Nottinghamshire Health & Wellbeing Board

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Nottinghamshire Health & Wellbeing Board

Executive summary

Introduction

This paper provides information on cancer, including local incidence, mortality and survival. It outlines the current position in relation to cancer across Nottinghamshire and in reference to the national position for England. The information presented seeks to highlight any key differences between the six CCGs where sufficient information is available, and differences within the overall population in terms of such characteristics as age, sex, ethnicity and socio-economic status.

Cancer is a disease caused by normal cells changing so that they grow in an uncontrolled way. There are more than 200 different types of cancer. Cancer is a complex disease.

Cancer is one of the biggest health challenges in the UK with one in three people expected to develop some form of cancer in their lifetime. There were 299,923 new cancers diagnosed in 2015 with the most common cancers being breast (46,083), lung (37,637), bowel (colorectal) (34,729) and prostate cancers (40,331). Medical developments along with an ageing population overall in the UK is resulting in an increasing number of cancer diagnoses. The National Strategy estimates this increase is in the region of 2% per annum.

Mortality for all cancers and all ages in England was 135,166 (2013). This compares to coronary heart disease which is one of the other biggest disease groups, accounting for 56,363 (2014) in England. In Nottinghamshire 5,867 new cancers were diagnosed in 2013, and 2,299 people's deaths were attributed to cancer.

Mortality and Incidence under 75 years of age

Cancer is largely a disease related to ageing, but when a cancer is identified or causes a death in someone under the age of 75 year it is considered 'premature' in the context of the nation's health overall. In England 189,217 (2014) cancers are diagnosed in the under 75s annually; representing two-thirds of all cancers diagnosed (PHOF under 75 mortality rate for cancer). Premature death from cancer is an important marker of health inequality within and between communities.

Cancer Survivorship

Cancer has been considered a life-limiting disease characterised by treatment provision that cannot heal. Due to this, an approach used to understanding how cancer is affecting a population is through one and five year survival information following a diagnosis. Survival rates from recent years are showing a steady increase. In England the one and five year overall survival rates for all cancers were 70% and 54% respectively (Macmillan, 2014). In terms of the number of people in England who have had a diagnosis of cancer in their lifetime, it was almost 1.8m in 2012. These figures show a developing picture of extending periods of 'survival' subsequent to a cancer diagnosis for many people.

The health situation of people living after cancer treatments is a health need too. Most cancers are treated through a combination of surgery, chemotherapy and radiotherapy. The medical, technological and pharmaceutical advances in treatments are a main reason for the improvements seen in the survivorship. These treatments can themselves cause illness, however, whilst healing the cancer disease. Common illnesses, or late effects, can be

chronic pain, crippling fatigue, incontinence and sexual difficulties. There can be mental health illness too, including the psychological distress relating to fears of a reoccurrence. Some of these health needs are now being approached from the consideration of cancer as a long term health condition. Within this approach the role of 'self-care' is explored as a potential best health care intervention for supporting people to live a full life following their treatment.

Cancer, Public Health and Social Care

The cost of treating cancer in England by the NHS is £6.7bn (2012/13), (NAO, 2015). The projection is for this to increase by 9% a year bringing it to an estimated costs of £13bn by 2020/21. Social care support is also anticipated to increase, especially in light of the predicted increase in the number of people living after cancer treatment and potentially suffering 'late effects'. By 2030 the prediction is that three million people in the UK population will have had a cancer diagnosis.

In addition to Public Health's (PH) role in identifying need and health inequality, supporting the development of population wide health and social care systems to bring improvements in health outcomes for people with a diagnosis of cancer, PH has a key role in preventing people from 'contracting' cancer. Cancer Research UK (CRUK) estimates that four in every ten cancers can be prevented by lifestyle change. PH endeavours to reduce the number of new cancers through a range of initiatives. These include health protection approaches such as tobacco control, workplace health, health promotion initiatives through to the provision of 'healthy' lifestyle service support to individuals.

Cancer in Nottinghamshire

This paper is presented to provide information on cancer in Nottinghamshire. It is written with reference to the National Strategy, 'Achieving World-Class Cancer Outcomes (AWCCO) 2015 – 2020 (Independent Cancer Taskforce, 2015). This paper first summarises the national literature on the risk of cancer in the UK, before considering the Nottinghamshire risks in light of this. The cancer health need is then examined in terms of cancers diagnosed and mortality due to cancers. The paper will then look at local service provision, cancer resources, the evidence-based recommendations for improving cancer outcomes and efficiencies, and a consideration of important developments coming up. The views of local cancer service users and people affected by cancer (PAC) are drawn on and links for further information are made. The paper concludes with a number of recommendations directed at the key cancer commissioning stakeholders. A summary of these is presented below.

Unmet needs and service gaps

In Nottinghamshire there remain areas of the National Strategy which need to be achieved prior to its completion in 2020. The introduction of the new 28 day referral to diagnosis is one of these critical areas. In addition, with the prediction of a rapid increase in the number of cancer diagnoses over the coming decade, there is the need to ensure the local cancer assets are systematically enhanced enabling them to deliver services as effectively as possible.

Recommendations for consideration

Cancer is a chronic disease that remains a challenge to diagnose and treat. The treatment and care of cancer is complicated, traumatic and expensive. The impact of a diagnosis of the disease for an individual and those close to them remains an overwhelming experience.

Notwithstanding this understanding though, through the information presented in this paper it is clear that Nottinghamshire has a great wealth of resource to deliver cancer services and to continue to improve on the immense achievements that have been realised over the past decade. These include the improvements in the cancer survivorship 'stories' for many residents, and the critical changes in environmental and lifestyle choices which can reduce people's risk of exposure to cancer overall, with exposure to tobacco smoke being the most notable of factors here.

The overarching recommendation for Nottinghamshire now is to complete the implementation of the ninety-six recommendations in AWCCO (Independent Cancer Taskforce, 2015). Many of these will be implemented at the national and regional level and they are mostly NHS service specific. Successful local implementation, however, will require local engagement including the participation in pilot schemes. In addition, for Nottinghamshire to make the most of its current assets and prepare for the anticipated large increase in cancer diagnosis over the coming years (especially due to the ageing population), the information and issues highlighted through this report suggests there are other key recommendations to be considered as a priority for public health, cancer service and related commissioners overall. These are outlined below:-

A. Addressing the health inequalities that feed into the risk factors for cancer, and prevent certain population groups from realising the cancer outcomes that other groups achieve. Core within this is the delivery of the LA PH commissioned services in the areas of tobacco control, alcohol abuse, weight management, and physical activity.

B. Addressing the underlying social determinants that are at the core of the relationship to the health inequalities highlighted above.

C. Develop a local strategic vision for the cancer service workforce across health, social and third sector / voluntary provision in response to increasing demand and changing requirements of cancer survivors. This will include implementation of the recommendations set out in the Health Education England (HEE) (2017) Cancer Workforce Plan. This is included with the National Strategy, but the acuteness of the mounting pressures particularly with reference to NHS provision due to increases in demand, as well as changing requirements, suggests the need for this to be included as a specific recommendation too.

D. Continue to develop local cancer systems and structures that are well led and coordinated; that will deliver improved cancer and the cancer related health outcomes aligned with the Nottingham and Nottinghamshire Sustainability and Transformation Partnership (STP) and the East Midlands Cancer Alliance.

E. Provide a supportive environment for the third/voluntary sector to flourish, covering national organisations and local organisations. This includes ensuring financial resources are sourced from the STP Cancer Programme Board partners to support

the local patient groups so that they continue to have an active remit that will ensure the 'currency' of their voice.

F. Full implementation of the Equality Act 2010 throughout cancer prevention and treatment provision. The delivery of cancer services in its widest sense will need to engage with this Act if the subtleties of discrimination of poverty, age, race and disabilities within service delivery are to be addressed, especially in-light of the rising demands on services due to increasing cancer incidence rates.

   Implementing equality is reliant on knowing and understanding the breadth of people's views, and especially requires the inclusion of views from people of socio-economic disadvantage as well as other vulnerable and minority groups including the views of people for who cancer outcomes are poor; the socially isolated elderly, prisoners and particular ethnic groups.

G. The provision of a supplementary report for Bassetlaw. This cancer JSNA is endorsed by Nottinghamshire Cancer STP Programme Board, which in essence is comprised of cancer stakeholders covering the NHS cancer service providers of Nottingham University Hospitals NHS Trust (NUH), Sherwood Forest Hospitals NHS Foundation Trust (SFHT), and the Circle Nottingham NHS Treatment Centre, and so a group without the authority to 'speak to' Bassetlaw cancer service provision. Bassetlaw cancer risk and need are covered in this paper. Beyond this in terms of cancer services, Bassetlaw details will need to be addressed in an additional supplementary paper.

Nottinghamshire Health & Wellbeing Board

Full JSNA report

What do we know?

1) Who is at risk and why?

Cancer is a disease caused by normal cells changing so that they grow in an uncontrolled way. There are more than 200 different types of cancer. Cancer is one of the biggest health challenges in the UK with one in three people expected to develop some form of cancer in their lifetime. In 2015, 299,923 new cancers were diagnosed with the most common cancers being breast (46,083), lung (37,637), bowel / colorectal (34,729) and prostate cancers (40,331) making up just over half of all cancers (53%). Medical developments along with an ageing population overall in the UK is resulting in an increasing number of cancer diagnosis. The National Strategy (Independent Cancer Taskforce, 2015) estimates this increase is in the region of 2% per annum.

Mortality for all cancers across all ages in England was 135,166 (2013). This compares to coronary heart disease which is one of the other biggest disease groups, accounting for 56,363 (2014) in England. In Nottinghamshire 5,867 new cancers were diagnosed in 2013, and 2,299 people's deaths were attributed to cancer.

An individual's risk of developing cancer depends on many factors, including age, lifestyle, socio-economic status, occupation and genetic make-up. With the dramatic improvements in the survivorship after a diagnosis of cancer, the other risks of concern are the potential of reduced health outcomes following treatments and the overall quality of life for an individual from there on.

This section highlights the different groups of adults who the evidence suggests have higher exposure to the risk of a cancer, and some of the key issues for consideration of risk across each of these three elements.

1.1 Older Adults

Cancers predominantly occurs in older people; nearly two thirds (65%) of cancer diagnoses occur in the over 65s and one third in people aged 75 and over. Over half of all cancer deaths occur in people aged 75 and over. Cancer outcomes for older people in the UK are seen as being poorer than in other comparable countries for some cancers.

AWCCO (Independent Cancer Taskforce, 2015) highlights this along with the following points in terms of older people's experiences of cancer services

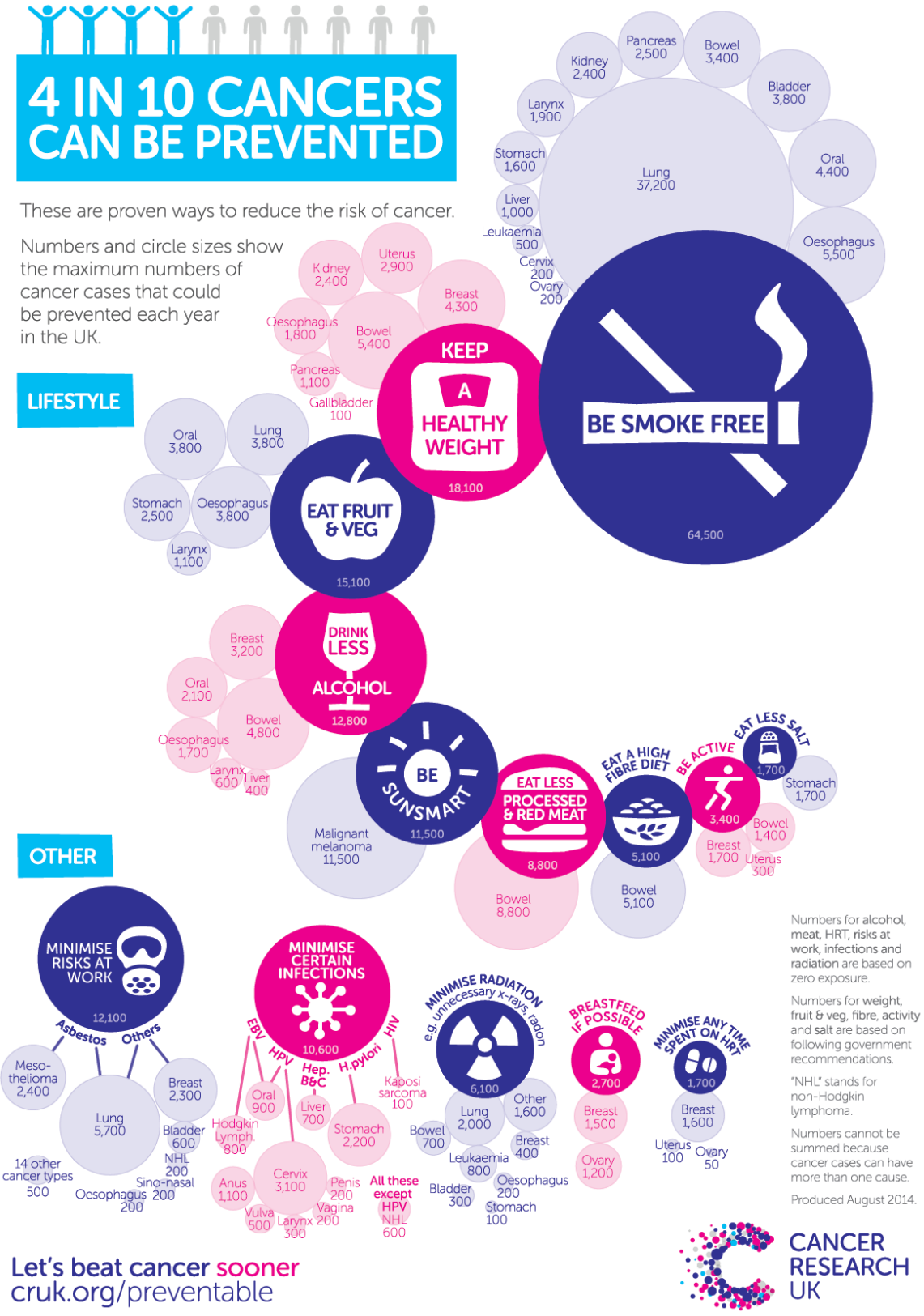
- 33% of all cancers in those aged 80 – 84 (2006 – 2010) were diagnosed after an emergency presentation compared with 15% of cancers in those aged 50 – 59.
- Older patients may be "less likely to receive the most clinically effective and appropriate treatment for their cancer".
- Cancer survival for older people (75 years and above) tails off markedly compared with survival of younger age groups (e.g. 55 – 64).

1.2 Lifestyle factors

Cancer Research UK (CRUK) estimates that four in every ten cancers can be prevented by lifestyle change. Some of the key risk and protective factors for cancer are discussed in this section. An overall summary of these risk factors nationally is provided in the graphic from Cancer Research UK (Fig. 1)

For many risk factors there is a latent period between exposure to the risk factor and the development of disease which remains poorly understood. With this there will be wide variation depending on factors such as the intensity and duration of exposure and the age, gender and genetic susceptibility of an individual. This latent effect is important to acknowledge as the number of patients with lung cancers presenting now, for example, will reflect the prevalence of tobacco smokers of earlier times rather than today's smoking prevalence rates.

Figure 1: Preventable cancer risk factors



Source: Cancer Research UK (2011)

1.2.1 Smoking

Smoking is the most important lifestyle risk factor for cancer in England (Parkin, Boyd and Walker, 2010). The infographic from Cancer Research UK (Fig. 1) shows over 60,000 cases of cancer annually could be avoided if exposure to tobacco smoke were eliminated. Exposure to tobacco smoke is responsible for over a quarter of cancer deaths, being the top risk factor for lung cancer, a tumour group which has one of the lowest one year survival rates.

Smoking prevalence exhibits marked differences among different socio-economic groups with rates at 23% among those with the lowest incomes and falling to 11% among the high earning socio-demographics (incomes over £40k per annum) (Independent Cancer Taskforce, 2015)

1.2.2 Healthy weight and diet

There is a consensus that diet has an important role to limit or exacerbate an individual's risk of cancer. Certainty over which aspects of a diet can be protective is not fully understood, but the elements of fruit and vegetables and fibre are considered to have a protective influence, whilst processed and red meats, and salt have been identified as increasing the risk of a cancer[1]

Estimates suggest that diet was the key contributing factor of 9% of cancers in 2010 nationally (Parkin, Boyd and Walker, 2010). Deficiencies in fruit and vegetable eating is calculated as being responsible for just over half of this (Parkin, Boyd and Walker, 2010). These national figures mask much variation such as between men and women, and between different cancer tumour groups themselves.

Maintaining a healthy body weight has also been found to be important to reduce the risks of many cancers (Fig. 1).

1.2.3 Alcohol

'Alcohol consumption is the fourth most important lifestyle related cause of cancer in the UK' (Parkin, Boyd and Walker, 2010). Overall 4% of cancers in the UK are considered to be attributed to alcohol. Bowel (colorectal) cancer and breast cancer are considered to be responsible for 62% of these 'alcohol-attributed' cancers (Parkin, Boyd and Walker, 2010). This cancer risk from alcohol increases with increasing alcohol consumption. Over ten million adults regularly drink more than 14 units of alcohol each week against the advice of the Chief Medical Officer, and 2.2 million people in England are drinking alcohol at harmful levels[2] (Davies, 2016). Levels of alcohol consumption correlates with deprivation. The most economically disadvantaged populations have been shown to suffer two to three times the mortality impact for alcohol as the population as a whole (PHE, 2014).

[1] The new Eatwell model guide states: If you eat more than 90g of red or processed meat per day, try to cut down to no more than 70g per day. The term processed meat includes sausages, bacon, cured meats and reformed meat products. (http://www.nhs.uk/Livewell/Goodfood/Pages/red-meat.aspx)

[2] From a categorical perspective a harmful alcohol level is considered to be in excess of 35/50 (female/male) units per week. The Chief Medical Officer, Prof Dame Davies, in relation to the issuing of the new national alcohol guidelines recommends all adults limit alcohol drinks to 14 units a week.

1.2.4 Physical activity

Being physically inactive is a risk factor for cancer. Studies suggest that habitual low levels of activity[3] increases people's risk of a cancer especially for breast, endometrial (uterine) and bowel (colorectal) tumours.

1.2.5 Protection against sun and radiation

A risk from UV radiation can come from high levels of sun exposure to the skin, and the use of sun beds. 'UV exposure is linked to one frequently lethal cancer, malignant melanoma, which is increasing in incidence' (Independent Cancer Taskforce, 2015). It is now the fifth most common cancer type in England, responsible for 1,900 deaths per year.

1.3 Other intrinsic and extrinsic factors

Aside from an individual's age and their lifestyle factors there are a further range of personal risk influencers for cancer. Some details of the other main risks as highlighted in the CRUK graphic (Fig. 1) are discussed below.

1.3.1 Sex

Overall men are more at risk of developing a cancer than women. The national data shows that for the majority of common cancer sites, males have higher incidence rates than females[4].

For all cancers combined, rates are 14% higher for men. When breast, lung and sex-specific cancers are not included, age standardised incidence rates are 59% higher in men (NCIN, 2015)

1.3.2 People living in certain geographical locations

A radioactive gas known as radon, is present in some of the geological bedrock in England, such as in some granite areas. Radon is a risk factor for cancer. Research suggests 3% of the burden of lung cancer in UK is due to radon exposure, but the suggestion is that this is caused jointly by radon gas and smoking (CRUK for information). The impact of air pollution, particularly road traffic pollution, is now recognised as a risk factor for many diseases nationally, including cancer (CRUK Air Pollution information).

There are differences in the geographical distribution of cancer nationally. Some of these differences may be attributed to geographical factors such as levels of rurality, and differences in health service provision. The majority of this geographical difference, however, are likely to be attributed to differences between population groups themselves.

1.3.3 Ethnicity

Ethnicity can impact on an individual's risk of a cancer, and their risk of it not being diagnosed at its early stages. The 'Routes to Diagnosis' research (National Cancer

[3] The national recommendation is for adults to have 150 minutes of moderate intensity activity per week.

[4] This male:female data is age standardised so it takes into consideration any differences in the age structure within the populations.

Intelligence Network (NCIN), 2015) looked at diagnosis route by ethnic group (2006 – 2015) for each cancer tumour. (Summary table Appendix1: Figure A1)

PHE's Health Equity Report (PHE, 2017) highlights inequalities relating to ethnicity in relation to stage of diagnosis building on the NCIN work. The report also highlights that inequality in cancer mortality examined by ethnic group is not available as ethnicity is not recorded in death certificates.

1.3.4 Genetics

It is estimated that inherited factors cause up to 10% of all cancers (Cancer Research UK, 2011).

1.3.5 Life course events

Factors such as the age at which a woman has her first child and the number of children she has, affect the risk of breast and gynecological cancers (Cancer Research UK, 2011).

1.3.6 Exposure to infection

A small number of infectious agents, especially selected viruses such as Human Papilloma Virus (HPVs) and a bacterium found in gut, H. pylori, appear to play a role in causing certain types of cancer. HPV, a sexually transmitted infection, is a major risk factor for cervical cancer, something which the NHS cervical screening programme and the newly introduced HPV immunisation programme addresses[5]. H. pylori is a risk factor for stomach cancer, for which smoking and diet related risk factors are also of influence.

1.3.7 Occupational risk factor

Research by the Health and Safety Executive (HSE) states that 'occupational cancer remains a key health issue and that low-level exposure of a large number of workers to carcinogens is important'. Recent research (Chen and Osman, 2012) is showing that a small number of carcinogens have been responsible for the majority of the burden of occupational cancer. A national systematic approach for collecting exposure information is not in place.

Occupation can contribute to other risk factors, such as an increase in exposure to UV radiation for occupations requiring prolonged working outside.

1.4 Other vulnerabilities

1.4.1 Individuals not attending for cancer screening services

The NHS has three national cancer screening programmes, breast, cervical and bowel. For a summary brief on the three programmes please refer to NHS choices screening.
These programmes detect around 5% of all cancers, including around 30% of all breast cancers and 10% of bowel cancers. The breast screening programmes save around 1,300 lives per year in the UK.

[5] The HPV immunisation programme was introduced in2008 for girls of 13 and 14 years to protect against certain strains of HPV. The introduction of the HPV vaccine for boys aged between 12 and 13 was announced in July 2018 by Department of Health and Social Care.

In England there is considerable variation in uptake of screening. Uptake often being worse in communities of lower socio-economic status and among other disadvantaged groups including people with personal disabilities. Black and Minority Ethnic (BME) communities often have lower uptake too (National Audit Office (NAO), 2015).

As screening is seeking to find early signs of cancer among the healthy population, there are risks to those participating in the screening programme of over-detection leading to cancers being treated that would never have gone on to cause any problems. This debate has been most extensively argues in relation to breast cancer leading to the publication of an independent panel review (Independent UK Panel on Breast Cancer Screening, 2012). This review's summary conclusion was 'that screening reduces breast cancer mortality but that some over diagnosis occurs'. In terms of quantifying this over diagnosis the panel estimate proposal is that of the 'roughly 307,000 women aged 50 – 52 who are invited to begin screening every year, just over 1% would have an over diagnosed cancer in the next 20 years'. This will continue to be an important area of nationally directed research including the acceptability of the offer to women and best ways for presenting the information enabling women to make informed decisions. The NHS Breast Screening Programme AgeX trial assessing the risks and benefits of including women aged 47 – 49 and 71 – 73 within the national programme is presently being examined by an Independent Panel too (AgeX).

1.4.2 Access to GP appointments

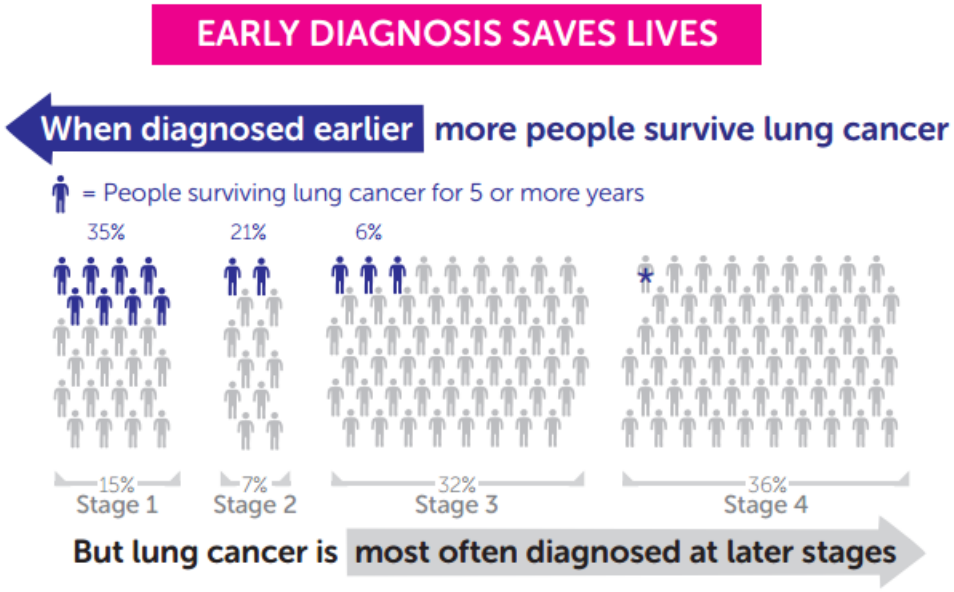
Research from international studies suggest that people in the UK are significantly more worried and embarrassed than those in other countries about seeing their doctor with a symptom that might be serious. Being 'worried about wasting the doctor's time' has been identified as a key concern. UK residents also report greater difficulty in getting an appointment with a GP as a barrier to presentation (Independent Cancer Taskforce, 2015). These are issues that the national 'Be Clear on Cancer' social marketing campaigns are aiming to address.

1.4.3 Tumour groups with poor health outcomes

Every individual cancer has a unique physiological profile in its growth pattern. However there tend to be similarities within each specific tumour site, as well as typical symptoms and the stage at which the cancer is diagnosed.

Lung cancer is one where over half of the diagnosis (68%) are among patients for who the cancer is at an advanced stage (3 or 4). Figure 2 presents a CRUK infographic showing the high percentage of lung cancers diagnosed at the later stages, and the contrasting five year survival rates for each of the four stages.

Figure 2: Lung cancer staging at diagnosis and relative survival



Source: Cancer Research UK

Prostate cancer by contrast has good survival prospects as highlighted in Figure 3. A long survivorship period may still be characterised by high health care needs, however, due to the 'late effects' caused by the treatments themselves.

Different tumour groups have different average ages of patients at diagnosis which also should be considered when making survivorship contrasts between the different cancers.

Figure 3: A profile showing average length of life following a cancer diagnosis for the main tumor groups

		Time since diagnosis Percentage of all cancer survivors alive in 2010, diagnosed in the previous 20 years					
Population	**Cancer site**	**Up to 1 year ago**	**1 to 2 years ago**	**2 to 5 years ago**	**5 to 10 years ago**	**10 to 15 years ago**	**15 to 20 years ago**
England	All Cancers	13	10	24	27	16	10
	Breast	9	9	22	28	19	13
	Colorectal	14	11	25	25	16	9
	Lung	36	15	20	15	8	5
	Prostate	14	13	29	31	10	3

(Source: Cancerstats)

The rarity of the cancer itself can also result in poor outcomes due to factors such as:

- Difficulties in identifying symptoms due to limited previous presentation in GP surgeries;

- Less well defined diagnostic and treatment pathways due to low patient numbers.

1.4.4 Cancer diagnosed at an advanced stage

Research in recent years (NCIN, 2015) has shown the health outcomes following a diagnosis of cancer are dependent on the setting at which the diagnosis takes place. This 'Routes-to-Diagnosis' 2006 - 2015 Report showed that the pooerest outcomes are those where the cancer is diagnosed after an emergency admission.

Generally an early diagnosis of cancer facilitates better cancer outcomes. The earlier the diagnosis the more treatment options are available and the late-effects from the treatments are more limited.

1.5 Social and economic impact of cancer

In the UK, 50,000 (2014) people of working age died from cancer. Whilst it is not possible to begin to estimate a value against the loss of a person's life, if a pure economic measure is used, the estimates of £585 million has been calculated as being the loss of the potential to the national economy. For any individual tumour site, it is lung cancer that has the highest economic losses associated with it, accounting for just under a quarter of the total amount (£125m) (Creighton and Beach, 2015).

The cost of treating cancer in England by the NHS is £6.7bn (2012/13) (NAO, 2015). The projection is for this to increase by 9% a year bringing it to an estimated costs of £13bn by 2020/21. Social care support is also anticipated to increase, especially in light of the predicted increase in the number of people living after cancer treatment and potentially suffering late effects. By 2030 the prediction is that three million people in the UK population will have had a cancer diagnosis.

1.6 Survivorship with, and beyond, cancer

Over the past few decades the survivorship of patients following diagnosis has improved dramatically. Survivorship ten years post diagnosis is the marker adopted for survivorship. Whilst 30 years ago patients would have a 1 in 4 chance of living beyond ten years, projections now for 2020 is that 57% of patients will live beyond this ten year marker. Breast (80%) and testicular (98%) are the cancer groups with the highest rates (Macmillan, 2014). Overall the picture is mixed though, with some cancer groups such as lung, brain and pancreatic cancers seeing very little improvement in their survival rates.

The health situation of people living after cancer treatments is a health need too. Most cancers are treated through a combination of surgery, chemotherapy and radiotherapy. The medical, technological and pharmaceutical advances in treatments are a main reason for the improvements seen in the survivorship. These treatments can themselves cause health problems, however, whilst healing the cancer disease. Common health problems, or 'late effects', can be in terms of chronic pain, crippling fatigue, incontinence and sexual difficulties. There can be mental health problems too, including the psychological distress relating to fears of a recurrence.

People living with and beyond cancer can continue to face on-going health and well-being challenges due to issues, including the following:

- Many patients having a limited awareness of anticipated side-effects and their likely impact at the time of their cancer treatments, leaving them unprepared for addressing them if they do occur, potentially years later.
- Discrimination in the work place, as people return to work after treatment.
- Financial difficulties; 'people don't realise someone with incurable cancer still needs to pay the bills'. (Mandy 42 years) (Macmillan, 2014)

The NHS Outcomes Framework includes an indicator on the employment of people with long-term conditions, however there is no means of measuring progress on this (All Party Parliamentary Group on Cancer, 2013).

1.7 End of life

End of life support continues to be an important integral element in the cancer treatment pathway. This is particularly so for the cancers with a known limited survival period such as lung and pancreatic cancer.

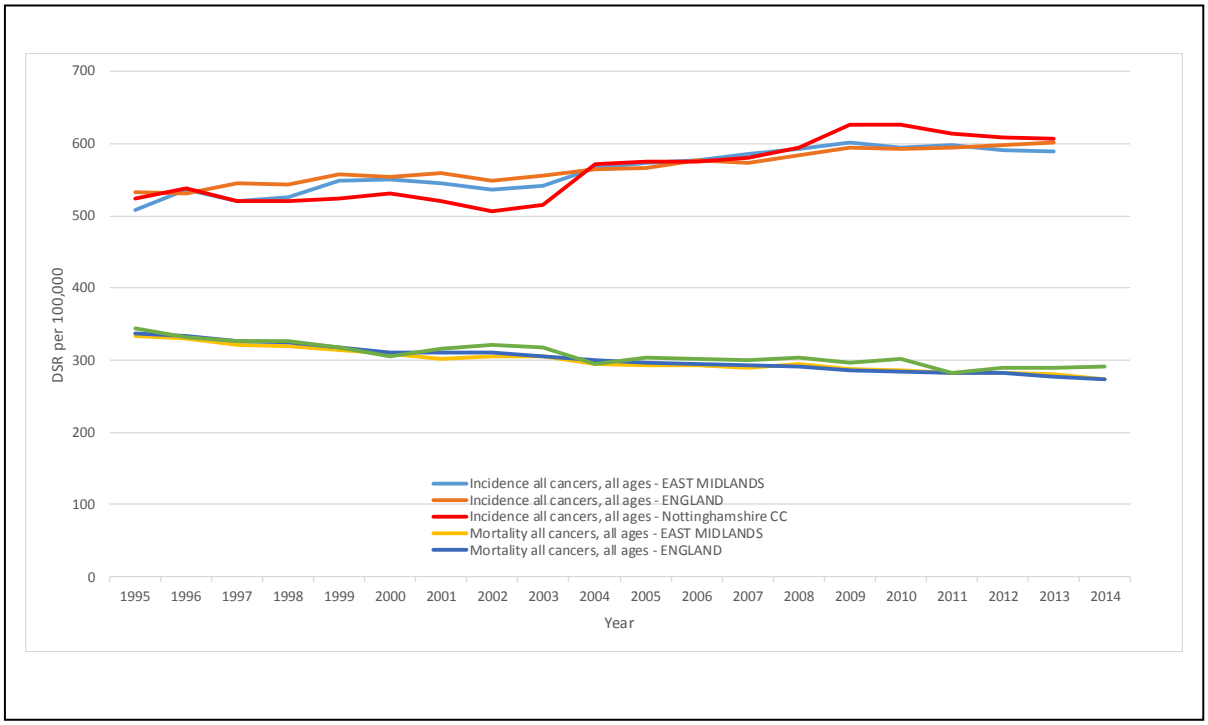
2) Size of the issue in Nottinghamshire

In Nottinghamshire County, in 2014, 4,910 people were diagnosed with cancer and 2,299 (2013) people died from the disease. The number of new cases of cancer being diagnosed shows an increasing trend in the county over this decade. Figure 4 below shows the recent trend in cancer incidence (new cases) for men and women[6]. This Nottinghamshire picture reflects the England one. In contrast to rising incidence rates, Figure 4 shows mortality (death) rates are falling in Nottinghamshire and overall in England.

The total number of new cancers being diagnosed in Nottinghamshire is gradually increasing year on year. This trend is similar to that of East Midlands and England (Fig. 4). The comparable mortality rate, showing the overall number of deaths from cancer is declining. The widening gap between the incidence and mortality rate indicates a growing population who are living with and beyond cancer treatments.

[6] This male and female cancer incidence data is shown for all ages for the period of 11 years from 2001 to 2013 (3 year sets of data are used for each year).

Figure 4: Trend in the incidence and mortality of all cancers, all persons, all ages Nottinghamshire, East Midlands and England (DSR[7] per 100,000)



Source: Cancerstats 28/09/17

Cancer incidence and mortality

The actual number of the main types of cancer diagnosed in Nottinghamshire is shown in Table 1. The data presented is of new cases in 2014; subsequent years are anticipated to have a similar profile with the slight drop in numbers overall as discussed earlier.

In terms of incidence and mortality rates there is no statistical differences found between those of Nottinghamshire to that of England's for any of the tumour groups below.

[7] DSR: Age standardised rate of people *DSR is where age-specific rates of the subject population are applied to the age structure of the standard population*

Table 1: Numbers of the most common types of cancer in Nottinghamshire and England, all ages, 2014

Cancer Type	Area	Male	Female	Persons
Breast	England	328	46,083	46,411
	Nottinghamshire	7	749	756
Prostate	England	39,714	-	39,714
	Nottinghamshire	670	-	670
Lung	England	20,100	17,302	37,402
	Nottinghamshire	348	297	645
Colorectal (Bowel)	England	18,786	15,227	34,013
	Nottinghamshire	316	251	567
Bladder	England	6,238	2,273	8,511
	Nottinghamshire	80	35	115
Upper gastrointestinal (stomach and oesophagus)	England	8,438	4,214	12,652
	Nottinghamshire	159	77	236
Malignant melanoma	England	6,506	6,530	13,036
	Nottinghamshire	94	104	198
All Cancers	England	150,789	146,023	296,812
	Nottinghamshire	2,458	2,452	4,910
All cancers under 75 years	England	94,368	94,849	189,217
	Nottinghamshire	1,522	1,565	3,087

Source: Health and Social Care Information Centre Indicator Portal, Incidence. Cancerstats 2014

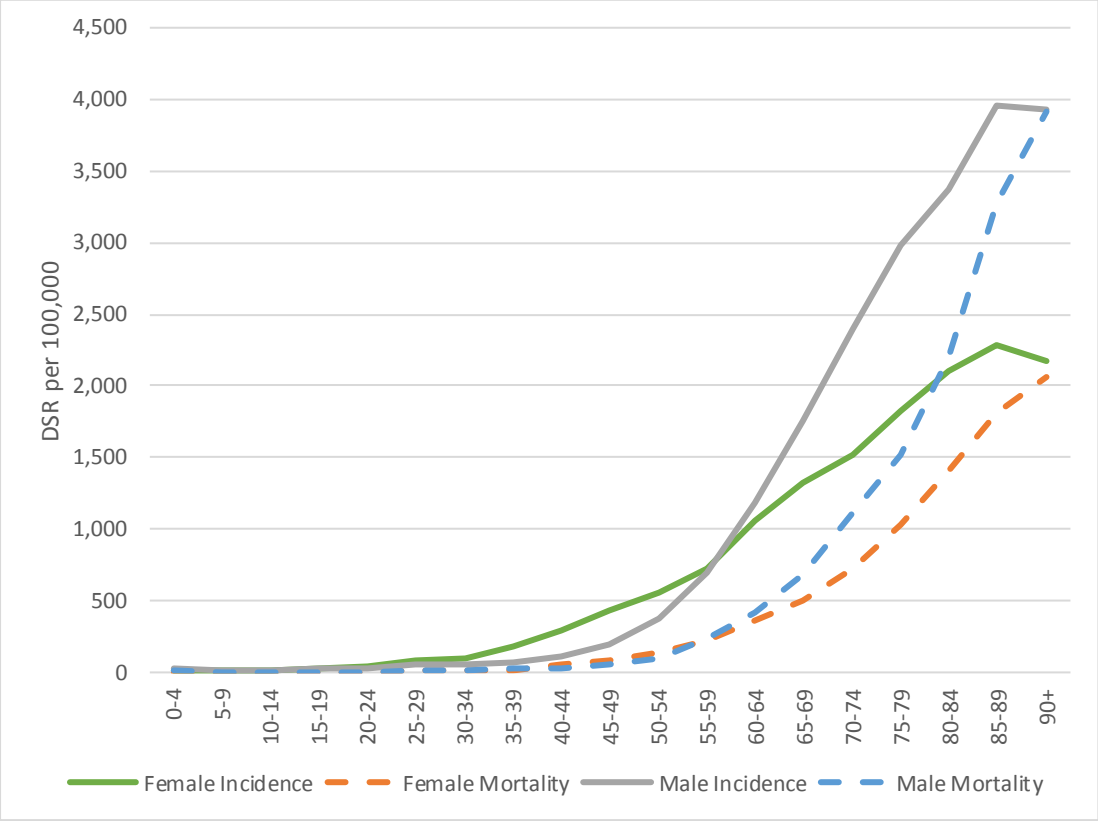
Risk factors in Nottinghamshire

This section will consider risks factors for cancer as detailed in Section 1 for Nottinghamshire residents.

2.1 Older adults

The impact of age as a risk factor for cancer in Nottinghamshire reflects the national picture. That is overall an individual's risk increases with age. Figure 5 shows the cancer to age relationship for men and women in Nottinghamshire.

Figure 5: Cancer incidence and mortality by age and gender for Nottinghamshire



Source: Health and Social Care Information Centre Indicator Portal, Incidence. Cancerstats 2014 (DSR: Directly standardised rate. DSR is where age-specific rates of the subject population are applied to the age structure of the standard population.)

Different cancer tumours have different risk profiles in terms of their incidence and mortality, in relation to age. For example between the two major tumour sites of breast and lung a greater number of cancers are diagnosed for the younger ages (under 75 years) for breast cancers whereas the number of deaths is greater for lung cancer. These details are presented in the appendices. (In the appendices are the four graphs broken down by Nottinghamshire CCGs and benchmarked to the England average (Appendix 1: Figure A2-A5)).

The charts (A2 – A5) show Nottinghamshire's breast and lung cancer rates closely matching England's average. In terms of CCG populations, however, Mansfield and Ashfield incidence and mortality rates for lung cancer, among the 75 years and over age group, is significantly higher than the national average. Also Nottingham North and East CCG (NNE CCG) mortality rates for breast cancer among this older age group suggests it is significantly higher than the national average. This data is covers the period 2011 to 2015, updated statistics for individual CCGs can now be viewed at PHE fingertips data source. The graphs remain of interest though for highlighting the variation that exists among the Nottinghamshire populations.

2.2 Lifestyle factors

In section 1.2 the details on identified links between lifestyle factors and a risk of cancer were discussed. The prevalence of these identified risks for the Nottinghamshire population is now discussed in this section.

Within this section and the subsequent ones exploring the level and distribution of cancer risk factors in Nottinghamshire, whilst the individual risk factors are discussed, their distribution within the local population can be interpreted with reference to an understanding of the determinants of health. The influence of these determinants results in differences in the prevalence of the risk factors among different groups of people. This variation results in differences in the numbers of cancers and cancer outcomes across the county. The determinants of health, and their relationships of impacts is summarised in the model presented by Dahlgren and Whitehead (1992), Figure 6.

Figure 6: A model exploring the determinants of health and their interrelationships



The Determinants of Health (1992) Dahlgren and Whitehead

2.2.1 Smoking Nottinghamshire

The percentage of people who smoke across Nottinghamshire County is 18.4%, in line with the England average. This figure masks differences across the County in terms of the different CCG populations, as well as among different geographical and socio-demographic populations within this. In terms of the CCGs, the span ranges from an 11.3% average for Rushcliffe contrasting with 25.8% for Mansfield[8]. Poverty is a risk factor for high smoking rates in Nottinghamshire, as is the case nationally, and as described in the determinants of health model presented above.

[8] Up-to-date figures can be sourced from: Local Tobacco Control Profiles, and for fuller details on Nottinghamshire smoking rates refer to http://jsna.nottinghamcity.gov.uk/insight/Strategic-Framework/Nottinghamshire-JSNA/Cross-cutting-themes/Tobacco-2014.aspx

2.2.2 Healthy weight

In Nottinghamshire 67.6% of adults are classified as overweight or obese which is slightly higher than England PHOF Excess weight in adults. Further information is available at Nottinghamshire Diet & Nutrition JSNA

2.2.3 Alcohol

In Nottinghamshire 131,011 adults drink at levels that pose a risk to their health and 21,632 are dependent on alcohol Nottinghamshire Substance Misuse JSNA.

National research has been undertaken exploring the impact of alcohol in terms of its risk to cancer. By applying these figures to the local cancer statistics, the Nottinghamshire alcohol risk impact can be investigated. This analysis suggests that 240 new diagnoses of cancer in Nottinghamshire annually may be attributable to alcohol consumption. The breakdown between women and men show that for women the overall number is slightly less than for men. Breast cancer is the most dominant group for women. For men, the cancer groups of bowel (CR), oesophageal and oral, show the highest numbers linked to alcohol consumption. (Appendix 1 sets these figures within a diagram (Figure A6)).

As discussed in section 1.2.3, harmful alcohol consumption is correlated with deprivation, and these county wide rates are likely to mask variation between different areas of the county.

2.2.4 Physical activity

Section 1 highlighted that low levels of physical activity have been identified as a risk factor for cancer (Fig. 1). Levels of physical activity and participation in exercise are challenging to measure, particularly due to vast differences in its intensity, duration and frequency on an individual basis. The national public health outcome measure (PHO) has been introduced to establish a benchmark measure against the Chief Medical Officer's recommendation for adults being active for two-and-a-half hours a week.

In Nottinghamshire County, 66% of adults participate in physical activity at this level and above, which is similar to the England average (2016/17) PHOF 2.13i. Within the 34% of adults not being active, for 150 minutes per week, there are again large variations with these being impacted again by the determinants of health (Fig.6). For fuller information on Nottinghamshire physical activity please refer to the Nottinghamshire JSNA Physical Activity.

2.2.5 Sun and radiation exposure

Exposure to UV radiation from the sun and the use of sunbeds is not recorded in Nottinghamshire.

2.3 Other intrinsic and extrinsic factors

2.3.1 Sex

The cancer incidence and mortality rates in Nottinghamshire for men and women were shown in Figure 5. This graph shows that the county picture reflects the national situation where men, after the age of 65 years, are more at risk of developing and dying from cancer

than women. Incidence of cancer under 55 years are higher in women due to cervical and breast cancer. However, there is no equivalent increase in deaths from these cancers among under 75 year old women.

2.3.2 Influence of geographical location and socio-economic status.

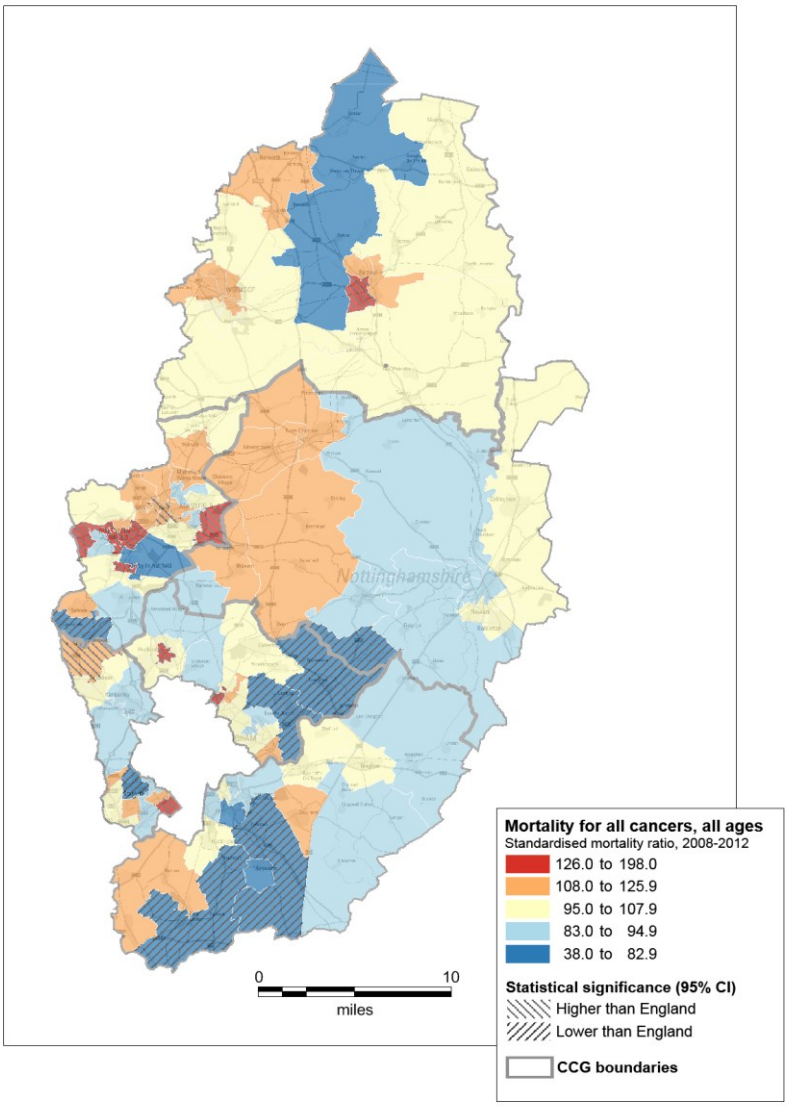
The mortality rates from cancer among different geographical communities in Nottinghamshire is shown in Map 1. The Nottinghamshire geology is not characterised by a bedrock containing radon, therefore the geographical variations are determined not by physical or geological influences but by the determinants of health as discussed earlier (Fig. 6).

Measures of socio-economic status brings together many of the influences of the determinants of health that result in health, and in this case cancer inequalities. Cancer inequalities are differences in the 'burden' of cancer disease between people and groups of people that may be considered unfair (PHE, 2017).

The map (based on 2008 to 2012 cancer data) shows some populations of Nottinghamshire as having statistically significant higher levels of deaths from all cancer and all ages than England[9]. The statistical population groupings used to build this map are known as 'middle super output areas' (MSOA). Within each of these areas there will be distinct geographical communities which will have statistically higher cancer deaths too, rates influenced by the determinants of health among these communities.

[9] The population includes those residing in the areas of S.E. Retford, S.W. Mansfield, Huthwaite, Sutton-in-Ashfield, Kirkby-in-Ashfield, Eastwood, Hucknall, Daybrook and S.E. Beeston

Map 1. Showing all cancer deaths in Nottinghamshire between 2008 and 2012 using an age standardised approach



Geographical variations across Nottinghamshire can also be considered in terms of the incidence and mortality rates of different tumour groups at CCG level too. In considering this variation, geographical differences in service provision and the influence of external factors including air quality should be recognised. (Information on the health needs relating to air quality issues can be found in the Nottinghamshire air quality JSNA chapter and on geographical variations in the determinants of health can be found in the people of Nottinghamshire chapter. Nottinghamshire Air Quality JSNA and The People of Nottinghamshire JSNA

In terms of the service variations, although some cancer pathways are single NHS provider entities, for many Nottinghamshire cancer treatments span across the three main cancer clinical providers in Nottinghamshire (NUH, SFHT and the Nottingham Treatment Centre). Therefore for the five CCG populations being referred through these providers of NHS cancer services, variations in incidence and mortality rates due to service provision is likely to be relatively small. Bassetlaw variations may be the exception here, however, due to the

population accessing a different provider network for their cancer treatments. Therefore, for the majority of the population of Nottinghamshire, as discussed earlier any variations are likely to be the outcome of the influences of the determinants of health (Figure 6).

Table 2. Nottinghamshire CCG incidence and mortality rates for key tumour groups. (Cancers recorded 2011 – 2013). The table highlights CCG populations with statistically poor cancer rates in comparison to the England average.

Tumour Groups	**CCGs' Incidence** showing statistically worse rates than England	**CCGs' Mortality** showing statistically worse rates than England
Lung	Mansfield and Ashfield	Mansfield and Ashfield
Female Breast	Nottingham North and East	Nottingham North and East
Bowel	None	None
Prostate	Nottingham North and East Newark and Sherwood	Rushcliffe
Urinary (bladder and kidney)	None	None
Gynaecological[10]	Mansfield and Ashfield	None
Melanoma	None	None

Source: Cancerstats. Updated data for some key tumour sites is available at NHS Rightcare

Notes:

1. On considering this information it should be noted that high cancer incidence and mortality rates may not necessarily reflect the prevalence of cancers in different populations. This may be due, for example, to differences in the levels of cancers diagnosed in different populations due to factors such as screening uptake, awareness of the signs and symptoms of cancers, and awareness of specific diagnostic tests; all of which will promote earlier diagnosis and subsequently higher incidence rates.
2. In terms of the all age cancer mortality rates higher rates may reflect the presence of low rates of other terminal disease in a population.

Each cancer tumour has its own geographic variation across the county. These can be contrasting as the incidence rates reflect the variations of cancer risks discussed here. Maps showing new cases of lung and breast cancer (based on cancer data 2009 to 2013) in Nottinghamshire are in Appendix 1 (Maps 1 & 2).

2.3.3 Ethnicity

Cancer incidence data for Nottinghamshire was examined by broad ethnicity groups for patients diagnosed between 2009 and 2013 by PHE in 2016. Looking at all cancers for the five year period, 107 (0.5%) of these were diagnosed among people of Asian ethnicity and 66 (0.3%) among people of black ethnicity (Appendix 1: Table 1). These small numbers represented here at the Nottinghamshire level mean than no further statistical interpretation of local cancer ethnicity data is viable. Therefore it is the National Cancer Intelligence Network (NCIN, 2015) 'Cancer and equality groups: key metrics 2015 Report' that provides the most valid approach for considering risks relating to ethnicity. Fuller details on the ethnicity of Nottinghamshire's population can be viewed at The People of Nottinghamshire JSNA

[10] Gynaecological cancer is an umbrella term for a group of cancers distinctive to women's reproductive organs including cervical, endometrial, vulva and ovarian cancers.

2.3.4 Genetics, life course events, infections, occupational risk factors

Obtaining accurate Nottinghamshire data for these risk factors is difficult. However, the estimate of 10% of inherited factors causing up to 10% of cancers should be the same percentage for Nottinghamshire's population. This is true for the range of other risk factors considered within these groupings as Nottinghamshire average is usually close to the national average. For some of these risk factors fuller information can be sourced including the percentage of women breastfeeding, the percentage uptake of HPV vaccines, hormone replacement therapy (HRT), and condom usage. Occupational risk factor information and data is not available at the county level.

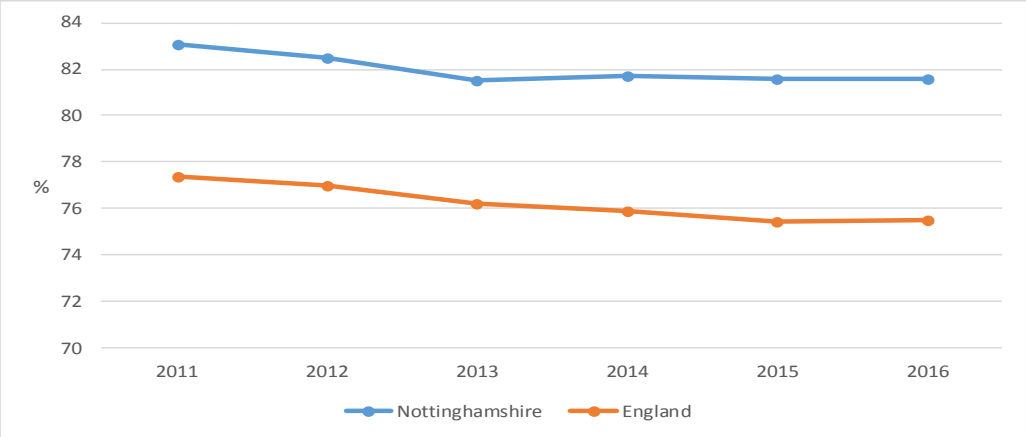
2.4 Other vulnerabilities

2.4.1 Individuals not attending for cancer screening services

As highlighted in Section 1.4.1, the NHS has three national cancer screening programmes, breast, cervical and bowel. The sections below provide information on the uptake of these screening programmes in Nottinghamshire. Fuller details on each of the three cancer screening programmes can be found at NHS choices screening and an overall guide to NHS population screening at NHS Population Screening Explained

2.4.1.1 Breast screening programme

Figure 7: Percentage of Nottinghamshire women screened for breast cancer[11].



Source: PHE PHOF -Health improvement indicators

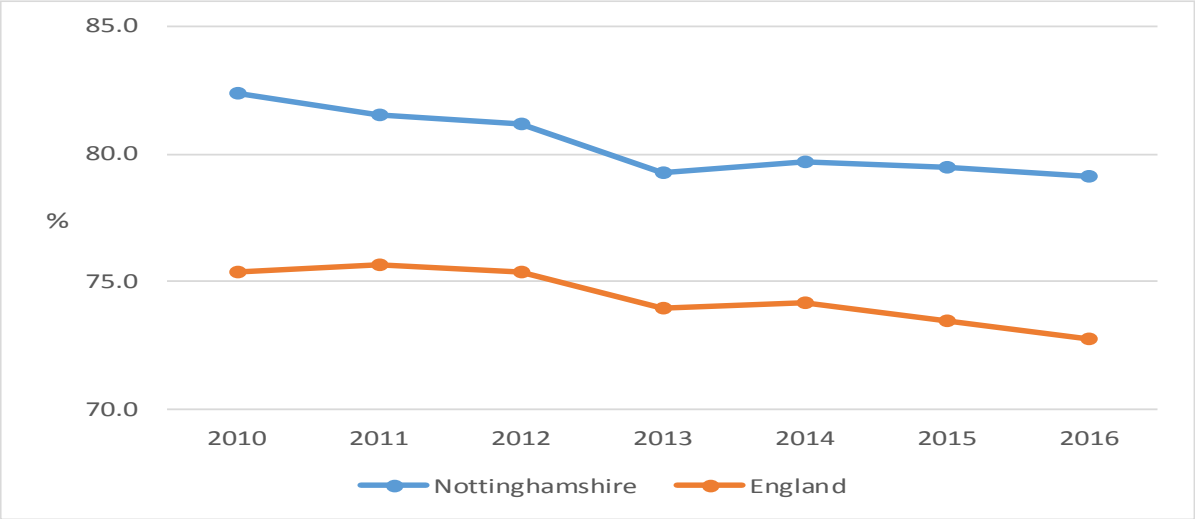
Figure 7 shows the Nottinghamshire breast screening uptake is slightly higher than the national rate. The coverage recorded for 31st March 2016 shows Nottinghamshire exceeds the national standard for this screening programme of 70%. 81.6% of eligible women aged 53 to 70 in Nottinghamshire County had been screened in 2016, compared to 75.5% nationally. Nationally 75.9% of eligible women have been screened[12]. Despite this high uptake rate for Nottinghamshire it also shows that 18% of the eligible women are not attending for screening.

[11] Percentage adequately screened within the previous three years on 31st March.

[12] Breast Screening Programme, England - 2016 - 2017 Report

2.4.1.2 Cervical screening programme

Figure 8: Percentage of Nottinghamshire women screened for cervical cancer [13]



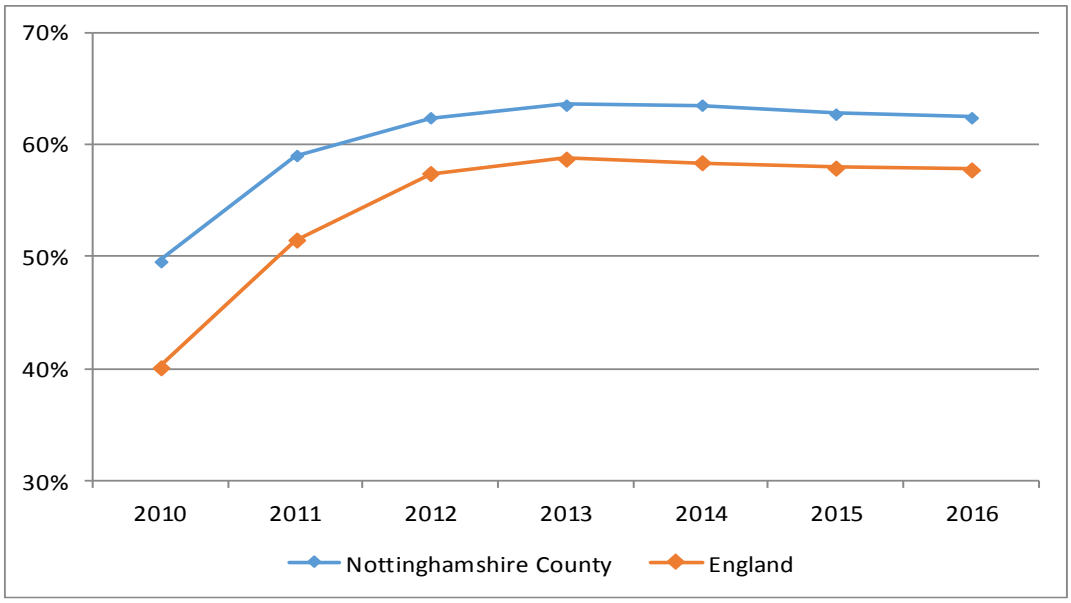
Source: PHE PHOF -Health improvement indicators

Figure 8 shows that cervical screening coverage in Nottinghamshire has remained consistently above England's coverage levels for the past four years. 79.2% of women in Nottinghamshire had a cervical screen as opposed to the lower uptake in England of 72.8% (2016). Despite this comparatively good rate the figure reveals that one fifth of eligible women living in Nottinghamshire are not accessing cervical screening. The graph suggests a declining uptake both in Nottinghamshire and England[14].

[13] Percentage adequately screened within the previous 3.5 and 5.5 years dependent on the respective age groups (25-49/50-64 years) on 31st March.
[14] Cervical Screening Programme, England - 2016 - 2017 Report).

2.4.1.3 Bowel (colorectal) cancer screening programme

Figure 9: Percentage of Nottinghamshire population screened for bowel cancer[15]



Source: PHE PHOF -Health improvement indicators

Figure 9 shows the uptake of bowel screening in Nottinghamshire County is 62.5% (2016) comparable to the national uptake of 57.8%. These figures suggest that about 37% of the population eligible for screening is not accessing it.

2.4.2 Access to GP appointments

Every individual in Nottinghamshire has the opportunity to register with a GP, a core primary NHS provision. Primary health care services are designed to support patients to access specialised services depending on an individual's need, but evidence suggests that access to cancer services can depend on many variables. These can include general issues of access relating to the availability of appointments, transport, opportunities to arrange an appointment around work and personal/social responsibilities including caring. Also, for cancer, as was discussed in the earlier section (1.4.3), access can relate to issues around embarrassment, and also an individual's knowledge of the signs and symptoms of cancer. Research on the impact that the different routes to a diagnosis can make was discussed earlier (1.4.4). Generally it is understood that a cancer that is identified through cancer screening or through an appointment with a GP is more likely to be at an early stage in its growth, and consequently more amenable to successful treatments. The review of the local 'Routes to diagnosis' (RTD) profiles can therefore, be valuable to support primary care in assessing potential patient access issues. The current data for individual CCGs and GP practices can be found can now be viewed at PHE fingertips data source, and for CCGs linking with the EM Cancer Alliance data is also available through the Cancer Dashboard. Clearly the data will require local interpretation as there may be other explanations for high emergency department diagnosis rates, for example such as areas with a large population of

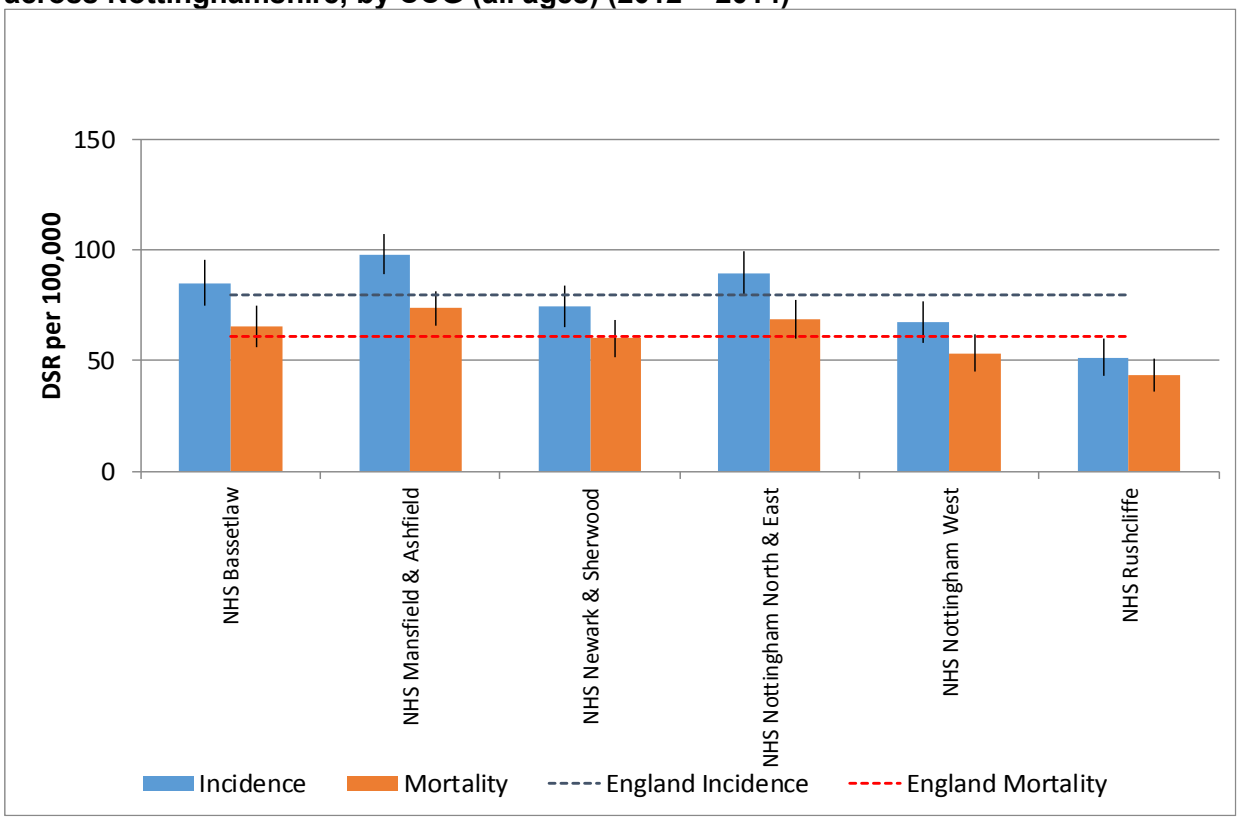
[15] Percentage adequately screened within the previous three years on 31st March.

elderly people are likely to have higher rates due to greater comorbidity and increased fragility.

2.4.3 Tumour groups with poor health outcomes

As was discussed earlier (1.4.3) different cancer tumours exhibit similarities in their tumour group characteristics in terms of the likely stage of a diagnosis and the long term health outcomes. From the major tumour groups, as it was discussed earlier, lung cancers are often characterised by a late diagnosis and the short life span for patients post treatment. Figure 10 shows the age standardised incidence and death rates for each of the Nottinghamshire CCGs. Mansfield and Ashfield CCG and Nottingham North and East had incidence and death rates significantly higher than the England averages (between 2012 and 2014). As highlighted earlier (1.2.1), tobacco smoking is the top risk factor for cancer, and poverty is a risk factor for smoking (2.2.1). Rates of smoking, their geographic distribution and correlations of this distribution with areas of economic disadvantage are shown in the JSNA Tobacco Control 2014 (pages15/16).

Figure 10: Age standardised rates of new diagnosis of and deaths from lung cancer across Nottinghamshire, by CCG (all ages) (2012 – 2014)



Source: Cancerstats.

As discussed earlier (1.4.3), some of the rarer cancer tumours have poor health outcomes due to difficulties in making the diagnosis and their having less well defined and potentially more poorly funded diagnostic and treatment pathways. This is an issue currently receiving national recognition. The Department of Health and Social Care (2018a) has recently announced funding of £40m for the Dame Tessa Jowell Brain Cancer Research Mission. Brain tumours are treated at NUH within the Nottinghamshire Head and Neck Cancer Services.

2.4.4 Cancers diagnosed at an advanced stage

At present there is no local data specific to Nottinghamshire to complement the earlier discussions (1.4.4).

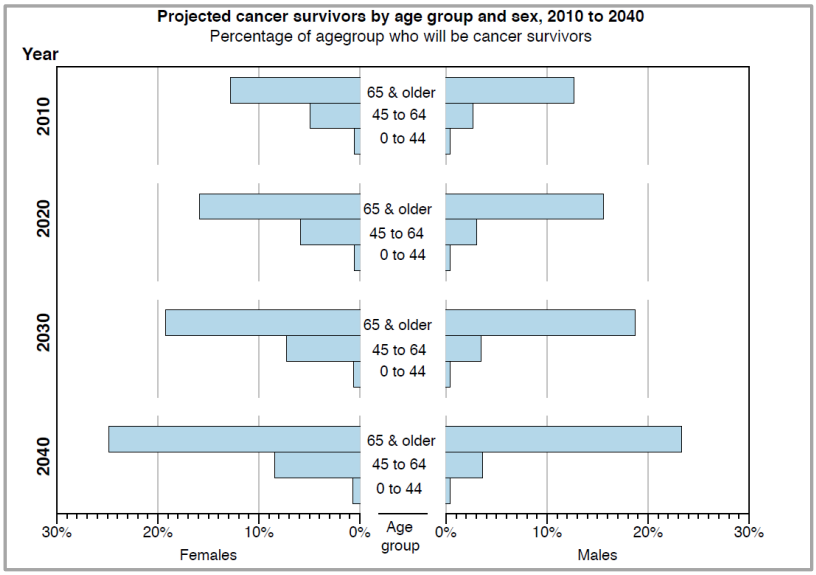
2.5 Social and economic impact of cancer in Nottinghamshire

As discussed earlier (1.5) the full economic and social impact of cancer has been calculated as being £585m (UK population), with £125m of this being specifically attributable to lung cancers (Creighton & Beach, 2015). In crudely applying these calculations to Nottinghamshire, based on 1.7% of lung cancer incidence (England, Table 1), the economic and social cost of lung cancer alone would be in the region of £2m annually. Also, in terms of the estimated overal NHS cost forecast of treating cancer of £13bn by 2020/21 (NAO, 2015), based on 1.6% of the national cancer incidence occuring in Nottinghamshire, the local NHS cancer costs will be in the order of £208m by 2020/21.
Calculating the financial costs of cancer are difficult to present appropriately or accurately, but inferring the Nottinghamshire information from the national research does highlight the local costs of this disease.

2.6 Survival with, and beyond, cancer in Nottinghamshire

Based on the current situation and trends an overall cancer survival picture for the coming decades can be considered (Fig.11). The type of tumour itself is the main factor determining lifespan subsequent to diagnosis (contrasting average survival spans according to tumour groups are shown in appendix 1, (Figure A7)). Subsequently, overall survivorship profiles in Nottinghamshire are likely to be a reflection of the local tumour mix being diagnosed.
Current data can now be found at PHE data sources

Figure 11: Projected cancer survivors by age group and sex



Source: Model produced by Nottinghamshire CC PH Info team, 2016.
(All Cancer excluding non-melanoma skin cancer (NMSC), 2010 to 2040 (age group by percentages).

The increasing numbers of people living with and beyond cancer is partly a reflection of the ageing population as a whole in England. These developments will have health and social care service implications.

2.7 End of life

As discussed earlier (1.7) end of life (EoL) is an integral element in the cancer pathway services, and particularly is prioritised for those services treating cancers known to have a short survival period. Details on the causes and place of death for different areas is available by CCG EoL Care CCG profiles and LA EoL Care LA profiles These details can support assess the local care needs. An overview of EoL health needs In Nottinghamshire is available at Nottinghamshire EOL JSNA

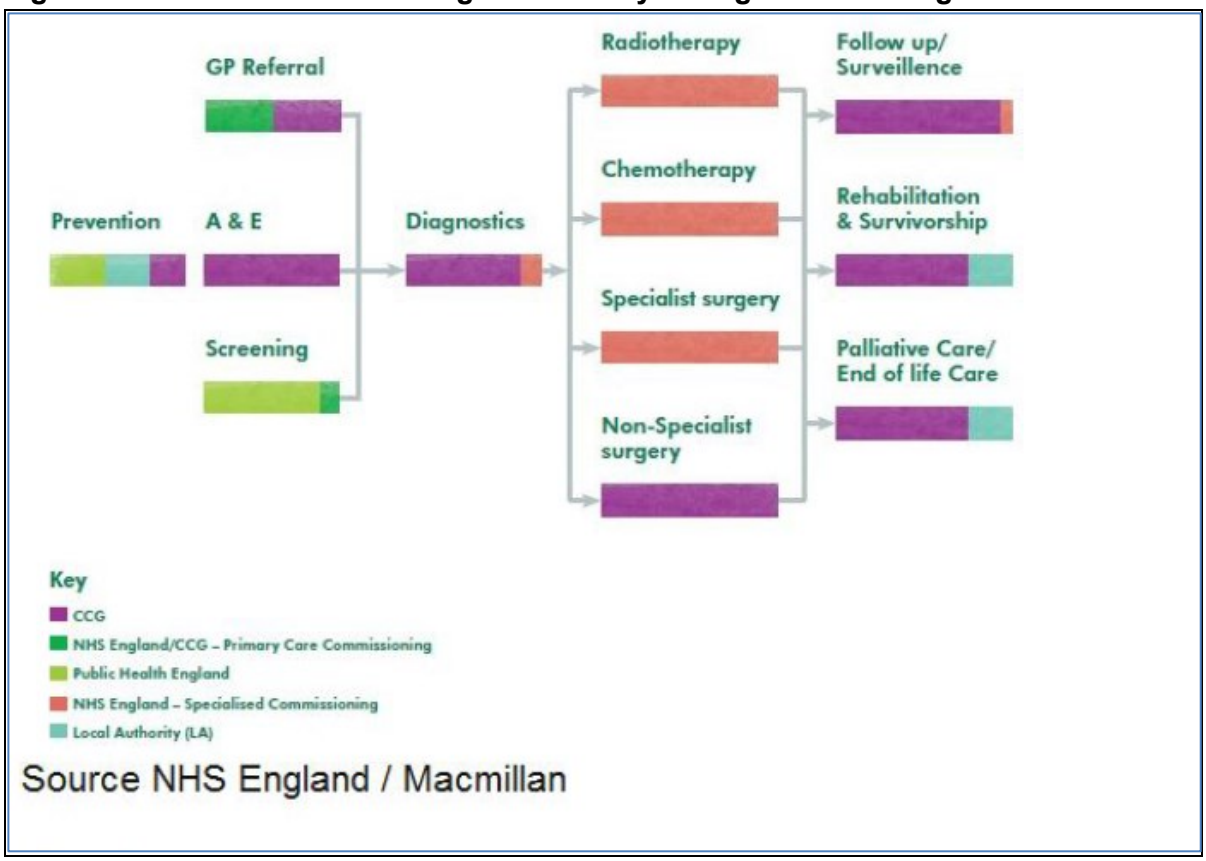
3) Targets and performance

Cancer services are commissioned and delivered by a range of different organisations, including the voluntary sector, and individuals and families themselves. The largest commissioners, however, do remain the NHS and local authorities (LA). Figure 12 below provides an overview of the present cancer commissioning responsibilities across the full pathway.

The cancer targets and performance framework reflects these commissioning arrangements and is drawn from three separate outcome sets. There are the Public Health Outcomes Framework; NHS Outcomes Framework and CCG Outcomes Framework. These details are available at: PHOF Cancer outcomes, NHS Outcomes and CCG Improvement and Assessment Framework. In terms of the PHOF, Nottinghamshire is usually benchmarked similar or above the England average. The Cancer in the East Midlands report 2017 also presents the local CCG/District detail on performance. In addition a full breakdown of the range of targets relating to cancer services are now available for each CCG and also for individual GP surgeries through PHE 'fingertips'

The East Midlands Cancer Alliance (EMCA) working with the East Midlands Academic Health Sciences Network (EMAHSN) has also developed a Cancer Dashboard to bring together the most recently published cancer and performance information.

Figure 12 Cancer commissioning and delivery arrangements in England



4) Current activity, service provision and assets

4.1 Current activity

Cancer outcomes improvement is being delivered across Nottinghamshire by a mixture of organisations. In Nottinghamshire for the populations of the mid and southern CCGs, with the development of the Nottingham and Nottinghamshire Sustainability and Transformation Partnership (STP), the Nottinghamshire STP Cancer Programme Board is now in place endeavouring to provide a strategic coordinated vehicle to deliver for the STP and linking with the East Midlands Cancer Alliance (EMCA). The East Midlands Cancer Alliance was formed early in 2017 and now provides a coordinating strategic lead role for cancer service development across the East Midlands. Bassetlaw CCG coordination and strategic support links with the South Yorkshire and Bassetlaw NHS and PHE footprint. PH LA services are commissioned by Nottinghamshire County Council to deliver a countywide provision.

4.2 Current local service provision

Cancer treatments and care are currently funded and delivered according to the commissioning chart in Figure 12.

4.3 Assets

The table below provides an overview of some examples of recent developments in service delivery in Nottinghamshire. Fuller details can be found on individual organisations' websites.

Table 3: Nottinghamshire - a summary of developing of assets across the cancer pathway.

Asset	Description
4.3.1 Strategy and Integrated Commissioning	
Cancer Alliance (CA) East Midlands CA South Yorkshire, Bassetlaw and North Derbyshire CA	The local ambition for setting the strategic direction in Nottinghamshire is now being aligned to that of the Cancer Alliances (CA). The East Midlands CA priorities are focusing on developments in Early Diagnosis and Living with and beyond cancer (LWBC). The South Yorkshire, Bassetlaw and North Derbyshire CAs is setting out similar priorities too.
The Nottingham and Nottinghamshire Sustainability and Transformation Partnership (STP)	The Nottingham and Nottinghamshire Sustainability and Transformation Partnership was launched in 2016 and has published a five year plan. Cancer is identified as one of its six priorities and the Nottinghamshire Cancer Board will provide oversight of this.
Local CCG Vanguard developments	The Mid-Notts Cancer Outcomes Partnership has sought to achieve coordinated, proactive, joined-up solutions to improve cancer outcomes for the populations of Mansfield and Ashfield, and Newark and Sherwood CCGs.
East Midlands clinically led developments of evidence-pathways.	The Cancer Network has produced timed pathways for prostate cancer, oesophago-gastric cancer, breast, colorectal and lung cancers to support delivery of care within 62 days
4.3.2 Prevention	
LA PH commissioned lifestyles behaviour change services	Nottinghamshire County Council PH commissions services for people across the county in the areas of smoking cessation, weight management, and alcohol and drug harm reduction. PH services also provides supportive programmes in the promotion of workplace health, and opening up and sustaining opportunities for active and healthy lifestyles.
Wider PH initiatives	Societal influences such as initiatives as the introduction of plain packaging of cigarettes and the national social marketing Change4Life and the 'OneYou' programme, will continue to be important in terms of achieving an improving picture for cancer prevention.
4.3.3 Screening/Early Detection	
Delivery of the three national NHS screening programmes (cervical, breast and bowel)	The on-going provision of the programmes, and the addition of new developments being rolled out within the programmes such as bowelscope (2016) and breast and bowel screening age extensions trials.

Local Be Clear on Cancer (BCOC) promotional campaigns	The local enhancement of the national campaigns with resource pack provision forwarded to all GP practices and libraries in the county.
Pilot diagnostic developments	The Lung CT direct access pilot for three southern CCG populations.
4.3.4 Treatment	
Macmillan Cancer Pathways Redesign Programme	A programme improving the patient experience from diagnosis through to treatment and beyond is in place at both NUH and SFHT, funded through to 2020. The development of integrated risk stratified follow up and the 'Recovery Package' are the core deliverables.
Prostate	The robotic surgery service is now embedded within the urology service.
Macmillan Funding	Funding has been allocated to a key number of clinical and other cancer leadership roles; and a range of initiatives across the local cancer pathways.
4.3.5 Survivorship	
The Macmillan Cancer Partnership	A partnership developing a breadth and strength of involvement in Nottinghamshire bringing together all of Macmillan locally funded initiatives. The Partnership's overall aim is to improve local cancer services and especially to address the needs of the growing number of people living with and beyond a diagnosis of cancer. The partnership engages with people affected by cancer (PAC) to improve the present initiatives and to identify unmet needs.
Delivering a comprehensive recovery package that is available to all patients.	The recovery packages include assessment and care planning, a treatment summary and the cancer care review, and access to health and wellbeing events. Going forward the aim is for this to now be developed in line with the CA LWBC transformation programme (East Midlands CA)
The National Cancer Survivorship Initiative (NCSI) (2010)	The local review of this initiative in order to ensure that those living with and beyond cancer will get the care and support they needed to lead as healthy and active a life as possible, for as long as possible.

5) Evidence of what works

The key guiding document for achieving cancer and cancer health related outcomes is set out in the National Strategy for England (Independent Cancer Task Force Review (ICTFR), 2015). Please see below for a summary of this. Some additional details to highlight and complement this strategy as it pertains to Nottinghamshire at present are also included within this section.

5.1 Achieving World Class Cancer Outcomes: Cancer Strategy for England 2015-2020, July, 2015

This National Strategy (written by the Independent Cancer Taskforce (2015)) sets out six strategic priorities by which it sees England can 'improve radically the outcomes that the NHS delivers for people affected by cancer'. These six are to:

- Spearhead a radical upgrade in prevention and public health;
- Drive a national ambition to achieve earlier diagnosis. This included the recommendation for 95 per cent of patients to be given a definite cancer diagnosis within four weeks;
- Establish patient experience as being on a par with clinical effectiveness and safety. This includes the recommendation for all patients to have on-line access to their test results and other treatment communications, and direct access to a clinical nurse specialist (CNS) or other key worker;
- Transform our approach to support people living with and beyond cancer. This includes every person with cancer having access to the recovery package;
- Make the necessary investments required to deliver a modern high-quality service. This includes major investment in new radiotherapy equipment;
- Overhaul process of commissioning, accountability and provision. This includes establishing the Cancer Alliances.

The All Party Parliamentary Group on Cancer prepares reports on their assessments of the achievements to-date against AWCCO ('Progress of the England Cancer Strategy: Delivering Outcomes by 2020?'). The NHS reports annually with progress reports too (NHS, 2018).

5.2 NICE guidance

Detailed guidance collating the latest evidence-based research for cancer is presented through the National Institute for Health and Care Excellence (NICE) guidance. Below are highlights of some examples of key areas of the guidance.

	Guidance Reference
Prevention	PH48 Smoking: acute, maternity and mental health services. PH32 (Jan 2011). Skin cancer
Early Diagnosis	NICE, Suspected Cancer: Recognition and referral (NICE, June 2015) Updated 2017 Suspected cancer NG12 NICE Interactive flowchart – Suspected cancer recognition and referral (July 2016). NICE QS124
Diagnosis and Treatment	NICE Clinical Guidance across the tumour sites (NICE guidance - Cancers)
Survivorship	NICE guidance CSGSP (March 2004): Improving supporting and palliative care for adults with cancer (NICE CSG4)

5.3 Additional Research and Audits

Of additional note among the breadth of research and audits recently undertaken is the National Audit of Breast Cancer in Older Women: Annual Report for public and patients (Healthcare Quality Improvement Partnership, 2017). This report was undertaken in response to findings suggesting that older women with breast cancer appear to have worse outcomes than younger women. The audit also considers differences between regions in the patterns of care delivered to older women. The report findings relate back to the discussion points raised earlier (1.1).

6) What is on the horizon?

Cancer is a rapidly developing agenda across its many aspects. Key developments on the horizon include:

6.1 Overall strategy and integrated commissioning

The main steer for the overall strategic commissioning continues to be the National Cancer Strategy 2015 – 2020, Achieving World Class Cancer Outcome (Independent Cancer Taskforce, 2015). This included the formation of the Cancer Alliances and its links to the local STP as discussed (4.3). Key to success here is the need to improve early diagnosis and cancer prevention. The present financial pressures and an ageing population are the main challenges which may potentially prevent the successful implementation of AWCCO locally, these are challenges reflected nationally as well.

6.2 Prevention

AWCCO (Independent Cancer Task Force, 2015) states the importance of undertaking a radical upgrade in prevention and public health. In Nottinghamshire, the two main strategic insights for delivery on cancer prevention are presented through the Health and Wellbeing (H&WB) Strategy and the STP 'promoting wellbeing' theme. The H&WB Board with oversight for the Strategy is chaired by a lead County Councillor. Whilst the strategy does not feature cancer directly, the issues relating to the risks of cancer as discussed earlier in terms of the wider determinants and lifestyle factors are all covered. The new 2018-2022 Health and Wellbeing Strategy was launched in January 2018. The Director of Public Health (DPH) provides the technical PH lead for the H&WBB, and is the 'Promoting Wellbeing' themed lead for the STP working in collaboration with Nottingham City's DPH. In addition to strategic leadership, NCC PH will continue to commission the key health promoting services detailed earlier (4.3.2). The wider LA PH team will continue to develop partnerships with others nationally and locally on PH protection initiatives, such as the introduced of plain packaging of tobacco cigarettes.

6.3 Early diagnosis and screening

6.3.1 Early diagnosis

Early diagnosis is a priority area within the National Strategy, the East Midlands Cancer Alliance and the STP. The table below highlights some of the new improvements being developed.

Table 4. Early diagnosis developments

Developments on the Horizon	Health Outcomes Improved by
Routes to Diagnosis, 2006 – 2013 (NCIN, 2015) A national initiative 'Routes to diagnosis' reports	Overall improving the 'routes to diagnosis' achieving a reduction of the number of diagnoses in emergency.
Improving primary care access to key diagnostic tests New pilots and pathways are being developed, including: Pathway of unknown primary Direct access lung CT – Southern Nottinghamshire CCG	Reduced delays in patients attending for core diagnostic tests
Improving primary care diagnostic support Implementation of electronic 'Cancer Decision Toolkit' at GP surgeries (e.g. Primary Care Cancer Toolkit (RCGP and CRUK)	Fuller information available to GP during patient consultation
Macmillan Clinical Nurse Specialist initiatives. (Lung diagnostic pathways – NUH and Hepatobiliary – SFHFT)	Improvements for patient support and their ease of movement through the diagnostic pathways

6.3.2 Screening

Table 5: Cancer screening developments

	Developments on the Horizon	Health Outcomes Improved by	Timeframes
Cervical **A national initiative**	Moving to primary HPV testing	Improving programme efficiencies	Dec 2019
Breast **A national initiative**	An age extension trial is underway offering screening to women aged 47 – 73 years	Potentially a wider cohort of women being included in the NHS screening programme	Until 2020 and potentially beyond
Bowel	The introduction of the Faecal Immunochemical Test (FIT). FIT	Improving accuracy (sensitivity and specificity). FIT	2019

A national initiative	testing is set to replace the faecal occult blood test (FOBt).	requires only one sample as opposed to the three for FOBt, making the test more user friendly.	
A national initiative	Bowel scope; one-off flexi-sigmoidoscopy of rectum and bowel for those aged 55 years is now rolled out. National research is underway to assess best practice combination of bowelscope and FIT and to explore commencing FIT at aged 50 years.	Earlier detection of bowel cancers	Now available
A local initiative	Fire and Rescue Service and CRUK are exploring a 'safe and well' partnership initiative.	Improving uptake	2019
All NHS Screening Programmes			
A local initiative	Improving screening uptake among people registered with a learning difficulty	Addressing health inequalities	2018

6.4 Treatment

New drug treatments and improvements in radiotherapy suggest that significant developments in cancer treatments are likely to be forthcoming.

In addition the most dramatic developments in cancer in the future are anticipated to come from new understanding of the human genome. NUH (in partnership with Leicester and Cambridge (the clinical lead)) have Genomic Medicine Centre status (The 100,000 Genomes Project). The project will offer whole genome sequencing to patients with rare diseases and their relatives, and also whole genome sequencing of the germline and tumour analysis for cancer patients.

The latest immunotherapy treatments are increasingly being considered as an important option, especially for the lung, kidney, bladder and malignant melanoma tumour groups. Immunotherapy is unlikely to be the complete answer, however, so combination therapy will remain core and continue to be developed. Suitability, compatibility and budgets will influence the prescribing possibilities for the immunotherapy.

Locally, Nottinghamshire has a number of new treatment approaches being piloted with Macmillan funding. These include the development of the Cancer Nurse Specialist role in the treatment pathways (for lung and urology at NUH and for hepatobiliary at SFHFT); the development of the Acute Oncology Outreach Service at NUH and also at NUH the Brain Metastases Services. Fuller details are available at Macmillan Partnership in Nottinghamshire

6.5 Overall

National news on updates of new guidance is provided by NICE as discussed earlier (section 5.2) - for example the updates on lung and colorectal cancer diagnosis and management are due in January and October 2019 respectively.

6.6 Survivorship

As discussed earlier, with the increase in people living with and beyond cancer, the provision of comprehensive and quality services to support people subsequent to their treatment is of growing importance. The recommended elements of this care have been set out by Macmillan in terms of the 'Risk Stratification' of the Cancer Pathways and the 'Recovery Package' (Figure 13 and 14). An established 'risk stratified' pathway has now been implemented for breast cancer patients at NUH, and is also being replicated at SFHFT. Further developments will continue at both providers enabling such pathways to be developed consistently for all main tumour groups. The 'Recovery Package' aims to provide holistic care and encompasses a core element of self-help within an empowering framework. Driven by the Nottinghamshire Macmillan Partnership, along with NHS operational facilitation, core elements of this package are now established with the local providers, the aim will now be to embed fully through all tumour sites. Nottinghamshire Cancer STP Board submission of a 'living with and beyond cancer' (LWBC) proposal to the EM CA to draw down national Transformational Cancer funding will provide additional support to progress this care provision further.

Figure 13: Living with and beyond cancer: A four stage model proposed by Macmillan, covering cancer services from a diagnosis to supportive self-management, including the risk stratification of the treatment pathway



Figure 14: A diagram proposed by Macmillan illustrating the components of the 'Recovery Package'



7) Local views - summary of local views of people affected by cancer (PAC)

In Nottinghamshire, the views of cancer patients and people affected by cancer (PAC) is sought regularly across a breadth of different topics and at different scales. Some of this engagement is driven through the national requirements, including the National Cancer Patient Experience Reviews, whilst others are generated through local initiatives such as the work of the Nottinghamshire Macmillan Partnership and Greater Nottingham Cancer Forum (GNCF). PAC's views are sought for a variety of reasons such as feedback from cancer patients with the aim of improving core services, feedback as part of an evaluation of new projects and initiatives, as well as views to develop understanding of the cancer experience among different groups and communities.

It remains a core remit of cancer service commissioning to understand and integrate PAC views into the commissioning decision process. Quality and meaningful engagement with PAC requires proactive planning, partnership work and financial investment. Whilst some effective service evaluation can be undertaken in-house by services themselves, the majority of the local consultation has been undertaken by the voluntary sector, due to their inherent position of independence and expertise in community engagement. The priority and profile placed on hearing from PAC will need to continue as directed by AWCCO and as part of the CA's transformation programme.
The table (6) below highlights something of the range of views that have been researched in Nottinghamshire in recent years.

Table 6: Engagement with people affected by cancer (PAC): some examples of summary reports

	Events/Surveys	Summary of Views
National level	National Cancer Patient Experience Survey	National Cancer Patient Experience Survey
Nottinghamshire County level	Macmillan Partnership 'Open Space' Events On 12 June 2015, PAC were invited to a public engagement event. 28 people attended the event. Macmillan Partnership in Nottinghamshire	Four themes were distilled as key areas of further work and support from the discussion. These are: • Information and support; • Managing my condition; • Professionals working with me; • Work.
NHS Providers/ CCGs	Patient, carers input/feedback. A summary of comments are presented for each NHS provider and service commissioners.	National Cancer Patient Experience Survey
Local Patient and Carer Groups	Greater Nottingham Cancer Forum (GNCF). Undertook a series of focused group research initiatives with minority groups including the local Chinese community, LGBT, people with deafness and refugees and asylum seekers. The Forum has recently interviewed patients on oncology and haematology wards at NUH, gathering their views on the hospital discharge experience. Greater Nottingham Cancer Forum	Results from the research highlights overall a high level of satisfaction from patients with their clinical care yet in some of the wider care issues such as delays in discharge, discomfort and distress were reported. NUH are working with GNCF to achieve service improvements in response to the findings.

Notes:

1. Organisation summary details are given in the glossary.

In addition to the above, PAC views will be incorporated into other research and evaluations including those of carers (Carers Federation) and those undertaken by other voluntary organisations such as Self-Help UK (self help UK) who have recently published the Macmillan Beyond Diagnosis Service annual report (Self-Help UK, 2018).

What does this tell us?

8) Unmet needs and service gaps

In Nottinghamshire there remain areas of the National Strategy which need to be achieved prior to its completion in 2020. The introduction of the new 28 day referral to diagnosis is one of these critical areas. In addition, with the prediction of a rapid increase in the number of cancer diagnoses over the coming decade, there is the need to ensure the local cancer assets are systematically enhanced enabling them to deliver services as effectively as possible. As highlighted in the assets section above, there are numerous initiatives underway to achieve this and the work of the Recovery Pathway initiative is core to this.

Three additional notable areas of unmet need to highlight are the following:

- The commissioning and integration of psychological therapy within the cancer pathways. The value of good emotional and mental health provision is detailed in a report by the Mental Health Foundation for Scotland (2018).
- The commissioning for sustainability of services of excellence for patient care and outcomes outside of the restrictions of the cost-efficiency funding models which can result in highly acclaimed initiatives not being awarded mainstream funding.
- The Integration of the Health and Wellbeing (self-help) programme with the patient pathway, both in terms of delivery and commissioning.

9) Knowledge gaps

Extensive research is underway in every field of cancer both nationally and locally. Nationally, research is well resourced through Macmillan, Cancer Research UK and the World Cancer Research Fund, the latter undertaking research on cancer prevention and survival (2018 WCRF Cancer Prevention Recommendations). Locally the Macmillan 'Open Space' engagement events have drawn together current users' views on treatment and survivorship experienced, more information can be found at Macmillan Cancer Partnership in Nottinghamshire. The GNCF, as highlighted above, has researched local cancer patient transfer (discharge) experiences. There is also the cutting-edge Genome 100,000 initiative (The 100000 Genomes) for which NUH is a key player, as discussed earlier. Service delivery pilot models and initiatives are also underway with the patient pathways and transformational programmes.

Despite this extensive work underway, there are numerous areas where knowledge gaps exist. These include the need to improve the following:-

Understanding of:

- Effective strategies and approaches for addressing health inequalities in lifestyle behaviours.
- Approaches for encouraging individuals to identify and act on the signs and symptoms of cancer early.
- Approaches for encouraging individuals to take up screening, and understanding the specific needs of different populations within this.

The accuracy of local cancer data sets including:

- The completion and consistency of cancer data sets, especially so a patient's ethnic origin and the stage of the cancer at diagnosis is recorded, as well as the quality of emergency admissions data.

Our understanding of the best approaches for service delivery and strategic drive to achieve improved outcomes including:

- The successful incorporation of information from the evaluations of pilot interventions such as the Macmillan Partnership initiatives, and the early diagnosis initiatives such as the direct access lung CT scans.
- The changing skill sets and delivery requirements for the cancer services workforce.

Knowledge on the profile and needs of people affected by cancer including the best support and interventions for:

- People returning to work after treatments.
- Delivering effective and enhanced self-care approaches.

In addition to the above the findings from the Genome 10000 project will see the arrival of a full set of additional knowledge with proposals for 'personalised' or 'stratified' medicine. The Chief Medical Officer, presents a brief on this in her 2016 Annual Report, 'Generation Genome' (Davies, 2017)

What should we do next?

10) Recommendations

Cancer is a chronic disease that remains a challenge to diagnose and treat. The treatment and care of cancer is complicated, traumatic and expensive. The impact of a diagnosis of the disease for an individual and those close to them remains an overwhelming experience.

Notwithstanding this understanding though, through the information presented in this paper it is clear that Nottinghamshire has a great wealth of resource to deliver cancer services and to continue to improve on the immense achievements that have been realised over the past decade. These included the improvements in the cancer survivorship 'stories' for many residents, and the critical changes in environmental and lifestyle choices which can reduce people's risk of exposure to cancer overall, with exposure to tobacco smoke being the most notable of factors here.

The overarching recommendation for Nottinghamshire now is to complete the implementation of the ninety-six recommendations in AWCCO (Independent Cancer Taskforce, 2015). Many of these will be implemented at the national and regional level and they are mostly NHS service specific. Successful local implementation however will require much local engagement including the participation in pilot schemes. In addition, however, for Nottinghamshire to make the most of its current assets and best prepare for the anticipated large increase in cancer diagnosis over the coming years (especially due to the ageing population), the information and issues highlighted through this report suggests there are other key recommendations to be considered as a priority for public health, cancer service and related commissioners overall. These are outlined below:-

A. Addressing the health inequalities that feed into the risk factors for cancer, and prevent certain population groups from realising the cancer outcomes that other groups achieve. Core within this is the delivery of the LA PH commissioned services in the areas of tobacco control, alcohol abuse, weight management, and physical activity.

B. Addressing the underlying social determinants that are at the core of the relationship to the health inequalities highlighted above.

C. Develop a local strategic vision for the cancer service workforce across health, social and third sector / voluntary provision in response to increasing demand and changing requirements of cancer survivors. This will include implementation of the recommendations set out in the Health Education England (HEE) (2017) Cancer Workforce plan. This is included with the National Strategy, but the acuteness of the mounting pressures particularly with reference to NHS provision due to increases in demand, as well as changing requirements, suggests the need for this to be included as a specific recommendation too.

D. Continue to develop local cancer systems and structures that are well led and coordinated; that will deliver improved cancer and the cancer related health outcomes aligned with the Nottingham and Nottinghamshire STP and the East Midlands Cancer Alliance.

E. Provide a supportive environment for the third/ voluntary sector to flourish, covering national organisations and local organisations. This includes ensuring financial resources are sourced from the STP Cancer Programme Board partners to support the local patient groups so that they continue to have an active remit that will ensure the ‘currency’ of their voice.

F. Full implementation of the Equality Act 2010 throughout cancer prevention and treatment provision. The delivery of cancer services in its widest sense will need to engage with this Act if the subtleties of discrimination of poverty, age, race and disabilities within service delivery are to be addressed, especially in-light of the rising demands on services due to increasing cancer incidence rates.

   Implementing equality is reliant on knowing and understanding the breadth of people’s views, and especially requires the inclusion of views from people of socio-economic disadvantage as well as other vulnerable and minority groups including the views of people for who cancer outcomes are poor; the socially isolated elderly, prisoners and particular ethnic groups.

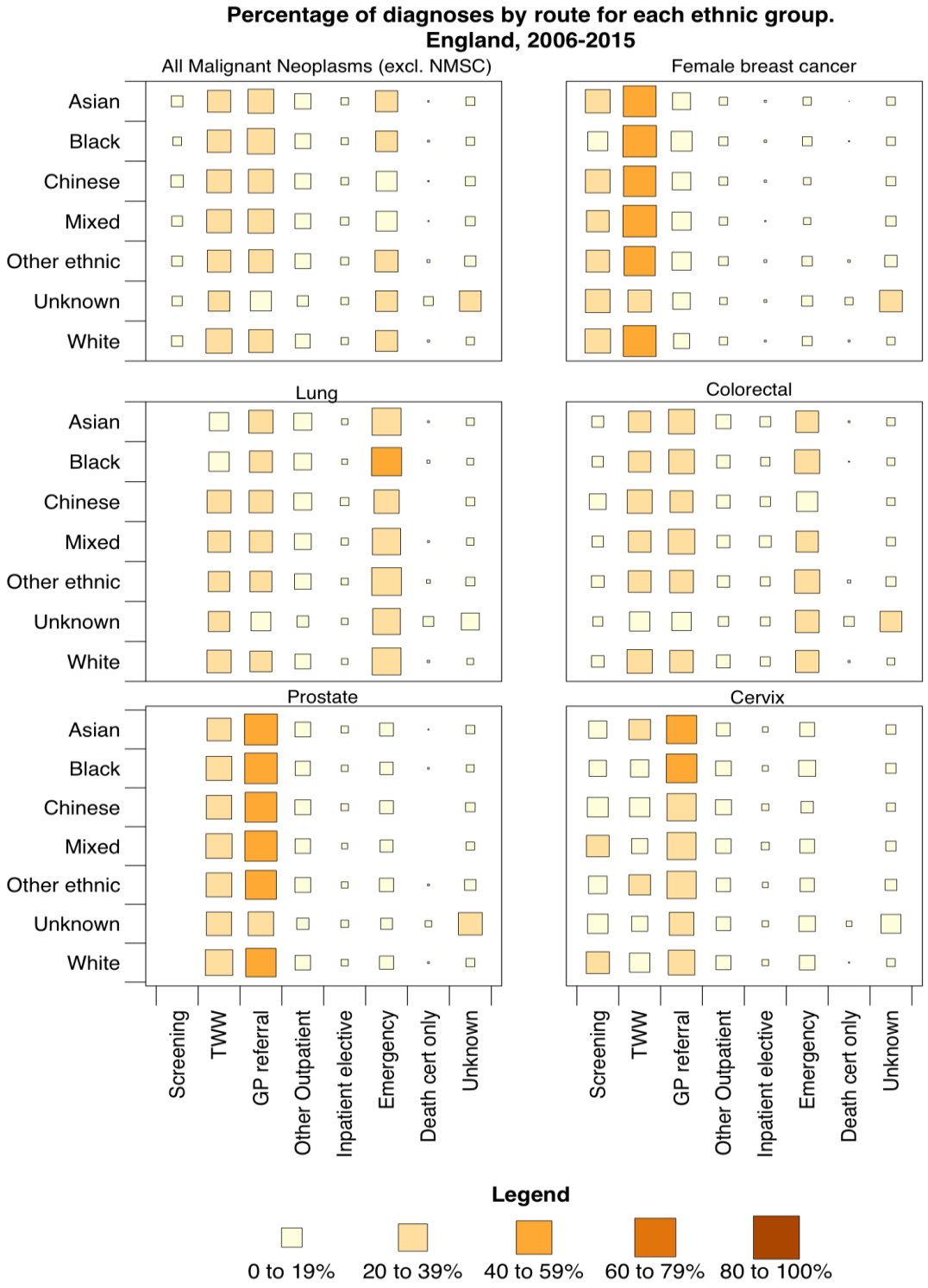
G. The provision of a supplementary report for Bassetlaw. This cancer JSNA is endorsed by Nottinghamshire Cancer STP Programme Board, which in essence is comprised of cancer stakeholders covering the NHS cancer service providers of NUH, SFHT, and the Treatment Centre, and so a group without the authority to 'speak to Bassetlaw cancer service provision. Bassetlaw cancer risk and need are covered in this paper. Beyond this in terms of cancer services Bassetlaw details will need to be addressed in an additional supplementary paper.

Key Contact

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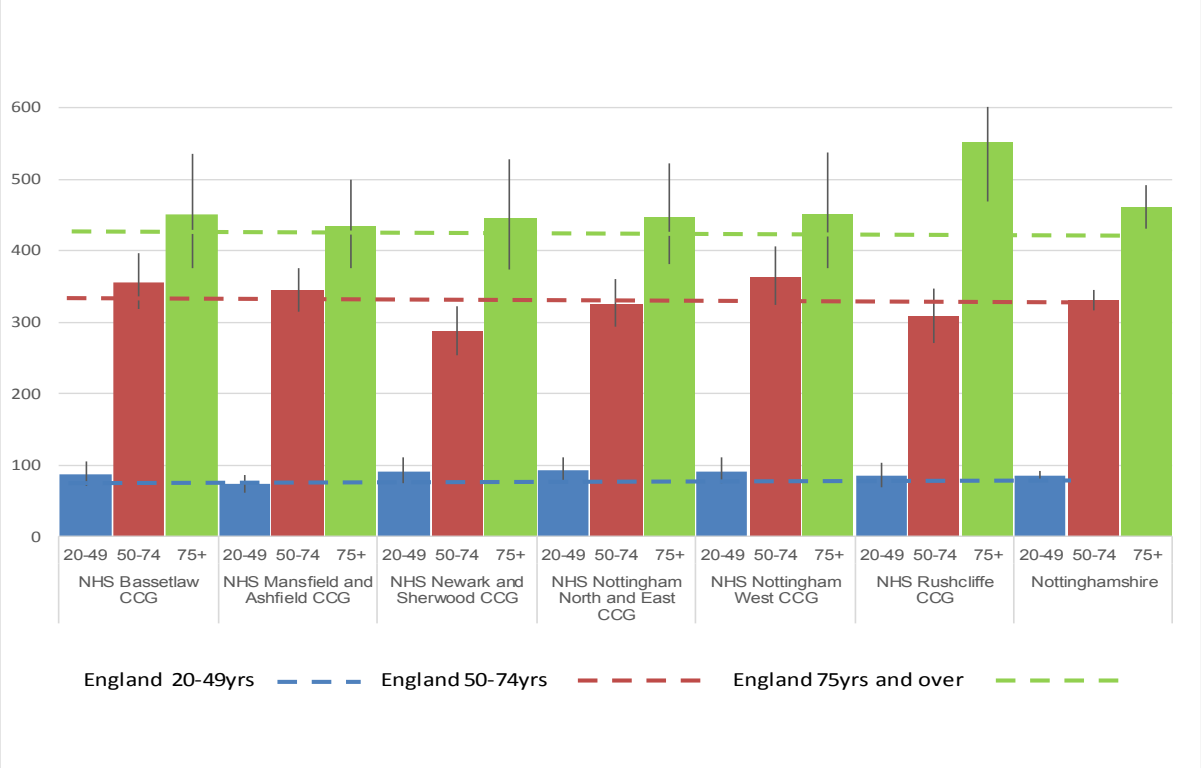
Appendix 1: Additional figures, maps and tables

Figure A1



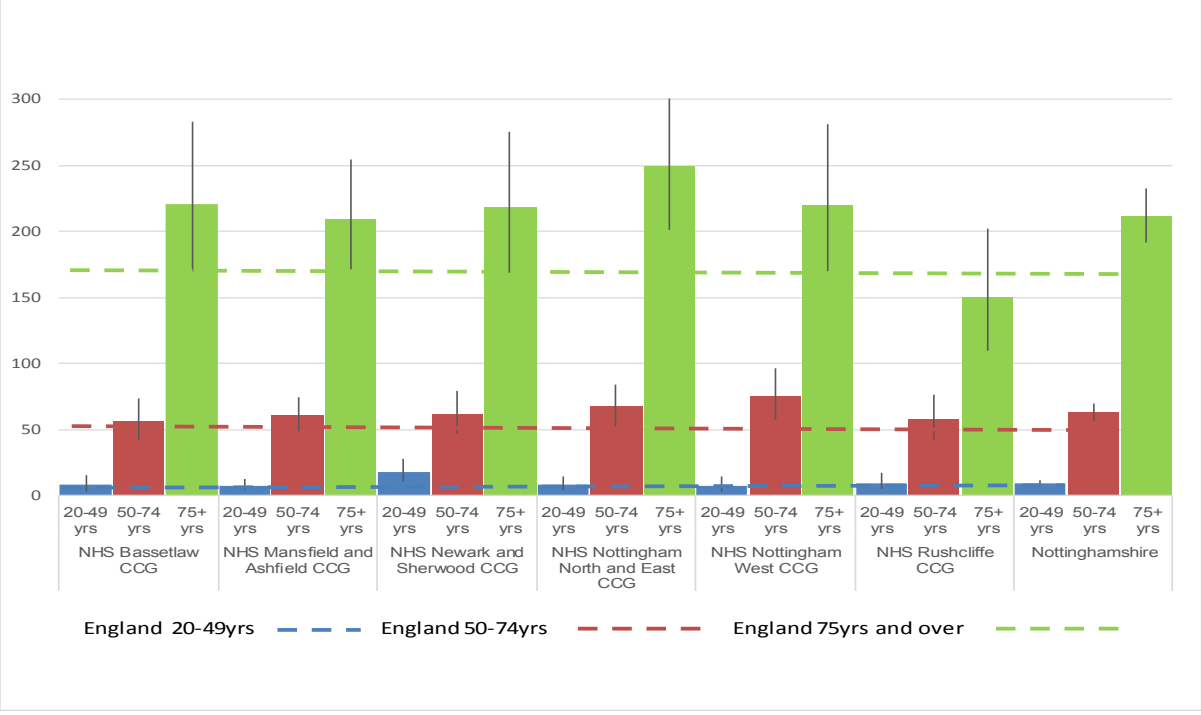
Source: NCIN (2015) (TWW: Two week wait referral pathway – urgent GP referral with a suspicion of cancer)

Figure A2: Breast cancer incidence in Nottinghamshire by age and CCG (2011 – 15)



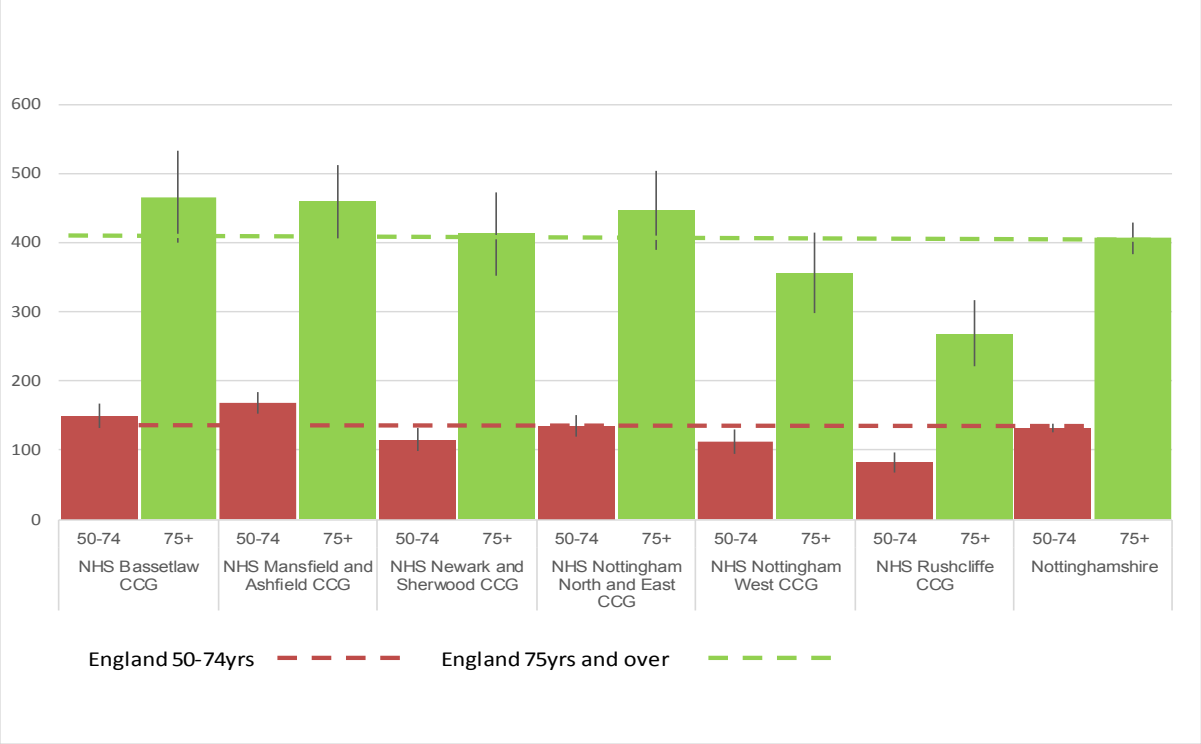
Source: Cancerstats. (Incidence - DSR per 100,000)

Figure A3: Breast cancer mortality in Nottinghamshire by age and CCG (2011 – 2015)



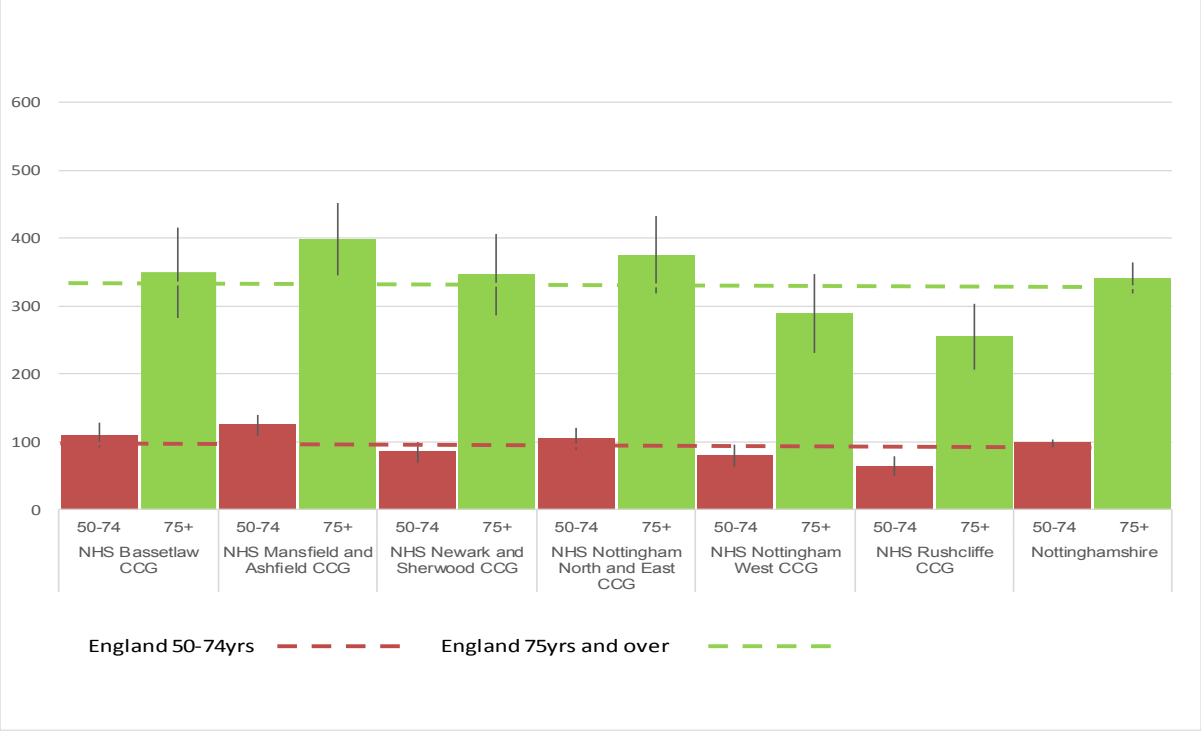
Source: Cancerstats. (Mortality - DSR per 100,000)

Figure A4: Lung cancer incidence in Nottinghamshire by age and CCG (2011 – 2015)



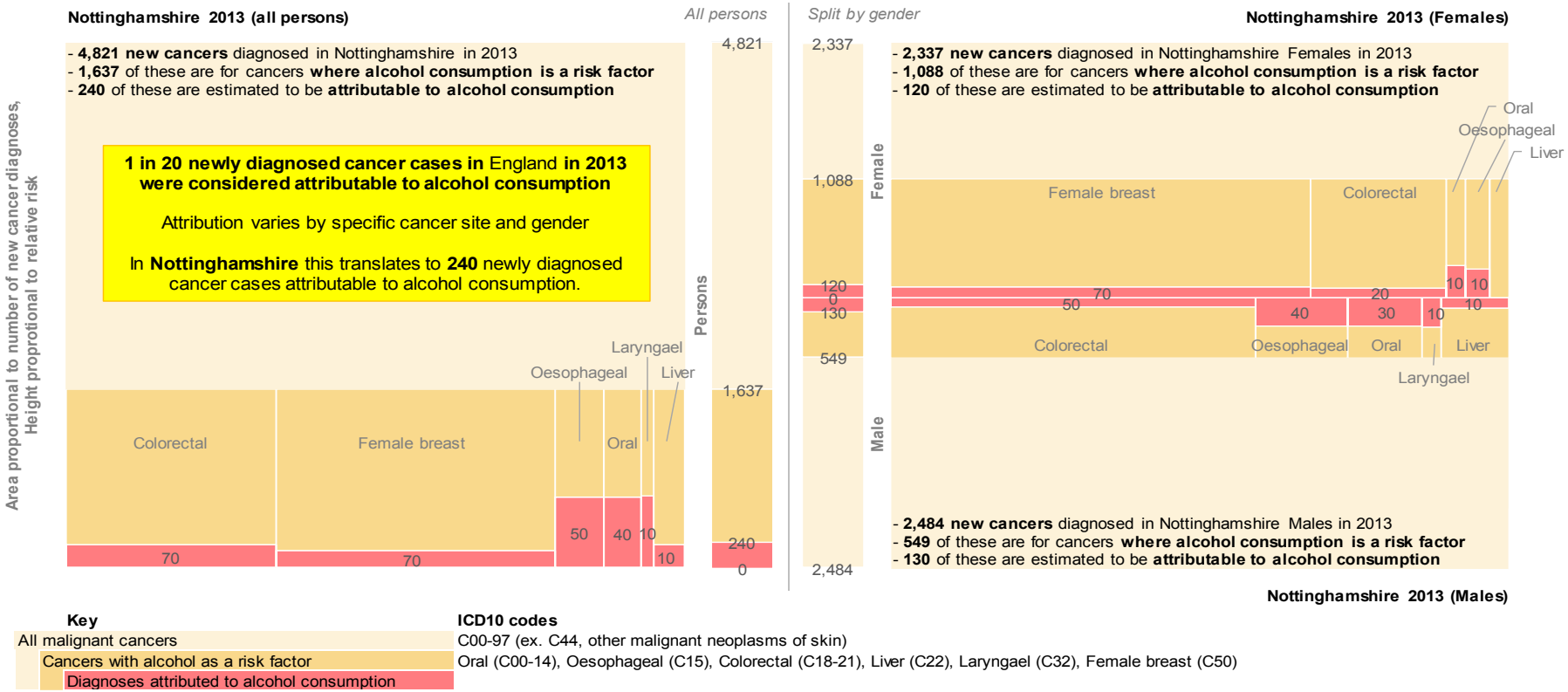
Source: Cancerstats. (Incidence - DSR per 100,000)

Figure A5: Lung cancer mortality in Nottinghamshire by age and CCG (2011 – 2015)



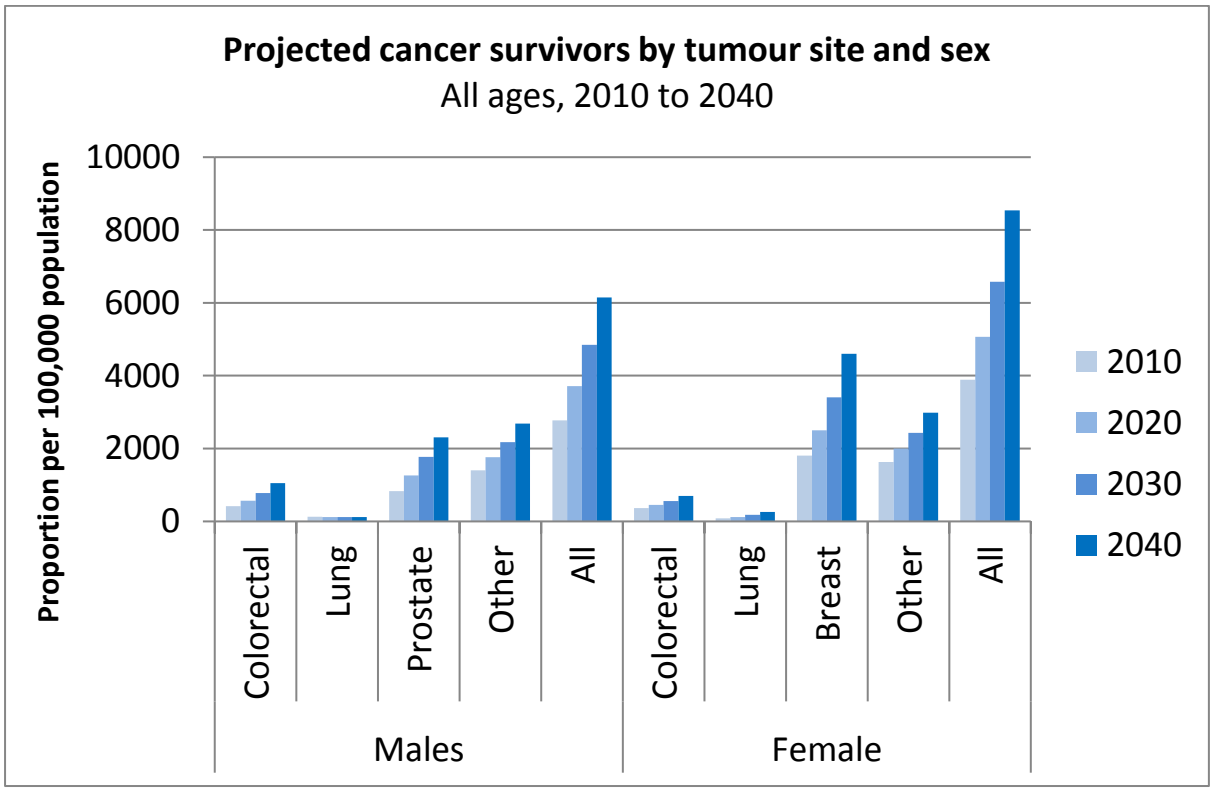
Source: Cancerstats. (Mortality - DSR per 100,000)

Figure A6: New cancer diagnoses in Nottinghamshire and estimated numbers attributable to alcohol consumption -overall and split by gender.



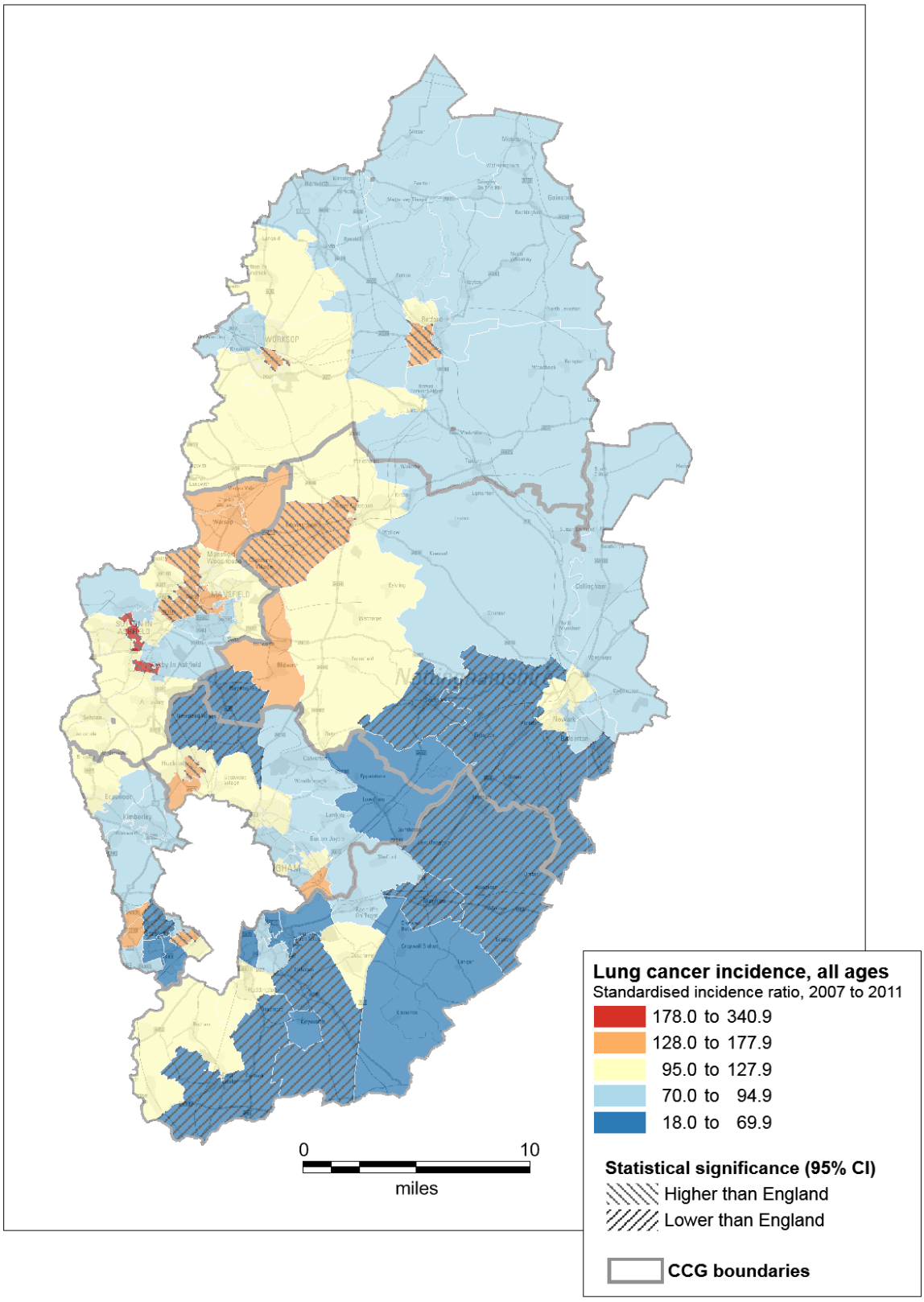
Sources: (cancer registrations) PHE cancer registry, (alcohol attributable cancers) adapted from "*Statement on consumption of alcoholic beverages and risk of cancer 2015/S2*" from Committee on Carcinogenity of Chemicals in Food, Consumer Products and the Environment (COC) 2015, URL: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/490584/COC_2015_S2__Alcohol_and_Cancer_statement_Final_version.pdf (last accessed January 2016) Note: Totals may not agree due to rounding

Figure A7: Projected cancer survivors by tumour site and sex



Source: (All Cancer excluding NMM, 2010 to 2040) Model produced by Nottinghamshire CC PH Info team, 2016).

Map A1: Lung cancer incidence in Nottinghamshire (all ages), 2007-2011



Map A2: Breast cancer incidence in Nottinghamshire (all ages), 2007-2011

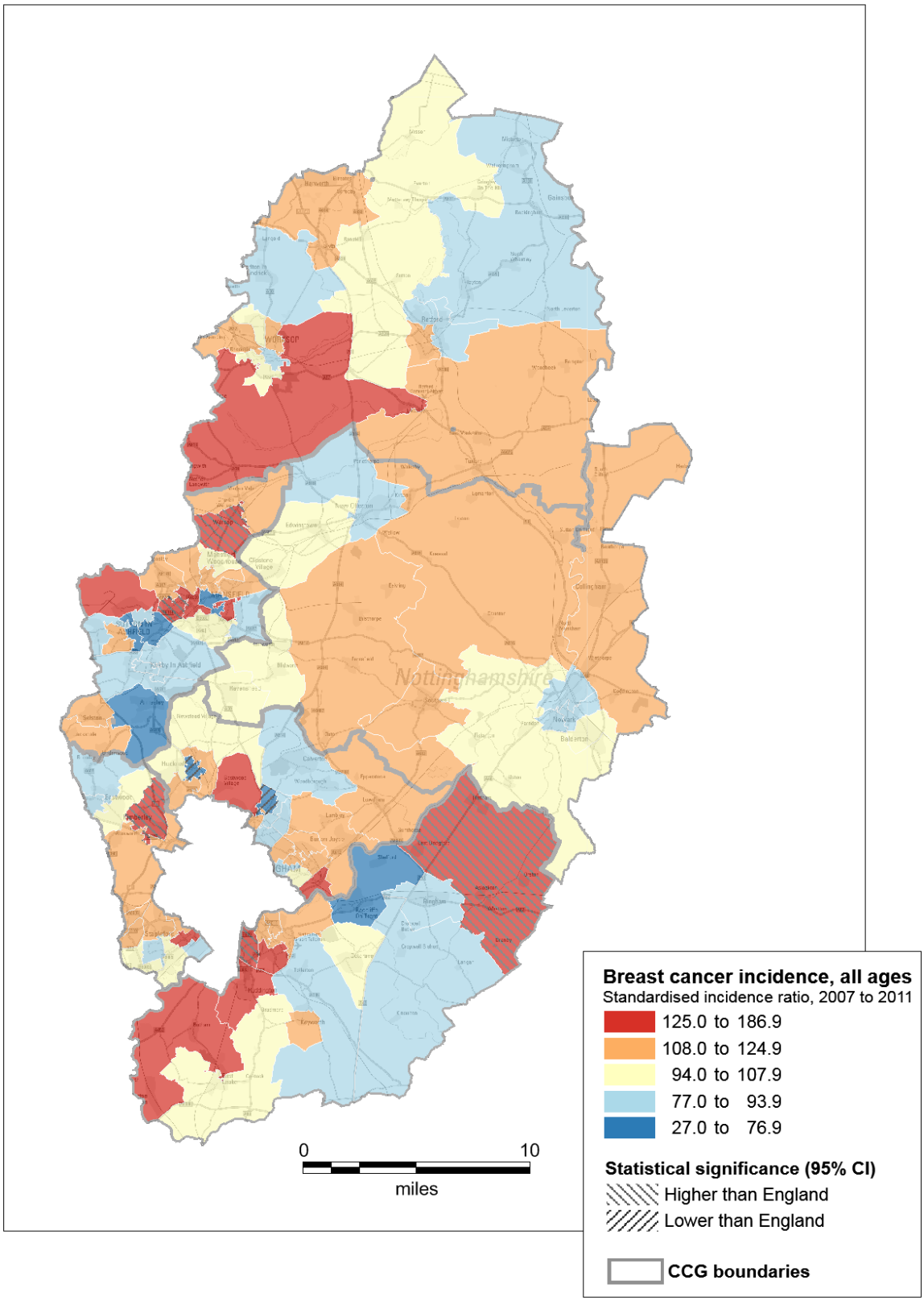


Table A1: Nottinghamshire recorded ethnicity of cancer patients (2009 – 2013) Number of people and percentage information (%)

	White	Asian	Black	Chinese	Mixed	Other	Unknown	Total
No	21,687	107	66	23	29	268	787	22,967
%	94.4	0.5	0.3	0.1	0.1	1.2	3.4	

Source: The National Cancer Registration Service database. (All malignant sites excluding skin cancer of non-melanoma (NMSC).

Appendix 2: Glossary and general notes

Glossary of organisation summary details

CCC	The three Cs group is a patient and carer forum linking to the mid-Notts area and SFHT.
EMAHSN	East Midlands Academic Health Science Network. Working alongside organisations in supporting them to develop research and implement transformational best practice.
EMCA	East Midlands Cancer Alliance: Formed in 2017 – an initiative generated in response to AWCCO.
GNCF	Greater Nottingham Cancer Forum is a patient and carer forum linking to the 'Greater Nottingham' area and NUH.
LA	Local Authority. In Nottinghamshire there are two tiers of local government. Nottinghamshire County Council is an upper tier of local government, and has responsibilities for directly commissioning PH services. There are seven districts or boroughs within Nottinghamshire comprising a lower tier of government. This lower tier has influence and provides services that are pivotal in addressing societal issues of disadvantage and poverty which impact on the determinants of health, as well as facilitating healthy lifestyle choices.
Macmillan CP	The Macmillan Cancer Partnership in Nottinghamshire is pioneering developments to improve health and social care support for people living with and beyond cancer.
STP	Sustainability and Transformation Partnership. Partnerships in 44 areas covering all of England, to improve health and care
	Other Acronyms and Summary Describers
LWBC	Living with and beyond cancer: Summary of the programme of work identified as being valuable to support people after having cancer treatments.
OneYou	A Public Health England social marketing campaign, launched in 2017 to support individuals to adopt healthier lifestyles.
PAC	People affected by cancer, encompassing the carer and wider relationships whose lives can be dramatically affected as well as the cancer patient themselves.

General notes supporting the report

The National Strategy

The National Strategy, 'Achieving World-Class Cancer Outcomes (AWCCO) 2015 – 2020' (Independent Cancer Taskforce, 2015) is also referred to as the 'National Strategy' throughout the document.

Geographical Footprints

The national data drawn on is from different geographical footprints depending on what was used in the original reference document. The main difference to highlight is that some information presented is for England, whereas other is for the UK. The source footprint is referenced as appropriate. Locally, below the county level, the cancer data is presented according to the CCG boundaries, which are not a direct match to the LA district boundaries. The CCG geography is chosen to align with the cancer commissioning catchment.

Cancer Definitions

As noted in the Executive Summary, there are over 200 different types of cancers. Within the document, the term all cancers/tumours are used to bring this information together. The skin cancer of non-melanoma (NMSC) (ICD-10 C44) is excluded from the data, however, due to the large number of diagnoses (131,000, each year in the UK); a quantity that would overwhelm and skew all other cancers' data. For more information on NM see (CRUK website NM skin cancer). Melanoma skin cancer (ICD-10 C43), the fifth most common cancer, is included in the overall cancer data (15,400, each year in the UK).

Nottingham City

Nottingham City Ccncer stakeholders, along with the county stakeholders (with the exception of Bassetlaw as described above), are members of Nottinghamshire STP Cancer Programme Board/(NSCAG). However, the Nottingham City population is not covered in this JSNA, but in a Nottingham City specific Cancer JSNA published in 2016.

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Appendix 4: Bassetlaw Supplementary Appendix – Cancer JSNA

Please note this appendix was added and approved in January 2020 subsequent to the JSNA approval in January 2019

1. Introduction

This appendix is a supplement to the Cancer JSNA[i] in line with the approved JSNA (Recommendation G) to produce a supplementary report specifically on cancer services in Bassetlaw.

Although Bassetlaw cancer risk and need were included in full in the JSNA chapter, as this analysis was undertaken for the whole of Nottinghamshire, details of the cancer service assets and activities related to Bassetlaw, and of local patient views, still needed to be addressed. This supplementary appendix addresses these elements. It has been quality assured and endorsed by the Doncaster and Bassetlaw Cancer Programme Board.

2. Service assets and activity

To summarise the JSNA, performance in the Bassetlaw area is as follows:

Demographics, screening and diagnostics 2017/18[ii]

- Bassetlaw is higher than the England average for all indicators related to screening
- Bassetlaw is statistically similar to the England average for number of emergency presentations and emergency admissions with cancer
- Bassetlaw has a higher proportion of the population aged over 65 years than the England average. This could be part of the explanation for higher than England average crude incidence rate of cancer (2016/17 latest info available), since cancers are more prevalent in older age groups

Two week wait referrals 2017/18[iii]

- Bassetlaw has a lower rate of two week wait referrals for suspected cancer than the England average
- Bassetlaw has a similar rate of two week wait referrals resulting in a diagnosis of cancer to the England average
- The rate of new cancer cases treated is lower than the England average
- Referral rates for suspected cancer of the lung and breast are similar to the England average but for lower GI and skin are lower than the England average

The table below details assets and activities specific to Bassetlaw, and identifies elements pertaining to Bassetlaw which were covered in the original JSNA.

Table 1: Bassetlaw: a summary of assets across the cancer pathway

Asset	Description
Strategy and Integrated Commissioning	
South Yorkshire, Bassetlaw and North Derbyshire Cancer Alliance (SYBND)	Working to develop and implement a different model of cancer care for South Yorkshire, Bassetlaw and North Derbyshire. Identified priorities are: • Early diagnosis through screening programmes • Prevention, through working collaboratively to address risk factors • Improving diagnostics – based on best practice, standardise approach across the region • Improved system organisation (architecture) to work effectively as one multidisciplinary, multi-site team delivering person-centred care and support for all people living with and beyond cancer.
The South Yorkshire and Bassetlaw Integrated Care System (formerly STP)	Cancer was one of six early priorities of the STP: Improve cancer care, including chemotherapy and pancreatic cancer services and working as part of an alliance across our region and North Derbyshire. Currently, cancer is one of four priorities nationally and as such is reflected in the ICS priorities.
Prevention	
Bassetlaw was included in analysis of local and national Public Health prevention services within original JSNA.	
Screening / Early Detection	
Delivery of national NHS screening programmes (cervical, breast and bowel)	National NHS screening programmes are available in Bassetlaw as set out in the JSNA. These are led by the South Yorkshire & Bassetlaw Screening & Immunisation Team embedded within NHS England & NHS Improvement (North East and Yorkshire)
National Be Clear on Cancer (BCOC) Campaigns	Bassetlaw is covered by BCOC campaigns as set out in the JSNA.
Be Cancer Safe	Be Cancer Safe is a community approach in South Yorkshire and Bassetlaw to improving cancer survival, through a range of community-based activities and initiatives to raise awareness of signs and symptoms of cancer, increase knowledge of what screening is available, and ultimately to increase the number of people diagnosed at an early stage. The activity is coordinated by the SYBND Cancer Alliance and in Bassetlaw is delivered by the Aurora Wellbeing Centre in Worksop.
Primary Care	The Bassetlaw CCG website contains cancer referral guidelines covering bone sarcoma, breast, suspected cancers in children, gynaecological, head & neck, lower Gastro-Intestinal (GI), lung, neuro, skin, neurology, suspected metastatic malignant disease. Guidelines are also published related to familial breast cancer.

Routes to diagnosis	The below information is for the whole SYBND[iv] area, which includes Bassetlaw, but also other areas in South Yorkshire / North Derbyshire. Breast cancer: • 2-week wait (2ww) is the most common route to diagnosis, accounting for just over 50% of diagnoses (relatively stable from 2009) • Screening accounts for almost 25% of diagnoses. Colorectal Cancer: • 2ww is the most common route to diagnosis, the rate has been increasing to over 30% of diagnoses. • Emergency presentation rates account for around 25% • Screening accounts for just over 10%. Lung Cancer: • Emergency route is the most common route to diagnosis, accounting for just under 40% of diagnoses. • 2ww and GP referrals account for around 25% each Prostate Cancer: • 2ww diagnoses have increased sharply and now account for nearly 50% of diagnoses. Since September 2019, Doncaster & Bassetlaw Teaching Hospitals NHS Foundation Trust has been a tester site for the new Day 28 Faster Diagnosis standard which is expected to be implemented nationally from April 2020. This standard will ensure that all patients who are referred for investigation of suspected cancer find out, within 28 days, if they do or do not have a cancer diagnosis.
Treatment	
Hospital treatment	People in Bassetlaw with a cancer diagnosis receive the majority of their treatment and care through Doncaster hospitals. Some outpatient clinics are run out of Bassetlaw Hospital.
Macmillan Cancer Pathways redesign programme	Bassetlaw participates within this national programme whose key deliverables are the development of risk stratified care pathways, based on individual needs, and the development of recovery packages for people living with and beyond cancer. Risk stratification work is underway locally. Breast cancer patients have well established access to risk stratified pathways; other tumour site pathways are due to be rolled out. With regards the recovery package, this comprises: • Holistic Needs Assessments (HNAs) and care planning at key points of the care pathway – the Doncaster and Bassetlaw system is testing the Macmillan stand-alone system of e-Holistic Needs Assessments. • A Treatment Summary completed at the end of each acute treatment phase, sent to patient and GP. In Bassetlaw the Macmillan Treatment Summary is being trialled with the Lung Cancer team. • A Cancer Care Review (CCR) completed by GP or practice nurse to discuss the person's needs. Work

	has commenced in Bassetlaw to engage GPs to understand current practice and their views on CCR use and value. • A patient education and support event, such as a Health and Wellbeing Clinic, to prepare the person for the transition to supported self-management, which will include advice on healthy lifestyle and physical activity. Bassetlaw has well established support through the Aurora Centres.
Support and Survivorship	
Holistic Needs Assessment (HNA)	HNAs are currently completed in clinical settings for Bassetlaw patients by Clinical Nurse Specialists. In a community setting, HNAs are completed by Wellbeing Practitioners at the Aurora Centre in Worksop. Aurora also offers a range of health and wellbeing activities, adapting the offer based on analysis of needs expressed in HNAs.
Macmillan Cancer Information Service	Macmillan Cancer Support provide a number of initiatives to improve patients' experience, with the need for bespoke personalised information and support delivered by Information and support specialists and access to expert welfare benefits advice from the Macmillan Welfare Benefits adviser to deal with the costs associated with cancer. Patients in Bassetlaw have access to these services through the Information and Support Pod at Doncaster Royal Infirmary and through the Aurora Wellbeing Centre and the Citizen's Advice Service in Worksop. The Macmillan Living Well mobile cancer information and support service, which offers professional information and advice delivered from Macmillan buses or in community venues, includes some destinations in Bassetlaw e.g. Bawtry and Blyth.
Other local practical and emotional support for people living with cancer	The Aurora Wellbeing Centre in Worksop supports local people and families living with cancer, providing support, information and wellbeing programmes to people with a diagnosis. Bassetlaw residents can access cancer support groups (various, with separate groups for cancers in specific sites), based in Bassetlaw, South Yorkshire and in other parts of Nottinghamshire.
Macmillan Cancer Partnership	Macmillan Cancer Support is working with partners across the UK on large scale programmes to improve the journey for people affected by cancer. Each programme is different and specific to the needs of patients living in that area, but all aim to ensure patients have a better experience and improved outcomes. The programmes focus on different pathways points including: prevention and screening; treatment and recovery; living with and beyond cancer; palliative or end of life care. In Bassetlaw, Macmillan is working on a programme to help improve the experience of people living with and beyond cancer, specifically looking at breast, bowel and prostate cancer services.

3. Local Views – Additional views of people affected by cancer in Bassetlaw

In addition to patient views cited in the main JSNA, the table below summarises additional information available specifically in Bassetlaw:

Table 2: Local views of people affected by cancer in Bassetlaw

	Events / Surveys	**Summary of views**
NHS Providers / CCGs	National Cancer Patient Experience Survey for Doncaster and Bassetlaw Hospitals NHS Foundation Trust, 2018 Report published September 2019	8.9 rating for care on a scale of 0 (very poor) to 10 (very good) 79% of respondents said they were involved as much as they wanted to be in decisions about care and treatment 89% said they were given the name of a Clinical Nurse Specialist (CNS) who would support them through their treatment 81% said it had been “quite easy” or “very easy” to contact their CNS 85% said they were treated with dignity and respect while in hospital 98% said hospital staff told them who to contact if they were worried about their condition or treatment after they left hospital 53% said they thought GPs and nurses at their general practice definitely did everything they could to support them while they were having cancer treatment
Local patient groups	Bassetlaw Cancer Support Services Patient Engagement event, 27 September 2016 51 people attended. Feedback from the public will inform Bassetlaw CCG’s Cancer Strategy and impact on possible service changes	Participants were asked for views on experience of current support services: Positive experiences were recounted of support from Aurora, buddying programme, practical support, and of support from GPs e.g. follow up phone calls after receiving diagnosis. Negative feedback related to levels of support and different support available depending on tumour site; the need to raise awareness of support service availability; need for improved communication and joined up care; improved response times for services following discharge. As well as collecting feedback on experiences, the event also sought input on the development of holistic health assessments, development of a health and wellbeing programme, and cancer care reviews.
Local patient information	Interim evaluation of the Macmillan *Living With and Beyond Cancer* programme	601 Health Needs Assessments (HNAs) were completed in Bassetlaw of which 134 were for three specific programme tumour sites of Breast, Urology, and Lower GI.

	in South Yorkshire, Bassetlaw and North Derbyshire.[v] In Bassetlaw, all the data was collected at Aurora, the local community hub, over a six-month time period ending in March 2019.	Women received the majority of the HNAs in Bassetlaw (70%). All HNAs raised concerns in the areas of physical, emotional, practical, family and spiritual needs; in Bassetlaw there were a higher proportion of emotional concerns than in other settings. Data from the HNAs are used to inform service development, for example Aurora developed a nutrition workshop in response to diet/nutrition being raised as a frequent concern. Feedback from patients identified that patients would prefer a Cancer Care Review (CCR) later on in the treatment pathway (towards the end of the current "within six months of diagnosis" requirement). This finding is being used in developing local plans for CCR.

[i] Nottinghamshire Health and Wellbeing Board, 2019, Cancer JSNA
[ii] PHE Fingertips, 2019, Cancer Services Profile, Demographics, Screening and Diagnostics, https://fingertips.phe.org.uk/profile/cancerservices/data#page/0/gid/1938132830/pat/120/par/E54000009/ati/152/are/E38000008, accessed 16.09.2019
[iii] Ibid, Two-Week Wait Referrals
[iv] PHE, 2019, Cancer Inequalities for South Yorkshire, Bassetlaw and North Derbyshire Cancer Alliance
[v] Bright Purpose, 2019, Evaluation of the Macmillan LWABC Programme, South Yorkshire, Bassetlaw and North Derbyshire, First Interim Report August 2019