begin to see improvements in their achievement of the 62 day target with cancer patients.

These rates are only averages and the monthly variation within providers is large in some instances (See Table 1 in Appendix 2), as an example Airedale ranges from 83.75% to 98.44% within this timeframe.

If we compare data for West Yorkshire, Yorkshire and England, the monthly averages show similar trends (i.e. when national rates increase or decrease, local rates tend to follow this same pattern).



**Figure 5:** Average percentage of patients receiving first treatment within 62 days of urgent GP referral each month by area<sup>34</sup>.

Overall, the data indicates that both Yorkshire and West Yorkshire are performing better than England, with a higher percentage of patients starting treatment within 62 days of an urgent GP referral, and both areas largely exceeding the 85% operational standard. From this it could be suggested that efforts on achieving an earlier diagnosis should be focused on primary care and getting patients referred sooner.

#### 8.4. Patient experience

The National Cancer Patient Experience Survey<sup>35</sup> measures numerous variables by NHS provider.

Of particular interest are:

- Question 1: Saw GP once/twice before being told had to go to hospital
- Question 21: Patient given the name of the CNS in charge of their care
- Question 30: Taking part in cancer research discussed with patient
- Question 70: Patient's rating of care 'excellent' / 'very good'

The latest data publically available was published in September 2014<sup>35</sup>, however an update is expected in the near future. Data for each West Yorkshire NHS Provider is presented below for each question, along with the averages for West Yorkshire, Yorkshire, and England.

**Table 11:** Summary of West Yorkshire NHS Provider scores on Question 21 of the 2014 Cancer Patient Experience Survey.

<b>Question 1: Saw GP once / twice before being told had to go to hospital</b>								
	2014 Percentage for this Trust	Lower 95% confidence interval	Upper 95% confidence interval	Threshold for lowest scoring 20% of all Trusts	Threshold for highest scoring 20% of all Trusts	Highest Trust's percentage score	Number of responders for this Trust	Scored % in highest/lowest 20% of Trusts 2014
Airedale NHS Foundation Trust	74%	68%	80%	72%	79%	94%	193	
Bradford Teaching Hospitals NHS Foundation Trust	75%	69%	81%	72%	79%	94%	212	
Calderdale and Huddersfield NHS Foundation Trust	79%	74%	83%	72%	79%	94%	307	
Harrogate and District NHS Foundation Trust	82%	76%	87%	72%	79%	94%	200	
The Leeds Teaching Hospitals NHS Trust	75%	72%	77%	72%	79%	94%	1,055	
The Mid Yorkshire Hospitals NHS Trust	76%	72%	81%	72%	79%	94%	335	

The averages by area are:

- West Yorkshire = 77%
- Yorkshire = 77%
- England = 75%
- Best in England = 94%

Airedale performed the worst on this question at 74%, Bradford and Leeds were in line with the average for England at 75%. Harrogate performed the best with 82% of patients seeing their GP only once or twice before being told they needed to go to hospital (among the highest 20% of all

Trusts). Overall, the average for Yorkshire sits slightly higher than the average for England, however nearly a quarter of all patients are reporting they go and see their GP three or more times before being referred to hospital.

**Table 12:** Summary of West Yorkshire NHS Provider scores on Question 21 of the 2014 Cancer Patient Experience Survey.

<b>Question 21: Patient given the name of the CNS in charge of their care</b>								
	2014 Percentage for this Trust	Lower 95% confidence interval	Upper 95% confidence interval	Threshold for lowest scoring 20% of all Trusts	Threshold for highest scoring 20% of all Trusts	Highest Trust's percentage score	Number of responders for this Trust	Scored %in highest/lowest 20% of Trusts 2014
Airedale NHS Foundation Trust	90%	86%	94%	86%	92%	97%	238	
Bradford Teaching Hospitals NHS Foundation Trust	83%	78%	87%	86%	92%	97%	263	
Calderdale and Huddersfield NHS Foundation Trust	91%	88%	94%	86%	92%	97%	400	
Harrogate and District NHS Foundation Trust	95%	93%	98%	86%	92%	97%	251	
The Leeds Teaching Hospitals NHS Trust	88%	86%	90%	86%	92%	97%	1,325	
The Mid Yorkshire Hospitals NHS Trust	88%	84%	91%	86%	92%	97%	394	

The averages by area are:

- West Yorkshire = 89%
- Yorkshire = 90%
- England = 89%
- Best in England – 97%

Bradford performed the worst on this question at 83% (among the lowest 20% of all Trusts), while Leeds and Mid Yorkshire did not meet the average for England. Harrogate performed the best with 95% of patients being given the name of the CNS in charge of their care (among the highest 20% of all Trusts). Overall, the average for Yorkshire sits slightly higher than the average for England.

**Table 13:** Summary of West Yorkshire NHS Provider scores on Question 30 of the 2014 Cancer Patient Experience Survey.

<b>Question 30: Taking part in cancer research discussed with patient</b>								
	2014 Percentage for this Trust	Lower 95% confidence interval	Upper 95% confidence interval	Threshold for lowest scoring 20% of all Trusts	Threshold for highest scoring 20% of all Trusts	Highest Trust's percentage score	Number of responders for this Trust	Scored %in highest/lowest 20% of Trusts 2014
Airedale NHS Foundation Trust	32%	26%	38%	21%	35%	61%	237	
Bradford Teaching Hospitals NHS Foundation Trust	38%	32%	44%	21%	35%	61%	255	
Calderdale and Huddersfield NHS Foundation Trust	36%	32%	41%	21%	35%	61%	390	
Harrogate and District NHS Foundation Trust	30%	24%	36%	21%	35%	61%	236	
The Leeds Teaching Hospitals NHS Trust	48%	45%	50%	21%	35%	61%	1,261	
The Mid Yorkshire Hospitals NHS Trust	30%	26%	35%	21%	35%	61%	391	

The averages by area are:

- West Yorkshire = 36%
- Yorkshire = 30%
- England = 31%
- Best in England = 61%

Harrogate and Mid Yorkshire performed the worst on this question at 30%. Leeds performed the best with 48% of patients reporting having taking part in cancer research discussed with them, and along with Bradford was among the highest 20% of all Trusts. Overall, the average for Yorkshire sits slightly lower than the average for England.

**Table 14:** Summary of West Yorkshire NHS Provider scores on Question 70 of the 2014 Cancer Patient Experience Survey.

<b>Question 70: Patient's rating of care 'excellent' or 'very good'</b>								
	2014 Percentage for this Trust	Lower 95% confidence interval	Upper 95% confidence interval	Threshold for lowest scoring 20% of all Trusts	Threshold for highest scoring 20% of all Trusts	Highest Trust's percentage score	Number of responders for this Trust	Scored %in highest/lowest 20% of Trusts 2014
Airedale NHS Foundation Trust	89%	85%	93%	86%	92%	97%	241	
Bradford Teaching Hospitals NHS Foundation Trust	88%	84%	92%	86%	92%	97%	279	
Calderdale and Huddersfield NHS Foundation Trust	89%	86%	92%	86%	92%	97%	410	
Harrogate and District NHS Foundation Trust	94%	91%	97%	86%	92%	97%	249	
The Leeds Teaching Hospitals NHS Trust	87%	85%	89%	86%	92%	97%	1,343	
The Mid Yorkshire Hospitals NHS Trust	88%	85%	91%	86%	92%	97%	419	

The averages by area are:

- West Yorkshire = 89%
- Yorkshire = 90%
- England = 89%
- Best in England = 97%

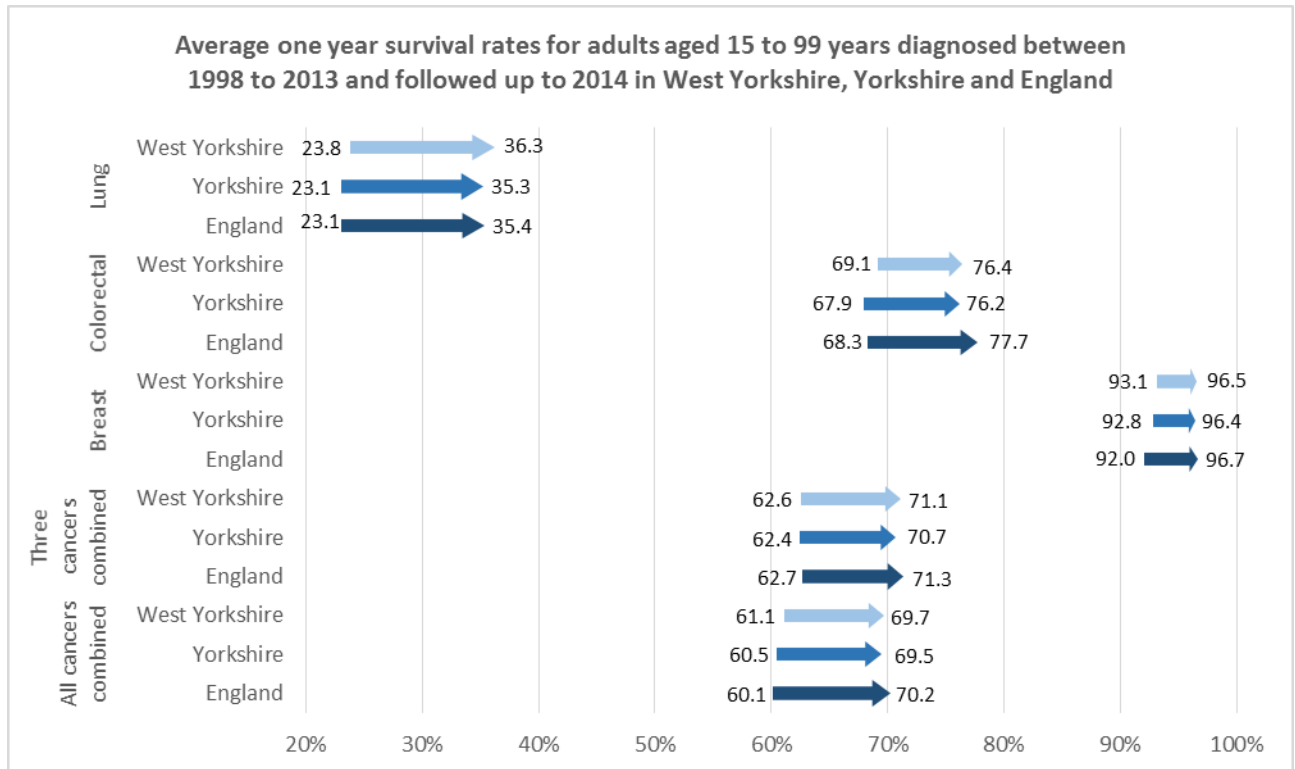
Leeds performed the worst on this question at 87%, while Bradford and Mid Yorkshire did not meet the average for England. Harrogate performed the best with 94% of patients rating their care as either excellent or very good (among the highest 20% of all Trusts). Overall, the average for Yorkshire sits slightly higher than the average for England.

## 9. Improvements in treatment are leading to growth in long term survivors

Cancer survival rates are at an all-time high and are improving year on year. One year survival rates tend to be reflective of whether cancer was diagnosed early or not whereas five year survival rates are more reflective of the treatment the patient received along with whether the cancer was diagnosed early. In this next section we will look at one and five year survival rates for some of the most common cancers.

### One year survival

One year survival rates are increasing, however survival rates in Yorkshire have not yet caught up with the average rates for England<sup>36</sup> (with the exception of one year lung cancer survival in West Yorkshire). The CCGs in Yorkshire with the highest survival rates (Lung = Bradford District 41.2%, Colorectal = South Tees 79.2% and Breast = Bradford District 97.7%) indicate that one year survival rates can be improved across the region, beyond the national averages for England.



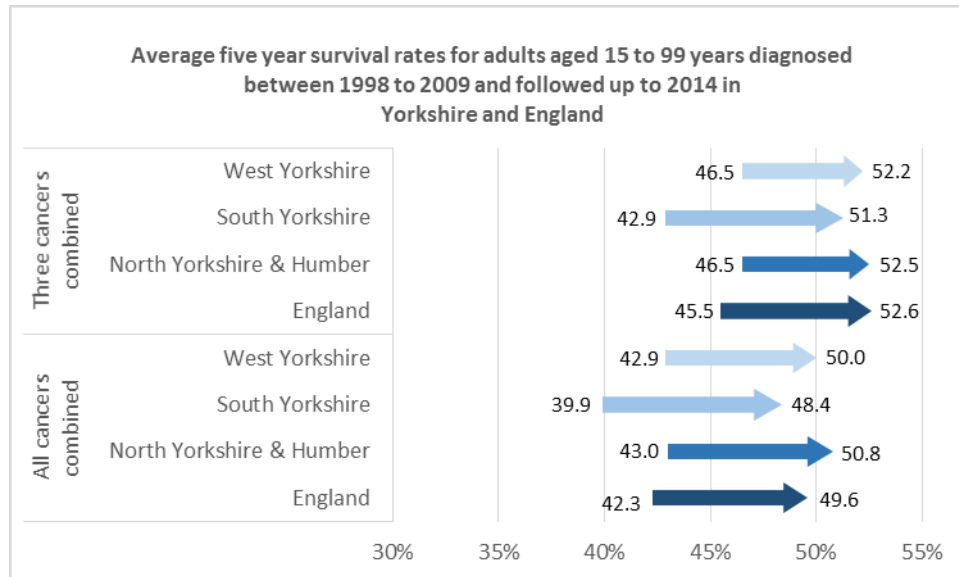
**Figure 8:** Average one year survival rates for adults aged 15 to 99 years diagnosed between 1998 to 2013 and followed up to 2014<sup>36</sup>. Data is presented for lung, colorectal and breast cancers separately, these three cancers combined, and all cancers.

### Five year survival

As with one year survival rates, five year survival rates are also increasing<sup>36</sup>. Five year survival rates across all cancers, and those for breast, colorectal and lung cancers combined ("Three cancers combined") are shown in the figure below. The data shows that there has been around a 7% increase in five year cancer survival for patients diagnosed in 2009 and followed up to 2014, compared to those patients diagnosed in 1998.

To put this into perspective, in 2009 there were 4,921 people diagnosed with breast, colorectal and lung cancers in West Yorkshire. A one year survival rate of 67.2% for patients diagnosed in 2009 means that we would expect that 1,614 patients would have died within the first year. A five year survival rate of 50% of those 4,921 patients diagnosed in 2009, means that we would expect 2,460 patients to have died within five years of diagnosis, 846 of whom would have died after the first year post-diagnosis but within five years of diagnosis. If the five year survival of West Yorkshire (50%) matched the best region in England, Thames Valley at 51.8%, we would expect

that 88 fewer patients would have died from their cancer in West Yorkshire alone. However, had survival rates not improved and remained at the same rate as in 1998 (42.9%) then of the 4,921 patients diagnosed with a combination of breast, colorectal and lung cancer in 2009 a total of 2810 would have died within five years - 350 additional patients. This indicates the huge patient benefit that can be achieved even with small increases in survival rates.



**Figure 9:** Average five year survival rates for adults aged 15 to 99 years diagnosed between 1998 to 2009 and followed up to 2014<sup>36</sup>. Data is presented for lung, colorectal and breast cancers separately, these three cancers combined, and all cancers.

For all cancers combine, West Yorkshire performs slightly better than England when we look at patients diagnosed in 2009, however the data shows that for the combined five year survival for breast, colorectal and lung cancer, survival in West Yorkshire is slightly lower than the rate in England. When we think about how this compares to other countries, the International Cancer Benchmarking Partnership (ICBP)<sup>37</sup>, a global collaboration looking at variations in breast, colorectal, lung and ovarian cancer survival has shown that out of Sweden, Australia, Canada, Norway, Denmark and the UK, the UK has the lowest five year survival rates for breast, colorectal and lung cancer, and the second lowest for ovarian cancer. This indicates that survival rates for Yorkshire and West Yorkshire fall further behind the international comparators than the rates for England.

## 10. Continuing current models of follow up care for survivors is unsustainable

As the general population ages, there will continue to be more people being diagnosed with cancer. As described above survival rates are increasing, and providing patients receive an early diagnosis and the right treatment for them, we can expect both one year and five year survival to continue to improve. This will mean that more people will be living with and beyond cancer, many of whom may have multiple comorbidities. It is important that every patient has access to a



suitable recovery package and to prepare models of follow up care that are appropriate for patients. The current recommendation is that all patients should have access to the Recovery Package which includes:

- A holistic needs assessment
- A treatment summary
- A cancer care review
- A patient education and support event<sup>38</sup>.

To determine how many CCGs were commissioning all four parts of the Recovery Package, in 2014 NHS England commissioned the Living with and beyond Cancer; Baseline Report. Variation between CCGs was found in Yorkshire and the Humber and so the Yorkshire and Humber Strategic Clinical Network for cancer repeated the survey in 2015<sup>39</sup>. Of the 17 CCGs that responded 14 had a cancer strategy that included living with and beyond cancer, however only three were commissioning the whole Recovery Package, while another eight were commissioning elements of the Recovery Package. The conclusions of the survey were as follows:

*"It is encouraging that most CCGs have a cancer strategy which incorporates Living with and Beyond Cancer and that most CCGs commission the Recovery Package (in part or as a whole), although it is clear from the findings that there are a number of challenges when commissioning services for people Living with and Beyond Cancer, including prioritisation, capacity and system constraints.*

*There are a number of things that can be done at a local, Yorkshire and Humber and national level to overcome some of the barriers to change that have been identified.*

- *Including cancer in work on Long Term Conditions; some people who move beyond active treatment will require minimal long term follow up, while others will have complex health and social care needs. CCGs will increasingly need to consider how the needs of these patients are incorporated into the overall approach to long term conditions.*
- *Working collaboratively to maximise capacity; CCGs already identified the benefits of working collaboratively and there is the opportunity to work more effectively by pursuing joint work with other CCGs either across Yorkshire and Humber or at a locality level."*

Risk stratified pathways may be one way to effectively reduce follow ups and improve capacity by removing those patients with minimal requirements from the standard follow up pathway. Taking breast cancer as an example, the current model of follow up care involves patients being invited for follow-up hospital appointments for five years after their cancer treatment, and patients may attend up to 15 times for those appointments. This model of care requires a lot of time (of both the patient and the health service), expert resource, may cause anxiety for the patient, and takes some of the responsibility of self-management away from the patient. Furthermore, only 10% of recurrences are identified in a follow-up clinic while 48% are identified by the patient themselves<sup>40</sup>.

In order to make better use of its resources, Calderdale and Huddersfield Foundation Trust developed a follow-up education programme for patients at low to moderate risk, alongside Breast Cancer Care and the University of Huddersfield<sup>41</sup>. The programme (called "Moving Forward") consists of four three hour sessions held over consecutive weeks and women are invited as close to completing surgery and radiotherapy as possible. Its implementation means that clinical resources can be focused on patients most in need. After two years an audit of the service showed it reduced overall patient anxiety and the number of routine hospital appointments (the majority of respondents were "very happy" they had not been required to attend any hospital appointments a year after finishing the programme), maintained standards of care, and provided patients with an effective support network.

Initiatives such as these indicate the possibility of alternatives to current models of follow-up care that help alleviate pressure on specialist resources so they can be focused on high risk patients. It also demonstrated that patient safety and quality of care was not compromised and the benefits to women of an education programme that helps them to self-manage their care. The audit concluded that the programme could be transferred to other specialist areas, and rolling out this model of follow up care in breast cancer in other Trusts should be considered.

## 11. Conclusion

The report gives a brief outline of the many factors that can influence cancer outcomes and attempts to illustrate the potential impact of these factors at a local level across the West Yorkshire region.

It is clear that a holistic approach is needed, and that significant and sustainable improvements in outcomes require changes at all levels of the pathway. To summarise the topics included in this report:

1. **Prevention** – action needs to be taken to help reduce the burden of disease from preventable risk factors for cancer. This report focuses on smoking, alcohol and being overweight, however many other factors such as poor diet and lack of physical activity also contribute.
2. **Screening** – screening rates across the region vary, and even in CCGs where overall screening rates are high, local variation between GP practices still exists. There is a need to close the gap between the worst and the best performing areas.
3. **Early diagnosis** – we know that treatment options and patient survival rates are better when cancer is diagnosed at an early stage, however many patients still present with late stage cancer or through emergency routes. As well as educating people to recognise the signs and symptoms of cancer and transfer recognition into help-seeking behaviour we need to ensure that suitable pathways for diagnosis are in place. These should make the most of resources available across the region and be tailored to the needs of both the patient and healthcare provider.

4. **Follow-up care** – Survival rates will continue to increase as more cancers are diagnosed early and treatments improve. Therefore, more people will be living with and beyond a diagnosis of cancer within the community. Continuing to monitor patient experience will help to identify areas where local providers are not in line with other similar providers. Implementing risk stratified models of follow up care should be considered to help increase clinical resource for patients most in need, and those with multiple long-term conditions.

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## 13. Appendices

### Appendix 1

#### Methodology for working out patient treatment costs

1. The total number of patients with colon and rectal cancer were calculated for each stage of diagnosis by adding together the figures in columns 1 and 2 of Table 4 in the Incisive Health Report<sup>19</sup>.
2. The percentage of the total colon cancers and rectal cancers which were colon cancers was calculated for each stage of diagnosis. The overall percentage of the total number of colorectal cancers which were colon cancers and rectal cancers was also calculated.

Stage	Colon cancer	Rectal cancer	Total
1	2,931 (49.9%)	2,946 (50.1%)	5,877
2	7,237 (74.8%)	2,442 (25.3%)	9,679
3	7,450 (69.5%)	3,267 (30.5%)	10,717
4	5,690 (68.6%)	2,607 (31.4%)	8,297
Total	23,308 (67.4%)	11,262 (32.6%)	34,570

3. Using the Yorkshire data from Table 2 in the main report above, the percentages calculated for each stage of diagnosis in step 2 was applied to the Yorkshire data to calculate the estimated number of colon cancers in Yorkshire diagnosed at Stages 1 to 4.

Stage	Total colorectal in Yorkshire	Percentage colon	Estimated number of colon cancers in Yorkshire
1	544	49.9%	271
2	747	74.8%	559
3	823	69.5%	572
4	770	68.6%	528
Total	2,884	67.4%	1,944

4. The proportion of cancers diagnosed at each stage was recorded as outlined in Table 1 in the Incisive Health Report.

Stage	Colon cancer	Rectal cancer
1	13%	26%
2	31%	22%
3	32%	29%
4	24%	23%

5. Using the overall percentage for the proportion of cancers that are colon (67.4%) an estimate for the number of unstaged patients with colon cancer in Yorkshire was calculated. The total number of unstaged colorectal cancer patients was 411, giving an estimated 277 unstaged patients with colon cancer.
6. The proportion of colon cancers diagnosed at each stage as outlined in Step 4 above was applied to the 277 unstaged patients. The total estimated number of patients with colon cancer was then calculated.

Stage	Colon cancer – proportion diagnosed at each stage	Estimation of staging of unstaged patients	Total estimated number of colon patients in Yorkshire
1	13%	36	307
2	31%	86	644
3	32%	89	661
4	24%	66	595
Total		277	2,221

7. Two sets of treatment costs were then calculated (see Table 5 in the main report above):
- Set 1: using only the known staging data (not including the re-allocated unstaged patients)
  - Set 2: using the known staging data combined with the re-allocated unstaged patients to the proportionally relevant stage.

These steps were then adapted and repeated to calculate the estimated cost of treatment of rectal cancer and NSCLC in Yorkshire, as well as calculating treatment costs across the three cancer types for West Yorkshire.

#### **Methodology for working out differences in patient treatment costs with a higher rate of early stage presentation**

1. The additional number of patients with early stage colorectal cancer was calculated for Yorkshire if the region had the staging proportions of the best CCG in England. This gave an additional 482 patients.
2. Using the overall percentage of cancers which are expected to be colon cancers (67.4%) the estimated number of colon cancers was 325.
3. The staging proportions given in Table 1 of the Incisive Health Report were then used to assign the relative proportion given that all 325 cancers needed to be assigned to either stage 1 or stage 2. This was done by totalling the sum of the stage 1 (13%) and 2 (31%) proportions (44%) and then dividing the individual percentages by the total (13/44 and 31/44 respectively) to give relative proportions of 30% and 70%.
4. The estimated number of stage 1 colon cancers was defined as 30% of 325 and the estimated number of stage 2 colon cancers was defined as 70% of 325.
5. The costs of treatment by stage (including the cost of recurrence) were then used to calculate the cost of treating the 325 additional colon cancer patients.
6. The same methodology was then applied to find out how much the treatment costs for the patients would have been if those 325 cancers had been diagnosed at stage 3 or 4.
7. The difference in costs was calculated by subtracting the cost of treatment at stage 3 and 4, from the cost of treatment at stage 1 and 2 and is presented in Table 8 above.



## Appendix 2

NHS Provider - Table 1

Month	NHS Provider						Area average		
	Airedale NHS Foundation Trust	Bradford Teaching Hospitals NHS Foundation Trust	Calderdale and Huddersfield NHS Foundation Trust	Harrogate and District NHS Foundation Trust	Leeds Teaching Hospitals NHS Trust	Mid Yorkshire Hospitals NHS Trust	West Yorkshire average	Yorkshire average	England average
Jun-15	89.53%	88.59%	89.83%	89.80%	79.57%	91.75%	<b>88.18%</b>	<b>85.64%</b>	<b>81.36%</b>
Jul-15	91.86%	89.62%	89.42%	87.22%	81.66%	89.75%	<b>88.26%</b>	<b>84.43%</b>	<b>81.87%</b>
Aug-15	93.59%	85.82%	93.18%	92.66%	82.81%	90.48%	<b>89.76%</b>	<b>86.82%</b>	<b>82.66%</b>
Sep-15	88.57%	86.90%	90.07%	83.13%	80.16%	84.50%	<b>85.56%</b>	<b>83.66%</b>	<b>81.53%</b>
Oct-15	83.75%	90.57%	91.93%	91.89%	86.28%	83.82%	<b>88.04%</b>	<b>83.36%</b>	<b>81.82%</b>
Nov-15	94.00%	90.65%	95.54%	93.86%	85.14%	88.46%	<b>91.28%</b>	<b>86.20%</b>	<b>83.46%</b>
Dec-15	98.44%	93.01%	95.32%	94.57%	85.58%	87.36%	<b>92.88%</b>	<b>89.11%</b>	<b>85.14%</b>
Jan-16	89.69%	89.10%	90.41%	86.02%	86.43%	83.75%	<b>87.57%</b>	<b>84.58%</b>	<b>81.03%</b>
Feb-16	87.50%	91.67%	94.62%	85.86%	86.10%	76.44%	<b>87.57%</b>	<b>84.93%</b>	<b>81.02%</b>
Total average	<b>91.18%</b>	<b>89.28%</b>	<b>91.96%</b>	<b>89.89%</b>	<b>83.45%</b>	<b>87.48%</b>	<b>88.94%</b>	<b>85.48%</b>	<b>82.36%</b>

Clinical Commissioning Group – Table 2

Month	Clinical Commissioning Group											Area average		
	NHS Airedale, Wharfedale and Craven CCG	NHS Bradford City CCG	NHS Bradford Districts CCG	NHS Calderdale CCG	NHS Greater Huddersfield CCG	NHS Harrogate and Rural District CCG	NHS Leeds North CCG	NHS Leeds South and East CCG	NHS Leeds West CCG	NHS North Kirklees CCG	NHS Wakefield CCG	West Yorkshire average	Yorkshire average	England average
Jun-15	87.80%	100.00%	86.11%	85.71%	86.79%	91.11%	76.92%	87.23%	84.93%	86.05%	89.39%	<b>87.46%</b>	<b>85.52%</b>	<b>81.18%</b>
Jul-15	90.00%	90.91%	87.01%	82.69%	89.36%	82.46%	88.89%	87.50%	84.62%	86.84%	89.41%	<b>87.24%</b>	<b>85.07%</b>	<b>81.63%</b>
Aug-15	90.70%	75.00%	86.15%	90.63%	86.96%	94.44%	80.65%	91.30%	90.77%	92.59%	86.67%	<b>87.81%</b>	<b>85.63%</b>	<b>82.44%</b>
Sep-15	90.24%	100.00%	85.92%	80.56%	89.80%	80.00%	80.49%	88.89%	86.11%	67.86%	84.93%	<b>84.98%</b>	<b>83.37%</b>	<b>81.35%</b>
Oct-15	89.13%	71.43%	88.57%	93.18%	88.64%	89.36%	100.00%	86.00%	90.00%	75.00%	86.42%	<b>87.07%</b>	<b>83.25%</b>	<b>81.66%</b>
Nov-15	95.45%	95.71%	87.69%	100.00%	92.59%	90.70%	95.24%	80.39%	90.77%	88.89%	86.42%	<b>91.26%</b>	<b>86.76%</b>	<b>83.30%</b>
Dec-15	100.00%	89.89%	87.72%	100.00%	96.29%	92.98%	94.87%	85.71%	85.42%	88.00%	85.14%	<b>91.37%</b>	<b>88.97%</b>	<b>84.97%</b>
Jan-16	86.00%	69.23%	93.10%	87.80%	87.18%	86.36%	95.00%	88.46%	90.63%	83.33%	81.03%	<b>86.19%</b>	<b>84.66%</b>	<b>80.84%</b>
Feb-16	90.91%	90.91%	89.83%	94.44%	88.57%	82.22%	87.50%	91.11%	89.29%	59.09%	78.46%	<b>85.67%</b>	<b>84.18%</b>	<b>80.82%</b>
<b>Total average</b>	<b>91.17%</b>	<b>86.52%</b>	<b>87.78%</b>	<b>90.07%</b>	<b>89.70%</b>	<b>88.43%</b>	<b>89.01%</b>	<b>86.94%</b>	<b>87.91%</b>	<b>83.57%</b>	<b>86.18%</b>	<b>87.92%</b>	<b>85.40%</b>	<b>82.17%</b>