Public Health Report 2005
Cancer in Islington: how to save more lives
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Each year the Director of Public Health has a duty to prepare a report on the public health or some aspect of the public health of the population they serve. This is an opportunity to take stock, describe, analyse, question and set new direction.

This year we have decided to focus on one particular area – cancer. There have been three major stimuli for the focus on cancer this year.

Firstly, Islington has high premature cancer mortality and we are expected to reduce it. The Labour government – soon after it came into office – adopted as a major health target a 20% reduction in premature (<75 years) deaths from cancer by 2010 from a 1995-7 baseline. This target is one of the Public Service Agreements between the Treasury and the Department of Health. Islington has not done well by this measure and our cancer mortality in under 75 year-olds remains stubbornly at around the same level stretching back to 1993 and this is around 25% higher than cancer mortality rates in England. There has long been an awareness of variation in cancer (and other) mortality across the country, so, alongside the cancer mortality reduction target is a target to reduce by 6% the gap between the areas with the worst health and deprivation indicators and the population as a whole. As well as higher cancer mortality compared with other areas, Islington has high mortality from cardiovascular disease, lower male and female life expectancy and high average levels of deprivation. Islington falls into the worst fifth of Local Authorities for all these measures and has been designated a ‘spearhead’ Primary Care Trust as a result. This requires us to achieve a faster than average reduction in mortality to bring us into line with England as a whole.

Secondly, there is ongoing interest at a national policy level about how good we are at treating cancer in the UK health systems compared to Europe. The measure chosen to compare performance in different health systems is survival from diagnosis. In comparisons England, Scotland and Wales all perform less well than northern and western European countries but better than eastern European countries. This was a major stimulus to the programme of investment outlined in the NHS Cancer Plan in 2000. Most recently interest has surfaced again in a report by the Committee of Public Accounts focusing on survival and the value for money of investment since the major cancer investment initiatives beginning in 2000.

Thirdly, we want to spend money wisely. This is always the case, but earlier this year a relatively minor internal discussion about cancer spend priorities led to an argument about the balance of investment in primary prevention versus secondary prevention and treatment. What became clear is that we don’t really know where the emphasis should lie in Islington.

So there were a number of stimuli shaping this report but at bottom we had one overriding question: “Why is premature cancer mortality in Islington persistently high?” and – the natural corollary – “What can we do about it?”

I hope and trust that our partners in Primary Care, Commissioning, the London Borough of Islington, the North Central London Cancer Network, the Strategic Health Authority, Cancer Charities and interested citizens find the exploration of these questions stimulating and of value. We may not be able to fully answer the questions posed but we hope that our analysis gives a steer to both the PCT and our partners on where we might need to focus attention in Islington.

The production of this report has been a combined effort by members of the public health team in Islington – many of whom are listed as chapter authors. Special thanks needs to be extended to Tesfaye Gemechu and Pejman Azarmina who did the vast majority of the data extraction, analysis and chart production, Sue Hogarth and Gosaye Fida who gave generously of their time in the final stages and particularly to Stephen Conaty who wrote large sections of the report, edited all contributions and coordinated the whole effort this year.

Sarah Price
Director of Public Health

BIBLIOGRAPHY
Cancer is not just one thing; it is many things. There are hundreds of different types of cancers – many rare and some common. Cancer describes a common process: cells in some part of the body lose their normal behaviour, multiply, erode and invade local tissue and eventually spread to other parts of the body. However, despite the multiplicity of cancers there are often common causes and common paths travelled by people with cancer and so common explanations for cancer deaths in a given population.

There are two possible reasons why cancer mortality (death) rates in Islington may be higher than other areas: either cancer itself is more common so more people die from it, or the chances of surviving after it has been diagnosed are lower. In the terminology high cancer mortality can be attributable to high incidence – high numbers of new cases – or poor survival. It can of course be a mix of both. The balance of each is important to know because the remedies are different. High incidence means that the causes of cancer – smoking, diet and others – are important. Survival can be poor for many reasons: it can be poor uptake of screening, a delay in initial presentation, delay in diagnosis, delay in time to definitive treatment, inappropriate or inadequate treatment or poor after-care. Poor survival is attributable to a problem somewhere in the cancer journey.

We have gone to some lengths to try to tease incidence and survival apart. The approach we have taken is to focus on four of the major cancer sites – lung, breast, colorectal (bowel) and prostate – and examine incidence, mortality and survival for each and interpret each in the context of the journey from before diagnosis to treatment and outcome. For each site we have also tried to examine whether there are variations in survival in our own borough. As a public health report our focus has been less on the details of treatment but, because survival depends on the quality and speed of the cancer journey, we have included some data on where people are treated, treatment volumes, and some of the performance or waiting time data. Some brief comments about incidence, mortality and survival are important because these terms are used throughout this report.

Incidence is information about new cases and so is current in that it reflects recent experience. A new case in 2002 would have been diagnosed in that year and probably treated in that year as well. However, because the information has to be actively collected and checked by the Cancer Registry there is a lag in producing this information. We have data up to the end of 2002 and for some analyses 2003. Mortality or death data is obtained from death certificate information and is often more up to date (than incidence data), however, deaths from cancer sometimes occur many years after the cancer is diagnosed. Although we may have death data for 2003 these deaths were probably mainly in people who developed their symptoms, were diagnosed and initially treated some years before. Exactly how long before will vary from cancer to cancer. Mortality data is in this sense ‘old’ information reflecting incidence, screening, diagnostic and treatment efforts some time ago. Because people die at various times after their diagnosis it also does not reflect the effects of incidence or practice at a particular specific time in the past. However, because mortality reflects both incidence and survival it is the best summary measure we have.

Survival is something specific: it is the length of time a person survives after diagnosis usually measured at some fixed time after date of diagnosis – such as five years. Survival is presented here as a percentage of the people who are alive at five years after their diagnosis. Unlike mortality, survival is specific for the particular period of time that people were diagnosed so it has this key advantage. Also, unlike mortality, it is not affected by incidence (the number of new cases) so if we have an equal health system we should expect that survival should be the same in Balls Pond Road as in Barnsbury. However, the interpretation of survival is not straightforward for a variety of reasons. For example survival can be made longer simply by diagnosing cancer earlier (so-called ‘lead-time’ bias). Also, because some people die from other causes, a correction for background mortality is made. This measure – ‘relative survival’ – i.e. survival relative to people who don’t have cancer – is what is used in this report.

Aside from the four major cancer sites we have included a number of general chapters: on overall cancer incidence and mortality, on the primary prevention of cancer, to bring together various prevention strands common to many cancer sites, and another on palliative care. We are interested what impact the NHS Cancer Plan may have had locally as far as it can be determined so we have included a chapter on some of the service changes since the year 2000.

Information of the kind we present here does not come neatly packaged. We tried to do two key things in this report that required extra effort: examine a longer time trend to get a better sense of where we were heading, and examine relative cancer survival for residents of Islington.
Survival analysis is technically difficult, is seldom done at a borough or PCT level and had to be specially commissioned for this report. The main data sources we used were the Thames Cancer Registry for cancer incidence and the Office of National Statistics for mortality data. Both these important data sources require healthy functioning systems of reporting information and, particularly for cancer data, willing and cooperative clinicians. For comparison data with neighbouring Boroughs/Primary Care Trusts we have had to use pre-packaged data sources like the Compendium produced by the National Centre for Health Outcomes Development which have meant we have been restricted to the years they have analysed. The comparisons we have chosen throughout the report are our neighbouring boroughs of Camden, Hackney and Haringey, North Central London (which approximates the cancer network) and a national comparator, which is usually England and Wales but is sometimes England alone.

Inevitably because of constraints on time and space we have had to leave things out. In particular we have been unable to discuss some of the next-most-common cancers such as cancers of the oesophagus, stomach, bladder and head and neck. We have also been unable to include for reasons of data quality some information that may have been of interest to local residents such as variations by ethnicity or country of birth.

BIBLIOGRAPHY

In any given recent year there are approximately 650 new cancers diagnosed in people resident in Islington. Over the 2000-2002 period 342 of these cancers were diagnosed in men and 323 in women. In Islington the risk of receiving any diagnosis of cancer before the age of 75 years are 1 in 5 for men and 1 in 6 for women. The five most common cancers in men are, in order: lung, prostate, colorectal, bladder and stomach. In the table below it can be seen that lung cancer comprises almost one quarter of all cases in men and lung, prostate and colorectal combined more than half of all male cancers. The most common cancers in women, are in order: breast, lung, colorectal, ovarian and non-Hodgkin’s lymphoma (not shown – see appendix).

Breast cancer comprises more than one quarter of all cancers diagnosed in women and breast, lung and colorectal combined just over 50% of all female cancers. The frequencies of all common and some less common cancers in the last 10 years are listed in the appendix.

The age-adjusted incidence of all cancers combined has been relatively stable with a small overall increase in incidence in both sexes mirroring small increases observed in the age-adjusted rate in men and women in England over this period. The underlying small incidence rise in men reflects increases in the incidence of prostate and colorectal cancer outstripping a decline in lung cancer. In women the small increase in the incidence rate is mainly attributable to an increase in the incidence of breast cancer. The incidence rates in both men and women in Islington are, however, clearly higher than the rates in England and Wales – approximately 23% higher in men and about 11% higher in women.
MORTALITY

Over the 2001-3 period there were approximately 360 deaths each year in Islington – about 200 in men and 160 in women. Premature or under-75 mortality is the main measure chosen by the Treasury and the Department of Health to measure performance. Just over 200 (almost two thirds) of cancer deaths in Islington were in people under the age of 75 years: 97 in women and 113 in men. Exactly one third of these ‘premature’ deaths in men were caused by lung cancer and in women almost 20% were caused by lung cancer and 16% caused by breast cancer.

### Table 2.3 Mortality for selected cancers, males, ages less than 75 years, Islington, 2001-03

Source: Compendium, NCHOD, 2005 and ONS Vital Statistics

<table>
<thead>
<tr>
<th>Cancer sites</th>
<th>Average annual number of deaths &lt;75 yrs</th>
<th>Average annual number of deaths all ages</th>
<th>Specific site as a % of cancer deaths &lt;75 yrs</th>
<th>Crude mortality rate per 100,000 &lt;75 yrs</th>
<th>Life-time risk &lt;75 yrs</th>
<th>Age standardised rate per 100,000 &lt;75 yrs</th>
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<td>Lung</td>
<td>38</td>
<td>62</td>
<td>33.6%</td>
<td>45</td>
<td>1 in 15</td>
<td>61</td>
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<tr>
<td>Colorectal</td>
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<td>21</td>
<td>8.0%</td>
<td>11</td>
<td>1 in 57</td>
<td>15</td>
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<tr>
<td>Prostate</td>
<td>9</td>
<td>19</td>
<td>8.0%</td>
<td>10</td>
<td>1 in 57</td>
<td>14</td>
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<tr>
<td>Oesophagus</td>
<td>8</td>
<td>10</td>
<td>7.1%</td>
<td>9</td>
<td>1 in 75</td>
<td>13</td>
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<tr>
<td>Head &amp; neck</td>
<td>6</td>
<td>6</td>
<td>5.3%</td>
<td>7</td>
<td>1 in 122</td>
<td>9</td>
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<tr>
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<td>4.4%</td>
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<td>1 in 126</td>
<td>7</td>
</tr>
<tr>
<td>Stomach</td>
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<td>8</td>
<td>3.5%</td>
<td>5</td>
<td>1 in 124</td>
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<td>193</td>
<td>100%</td>
<td>132</td>
<td>1 in 6</td>
<td>181</td>
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### Table 2.4 Mortality for selected cancers, females, ages less than 75 years, Islington, 2001-03

Source: Compendium, NCHOD, 2005 and ONS Vital Statistics

<table>
<thead>
<tr>
<th>Cancer sites</th>
<th>Average annual number of deaths &lt;75 yrs</th>
<th>Average annual number of deaths all ages</th>
<th>Specific site as a % of all cancer deaths</th>
<th>Crude mortality rate 100,000 &lt;75 yrs</th>
<th>Life-time risk &lt;75 yrs</th>
<th>Age standardised rate 100,000 &lt;75 yrs</th>
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<tr>
<td>Lung</td>
<td>19</td>
<td>33</td>
<td>19.6%</td>
<td>22</td>
<td>1 in 29</td>
<td>28</td>
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<tr>
<td>Breast</td>
<td>16</td>
<td>27</td>
<td>16.5%</td>
<td>18</td>
<td>1 in 46</td>
<td>23</td>
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<tr>
<td>Colorectal</td>
<td>7</td>
<td>16</td>
<td>7.2%</td>
<td>8</td>
<td>1 in 86</td>
<td>10</td>
</tr>
<tr>
<td>Pancreas</td>
<td>5</td>
<td>9</td>
<td>5.2%</td>
<td>6</td>
<td>1 in 111</td>
<td>8</td>
</tr>
<tr>
<td>Stomach</td>
<td>4</td>
<td>8</td>
<td>4.1%</td>
<td>4</td>
<td>1 in 187</td>
<td>5</td>
</tr>
<tr>
<td>Ovary</td>
<td>4</td>
<td>7</td>
<td>4.1%</td>
<td>5</td>
<td>1 in 39</td>
<td>6</td>
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<td>Cervix</td>
<td>2</td>
<td>4</td>
<td>2.0%</td>
<td>3</td>
<td>1 in 268</td>
<td>4</td>
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<tr>
<td>All cancers</td>
<td>97</td>
<td>169</td>
<td>100%</td>
<td>110</td>
<td>1 in 7</td>
<td>141</td>
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MORTALITY TREND

Under-75 age-adjusted mortality has fallen steadily in both men and women since 1985 (Fig. 2.2). The rate of decline appears broadly similar in both sexes, and, as can be viewed, the proportional decrease is similar to but not quite equal to the rate of decrease seen in men and women in England and Wales since 1993. However, more importantly the under-75 mortality rate over the last 10 years remains around 25% higher in Islington, and, in the latest three year period 2001-2003, it is 28% higher than the rate in England and Wales: 29% higher in males and 27% higher in females.

DISTRIBUTION OF CANCER MORTALITY

Examining the distribution of cancer mortality for men under the age of 75 years by ward, all but four wards have rates higher than the national. As can be seen from the Fig.2.3 four wards have rates 25% or more above the national rate and these can be seen in purple. Similarly for women (Fig. 2.4) all but three have rates higher than the national and there are three wards with rates 40% above the national. However, except for Holloway these are not the same wards. Bunhill ward is illustrative of some of the limitations of this kind of geographic analysis. It has the highest rate of male cancer mortality over this five-year period and one of the lower rates of female cancer mortality. This reflects two factors. Firstly, differences between male and female cancer rates in a given area may simply reflect differences in the mix of cancers between males and females. Whilst lung cancer is the most common cause of cancer death in both sexes, breast cancer is the next most common female cancer and is a non-smoking-related cancer without a clear social gradient (see Chapter 4). Secondly, even if we take five years of data, which includes almost 500 female cancer deaths and over 500 male deaths under the age of 75 years, there are around only 30 cancer deaths for each sex in each ward. The confidence intervals surrounding the rate in each ward are wide meaning that chance variation plays a big role.

RELATIONSHIP BETWEEN DEPRIVATION AND CANCER INCIDENCE AND MORTALITY

Islington is a highly mixed borough. The high stock of social housing and its distribution ensures that within each of the 16 electoral wards there is a wide variation in social deprivation and many other features. This means that for many purposes a ward rate is simply a mixed rate that only partly reflects some feature of the ward that we may be interested in (social housing, income, ethnicity, etc) and the variation between wards is low. This lack of homogeneity or discrimination can be improved by going down to a lower geographic unit (super-output area) developed by the ONS. There are 118 super-output areas in Islington each containing about 1500 people. At this level rate comparisons for individual super-output areas are not very useful because some have no cancers or deaths over a 5-year period. However, they can be grouped together, for example, by deprivation score. If we rank all the super-output areas in the country by their score, 65% of super-output areas in Islington are ranked in the 40% most deprived. Only 5 (4%) are in the most affluent or least deprived quintile. So, at this level, discrimination is better but we probably still do not have homogenous groupings that reflect the wide variations in wealth that we know exist in the borough. By grouping the super-output areas into five Islington-specific groups (quintiles) according to 2004 Index of Multiple Deprivation (IMD) scores we can see that there is a trend to higher mortality with increasing (worse) deprivation (Fig. 2.6). However, for incidence this trend is not strong (Fig. 2.5). The relationship between deprivation and mortality for men and women over this period is summarised in Table 2.5.
between incidence and deprivation is not simple and is likely to vary by cancer site and sex. For example, if we examine the incidence trend for males under the age of 75 years then there is a noticeable trend to higher incidence as we move from least to most deprived groups (chart not shown). One interpretation of this general pattern (stronger relationship between deprivation and mortality than deprivation and incidence) is that the mortality relationship is stronger because survival is worse in more deprived groups.

Figure 2.4 Standardised mortality ratios for all cancers in females in Islington by ward, 1999-2003

Figure 2.5 All cancer incidence by super-output area quintiles, directly age-standardised rate, all persons, Islington, 2000-2002 (Source: Thames Cancer Registry and Vital Statistics, ONS)

Figure 2.6 All cancer mortality by super-output area quintiles, directly age-standardised rate, under 75 years, 2001-04 (Source: Vital Statistics, ONS)

BIBLIOGRAPHY
DEFINITION
Lung cancer is the most common type of malignancy in England and Wales and has assumed epidemic proportions with widespread adoption of cigarette smoking by all sections of society. In the 1990s in the UK lung cancer accounted for 1 in 6 diagnosed cases of cancer, 1 in 4 cancer deaths and 5% of all deaths. There are two main types of lung cancers: Small cell and Non-small cell. They cause about 20% and 80% of lung cancers respectively.

Disease progression

Healthy lung tissue

Early changes

Localised cancer

Local and regional spread

Metastasis

Death

Cancer development – many years

Pre-symptomatic phase (to symptoms) – several years

Symptomatic phase (to diagnosis) – variable

Treatment phase (to outcome) – short – survival poor

Exposure to tobacco smoke and / or other carcinogen

INCIDENCE
In Islington in the three-year period 2000-2002 there were on average 123 newly diagnosed cases of lung cancer each year accounting for 22% of male and 14% of female cancers. The risk of being diagnosed with lung cancer before the age of 75 years is 1 in 12 for men and 1 in 15 for women. Lung cancer is predominantly a disease of older people. In England and Wales above the age of 50 the rate increases steeply to peak at 80-84 years for men and age 70-79 years for women. Over the past two decades there has been a decrease in the overall incidence of lung cancer in Islington attributable to falling rates in males, however, there has been an apparent arrest in the rate of decline in males since 1993 and a small increase in the incidence in females. Both the incidence rates for males and females remain markedly higher compared to the rates in England and Wales (Fig. 3.1).
The standardised incidence or registration ratio for lung cancer in Islington is 158 for males and 152 for females, or 58% and 52% higher than the incidence rates in England and Wales. Lung cancer in both sexes is also substantially more common in Islington than in North Central London, and London as a whole. Lung cancer is more common in Islington men than in neighbouring boroughs and probably more common in Islington women than women in neighbouring boroughs although this difference is not statistically significant (Fig. 3.2).

RISK FACTORS
The greatest risk factor for lung cancer is tobacco smoking, which probably causes 90% of cases in males and 80% in females. Industrial carcinogens associated with an increased risk of lung cancer include: asbestos, nickel, chromium, zinc, polycyclic hydrocarbons and radon. It has been suggested that up to 15% of lung cancer cases in males and 5% in females may be attributed to occupational factors in conjunction with smoking. Excess lung cancer risk from exposure to secondary spousal smoking is 20% for women and 30% for men world-wide; in the UK the risk of lung cancer for a non-smoker who lived with a smoker is increased by 24%.

RISK GROUPS
Lung cancer incidence and mortality are strongly associated with deprivation. In England and Wales, men in manual occupations are twice as likely to die of lung cancer than non-manual occupation while the ratio for women is around three times. Because of the strong association with smoking, people with smoking-related diseases like Chronic Obstructive Pulmonary Disease (COPD) are at high risk of developing lung cancer. Despite high prevalence of smoking in some ethnic groups, there is little evidence of an ethnic gradient of mortality for lung cancer.

EARLY DETECTION AND SCREENING
Testing for early lung cancer in individuals with no symptoms but at risk of lung cancer is not recommended. Early trials of frequent chest x-ray screening did not reduce lung cancer mortality compared to usual care. However, there is renewed interest in screening. Computed Tomography (CT) scans are used increasingly but have not been shown to reduce lung cancer mortality. The National Lung Screening Trial (NLST) is comparing two ways of detecting early lung cancer: spiral computer tomography and standard chest x-ray.

SYMPTOMS AND PRESENTATION
Cough is the most common presenting symptom in lung cancer. Many lung cancers occur in central airways and may lead to pneumonia, or cause lymph node enlargement that may lead to cough. Shortness of breath develops early in up to 60% of patients. It is usually associated with increasing cough and sputum (phlegm). Coughing of blood (usually only blood-streaking of the sputum) is not a common presenting symptom. Ill-defined and intermittent chest discomfort is common and occurs in up to 50% of patients at diagnosis. Early diagnosis is difficult because many of the symptoms of lung cancer are common and similar to the symptoms of COPD in smokers.

Figure 3.2 Lung cancer incidence, indirectly standardised registration ratios (SRR), all ages, 1998-2000
(Source: Compendium, NCHOD, 2005)
REFERRAL AND DIAGNOSIS

Unlike other cancers, the most useful initial investigation (chest x-ray) is simple, non-invasive and should be organised by the general practitioner. According to NICE referral guidelines, chest x-ray should be offered when a patient presents with any of the following unexplained or persistent (>3 weeks) symptoms: cough, chest/shoulder pain, shortness of breath, weight loss, hoarseness, finger clubbing (distinctive changes to the ends of the fingers) and features suggestive of spread of lung cancer (such as bone pain). If a chest x-ray (or CT scan) suggests lung cancer patients should be offered an urgent referral to a member of the lung cancer multidisciplinary team (MDT), usually a chest physician.

Delays in patients presenting to the doctor and in referral for treatment may occur commonly with lung cancer. A local study in north London has reported variation in the threshold of investigation and referral amongst general practitioners, and so potential delays between first presentation with symptoms and decision to refer to secondary care. They suggested a need to review fast track chest-x-ray referral guidelines for suspected lung cancer. A study in south London quantified a delay from symptom onset to chest x-ray of 39 days, a further 73 days until referral for surgery and a further 32.5 days until surgery.

From January 2004 to December 2004 94 Islington patients were referred through the urgent referral route for assessment of lung cancer (Table 3.1). At the same time, 14 referred through the urgent referral system were started on treatment. So approximately 15% of those urgently referred for assessment have lung cancer. Over the same period 60 patients were reported as starting treatment under the 31 day standard so the majority of treated patients were referred through non-urgent referral routes. The number of patients reported starting on treatment in a calendar period is substantially lower than 123 incident cases we would ordinarily expect. It is also lower than the numbers of unique patients (92) we know were admitted to the hospital sector with lung cancer in 2002-2003.

TREATMENT

In Islington most patients with lung cancer are treated at Whittington and University College London Hospitals. Non-small cell lung cancer will be treated by chemotherapy, radiotherapy and if possible surgery to remove all or part of the cancer. For patients with early stage non-small cell lung cancer (I or II) surgical removal is recommended. Surgery is rarely a suitable treatment option for small cell lung cancer and chemotherapy is standard treatment for most patients. Differences in treatment between different health authorities in South East England have been reported. In the 1995-1999 the proportion receiving any active treatment varied from 15% to 42%. This may reflect initial presentation with later stage disease or differences in practice.

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<td>Nos of urgent IPCT patients seen under two weeks</td>
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<td>Total no. of patients starting treatment</td>
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<th>Secondary care activity and cost data for lung cancer patients, Islington, 2002-2003</th>
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<th>Finished Consultant Episodes (FCE)</th>
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<td>94</td>
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<tr>
<td>UCLH</td>
<td>110</td>
<td>50</td>
<td>256</td>
</tr>
<tr>
<td>Barts &amp; London</td>
<td>15</td>
<td>16</td>
<td>35</td>
</tr>
<tr>
<td>Other trusts</td>
<td>low</td>
<td>low</td>
<td>low</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*An estimate of inpatient cost alone based on tariff data – substantial treatment costs are incurred in non-inpatient settings
MORTALITY

In the past three years (2001-2003), there were 187 lung cancer related deaths and this accounts for 34% of male, 20% of female and 27% of all person cancer related mortality each year in Islington. The risk of dying from lung cancer related death before the age of 75 in Islington was 1 in 29 for women, 1 in 15 for men, and 1 in 20 for all persons.

In the last two decades (1985-2002) there has been an overall decrease in lung cancer mortality. However, reflecting similar changes in incidence, the decline in male lung cancer mortality stopped after 1993. Female lung cancer mortality remains stable. Both male and female mortality rates remain higher than the rates in England and Wales.

The age standardised mortality ratio for lung cancer in Islington is 134 for females and 165 for males or 34% and 65% higher than the mortality observed for England and Wales. Lung cancer mortality for both males and females is significantly more common in Islington than it is in both London and England and Wales. For males lung cancer mortality in Islington is more common than in our neighbouring boroughs.

SURVIVAL AND STAGING AT DIAGNOSIS

Staging of lung cancer is essential for defining operability, selecting treatment regime, predicting survival and reporting comparable end results. The median survival time for patients with limited-stage disease is approximately 18 months. Lung cancer has one of the lowest survival rates in England and Wales. For patients diagnosed in 1996-1999, one year relative survival was only 23% for males and 24% for females; it was 6% for both males and females after five years. The European average survival rate for patients diagnosed between 1990-1994 was 30% after one year and 10% after five years. In England and

Table 3.3 Lung cancer one and five year relative survival: Islington compared to England and Wales and European survival.

<table>
<thead>
<tr>
<th>Year of diagnosis</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 year survival</td>
<td>5 year survival</td>
</tr>
<tr>
<td>Islington</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998-2003</td>
<td>22% (17.9 – 26.7)</td>
<td>–</td>
</tr>
<tr>
<td>1992-1997</td>
<td>28% (23.4 – 33.4)</td>
<td>6% (3.8 – 9.7)</td>
</tr>
<tr>
<td>England and Wales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-2001</td>
<td>23%</td>
<td>7%</td>
</tr>
<tr>
<td>1996-1999</td>
<td>21%</td>
<td>6%</td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990-1994</td>
<td>–</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

Figure 3.3 Lung cancer, directly age-standardised mortality rate, under 75 years, 1985-2003
(Source: Vital Statistics, ONS and Compendium, NCHOD, 2005)

Figure 3.4 Mortality from lung cancer, indirectly standardised mortality ratios (SMR), all ages, 2001-2003
(Source: Compendium, NCHOD, 2005)

Table 3.3 Lung cancer one and five year relative survival: Islington compared to England and Wales and European survival.

Sources: Cancer stats Monograph 2004 and EUROCARE-3 Summary 2003.
Wales survival was 1.4 times lower among deprived men compared to those living in affluent areas.

In Islington, for patients diagnosed with lung cancer between 1998-2003 and followed to the end of 2003, one year relative survival was 35% for males and 22% for females. There were not enough survivors to estimate five year survival for the 1998-2003 period, but for patients diagnosed between 1992-1997 the five-year survival rate was 10% for females and 6% for males.

Figure 3.5 shows stage at diagnosis for lung cancer for the period 1985-2004. There is no apparent change in the proportion presenting with early stage lung cancer over this period of time. The large number of patients without staging data precludes any firm conclusion about changes in stage at diagnosis over time.

There is an apparent decrease in one-year relative survival from least deprived to most deprived (Fig. 3.7). This may reflect presentation with more advanced disease in more deprived groups.
CONCLUSION AND FUTURE TRENDS

Lung cancer incidence is much higher in Islington than in England and Wales and consequently mortality is higher too. Over the past two decades lung cancer incidence and mortality have declined in Islington but from a higher base than in England and Wales with a strong suggestion that in the last decade male rates have stopped falling. There is some evidence that survival is worse for more deprived groups in Islington. Smoking is the number one cause of lung cancer. Sustained reduction in smoking prevalence is needed to reduce the burden of lung cancer mortality.

BIBLIOGRAPHY


ADDITIONAL RESOURCES


National Cancer Institute (USA). Clinical Trials http://www.nci.nih.gov/clini-


DEFINITION
Breast cancer affects either the breast ducts in 85% of cases or the main breast tissue (lobules) in 15% of cases. It is the commonest cancer in women in the UK accounting for almost one in three of all new female cancer cases. Like many other cancers, it spreads via the lymph to nodes in the armpit and elsewhere, and via the blood to the bones, liver, lung and brain. Breast cancer in men is rare.

Disease progression

<table>
<thead>
<tr>
<th>Healthy breast</th>
<th>Early changes</th>
<th>Localised cancer</th>
<th>Local and regional spread</th>
<th>Metastasis</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer development – many years</td>
<td>Pre-symptomatic phase (to symptoms) – several years</td>
<td>Symptomatic phase (to diagnosis) – usually short (months)</td>
<td>Screening effective</td>
<td>Treatment phase (to outcome) – long – survival good - deaths from recurrence may occur</td>
<td></td>
</tr>
</tbody>
</table>

INCIDENCE
In Islington 1 in 11 women will develop breast cancer before the age of 75 years. In the 2000-2002 period there were an average of 88 breast cancers diagnosed each year. The incidence of breast cancer has risen by almost one third over the last two decades consistent with rises seen nationally. Part of this rise in incidence may be attributable to the introduction of the NHS Breast Screening Programme in 1988.

When adjustments are made for age, breast cancer is no more commonly diagnosed in Islington than our neighbouring boroughs, North Central London, London or England and Wales.

Figure 4.1 Breast cancer incidence, directly age-standardised rate, all ages, 1985-2002 (Source: Thames Cancer Registry and Compendium, NCHOD, 2005)

Figure 4.2 Breast cancer incidence, indirectly standardised registration ratios (SRR), all ages, 1998-2000 (Source: Compendium, NCHOD, 2005)
RISK FACTORS
Incidence increases steadily with age particularly after the menopause, with 80% of breast cancers occurring in post-menopausal women. The incidence of breast cancer is affected by exposure to hormones (mainly oestrogen). Early menarche (first period) and late menopause, being childless or bearing a first child over the age of 30, current use of the contraceptive pill, being overweight after the menopause and drinking alcohol all increase risk through increasing exposure to oestrogen. Current use of Hormone Replacement Therapy (HRT) is also associated with an increased risk of breast cancer: the effect is substantially greater for oestrogen-progesterone combinations than for other types of HRT. Two breast cancer genes have been identified: BRAC1 and BRCA2. These genes have been found in approximately 85 per cent of families with four or more cases of breast cancer diagnosed under the age of 60. However, breast cancer genes probably only cause about 5% of all breast cancer cases. The relatively rapid increase in incidence observed in most developed and developing countries points to the importance of environmental and lifestyle factors and can probably be attributed to changes in reproductive choices and nutrition.

RISK GROUPS
There is a higher risk of breast cancer in the south of England and Wales than in the north of England and Scotland. South Asian women in England have been found to have a lower breast cancer risk than their English-native counterparts. Women are at higher risk of developing breast cancer if they have higher socio-economic status or live in higher socio-economic or urban communities. There is an increase in risk when people move from low-risk to high-risk countries. For example, Japanese immigrants to the USA acquire incidence rates similar to the US population within two generations.

EARLY DETECTION AND SCREENING
The NHS Breast Screening Programme started in 1988 and provides free breast screening mammograms (low energy X-ray examinations) every 3 years for all women in the UK aged 50 and over. Women aged between 50-70 years and registered with a GP are routinely invited. Around one-and-a-half million women are now screened in the UK each year. Best consensus on the effectiveness of screening suggests it reduces mortality in women screened by around 20%. This is supported by a downward trend in mortality and a step increase in survival post 1988 in the age groups offered screening.

The breast-screening programme in Islington is coordinated by the PCT and is provided by (CELBSS) Central and East London Breast Screening Service based at St Bartholomew’s Hospital. On average, 2,320 Islington women are screened every year with an average 18 cancers being detected (around 20% of all breast cancers diagnosed). This is a cancer detection rate of 7.2 per 1000 women screened. The average detection rate nationally is 6.7 per 1000 women screened. Cancer detection rates through breast screening are higher in populations like Islington where fewer women are screened regularly.

As at the end March 2004, 5,534 women had been screened within the last 3 years of 9,490 eligible for screening (58% coverage). The suggested target for participation in the screening programme is 80%. In London breast-screening coverage averages 64%, while nationally the average coverage is 74.9%. Like other inner city PCTs Islington has a highly mobile population and this is one reason for lower coverage. A simple model suggests that in some London areas up to 11% on GP lists may miss out on invitations for screening because they change address frequently. Participation in the local programme varies by GP practice, deprivation, geographical location and access. We have one fixed site south of the borough based at St Bartholomew’s and a single mobile screening unit that is constantly being relocated due to site hosting issues.

Individualised surveillance programmes and annual mammograms are offered to some women with a strong family history who we know have genes that are associated with breast cancer.

SYMPTOMS, PRESENTATIONS
The commonest presenting symptom is a painless lump. This is also the most predictive symptom although only a minority of women referred with a lump in the breast will have cancer. Other symptoms and signs include changes in the skin such as dimpling, puckering or redness, changes in the nipple, unusual rash or sore area, a change in the size or shape of the breast, unusual pain or discomfort (pain is an uncommon symptom and is more common in benign breast disorders) and nipple discharge. Evidence from London suggests around two-thirds of women present to their doctor within a month of symptom discovery but around a third delay. Socio-demographic associations with delay in presentation are not strong but in various studies older women are more likely to delay and there may be an association with fewer years of education. Knowledge of symptoms is better in higher socio-economic groups. Failure to recognise symptoms and failure to disclose symptoms to another person are associated with delay.
REFERRAL AND DIAGNOSIS

Recent NICE referral guidelines recommend urgent referral of women of any age who present with a discrete fixed and hard lump and any woman over 30 years of age with a persistent (>1 cycle) discrete lump. Other less common symptoms (as above) are also indications for urgent referral except for breast pain. Retrospective studies of women with breast cancer suggest median time from primary care referral to outpatient appointment is generally short (<2 weeks). There is little evidence that survival is lower with a delay of up to three months from referral to treatment. However, there is good data that supports a significant survival deficit in women for whom total delay (presentation to treatment) is 3-6 months. This survival deficit is around 5%. Differences in survival between countries in Europe have been attributed to delay.

Performance data around delay in referral is readily available by PCT and provider. Approximately 200 Islington women per year are referred for assessment using the urgent referral system and nearly all are seen within the stipulated 2 weeks (Table 4.1).

INVESTIGATION AND TREATMENT

The literature suggests approximately 10% of women referred to a breast clinic have cancer. From the table above it can be seen that amongst urgent referrals around 8% go on to be treated for breast cancer. Triple assessment - a combination of physical examination, mammography and biopsy (aspiration with a fine needle or other method) misses very few cancers. Triple assessment should be done on the same day with results given on the same day. Once a diagnosis has been made few investigations delay surgery. Investigations to determine cancer stage are only done if it is suspected that the cancer has already spread beyond the breast. So delays to surgery because of investigations (such as bone scans, liver ultrasound, chest X-ray, CT and MRI) are uncommon.

From performance reporting data (Table 4.1) about 60 Islington women are reported to receive treatment in a year. Approximately one-third were urgently referred and the remaining two-thirds routinely referred. The numbers of Islington women treated by the hospital system in 2002-3 was 84 – very close to the number of incident cases over this period of time. After allowing for DCO cases we estimate around 10% of women with breast cancer are not being counted and reported through the performance reporting system.

Table 4.1 Breast referrals from primary to secondary care, Islington, 2004

| Source: Open Exeter Cancer Data |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | Jan-Mar 04 | Apr-Jun 04 | Jul-Sept 04 | Oct-Dec 04 | Total |
| Nos of IPCT patients referred urgently | 60 | 56 | 50 | 52 | 218 |
| Nos of urgent IPCT patients seen under two weeks | 60 | 56 | 50 | 52 | 218 |
| Urgent GP referrals starting treatment | 4 | 5 | 6 | 3 | 18 |
| Total no. of patients starting treatment | 9 | 15 | 13 | 16 | 53 |

Table 4.2 Secondary care activity and cost data for breast cancer patients, Islington, 2002-2003

| Source: Happi |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Trust | Finished Consultant Episodes (FCE) | Bed days | Total cost* |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | Elective | Non-elective | Elective | Non-elective | | |
| Whittington | 179 | 13 | 115 | 195 | £158,243 |
| Barts & London | 139 | 12 | 210 | 58 | £135,389 |
| UCLH | 141 | 38 | 254 | 393 | £188,533 |
| Other trusts | low | low | low | low | £23,304 |
| Total | | | | | £505,489 |

*An estimate of inpatient cost alone based on tariff data – substantial treatment costs are incurred in non-inpatient settings.
MORTALITY

Women die from breast cancer because of spread of the disease throughout the body (metastasis). Since 1985 there have been approximately 15 deaths from breast cancer in women under the age of 75 years in Islington each year and another 10 over the age of 75 years. For a woman in Islington the risk of dying from breast cancer before the age 75 is 1 in 46. Death rates have fallen by around 25% from higher rates in the late 1980s and early 1990s and appear to be tracking national death rates closely (Fig. 4.3).

After adjustments are made for age, breast cancer mortality is no more common in Islington than our neighbouring boroughs, North Central London, London or England and Wales (Fig. 4.4).

SURVIVAL AND STAGE AT DIAGNOSIS

Breast cancer may be simply divided into 4 stages1. In Islington Thames Cancer Registry data indicate about 30% of women present in Stage I, less than 10% in Stage 2, about 20% in stage 3 and less than 10% in Stage 4. There is little apparent change over time. However, this needs to be interpreted with caution because no staging data is available for almost 30% of cancers. Nationally since the introduction of screening there has been an increase in the proportion of women with early stage breast cancer in 50-70 year olds. This is not readily apparent in Islington data.

Survival is related to stage at diagnosis. The five-year relative survival for breast cancer in Islington for the most recent years is high and comparable to that of England and Wales and Europe. In Islington 5-year relative survival for women diagnosed between 1998 and 2003 and followed to the end of 2003 is 84%.

Five-year relative survival for breast cancer is improving over time in Islington reflecting national trends.

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1Stage 1 is invasive cancer localised to the breast, Stage 2 is invasive breast cancer with spread to local lymph nodes or a larger tumour (growth), Stage 3 is a larger tumour with more extensive spread to lymph nodes and Stage 4 is spread to other more distant parts of the body.
In Islington the data does not suggest any trend in breast cancer survival by deprivation. This is encouraging, however, there were not enough data (too few deaths in women from less deprived areas) to make some of these survival calculations. National data does, however, suggest that women from deprived areas are 2.65 times more likely than those from affluent areas to present with locally advanced cancer or cancer that has spread. A study conducted in the South Thames Region of London found a clear trend that mortality rates increased with deprivation. Breast cancer patients resident in the most affluent areas had 70% relative survival compared with 57% in the most deprived.

### Table 4.3 Breast cancer one and five-year relative survival in Islington (with 95% confidence limits) compared to survival in England and Wales and Europe.

<table>
<thead>
<tr>
<th>Year of diagnosis</th>
<th>Women</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 year survival</td>
<td>5 year survival</td>
<td></td>
</tr>
<tr>
<td>Islington</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998-2003</td>
<td>96% (92.6-97.4)</td>
<td>84% (76.4-88.7)</td>
<td></td>
</tr>
<tr>
<td>1992-1997</td>
<td>90% (86.4-92.6)</td>
<td>76% (70.0-79.2)</td>
<td></td>
</tr>
<tr>
<td>England and Wales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-2001</td>
<td>96%</td>
<td></td>
<td>81%</td>
</tr>
<tr>
<td>1996-1999</td>
<td>93%</td>
<td></td>
<td>77%</td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990-1994</td>
<td></td>
<td></td>
<td>76%</td>
</tr>
</tbody>
</table>

### Figure 4.6 1-year and 5-year relative survival by period of diagnosis: breast cancer, women, Islington PCT, 1985-2003

(Source: Thames Cancer Registry)

### Figure 4.7 1-year and 5-year relative survival by deprivation quintiles (Super Output Area): women diagnosed with breast cancer during 1998-2003

(Source: Thames Cancer Registry)
SUMMARY AND FUTURE DIRECTION

Breast cancer is common and will probably increase in frequency. Incidence in Islington is no different to elsewhere. Survival is improving and deaths are becoming less common. In Islington survival is high and there is no relationship that we can find between deprivation and survival. Improvements in screening technology (digital mammography, computer aided detection and mammotome biopsy), evaluation (sentinel node biopsy) and treatment (Herceptin) will offer scope for further improvement in breast cancer detection and survival. These need to be matched by improvements in screening coverage, early diagnosis and speedy treatment.

BIBLIOGRAPHY


ADDITIONAL RESOURCES


DEFINITION
Colorectal or large bowel cancer arises from the lining of the large bowel or intestine (colon and rectum). Nearly two thirds of colorectal cancers occur in the rectum or sigmoid colon. It is the third most commonly diagnosed cancer in the UK accounting for over 10% of all deaths from cancer. Colorectal cancer affects almost equal proportions of men and women, most commonly between the ages of 60 and 80 years. Rectal cancer is more common in men.

Disease progression

Figure 5.1 Colorectal cancer incidence, directly age-standardised rate, all ages, 1985-2002
(Source: Thames Cancer Registry and Compendium, NCHOD, 2005)

ININCIDENCE
In the three-year period 2000-2002 there were on average 73 colorectal cancer cases diagnosed per year in Islington (41 male, 32 female). This accounts for 11% of all cancers. The risk of being diagnosed with colorectal cancer in Islington before the age of 75 is 1 in 26. Over the last two decades the incidence of colorectal cancer has been stable with possibly a small increase in the incidence in men. The rate for males remains higher than the rate for females (Fig. 5.1).

The standardised incidence ratio for colorectal cancer in Islington is 90 for females and 92 for males with confidence limits including the standard (100) indicating that colorectal cancers are no more or less common in Islington than our neighbouring boroughs, London, England and Wales. Incidence rates are lower in London than England and Wales (Fig. 5.2).
RISK FACTORS
Age greatly increases the risk of colorectal cancer. Among those aged 75 and above the incidence of colorectal cancer nationally is more than ten times the rate of those aged between 45 and 55 years. The median age of patients at diagnosis is 70. There is evidence that a diet high in fibre decreases the risk of colorectal cancer. A recent study has found that patients with high red and processed meat and low fish intake are at 63% increased risk of colorectal cancer. Alcohol consumption, and excess body weight are independent risk factors and regular physical activity has proven to be protective for colon cancer for males. 20% of colorectal cancer patients have a family history of colorectal cancer and 5-10% have other certain genetic syndromes (familial adenomatous polyposis and hereditary non-polyposis cancer of the colon). 1-2% of patients have ulcerative colitis or Crohn’s disease and 1.5-3% of patients have a previous history of colorectal cancer within the last 5 years. Recent studies have shown that long-term smokers are at an increased risk of colorectal cancer. This is especially relevant for Islington with its high smoking prevalence.

SYMPTOMS AND PRESENTATIONS
Individual symptoms are poor predictors of colorectal cancer. Blood mixed with or on the stool and change in bowel habit are the most consistent predictors of cancer. Other symptoms include rectal bleeding, unexplained iron-deficiency anaemia, unexplained weight loss, abdominal pain, faecal incontinence, bowel obstruction, and production of mucus from the rectum. Many of these symptoms occur in the population and can be unrelated to a cancer making diagnosis difficult. The stage of cancer at presentation determines prognosis and treatment.

Figure 5.3 shows the stage at diagnosis (I to IV) of people in Islington with colorectal cancer between 1985 and 2004. It is difficult to draw conclusions from this graph as almost a third of all cases are classified as ‘not known’ (NK). However, there was no clear shift in stage of diagnosis over the time periods examined.

SCREENING AND EARLY DIAGNOSIS
Screening by Faecal Occult Blood (FOB) test followed by appropriate investigation in FOB positive cases reduces mortality in the screened population by 15-18%. The NHS Bowel Cancer Screening Programme will commence in April 2006 offering men and women aged 60 to 69 a FOB test every two years. People aged 70 and over will be provided with an FOB testing kit on request. Two-yearly screening of 60% of 50-69 year olds has been estimated to prevent 1,200 deaths from colorectal cancer per year in the UK. With an FOB screening programme for 60 to 69 year-olds in Islington we would expect to prevent 1.5 premature deaths from colorectal cancer each year as well as some deaths in the over 75 age group. If the programme was extended to cover a wider age group we would expect to prevent a greater number of deaths. It is important to note that in pilot programmes patients from more deprived areas were less likely to accept an invitation for screening.
**REFERRAL DATA**

Between January and December 2004, 184 people were urgently referred for suspected colorectal (lower gastrointestinal) cancer, all of them were seen in under two weeks. Of those 184 people, approximately 6% were diagnosed with cancer and treated. During the same period 3 times as many treated patients came through non-urgent referral routes. This underlines the difficulty of diagnosing bowel cancer and the low yield of cancer cases in a referred population. In all there were 43 in whom a decision to treat was made. HES data indicates that there are probably a further 10 patients seen in a year who are treated but probably not seen through this specialist treatment and assessment route. This could be due to some patients receiving palliative care only because of advanced stage of diagnosis. There are further 10 or more cases per year who are not seen by the hospital system with a primary diagnosis of colorectal cancer but have colorectal cancer reported as the primary cause of death.

**DIAGNOSIS AND TREATMENT**

There are various procedures to obtain diagnosis and there is much debate as to what is the most effective and cost effective. The success of the procedure can be dependant on the person performing it. The decision on which investigation will be carried out is based on the patient’s symptoms, age and general condition. The National Institute of Clinical Excellence (NICE) recommends that endoscopy (flexible sigmoidoscopy or colonoscopy) and imaging (barium enema and computed tomography (CT), including CT colonography which is becoming more widely used, should be available for investigation. Evidence shows that delays from onset of symptoms and diagnosis for colorectal cancer can be a year or more. This is mostly due to patient delay and to a lesser extent primary care and hospital delays.

In 2002/3 the majority of elective and non-elective surgery for Islington residents with colorectal cancer took place in either the Whittington or University College Hospital. The treatment offered to colorectal cancer patients depends on the stage at which the cancer is diagnosed. Surgery, pre and post-operative radiotherapy, post-operative chemotherapy and palliative procedures including surgery (stent) radiotherapy and chemotherapy are available.

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**Table 5.1** Lower gastrointestinal referral rates from primary to secondary care, Islington, 2004

<table>
<thead>
<tr>
<th>Jan-Mar 04</th>
<th>Apr-Jun 04</th>
<th>Jul-Sept 04</th>
<th>Oct-Dec 04</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>Nos of IPCT patients referred urgently</td>
<td>41</td>
<td>38</td>
<td>55</td>
<td>50</td>
</tr>
<tr>
<td>Nos of urgent IPCT patients seen under two weeks</td>
<td>41</td>
<td>38</td>
<td>55</td>
<td>50</td>
</tr>
<tr>
<td>Urgent GP referrals starting treatment</td>
<td>2</td>
<td>5</td>
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<td>1</td>
</tr>
<tr>
<td>Total no. of patients starting treatment</td>
<td>13</td>
<td>14</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

**Table 5.2** Secondary care activity and cost data for colorectal cancer patients, Islington, 2004

<table>
<thead>
<tr>
<th>Trust</th>
<th>Finished Consultant Episodes (FCE)</th>
<th>Bed days</th>
<th>Total cost*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Elective (planned)</td>
<td>Non-elective (unplanned)</td>
<td>Elective</td>
</tr>
<tr>
<td>UCLH</td>
<td>170</td>
<td>49</td>
<td>416</td>
</tr>
<tr>
<td>Whittington</td>
<td>154</td>
<td>33</td>
<td>154</td>
</tr>
<tr>
<td>Other trusts</td>
<td>low</td>
<td>low</td>
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</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*An estimate of inpatient cost alone based on tariff data – substantial treatment costs are incurred in non-inpatient settings
MORTALITY AND RELATIVE SURVIVAL

In the three-year period 2000-2002 there were on average 15 colorectal cancer deaths registered per year in Islington (9 male, 6 female). Over the last two decades there has been a steady decrease in deaths from colorectal cancer under the age of 75 years (Fig. 5.4). The rates for males remain higher than females. Broadly the decrease observed in Islington is consistent with the rate of decline seen nationally. This trend is thought to reflect the more widespread use of endoscopy for early diagnosis, improved surgical techniques and lower post-operative mortality.

The standardised mortality ratio for colorectal cancer in Islington is 117 for females and 127 for males indicating that colorectal cancer deaths in this period were 17% and 27% more common in Islington than in England and Wales but confidence limits include the standard (100) so the underlying rate may be no different from the rate in England and Wales (Fig. 5.5).

Relative survival at 5 years from colorectal cancer is 29% for men and 46% for women based on diagnoses in the 1998-2003 period. There has been decrease in relative survival at 5 years since 1985 for men, however it is possible that this apparent decline is a chance result (Fig. 5.6 and Table 5.3).

Deprivation is associated with adverse survival in patients with colorectal cancer. For patients diagnosed between 1998-2003 the 1-year relative survival in less affluent areas of Islington is 57%, which is lower than the 83% 1-year survival in people from least deprived areas (Fig. 5.7).

The survival difference between affluent and deprived areas could be due to late presentation with advanced disease in people from more deprived groups. This difference within Islington is mirrored in differences within Europe for the same reasons. A study was carried out in 2000 examining the variation in relative survival for colorectal cancer across 11 European cancer registries including Thames Cancer Registry (of which Islington data is part). Patients in the Thames region ranked tenth out of the 11 in terms of relative survival at 3 years. This was found to be due to fewer patients being surgically treated post-diagnosis and a lower percentage of diagnoses at stages I and II (Dukes’ stages A and B) than in most of the other areas studied.
### Table 5.3 Colorectal cancer one and five years survival (with 95% confidence limits) in Islington compared to England and Wales and Europe
Sources: Cancer stats Monograph 2004 and EUROCARE-3 Summary 2003.

<table>
<thead>
<tr>
<th>Year of diagnosis</th>
<th>1 year survival</th>
<th>5 year survival</th>
<th>1 year survival</th>
<th>5 year survival</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Islington</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998-2003</td>
<td>66% (58.4-73.0)</td>
<td>29% (18.1-41.7)</td>
<td>71%</td>
<td>46% (33.8-58.0)</td>
</tr>
<tr>
<td>1992-1997</td>
<td>69% (61.4-76.1)</td>
<td>42% (33.6-50.7)</td>
<td>65%</td>
<td>39% (30.6-48.2)</td>
</tr>
<tr>
<td>England and Wales</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-2001</td>
<td>74</td>
<td>52%</td>
<td>73</td>
<td>53%</td>
</tr>
<tr>
<td>1996-1999</td>
<td>67</td>
<td>47%</td>
<td>67</td>
<td>48%</td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td>45%</td>
<td></td>
<td>50%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Women</th>
<th>1 year survival</th>
<th>5 year survival</th>
<th>1 year survival</th>
<th>5 year survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Islington</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998-2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992-1997</td>
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<tr>
<td>England and Wales</td>
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<tr>
<td>2000-2001</td>
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<tr>
<td>1996-1999</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Figure 5.7 Colorectal cancer, 1-year and 5-year relative survival by quintiles of deprivation (Super Output Area), Islington, 1998-2003
(Source: Thames Cancer Registry)

#### SUMMARY AND FUTURE TRENDS
In Islington the incidence and mortality rates of colorectal cancer are not significantly different than our neighbouring boroughs, London, England and Wales. However, a European-wide study has shown that the survival at 3 years in the Thames region is poor compared to some other European areas due to late diagnosis and fewer patients receiving surgical treatment. There are strong suggestions in Islington that there is a trend to poorer survival in people from more deprived areas. The introduction of the NHS bowel cancer screening programme is likely to increase early diagnosis of colorectal cancer. However, this is entirely dependant on participation in the screening programme. Deprivation levels affect uptake of screening and as Islington is one of the most deprived boroughs in England special consideration should be made to prevent widening health inequalities.
BIBLIOGRAPHY


ADDITIONAL RESOURCES


Wrigley, H., et al., 2003. Inequalities in survival from colorectal cancer: a comparison of the impact of deprivation, treatment, and host factors on observed and cause specific survival. *Journal of Epidemiology and Community Health,* 57 (4), 301-309.
DEFINITION
Prostate cancer is the second most common cancer in men in the UK. The prostate is a small conical gland at the base of the male bladder and surrounding the first part of the urethra. Non-metastatic prostate cancer can be divided into clinically localised disease and locally advanced disease that has spread outside the capsule of the prostate gland.

Disease progression

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Early possible detection</th>
<th>Clinical course (watchful waiting, radiotherapy, prostatectomy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy prostate</td>
<td>Pre-cancer (early cellular change)</td>
<td>Localised prostate cancer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Locally advanced prostate cancer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Metastatic prostate cancer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prostate cancer related death</td>
</tr>
</tbody>
</table>

Pre-symptomatic stage (years, possibly until non-prostate cancer related death)
Symptomatic until diagnosis (long/variable)

IN Incidence
In the three-year period between 2000 and 2002, there were on average 63 diagnosed cases of prostate cancer per year in Islington. This accounts for 18% of all male cancers. The lifetime risk for men of being diagnosed with prostate cancer in Islington before the age of 75 years is 1 in 13.

Over the last two decades the incidence rate of diagnosed prostate cancer has doubled – approximately in keeping with rises seen nationally (Fig. 6.1).

The standardised registration (incidence) ratio for prostate cancer in Islington is 121 or 21% higher than the incidence rate in England and Wales (Fig. 6.2). Prostate cancer is more common in Islington than our neighbouring boroughs, London and England and Wales but is only significantly more common (statistically) than the rate in England and Wales.

| Figure 6.1 Prostate cancer incidence, directly age-standardised rate, all ages, 1985-2002 (Source: Thames Cancer Registry and Compendium, NCHOD, 2005) |
| Figure 6.2 Prostate cancer incidence, indirectly standardised registration ratios, all ages, 1998-2000 (Source: Compendium, NCHOD, 2005) |
RISK FACTORS

Age
Prostate cancer is rarely found in men under 45 years old and only 12% of clinically apparent cases arise before the age of 65. Incidence rates increase steeply with age and the highest rates occur in the oldest age groups. Prostate cancer is usually slow growing and is often not the cause of death.

Diet
The causes of prostate cancer are not well understood. There is some indication (though epidemiological evidence at present is inconclusive) that making changes to diet to include more fruit and vegetables (especially foods rich in selenium, vitamin E and lycopene) and decrease your intake of animal fat, is one way of reducing your risk of developing prostate cancer.

Family history
The risk of developing prostate cancer increases if there is a first-degree relative (father or brother) who was diagnosed with prostate cancer at a young age. Having an elderly relative with prostate cancer is not uncommon and does not increase risk.

RISK GROUPS

Deprivation
Incidence rates are higher among men from most affluent areas (10% higher in men from affluent areas than in men from deprived areas), perhaps reflecting screening and case finding in more affluent areas. But there is no such trend for mortality rates.

Ethnicity
People in traditional low risk countries such as China and Japan, are less likely than those in the USA or UK, for example, to develop cancer. Men of African descent are most at risk. This difference may relate to the genetic differences between those living in different parts of the world but may be related to other aspects of life.

Environment
Japanese migrants to the USA increase their risk of developing prostate cancer and this has been linked to changes in their diet, just as increasing rates of prostate cancer in traditional low risk countries, such as China and Japan, have been associated with westernisation of diet.

SYMPTOMS AND PRESENTATIONS

Cancer of the prostate is slow to develop. In some, especially older men, it may only affect a small area of the prostate and grow so slowly it may never need treatment, not cause symptoms and may not be the cause of death. An American autopsy study in 1996 found that 42% of prostates were cancerous, yet did not cause symptoms before death and were not the cause of death.

Large prostatic tumours can cause a number of symptoms, many of which are the same as for minor prostate problems: a frequent need to urinate, difficulty starting the flow of urine, blood in urine or semen, and pain in the back, hips or pelvis. It should be noted that many of these symptoms are most often caused by benign conditions.

The natural history of the disease is poorly understood. As a result it is not always possible to predict reliably which tumours will be aggressive and which require little or no treatment. Unfortunately about half the men who are diagnosed with prostate cancer nationally are diagnosed at a late stage when the disease is less treatable.

Figure 6.3 shows the stage at presentation (I to IV) of men in Islington diagnosed with prostate cancer between 1985 and 2004. A large proportion of cases are classified as ‘not known’ (NK). There is no apparent change over time in the proportion diagnosed at each stage.

1 Prostatic cancer is staged according to two systems: the tumour, node, metastasis (TNM) classification system which gives stages I to IV where I is local and IV is metastatic and the American urologic staging system. Clinically localised disease is prostate cancer thought, after clinical examination, to be confined to the prostate gland. Locally advanced disease is prostate cancer that has spread outside the capsule of the prostate gland but has not yet spread to other organs. Metastatic disease is prostate cancer that has spread outside the prostate gland to either local, regional, or systemic lymph nodes, seminal vesicles, or to other body organs (e.g. bone, liver, brain) and is not connected to the prostate gland.
SCREENING AND DIAGNOSIS
There is considerable debate about whether screening for prostate cancer should be introduced. Many of the criteria for assessing the need for a population programme have not been met for prostate cancer. In particular, there is a lack of knowledge about the epidemiology and natural history of the disease, a poor level of accuracy in the screening tests, and a lack of good quality evidence concerning the effectiveness and cost-effectiveness of treatments for localised prostate cancer.

The aim of screening is to identify, at an early stage, those cases of prostate cancer which will become invasive and then to offer treatment which will increase the quality and length of life. There is no evidence about the number of deaths that could be prevented by screening men without any symptoms, and there is a lack of evidence about the best way to treat early disease.

There are several tests which can inform the diagnostic process: urine test, prostate-specific antigen (PSA) blood test, digital rectal examination, biopsy, scans (to establish whether the cancer has spread). Combinations of these tests might be used.

Of all tests, PSA is the most acceptable and reliable, but there are a number of problems:

- Positive Predictive Value: only about a quarter to a third of asymptomatic men with abnormally high PSA levels will have prostate cancer. Up to two-thirds of men will not have prostate cancer but will suffer the anxiety, discomfort and risk of follow-up investigations.

- Lack of sensitivity: up to 20% of all men with prostate cancers have normal PSA levels.

- The PSA test has not been standardised.

The Royal College of Radiologists suggests that PSA testing in asymptomatic men should be offered on request following full counselling about the implications and would include information on the test’s sensitivity and specificity, and on the possibility that treatment may incur risk and not improve life expectancy.

The UK National Screening Committee has recommended that a prostate cancer screening programme should not currently be introduced in England. The Department of Health has instead introduced an informed choice programme, “Prostate Cancer Risk Management” which provides guidelines for practitioners on investigation options in men who enquire about testing.

REFERRAL DATA AND HOSPITAL FLOWS
Between January 2004 and December 2004, 98 people were urgently referred for suspected urological cancers (which includes prostate cancer but also other common cancers such as bladder cancer). All were seen in less than two weeks. Over the same time period 67 people with urological cancers were diagnosed and entered into treatment. Only a small minority (8) had been referred through the urgent referral route so the yield in urgently referred patients appears low. The remaining 59 treated patients were referred non-urgently. Approximately 80% of patients are treated within 31 days of a decision to treat. From HES data for 2002-3, 45 Islington residents were admitted to hospital with a primary diagnosis of prostate cancer. After allowing for Death Certificate Only (DCO) patients, this is considerably less than expected from incidence data indicating that there are probably some men with a prostate cancer not admitted acutely.

In 2002/3 the majority of elective and non-elective surgery for Islington men with prostate cancers...
cancer took place in either the Whittington or University College London Hospitals (UCLH). The total cost of surgery in 2002/3 for Islington men with prostate cancer was £174,329.

The total number of Finished Consultant Episodes (FCEs) for elective surgery was 60, with 173 bed days for prostate cancer. For non-elective surgery, the total number of FCEs was 37, with 590 bed days.

**TREATMENT**

Current management of early prostate cancer includes watchful waiting, radical prostatectomy or radiotherapy. Prostatectomy and radiotherapy may cause unwanted side effects, including impotence and incontinence. There is no curative treatment for metastatic disease, instead hormone treatment is used to lower the levels of androgens, principally testosterone, in the body, which gives good short term control of the cancer. For localised and locally advanced cancers, research suggests that there is no significant difference in overall survival between watchful waiting and radical prostatectomy. The latter carries the risks of major surgery and of sexual and urinary dysfunction. There is general agreement that pre-treatment tumour characteristics, including serum prostate-specific antigen (PSA) level at diagnosis, tumour grade, and clinical stage as judged by digital rectal examination, are important predictors for treatment outcomes independent of the type of treatment.

**MORTALITY AND RELATIVE SURVIVAL**

In a three-year period between 2000 and 2002, there were on average 9 deaths attributable to prostate cancer per year in Islington men under the age of 75 years. There were approximately 10 deaths per year in men over 75 years of age.

The number of deaths under 75 years are small leading to variation in the rate in any given year (Fig. 6.4). However over the last two decades there is no apparent trend in mortality rates. This is consistent with the national trend for England and Wales, where mortality is nearly constant.

The standardised mortality ratio for prostate cancer in Islington is 104 or 4% higher than the mortality rate in England and Wales. This is not significantly different to the rates for England and Wales, London, or our neighbouring boroughs.

It is not known to what extent the incidence and survival differences reflect true variation in risk by socio-deprivation group or differences in access to screening and/or patient presentation.

Survival from prostate cancer is strongly related to the stage of disease at diagnosis. Those who present with low-grade prostate cancers have a minimal risk of dying from prostate cancer during 20 years of follow up. Men with high-grade prostate cancers have a high probability of dying from prostate cancer within 10 years of diagnosis.

The five-year survival from prostate cancer is 79% in Islington, for patients diagnoses between 1998 and 2003 followed to the end of 2003. This is higher than the 65% survival in England and Wales (Table 6.3) and 73% survival reported for North Central London for a slightly earlier period (1995-7 followed to end 2002). There has been a steady increase in the rate of survival in Islington since 1985, and this increase in survival is in line with the national trend. There is no trend in survival across Islington deprivation quintiles for 1-year survival and not enough data to determine any trend across quintiles for five-year survival.

**Table 6.3 Prostate cancer one and five year survival Islington compared to England and Wales and European survival.**

<table>
<thead>
<tr>
<th>Period of diagnosis</th>
<th>1 year survival</th>
<th>5 year survival</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Islington</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998-2003</td>
<td>92% (87.2-94.9)</td>
<td>79% (66.4-86.7)</td>
</tr>
<tr>
<td>1992-1997</td>
<td>91% (85.6-99.5)</td>
<td>72% (64.0-79.0)</td>
</tr>
<tr>
<td><strong>England and Wales</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-2001</td>
<td>91%</td>
<td>71%</td>
</tr>
<tr>
<td>1996-1999</td>
<td>87%</td>
<td>65%</td>
</tr>
<tr>
<td><strong>Europe</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990-1994</td>
<td>–</td>
<td>50-85%</td>
</tr>
</tbody>
</table>
Incidence of prostate cancer is increasing probably due to increased testing. Men who are diagnosed with prostate cancer in Islington have a high survival rate, probably due in large part to earlier detection of cancers, but maybe also be in part due to effective treatment and increased awareness of possible symptoms.

There is considerable uncertainty about the natural history of prostate cancer. However, Health Technology Assessment (HTA) research project which started in 1999 and is due to publish in 2009, aims to evaluate the effectiveness, cost-effectiveness and acceptability of treatments for men with localised prostate cancer within the context of a pragmatic randomised controlled trial. This will compare 3 treatments, assess survival at 5, 10 and 15 years following treatment, investigate a number of short and medium-term outcomes, estimate the resource use and costs of case-finding, treatment and follow-up, and compare costs and outcomes of treatment in terms of survival and health related quality of life.
BIBLIOGRAPHY
Albertsen P, Hanley J, Fine J. 20 Year Outcomes Following Conservative Management of Clinically Localized Prostate Cancer. JAMA; May 4, 2005; 293, 17; AMA Titles pg. 2095


KCL, Thames Cancer Registry. Prostate Cancer in South East England: Cancer network perspective, December 2004


Melia J. Part 1: The burden of prostate cancer, its natural history, information on the outcome of screening and estimates of ad hoc screening with particular reference to England and Wales. BJU International 2005; 95:Supplement:3, 4-15


NICE. Referral for Suspected Cancer. A clinical practice guideline. University of Leicester, Royal College of General Practitioners, National Collaborating Centre for Primary Care. June 2005


The Royal College of Radiologists’ Clinical Oncology Information Network. Guidelines on the management of prostate cancer. 1999, Royal College of Radiologists

Wilt T. Prostate Cancer (non-metastatic) Clin Evid 2004,12:1269-1284

OTHER USEFUL SOURCES OF INFORMATION
Bupa fact sheet accessed 29.03.05 at http://hcd2.bupa.co.uk/fact_sheets/Mosby_factsheets/prostate_cancer.html

Cancer Research UK fact sheet; Prostate cancer accessed 29.03.05 at http://www.cancerresearchuk.org/aboutcancer/specificcancers/prostatecancer


The Prostate Cancer Charity website accessed 29.03.05 at http://www.prostate-cancer.org.uk/learn/prostateCancer/index.asp
Efforts to improve cancer survival are very important, however, just as important is the need to recognise that people die from cancer and need to do so with dignity and appropriate support.

Palliative care is defined by the National Institute for Health and Clinical Excellence (NICE) as the active holistic care of patients with advanced progressive illness. Provision of psychological, social and spiritual support are just as important as management of pain and other symptoms. The goal of palliative care is achievement of the best quality of life for patients and their families. Many aspects of palliative care are also applicable earlier in the course of illness in conjunction with other treatments. Although this definition suggests input throughout a disease, the term palliative care tends to be associated with the care of dying people.

**WHAT PATIENT GROUPS REQUIRE PALLIATIVE CARE?**

All patients facing a life-threatening illness and their families will need some degree of supportive care apart from the treatment for their condition. The caseload of Islington's palliative care service is mostly cancer patients and includes patients across all the main tumour groups.

**WHERE DO PEOPLE DIE?**

There is substantial evidence that most people prefer to be cared for and to die at home. However, across England as a whole most people die in places other than their home—particularly hospitals. Locally the picture is consistent with this. A national telephone survey in July 2002 by the National Council for Hospice and Specialist Palliative Care Services (NCHSPCS) showed the results listed in Table 7.1.

The proportion of cancer deaths that occur at home in Camden and Islington falls below the average figures nationally. It is possible that there has been an increase in home deaths from 1998 onwards but it is unlikely that any major shift has occurred. From hospice data it is estimated that 17% of all North London cancer deaths take place in a hospice. Based on these figures 63% of deaths occur in a hospital or care home.

**Table 7.1 Percentage of preferred and actual deaths by location, nationally, 2002**

<table>
<thead>
<tr>
<th>Place of death</th>
<th>Preferred place of death</th>
<th>Actual place of death – all causes</th>
<th>Actual place of death – cancer principal cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>56%</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>Hospice</td>
<td>24%</td>
<td>4%</td>
<td>17%</td>
</tr>
<tr>
<td>Hospital</td>
<td>11%</td>
<td>56%</td>
<td>47%</td>
</tr>
<tr>
<td>Care Home</td>
<td>4%</td>
<td>20%</td>
<td>12%</td>
</tr>
</tbody>
</table>

**Table 7.2 Average proportion of cancer deaths occurring at home, former Health Authority area of Camden and Islington, 1985-1997**

<table>
<thead>
<tr>
<th>Place of death</th>
<th>Average for the years 1985 to 1989</th>
<th>Average for the years 1990 to 1994</th>
<th>Average for the years 1995 to 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>18%</td>
<td>20%</td>
<td>20%</td>
</tr>
</tbody>
</table>
Research has shown that patients from black and minority ethnic communities, older people and those who are homeless or otherwise socially excluded are disadvantaged when it comes to accessing palliative care. Some of the reasons cited for this are that patients are already in receipt of support through other means, that there are failures to provide adequate information, and other communication problems including language difficulties. It is difficult to map these findings to Islington’s population as not all the research occurred within the UK health system or inner London.

We know that where there are pockets of social deprivation, dying at home is less common. There are various other factors that can also impact on this decision: the availability of enhanced care provision (e.g. Marie Curie), the availability of medications including out of hours and being able to access fundamental nursing care 24 hours a day.

Also, Islington has a higher proportion of the population who live in single person households (44%) than the English average (30%); the lack of an informal carer has a bearing on where people are cared for in the last year of life. Many people simply change their mind in the last days of life despite spending the major proportion of time with their final illness at home. The statistics do not reflect this.

WHAT SERVICES ARE AVAILABLE?
Excellent community and hospital palliative care services are available in Islington with 24 hour specialist palliative care guidance available through the Camden Palliative Care Centre. The Islington community palliative care team is based at the Whittington Hospital and includes a Nurse Consultant, Clinical Nurse Specialists, Consultant in Palliative Medicine, Specialist Registrar, Social Workers, Clinical Psychologist, Occupational Therapy, Physiotherapy and Rehabilitation Assistants. The hospices at Eden Hall or St Joseph’s in Hackney are also available to Islington residents who require inpatient specialist care. Both units also have day therapy provision.

WHAT NEW DEVELOPMENTS ARE SUPPORTING MORE PALLIATIVE CARE AT HOME?
It is important for the primary and social care workforces to be knowledgeable and skilled in general palliative care. A Camden and Islington palliative care resource pack for general practice was distributed in March this year following target education events held in August 2004. Also, a GP Macmillan facilitator was funded by Macmillan Cancer Care and Islington PCT to develop education within practices. The position is currently not filled but funding is available for a new appointment before the end of 2005 for a further two years. Extra funding and time has been made available for additional district and community nurses to complete training in the field of palliative care.

The NICE guidance on supportive and palliative care was published in 2004. It covered many aspects of palliative care and is in the process of being fully implemented in Islington. The nationally recognised gold standards framework has been implemented in many PCTs across the UK to support people wishing to die at home and particularly to support a comprehensive review of patient and family needs. This will be implemented across general practice and the district nurse and social care teams in Islington when the GP Macmillan facilitator is in post. The GP facilitator will also work closely with the senior practitioners in community nursing and have effective links with the Palliative Care Team. In addition, the Liverpool Care Pathway has been implemented at all the local hospital trusts, hospices and an Islington pilot has just been completed. The care pathway is nationally recognised to be used in the last days of life to improve all aspects of fundamental care to patients and their relatives. It enables a single assessment and record for all staff seeing a patient and provides a checklist of physical, psychological and practical issues to be addressed. The pathway will be established during the end of this year and beginning of next year and it is hoped will further improve quality of care.

There are several other quality developments underway which take place across the whole of Camden and Islington including a post-bereavement audit to obtain views from bereaved informal carers and the piloting of a Distress Tool to enhance clinicians skills in determining all aspects of distress associated with the end of life.

BIBLIOGRAPHY
NICE. Guidance on Cancer Services: Improving Supportive and Palliative Care for Adults with Cancer- The Manual. March 2004

ADDITIONAL RESOURCES
Liverpool Care Pathway http://www.lcp-mariecurie.org.uk
Macmillan Cancer Relief http://www.macmillan.org.uk
Marie Curie Cancer Care http://www.mariecurie.org.uk
Approximately half of all cancers in the UK could be prevented by changes to lifestyle. The main lifestyle factors that affect cancer risk are smoking, diet, physical activity and alcohol consumption.

About 20% of cancers globally (somewhat fewer in the UK) are associated with chronic infections that lead to chronic inflammation. The most significant infections are hepatitis (hepatitis B and C viruses increase risk of liver cancer), Helicobacter pylori infection (which is linked to stomach cancer), and human papillomavirus infection (HPV almost certainly causes nearly all cervical cancer). The risk of contracting some of these infections is linked to certain behaviours, and risks can be reduced, for example, by safe sex and reduction of contaminated needle use by injecting drug users.

A comprehensive approach to primary prevention of cancer should tackle tobacco, diet, physical activity, alcohol, and sexual behaviour. In this chapter we consider different lifestyle issues that are known to be risk factors for a range of cancers and consider what can be done to prevent them.

**SMOKING**

The World Health Organisation has identified use of tobacco as the major preventable cause of death. In this chapter we only discuss tobacco smoking in relation to cancer, although it can cause a wide range of diseases including cardio-vascular and respiratory diseases. Tobacco smoking accounts for nearly one-third of all cancer deaths nationally each year. Although smoking most commonly causes lung cancer it is also a risk factor in cancers of the mouth, pharynx, larynx, oesophagus, stomach, pancreas, kidney, bladder and cervix.

**PREVENTING LUNG CANCER**

90% of lung cancers are caused by smoking and exposure to tobacco smoke. Both cigarette and cigar smoke contain chemicals that damage the genetic structure of human cells causing them to become cancerous. Lung cancer risk is related to the degree of exposure to tobacco smoke (including dose, duration and intensity of exposure). Active smokers are most at risk with clear evidence that the more cigarettes a person smokes each day, and the longer they have smoked, the higher the risk of lung cancer. Smokers who smoke more than 25 cigarettes a day have 25 times this risk compared to non-smokers. Non-smokers are also exposed to environmental tobacco smoke, the amount of exposure being determined by whether family members smoke and workplace conditions. However, the amount of smoke inhaled is much less than active smokers.

The single most effective way to prevent lung cancer is to stop people smoking. Ideally the best prevention is by never smoking. But if someone does smoke, stopping for good as soon as possible will reduce the risk. Not long after a smoker quits the risk of lung cancer starts to decrease. Approximately 10 years after quitting smoking, an ex-smoker's risk of lung cancer is 50% less than the risk for continuing smokers, and continues to decrease with time. Risk of other tobacco-related cancers, such as oesophageal, kidney, pancreatic, and cervical cancer, also decreases.

**INTERVENTIONS TO REDUCE SMOKING IN ISLINGTON**

There are several government policy initiatives to help people stop smoking. The most important are smoking cessation services and the introduction of bans of smoking in workplaces and other public places.

Recent published evaluations of the English smoking cessation services show that the approaches used in Islington are effective in reaching large numbers of smokers and helping people quit in the short term. In 2004/5, 2,621 individuals in Islington enrolled in the smoking cessation programme, of which 1,346 had quit at four week follow up. In Islington a range of services are offered which have shown to be effective in numerous randomised controlled studies. Nicotine replacement therapy and bupropion double the chance of success in stopping smoking. Behavioural support (counselling or advice from a GP or smoking cessation specialist) increases the chance of success. Providing intensive group support facilitated by a trained advisor is more effective than one-to-one counselling. National evaluations also show that smoking cessation services are cost-effective compared with other health service interventions, and will save time and money treating cancer and other conditions for which smoking is a significant risk factor. The average cost per life year gained is £684 (95% CI 557-811), falling to £438 when savings in future health care costs are counted. This shows that such services provide a worthwhile investment for PCTs compared to other health-care interventions for lung cancer.
The most cost-effective way of reducing smoking is by introducing bans on smoking at work and in public places. A systematic review of twenty-six workplace studies in the United States, Australia, Canada, and Germany showed that entirely smoke free workplaces were associated with a 3.8% reduction in smoking prevalence. Of those employees who continued to smoke, there was an average reduction in consumption of 3.1 fewer cigarettes per day. The combined effects of increased cessation and decreased consumption corresponded to a 29% reduction in tobacco use among all staff, which has been estimated to translate to an 8% reduction if applied to the United Kingdom population as a whole. To achieve similar reductions, tax on a pack of cigarettes would have to increase to £4.26.

Most of the work on smoke free legislation in public places comes from the USA. A study on the impact of smoke free laws in California suggested that local smoke free regulation increases the rate that people stop smoking. People living in areas with strong smoke free laws were 38% more likely to quit than smokers in communities with no public smoking ban. In Massachusetts, the introduction of a comprehensive tobacco control program including cigarette taxation, cessation services, and smoke-free legislation caused a first year drop in cigarette consumption of 12%.

In New York City, 11% of smokers quit between 2002 and 2003, due to their comprehensive tobacco control programme which included smoking bans in public places, high cigarette taxation, education and smoking cessation. The legislation in the Republic of Ireland has shown that smoke free legislation works best when it contains as few exemptions as possible. Scotland is introducing a ban on smoking in all public places in 2006. The current proposals by the English Department of Health are more limited with a ban on smoking in almost all public places in 2008, although pubs not serving food will be exempt. Such a ban is likely to reduce prevalence of smoking by at least 4%, but is likely to be much less than the 11% reduction with the New York tobacco control laws. Despite concerns of potential economic impacts there is no reputable evidence that smoke-free laws harm the hospitality sector.

REducing smoking in Islington

Islington has high rates of smoking prevalence. The most current local data available comes from the Health Survey for England local booster survey in 1999. This showed overall rates in Islington were 33%. Rates were higher amongst men (38%) than amongst women (31%). Overall these rates are higher than for Inner London and England. Rates are comparatively high for men in Islington compared to Inner London and England. Rates for women in Islington are not substantially different from London.

Such high rates of smoking mean that we have high rates of smoking related deaths, particularly lung cancer. Approximately 39 people per 10,000 die of directly smoking related causes in Islington, a rate higher than London as a whole and the other boroughs in North Central London. In 2001, smoking caused 1,360 hospital admissions in Islington and there were 120 deaths directly attributable to smoking. Islington has a higher percentage of cancer admissions due to smoking compared to London as a whole and compared to neighboring boroughs in North Central London.

Table 8.1 Best estimates of effect of interventions to reduce smoking

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>None (background trend)</td>
<td>0.5% fall in prevalence per annum</td>
</tr>
<tr>
<td>Smoking cessation services</td>
<td>0.5% fall in prevalence per annum</td>
</tr>
<tr>
<td>Cigarette taxation, cessation services, smoke free legislation (Massachusetts)</td>
<td>12% fall in cigarette consumption</td>
</tr>
<tr>
<td>Smoking bans in public places, cigarette taxation, education, smoking cessation (New York City)</td>
<td>11% fall in smoking prevalence</td>
</tr>
<tr>
<td>Smoke free work places (26 sites across United States, Canada, Australia, Germany)</td>
<td>3.8% reduction in prevalence (in workers)</td>
</tr>
<tr>
<td>Smoke free enclosed public places and workplaces by 2008 (partial ban)</td>
<td>4% reduction in smoking prevalence</td>
</tr>
<tr>
<td>‘Smoke-free’ Islington in 2008</td>
<td>7% reduction in smoking prevalence†</td>
</tr>
</tbody>
</table>

† Estimate

What is the potential effect of different stop smoking strategies in Islington? We have modelled the effect of two smoking prevention strategies – continued smoking cessation services and introduction of a ‘Smoke-Free’ Islington – on future smoking prevalence in Islington as shown in figure 8.1. By Smoke-Free Islington we mean a package of measures that include controls on illicit sales, awareness raising and implementation of legislation in 2008.

Local smoking trends suggest that current prevalence of smoking is decreasing by 0.5% per year without any interventions. Evaluations of smoking cessation services suggest that they cause rates of smoking prevalence to decrease by a further 0.5% per year. The biggest gains would come through introduction of a ‘Smoke-Free’ Islington in 2008. We have modelled the potential impact of introducing smoke free legislation in 2008, which is likely to lead to a decrease in smoking prevalence of approximately 7%.  

Cancer in Islington Scope for Prevention 35
DIET

Dietary factors are estimated to account for 30% of cancers in industrialised countries. A typical UK diet (high calorific food rich in animal fat and protein and low in fruits and vegetables), often combined with a sedentary lifestyle, increases the risk of several cancers including those of the colon, rectum, breast, endometrium and prostate.

FRUITS AND VEGETABLES

Increased fruit and vegetable consumption is associated with reduced risks of cancers of the colon, rectum, oesophagus, stomach, lung, larynx and pharynx. A recent large study across Europe suggests that a total daily consumption of 500g (that is greater than 5 portions per day) can reduce incidence of gastrointestinal cancers by up to 25%. Current dietary guidelines recommend consumption of a minimum of 5 portions of fruits and vegetables a day.

A recent systematic review of effectiveness of interventions and programmes promoting fruit and vegetable intake suggests that small increases in intake are possible in both adults and children, and that these can be obtained using a variety of approaches. In adults, fruit and vegetable intake interventions increased fruit and vegetable intake by approximately half a serving per day. Consistent positive effects were seen in studies involving face-to-face education or counselling, but interventions using telephone contacts or computer-tailored information appeared to be a reasonably effective alternative. Community based multi-factor interventions also showed positive findings. In children the evidence is strongest for a multi-factor approach especially involving schools and parents.

In Islington we have various initiatives promoting fruit and vegetable consumption as part of the 5-a-day programme. The majority of

<table>
<thead>
<tr>
<th>Age group</th>
<th>women</th>
<th>men</th>
<th>women</th>
<th>men</th>
<th>women</th>
<th>men</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-24</td>
<td>42</td>
<td>30</td>
<td>27</td>
<td>27</td>
<td>38</td>
<td>40</td>
</tr>
<tr>
<td>25-34</td>
<td>37</td>
<td>46</td>
<td>41</td>
<td>47</td>
<td>34</td>
<td>36</td>
</tr>
<tr>
<td>35-44</td>
<td>34</td>
<td>43</td>
<td>26</td>
<td>34</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td>45-54</td>
<td>13</td>
<td>41</td>
<td>34</td>
<td>39</td>
<td>26</td>
<td>28</td>
</tr>
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<td>55-64</td>
<td>33</td>
<td>23</td>
<td>28</td>
<td>30</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td>65-74</td>
<td>28</td>
<td>35</td>
<td>24</td>
<td>19</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>75+</td>
<td>16</td>
<td>23</td>
<td>28</td>
<td>8</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>all ages</td>
<td>31</td>
<td>38</td>
<td>31</td>
<td>34</td>
<td>27</td>
<td>28</td>
</tr>
</tbody>
</table>

Table 8.2 Smoking prevalence (%) in Islington compared to Inner London and England.

Source: Health Survey for England (HSE) 1999
CONCLUSION

Smoking, diet, obesity and physical inactivity are all important risk factors for cancer. Smoking is most harmful and smoking prevalence remains high in Islington, but we have good tools to reduce smoking prevalence. There has been local investment in proven measures that reduce prevalence of smoking in Islington, but progress is likely to be incremental. Evidence shows introducing smoke free bans in work and public places reduces smoking substantially. We need to increase public and business support to follow suit in Islington. Improving consumption of fruit and vegetables, increasing levels of physical activity and reducing obesity are more challenging but changes will impact on the cancer mortality over the long term.

OVERWEIGHT, OBESITY AND PHYSICAL ACTIVITY

Being overweight and physically inactive together is estimated to account for approximately one-fifth to one-third of many common cancers, particularly hormone dependent and gastrointestinal cancers. Obese women have a much greater risk of ovarian, endometrial, cervical and post-menopausal breast cancer. This is greatest for those with excess abdominal fat and is thought to be a direct consequence of hormonal changes. There is convincing evidence of a higher risk of oesophageal, colorectal and renal cancer in overweight and obese men and women. Increased physical activity decreases the risk of colon cancer in men and women, with the risk in the most active individuals being 40-50% lower than that of the least active. Physical activity also leads to a 30% reduction in the risk of breast cancer in post-menopausal women.

In Islington rates of overweight and obesity have been increasing. The most current local data available for adults comes from the Health Survey for England local booster survey in 1999. These showed that 20.4% of all people in Islington were obese, and a further 31% were overweight. Rates of obesity were higher amongst women (24%) than amongst men (17%). Recent data from school children aged 4-7 years in Islington indicates that 9% are obese and a further 11% are overweight, which is consistent with national trends in childhood obesity.

BIBLIOGRAPHY


ADDITIONAL RESOURCES

ARCHITECTURE OF REFORM

The Calman-Hine report in 1995 by the then Chief Medical Officers of England and Wales outlined reforms designed to ensure that a patient wherever he or she lived obtained cancer treatment and care of the highest standard. The main elements of the reforms were the creation of networks of care with concentration of specialist services and expertise in cancer units and cancer centres. This acknowledged the evidence that poor quality was often associated with treatment by non-specialists who treated only a small number of cancer cases and that specialist centres seeing higher numbers of cases achieved better outcomes. An intense focus on the delivery of cancer services continued after the election of the Labour Government in 1997. In particular a number of Improving Outcome Guidance documents were published for a number of specific cancers. This had the effect of more clearly defining pathways of care and distinguishing treatment that was expected in cancer units and treatment that was expected in larger cancer centres.

The publication of the NHS Cancer Plan in 2000 did not redesign cancer services as did Calman-Hine but was comprehensive, heralding, among other things, new screening programmes, extra investment in palliative care, new waiting time targets, extra investment in staff and equipment and, through the National Institute for Clinical Excellence and the Health Care Commission, mechanisms to ensure equal standards in cancer services - particularly equal access to cancer drugs and interventions. Implementation was coupled with three-year ring-fenced funding for cancer services, the appointment of a national Cancer Tsar and the development of area based Cancer Networks to co-ordinate the development of services.

SERVICE DEVELOPMENTS IN NORTH CENTRAL LONDON

Since the Cancer Plan in 2000, the development of local structures has followed the national template. The North London Cancer Network initially covered the North Central London Sector area (Camden, Islington, Barnet, Enfield and Haringey) and was later extended to include some parts of West Anglia where the natural referral pathways were into the North Middlesex and UCH Trusts. The Cancer Network has tumour boards for each tumour site as well as primary care and public health boards.

As an inner London sector with two large teaching hospitals there was a considerable degree of duplication of specialist services. One of the main tasks of the Cancer Network has been to look at the pattern of services and to rationalise provision, in particular making a reality of the concept of a joint UCLH/Royal Free cancer centre. Centralisation has successfully taken place for gynaecological cancer at UCLH, and for skin cancer at the Royal Free and work is continuing to centralise provision for some treatments for urology, upper gastrointestinal, head and neck and haematological cancers. Patients can go initially to any hospital in the network for diagnosis and work-up and if necessary will then be referred onto the appropriate central unit. These changes have been crucial in meeting the standards set out in both the improving outcome and NICE guidance about service provision, both of which set clear minimal levels of activity for clinicians and trusts to be able to safely treat specialist cancers.

The Cancer Network has been very helpful in supporting the development of consistent pathways of care across the sector and this work has been largely driven by the clinically led Tumour Boards. There are now agreed pathways for all cancers in all trusts that form a part of the network. The other significant development in terms of patient care has been the development of MDTs (multi-disciplinary teams), which are responsible for discussing patient care on a case-by-case basis. These would normally take place within a trust but for specialist cancers virtual MDTs will be convened across multiple hospital sites. Co-ordinators have been employed to facilitate the MDTs and to actively track-patients through the system.

PERFORMANCE MANAGEMENT AND WAITING TIMES

The focus initially, in terms of performance management, was the two-week cancer wait. GPs were asked to refer urgent suspected cancers on a specially designed fax-back sheet, once received these needed to be processed by the trust and the patient booked in for an appointment within two weeks of the original GP consultation. This was not an easy target and it took some time for the systems at both the GP and trust end to work smoothly. These targets are now effectively met. In the first quarter of 2005 The Whittington saw 99% of urgent referrals within two weeks, the Royal Free 100% and UCLH 99%. There are question marks over the number of patients seen through the urgent referral system (see individual cancer chapters).

The focus for trusts now is on the implementation of the two ambitious waiting time targets set down in the NHS Cancer Plan: one month from diagnosis to treatment, and 2 months from GP urgent referral to treatment. These need to be achieved by December 2005. These targets have been operationalised as 62 days from urgent GP referral to the start of treatment and within that period 31 days from decision to treat to treatment.

The Whittington has been classified as a demonstrator site for 31/62 day targets, with the expectation that they would meet them by July 2005. They have successfully done this by changing their data capture systems to collect real-time information, changing the role of MDT co-ordinators to take on a ‘navigator’ role actively managing patients through the system and doing some concentrated work looking at bottle-necks in urology. UCLH and the Royal Free are working towards the December target although there are some concerns about the quality of their information systems and whether this will inhibit them in meeting the target.

INVESTMENT

Within the NHS system of financing we are not able to easily or accurately identify the amount of new investment that has been made into cancer services or any individual cancer specialty service. This is understandable in the sense that many cancer services are just one part of the service provided by any specialty grouping such as gastroenterology or radiology and these services are difficult to partition financially. However, it must be
Over the last three years significant investment has been made into direct cancer services but only a small proportion of this has been with specifically identified money for cancer services. There has been more investment into cancer services as part of the growth that has been put into mainstream services, particularly medical and nursing posts. For example, the PCT continues to fund NICE approved cancer drugs and provision will be made in individual SLAs to pick up these additional costs but they will not be designated as cancer investment.

Earmarked cancer monies have gone into a number of specific projects, for example pump-priming the gynaecological cancer centre at UCLH, support for the Cancer Network Tumour Boards, an MDT co-ordinator at the Whittington, a urology consultant at the Whittington, lung nurse at the Whittington, pharmacy support for the Whittington, an oncology consultant and staff grade posts at the Whittington, a palliative care social worker, some preventative work including five-a-day and smoking cessation, and a pilot Saturday smear-taking clinic at the Whittington for Islington women. PCTs also received a three-year funding allocation for palliative care, which was pooled across the sector and invested by the Palliative Care Board. Recurrent earmarked cancer funding will be set-aside in 2006/07 to supplement funding of two service developments: liquid based cytology for cervical screening and the establishment of a bowel cancer-screening programme.

### AREAS FOR FUTURE WORKS

Over the next year a number of areas of work that are currently being led by the Cancer Network will be completed. Among them detailed planning exercises around imaging and radiotherapy capacity in the sector. With the rollout of Payment by Results (a system of paying provider organisations a set tariff amount for the patients they treat) the funding of individual posts will become increasingly rare. Trusts will be funded on an activity basis for the patients they see and these tariffs will be expected to cover all of the costs of patient care. It will therefore be harder to track additional cancer investment, as it will be shown in contracts with acute trusts through increases in activity rather than through named consultant or nursing posts. Cancer commissioners will also need to work through the implications of how the implementation of full-scale payment by results will effect the commissioning of cancer care.

### BIBLIOGRAPHY


OUR CURRENT POSITION
As we covered in our general overview, the rate for under-75 mortality is not stagnant. It is not declining rapidly, but with the benefit of viewing a longer time trend it is declining but more slowly than the national rate with some recent indication that it has slowed. This slowing seems mainly attributable to stationery lung cancer incidence and mortality. If we project linearly to 2010 then the Islington cancer mortality rate is going to be approximately 15% lower than the 1995-7 baseline but it is also going to be around 35% higher than the rate in England. So, adopting a purely static view, by 2010 we (unlike England as a whole) are unlikely to meet the 20% reduction target and the gap in mortality between Islington and England is likely to widen.

**Figure 10.1** All cancers, directly age-standardised mortality rates, under 75 years, 1985 projected to 2010
(Source: Vital Statistics, ONS and Compendium, NCHOD, 2005)

**Table 10.1** Excess annual cancer <75-year deaths in Islington: Islington less England age-standardised rate expressed as person-equivalents (2001-2003 period)

<table>
<thead>
<tr>
<th>Cancer site</th>
<th>Mortality excess (&lt;75yrs)</th>
<th>Mortality excess (&lt;75yrs)</th>
<th>Mortality excess (&lt;75yrs)</th>
<th>All person excess mortality attributable to incidence excess or survival deficit*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
<td>Persons</td>
<td>Incidence component</td>
</tr>
<tr>
<td>Lung</td>
<td>21.5</td>
<td>6.5</td>
<td>28.1</td>
<td>+28.6</td>
</tr>
<tr>
<td>Breast</td>
<td>-</td>
<td>0.8</td>
<td>0.8</td>
<td>+2.6</td>
</tr>
<tr>
<td>Colorectal</td>
<td>-0.1</td>
<td>1.2</td>
<td>1.1</td>
<td>-5.8</td>
</tr>
<tr>
<td>Prostate</td>
<td>3.3</td>
<td>-</td>
<td>3.3</td>
<td>+6.4</td>
</tr>
<tr>
<td>All others</td>
<td>10.1</td>
<td>17.3</td>
<td>27.4</td>
<td>Not examined</td>
</tr>
<tr>
<td>All cancers</td>
<td>34.8</td>
<td>25.8</td>
<td>60.7</td>
<td>Not examined</td>
</tr>
</tbody>
</table>

*The component is the contribution to the excess number of deaths and is additive so +28.6 excess incidence and -0.5 survival (i.e. better survival) = 28.1 (excess mortality)
HIGH INCIDENCE OR LOW SURVIVAL?

Returning to our original question we were interested in understanding whether the persistently high observed premature cancer mortality in Islington was due to high incidence or poor survival. We can look at this for males, females and all persons for the main sites in simple numerical terms.

In Table 10.1 it can be seen there are approximately 60 additional person-equivalents in Islington who die prematurely each year from cancer compared to an average English population. Because Islington has a young population the actual number of excess deaths is lower (around 46). Lung cancer causes about half of these excess deaths and most of the rest are caused by a large number of less common cancers (some of which are smoking-related). For each of these cancers part of the excess mortality is due to higher incidence and some of it due to better or worse than average survival. The incidence component and survival component add up to the mortality excess expressed in persons.

From Table 10.1 it can be seen that relative survival is reasonable or not out of step with the rest of the country so the contribution of survival to explaining the excess of deaths under the age of 75 is small and the contribution of incidence is high. This is the case for each of the four main sites except for colorectal cancer for which our Islington estimate for survival is low compared with the rest of the country so our small mortality excess is mainly explained by a survival deficit. Mortality for colorectal cancer would be worse if our incidence was not lower than elsewhere.

So it seems, based on the data presented here, that our high mortality is driven largely by incidence. This is not to say that we cannot do better or that some gain in the future cannot come from improving survival, but that we cannot readily explain our high mortality relative to other areas based on this.

AVOIDABLE DEATHS: EFFECT OF DEPRIVATION

It is worthwhile to review based on local data where there may be some survival gains to be made. One method of doing this is not to compare the survival in Islington with the survival elsewhere but to look for survival differences within Islington (Table 10.2). For some cancer sites there are well-described survival differences between least deprived and most deprived. In Islington we are only able to see differences that could be both important and perhaps significant for lung cancer (at one year) and colorectal cancer (at one year and perhaps at five years). Our inability to see any survival difference for breast cancer in our own data is good news.

The number of ‘avoidable’ deaths are underestimated if there is a strong association between deprivation and survival because any difference in deaths between the 2nd, 3rd and 4th most deprived quintile and the least are not counted, but they exaggerate eventual differences because by 5 years some of the survival

### Table 10.2 Avoidable deaths: Annual deaths that would be avoided in most deprived if they had the same survival as the least deprived at 1 year post diagnosis (all ages), 1998-2003

<table>
<thead>
<tr>
<th>Cancer site</th>
<th>Average number of incident cases in most deprived quintile each year</th>
<th>Relative survival in least deprived (%)</th>
<th>Relative survival in most deprived (%)</th>
<th>Relative survival in least deprived less relative survival in most deprived</th>
<th>Annual 'avoidable' deaths in most deprived quintile 1 year after diagnosis*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td>28.8</td>
<td>51.4%</td>
<td>22.7%</td>
<td>28.7%</td>
<td>8.3</td>
</tr>
<tr>
<td>Breast</td>
<td>21.2</td>
<td>96.4%</td>
<td>92.3%</td>
<td>4.0%</td>
<td>0.9</td>
</tr>
<tr>
<td>Colorectal</td>
<td>16.2</td>
<td>83.1%</td>
<td>57.1%</td>
<td>26.0%</td>
<td>4.2</td>
</tr>
<tr>
<td>Prostate</td>
<td>16.3</td>
<td>88.0%</td>
<td>97.4%</td>
<td>-9.4%</td>
<td>0</td>
</tr>
</tbody>
</table>

*Calculated from incidence data in most deprived quintile (2000-2002)
advantage of the least deprived (most well-off) is lost because survival is low anyway – this is particularly true for lung cancer where for all groups survival at 5 years is poor.

**MAKING PROGRESS**

So if we are going to reduce premature mortality from cancer in the near future - for example in the five years leading up to 2010 - where is this reduction going to come from and how are we going to achieve it? This answer best ends with a brief review of the ‘cancer journey’ for each of the major sites we have examined in preceding chapters.

**Lung cancer**

Lung cancer with its high incidence, dominant known cause (smoking), relatively late presentation, short course and poor survival is best addressed through interventions aimed at reducing smoking. The gain that we obtain from smoking cessation in the group of smokers with very high lung cancer incidence (55-74 year-old current smokers) is strong because risk declines more quickly than we think. Hazard declines by about one-third at five years after cessation. Using a simplified smoking model we have developed we would estimate that a 1% annual decline in smoking prevalence in male adult smokers aged between 35 and 74 years would have the effect of reducing current mortality (as measured in 2002) by 12% by 2010 – equivalent to 5 deaths each year. If there were an additional 7% step-decline in smoking prevalence associated with concerted adoption of smoking bans in 2008 there would be a 17% decline in lung cancer mortality equivalent to 7 fewer deaths each year by 2010. If a similar effect were seen in females (it is likely to be less because lung cancer risk in females is not as great) there would be a total of 6 and 10 fewer deaths each year in men and women combined. There would probably be reductions in other smoking-related cancers at the same time. It must be stressed that these remain anticipated gains because our persistent high lung cancer mortality suggests either that lung cancer risk is very high in some groups and/or that smoking prevalence is not declining as anticipated in the right groups.

Earlier diagnosis of lung cancer may well be achievable either through improved knowledge and education or lowering the threshold for referral. Alternatively, depending on the results of trials, some kind of screening may become viable. However, although survival prospects are better for lung cancer patients diagnosed at an earlier stage, they are still not good. It remains plausible that lung cancer survival could be increased to the best in western Europe but this would probably require large efforts to increase the proportion of patients with NSCLC diagnosed with operable early stage disease. An increase in the proportion of patients surviving 5 years from 7% to 12% would reduce the number of premature lung cancer deaths by approximately 2.9 per annum.

**Breast cancer**

In contrast there is probably little immediate prospect of reducing breast cancer mortality through reducing breast cancer incidence because breast cancer seems to be associated with long-term demographic and nutritional changes and the trend is upward. Public health interventions to increase physical activity and reduce obesity may have some effect but these are unlikely to have much impact in the short term. The scope for reducing breast cancer mortality through earlier diagnosis and better screening is real although survival now is very high anyway so the number of deaths preventable is small. Breast cancer screening probably leads to a mortality reduction of around 20% in those women who are regularly screened. If current coverage could be improved substantially from less than 60% to 80% then there would be a reduction of 0.36 deaths each year in Islington. This is a relatively small gain because we are already doing breast screening, all this gain is in the 55-74 year age group, and the number of breast cancer deaths is low. To this gain can be added the gain from age-extension of breast screening to women from 65 to 70 years which has yet to be felt and will prevent a further 0.36 deaths per annum. Reviews of the literature suggest that earlier symptomatic diagnosis is probably worth a 5% survival gain which when applied to non screen-detected breast cancers in the under 75 age group is around 2.6 preventable deaths. However, there is not that much evidence locally that there are very important delays or differences in survival by deprivation category and it may be that some of these gains in survival have been made already. There may be further gains from improvements in treatment but much of the gains in adjuvant therapy and surgical specialisation have probably been made. One possible treatment gain is from Herceptin a different kind of drug treatment (immunological), which is currently recommended only for advanced cancer but may, depending on trial results, improve survival for early stage breast cancer.

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1. This model uses the Peto et al (BMJ 2000; 321: 323-329) calculation of lung cancer risk by smoking category and applies theses to Islington specific smoking prevalences (see methodological notes)
Colorectal cancer
The incidence of colorectal cancer is probably to a large degree driven by diet. Long term changes in diet, increasing physical activity and reducing obesity will probably achieve a substantial reduction. However, although it is important to make investments in these areas now there is not much prospect for change in the short term. The most immediate prospect for a step change in survival is through the bowel cancer-screening programme that will be introduced in 2006. Screening through testing for blood in faeces is likely to offer a 15-18% mortality reduction in those offered screening. In the short-term, because the programme is being introduced only in 60-69 year-olds, the gains are small – about 1.5 deaths prevented each year. Colorectal cancer has intermediate survival. There is also good evidence that stage at presentation probably accounts for some of the observed survival differences between European countries and suggests that earlier diagnosis can be improved. In Islington we observe in the most recent period a five-year relative survival (37% in all persons, 29% in males, 46% in females) that is lower than survival in England although this could be a chance result. If this result reflects true underlying survival, improving survival to the English standard could result in preventing approximately 6 deaths per annum. The suggestion that there may be a lower survival in Islington as a whole is supported by an apparent worsening of survival as we move across quintiles from least to most deprived. If this is indicative of a problem it is unclear where it may lie exactly; it may be a delay in patient presentation, patient referral or possibly later parts of the patient journey including treatment. Survival appears worse in males, which may support a patient delay rather than a system delay. In the table below these 6 preventable deaths have been distributed arbitrarily 2/3rds to early diagnosis and 1/3rd to treatment.

Prostate cancer
Survival for prostate cancer is currently very high at around 80% at 5 years. With only 9 deaths per year in under-75 year-olds and high current survival the prospects for reduction in mortality are not good. As outlined in the chapter on prostate cancer we probably need better earlier treatments and better ways of identifying prostate cancers with poor prognosis before large gains can be made.

Other cancers
Many of the cancer deaths in Islington are caused by less common cancers. It is beyond the scope of this report to examine these in detail. Some of these cancers are going to be smoking related – especially head and neck cancers, which include cancers of the oral cavity that are largely caused by smoking – so, we can expect some reduction from decreasing smoking prevalence. Apart from smoking reduction, general improvements in treatment services including faster treatment will probably have some effect.

### Table 10.3
Indicative number of deaths in people under the age of 75 years potentially preventable in the year 2010 (compared with 2002) with an increased quantum of investment in given area (see text)

<table>
<thead>
<tr>
<th>Cancer site</th>
<th>Primary prevention</th>
<th>Screening</th>
<th>Early diagnosis</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorectal</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prostate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All (sum)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WHAT WE AS A PCT AND A CANCER NETWORK CAN DO ABOUT IT

IMPROVING INFORMATION

Part of the job of public health, commissioners and the cancer network is to ensure that we have high quality outcome-relevant data. Stage at diagnosis is potentially an important tool for monitoring whether patients are being diagnosed soon enough and stage data does not currently appear to be currently well captured by the registry. As cancer networks become increasingly responsible for recording information, capturing this information is important.

**Recommendation 1:** That the network review methods of recording and reporting stage and other outcome relevant data

**IMPROVING INVESTMENT IN CANCER PREVENTION**

The clearest life-saving gains that can be made in the short to medium term are through reducing smoking prevalence especially in current smokers who have been smoking a long time. Improvement in diet can achieve further gains in a longer time frame.

**Recommendation 2:** That Islington PCT support concerted implementation of the anticipated mandatory partial smoke-free bans in 2008 and support maximum participation in a voluntary bans in the lead up to 2008

**Recommendation 3:** That Islington PCT invests in smoking cessation services

**Recommendation 4:** That Islington PCT and its partners support healthy eating strategies

**MAXIMISING THE GAINS THROUGH POPULATION SCREENING**

Introduction of bowel cancer screening in 2006 offers real opportunities to save lives. An improvement in breast cancer screening coverage offers further small gains.

**Recommendation 5:** That Islington pursues first wave adoption of the national bowel-screening programme in 2006

**Recommendation 6:** That Islington increase access to breast cancer screening by facilitating access to a further fixed-site mammographic screening unit in the north of the borough

**IMPROVEMENTS IN EARLY DIAGNOSIS**

In Islington there is reasonable evidence that for both lung cancer and colorectal (bowel) cancer there are survival deficits because of problems in the patient journey. Some of these may be associated with patient and doctor delay.

**Recommendation 7:** That the primary care and prevention board of the cancer network review implementation of NICE referral guidelines for both these cancers

**IMPROVING CANCER TREATMENT SERVICES**

Support for the process reforms associated with the 62-day target (urgent referral to treatment) are very important for all cancers.

**Recommendation 8:** That Islington support the work towards early adoption of the 62-day target for all our providers

**BIBLIOGRAPHY**


Incidence summary and trend data
Incidence data were obtained from the Thames Cancer Registry. Data was requested on all incident cases for Islington from 1980 onwards. We obtained data from 1980 until 31 December 2002. Data quality for 1980-1984 was not high and we elected to extract and present data from 1985 onwards. For the 1985 to 2002 period there were 12,343 incident cancers. Of these 2,435 (19.7%) had the same date of diagnosis and death (death certificate only or DCO cases). We extracted incident cases for lung, breast, colorectal and lung cancers and all cancers using relevant ICD codes for 1985-2002 and for oesophagus, stomach, cervical, ovarian and the 2000-2002 three-year period. Estimates of the Islington population for the 1985-2002 period was obtained as below. Age and sex specific cancer mortality rates were calculated for the 1985-2003 period (for the four main sites) and for 2001-2003 for age and sex standardised rates (using the European standard population). England and Wales trend data for lung, breast, colorectal and prostate and all cancers in these charts from 1993 onwards were obtained from ‘the Compendium’. Summary table information for all cancers (<75 years) and lung cancer (<75 years) was also taken from ‘the Compendium’. Variation in rates from year to year were high because absolute numbers of cancer deaths were low so time trends were presented as three year moving averages.

Standardised incidence ratios and standardised mortality ratios
Incidence and mortality ratios were presented in chart form to display differences between Islington and our neighbouring boroughs, North Central London, London and England. All this comparison data was obtained from National Clinical and Health Outcomes Development (NCHOD) Knowledge base – often called the ‘Compendium’ a web-based health data warehouse. Data in the Compendium is typically a little older than the most up-to-date information we can obtain from the Registry or Vital Statistics but the comparisons with other boroughs data are ‘ready-made’. For incidence data the period was 1998-2000; for mortality data the period was 2001-2003. All charts for incidence or mortality ratios are presented on a logarithmic scale from 10 to 1000 with 100 or the standard as the central axis. Bars that deviate to the right indicate ratios that are less than 100 (the standard). Bars that deviate to the left indicate ratios that are higher than 100 (the standard). The logarithmic scale is chosen because it correctly represents ratios. If the rate in Islington is four times as high as the rate in England (the standard) then the ratio is 400; if the rate is one-quarter of that in England then the ratio is 25. Both of these bars on the logarithmic scale deviate the same distance from the central axis.

Population data
We needed age and sex-specific population estimates for Islington for the period 1985 to 2003. We used latest updates of census population estimates for 1981, 1991 and 2001 and linearly interpolated between them to obtain mid-year estimates for each five-year age group in each sex for each of these years. The 2001 census estimate we used was the 2003 update from the ONS Population Estimates Unit. 2001 population estimates for each super output area in Islington were used to construct age-standardised incidence and mortality rates by deprivation quintile.

Deprivation analyses
In Islington there are 118 super output areas of approximately 1500 people each. They are the next-to-lowest area level that census statistics are available for. Each has been assigned a deprivation score. The domains used to construct the score are: income, employment, health deprivation and disability, education skills and training, barriers to housing and services, living environment, and crime. If all deprivation scores for all the small areas in England are ranked we can divide them into 5 equal groups or quintiles. Most of the small areas in Islington have deprivation scores that fall into national quintiles Q3, Q4 and Q5, that is, most of them are more deprived. The exact distribution is given in the table below.

If we use the national quintile groupings for analysis then we get high comparability between other parts of the country, but we can’t easily see any trend by deprivation because there are not enough events (cases of cancer, deaths from cancer, etc) in Q1 and Q2 and sometimes Q3 to see any variation with deprivation locally. So in this report we have used Islington specific quintiles, which divide the small areas of Islington into five equal groups as below.

To allocate people or events to super output areas (cancer cases or deaths) we need to match them

---

### Table
Where small areas (super output areas) in Islington fall in the quintile groupings for deprivation in England

<table>
<thead>
<tr>
<th>Quintile of deprivation in England</th>
<th>Number of Islington super output areas in each quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>5</td>
</tr>
<tr>
<td>Q2</td>
<td>14</td>
</tr>
<tr>
<td>Q3</td>
<td>22</td>
</tr>
<tr>
<td>Q4</td>
<td>48</td>
</tr>
<tr>
<td>Q5</td>
<td>29</td>
</tr>
<tr>
<td>Q6</td>
<td>118</td>
</tr>
</tbody>
</table>

---

### Table
The division of small areas into quintiles of deprivation in Islington

<table>
<thead>
<tr>
<th>Quintile of deprivation</th>
<th>Number of Islington super output areas in each quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>23</td>
</tr>
<tr>
<td>Q2</td>
<td>23</td>
</tr>
<tr>
<td>Q3</td>
<td>23</td>
</tr>
<tr>
<td>Q4</td>
<td>24</td>
</tr>
<tr>
<td>Q5</td>
<td>118</td>
</tr>
</tbody>
</table>
Survival data

The Cancer Epidemiology Unit at the London School of Hygiene and Tropical Medicine (LSHTM) constructed for us relative survival estimates for four common cancers (lung, breast, colorectal and prostate) diagnosed in Islington residents between 1985 and 2003. They worked from a data set we obtained for them from Thames Cancer Registry. The date up to which follow-up of all patients was considered complete was 31 December 2003. Patients surviving beyond 31 December 2003 were censored alive at that date. There were 6,391 incident cases comprising the four cancers chosen for analysis. Of those, 1,242 (19.4%) were excluded because of missing or invalid data (date of diagnosis, sex, ICD-10 site code, ICD-O behaviour or morphology codes), incompatibility of cancer site and sex, duplicate registration involving the same cancer site and date of diagnoses, multiple primary cancer sites and synchronous cancers. In all, 5,149 persons were included in the analyses, representing 81% of those eligible. Of these 5,005 cases could also be allocated to Islington-specific deprivation quintiles.

For calculation of relative survival background probabilities of dying were used. The life table based on deaths during 1980-1982, with population denominators from the 1981 Census, were used to represent background mortality by sex and age between 1971-1985. The time period covered in this life-table would represent the most suitable background mortality for Islington patients who died during 1985. The life table based on deaths during 1990-1992, with population denominators from the 1991 Census, was used to represent background mortality by sex and age between 1986 and 1995. The life table based on deaths during 1997-1999 and estimated populations from the 2001 Census was used to represent background mortality by age between 1996 and 2003. Follow-up was examined in three intervals (01, 1-2 and 3-5 years) up to 5 years after diagnosis. Relative survival rates were not age standardised because of paucity of deaths.

Virtual all cancer patients were in the most deprived category based on the national distribution of ward-level of the income domain of the indices of multiple deprivation (IMD2000). There were only four cases in the two most affluent categories with 95% of cases in categories 4 and 5. Therefore, Islington-specific deprivation quintiles based on IMD 2004 were used (see above). These showed a relatively less skewed distribution, although over two thirds (67%) of the 5,005 cases used in the analysis fell in categories 4 and 5 (most deprived). LSHTM estimated relative survival for patients diagnosed in the most recent period (1998-2003), stratified by each of the five deprivation categories, and using a set of deprivation-specific regional life tables (London) derived at ward level. Again, survival estimates could not be made for some cancers due to paucity of deaths.

Lung cancer modelling

Our highly simplified model of the effect of smoking on lung cancer incidence in Islington uses approximate annual lung cancer risks for male never-smokers, current smokers, ex-smokers who have quit within the last 10 years, and ex-smokers who have quit for longer. We derived these estimates from a paper by Richard Peto and others. We applied these estimates of risk to a European standard population with Islington smoking prevalences (from the Health Survey for England). From this we obtained a ‘predicted’ estimate of (age- standardised) lung cancer incidence in males. After applying a correction factor (0.76) to get measured incidence in Islington, we modeled changes to lung cancer incidence that would occur if there was a 1% decrease in smoking prevalence each year in each of the age groups below and a 7% one-off decrease in prevalence in 2009. The model accommodates persons passing from one category (e.g. smoking) to another (e.g. ex-smoking) whether from quitting or aging. We extended the model to 2015.

Table Base assumptions for smoking and lung cancer model (males)

<table>
<thead>
<tr>
<th>Smoking category</th>
<th>Age band</th>
<th>Lung cancer annual risk per 100,000</th>
<th>Estimated smoking prevalence in Islington 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never smokers</td>
<td>35-54</td>
<td>4.18</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>55-74</td>
<td>17.82</td>
<td>15%</td>
</tr>
<tr>
<td>Current smokers</td>
<td>35-54</td>
<td>79.50</td>
<td>42%</td>
</tr>
<tr>
<td></td>
<td>55-74</td>
<td>715.50</td>
<td>30%</td>
</tr>
<tr>
<td>Ex-smokers&lt;10 years</td>
<td>35-54</td>
<td>52.47</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>55-74</td>
<td>472.23</td>
<td>20%</td>
</tr>
<tr>
<td>Ex-smokers ≥10 years</td>
<td>35-54</td>
<td>15.90</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>55-74</td>
<td>143.10</td>
<td>35%</td>
</tr>
</tbody>
</table>

BIBLIOGRAPHY


RESOURCES


Adjuvant Therapy
The use of drugs or other cancer treatments in addition to surgery.

Age standardised
A procedure for adjusting rates designed to minimise the effects of differences in age composition when comparing rates for different populations. See Standardisation.

Breast screening coverage rate
The proportion of women aged between 50 and 64 registered with general practitioners and who have had a mammogram in the previous 3 years.

Chemotherapy
Drug treatment.

Confidence interval
A range of values around an estimate – such as a rate or percentage – that expresses the uncertainty surrounding that estimate. The 95% confidence interval is the interval, which will include the true population value in 95% of cases. We expect that the 95% confidence interval will not include the true population value 5% of the time.

Crude rate
A simple rate without any adjustment. For example the number of new lung cancers in a year divided by the mid-year population multiplied by 100,000. It is usually not comparable to other rates in other areas because it has not been adjusted for age.

Directly age standardised mortality rates
(see Standardization)

Health Survey for England
An annual nationally representative sample survey of health and associated factors in England.

Health Survey for England local boost
Camden & Islington Health Authority commissioned a local ‘boost’ to the 1999 HSE (the Camden and Islington Health Survey 1999-2000). Nearly 2000 people were surveyed.

Incidence
The number of instances of illness commencing, or of persons falling ill, during a period, e.g. new cases of lung cancer in Islington in the year 2000.

Incidence rate
The rate at which new events occur in a population. The numerator is the number of new events; the denominator is the population at risk of experiencing the event during this period. By convention it is calculated as number of new events during a specified period divided by the number of persons at risk during the period multiplied by 100,000.

Prevalence
The number of instances of a given disease or other condition in a given population at a particular time. When used without qualification, the term usually refers to the situation at specific point in time. For example smoking prevalence refers to the proportion of current smokers in a specified population at a given point in time.

Quintiles
Ranked or ordered values dividing a given data set into five equal parts. For example, dividing 118 small areas of Islington into five groups based on their deprivation score.

Lifetime risk
The risk that an event will occur during an average lifetime. By convention it is usually calculated for people age 0 to 74 years and so is the risk that an event will occur before age 75. It is calculated by summing the current risk at each age.

Mortality rate
Estimate of the proportion of a population that dies during a specified period. The numerator is the number of persons dying during the period; the denominator is the number in the population, usually estimated as the midyear population. By convention it is calculated as number of deaths during a specified period divided by the number of persons at risk of dying during the period multiplied by 100,000.

Risk
The probability that an event will occur. For example that an individual will become ill or die within a stated period of time or at a certain age.

Relative survival
Another method that tries to assess cause-specific survival but goes about it another way. It estimates the survival of cancer patients relative to the life expectancy in the population. The relative survival for a group of cancer patients is the ratio of the survival in this group to the survival expected in the general population. Relative survival is expressed in this report as a
NUMBER OF CANCER REGISTRATIONS
by sex and site

Table: Islington PCT, 1992-2001. Number of cancer registrations by sex and site
Source: Thames Cancer Registry

<table>
<thead>
<tr>
<th>Site</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All other sites</td>
<td>869</td>
<td>635</td>
<td>1504</td>
</tr>
<tr>
<td>Lung (incl. Trachea &amp; bronchus)</td>
<td>780</td>
<td>463</td>
<td>1243</td>
</tr>
<tr>
<td>Breast (female)*</td>
<td>0</td>
<td>869</td>
<td>869</td>
</tr>
<tr>
<td>Prostate</td>
<td>601</td>
<td>0</td>
<td>601</td>
</tr>
<tr>
<td>Colon</td>
<td>210</td>
<td>206</td>
<td>416</td>
</tr>
<tr>
<td>Bladder</td>
<td>223</td>
<td>85</td>
<td>308</td>
</tr>
<tr>
<td>Stomach</td>
<td>182</td>
<td>95</td>
<td>277</td>
</tr>
<tr>
<td>Head and neck</td>
<td>168</td>
<td>107</td>
<td>275</td>
</tr>
<tr>
<td>Rectum (incl. Rectosigmoid junction &amp; anus)</td>
<td>146</td>
<td>109</td>
<td>255</td>
</tr>
<tr>
<td>Non-Hodgkin’s lymphomas</td>
<td>119</td>
<td>130</td>
<td>249</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>87</td>
<td>68</td>
<td>155</td>
</tr>
<tr>
<td>Pancreas</td>
<td>78</td>
<td>67</td>
<td>145</td>
</tr>
<tr>
<td>Ovary</td>
<td>0</td>
<td>140</td>
<td>140</td>
</tr>
<tr>
<td>Melanoma of skin</td>
<td>49</td>
<td>57</td>
<td>106</td>
</tr>
<tr>
<td>Uterus</td>
<td>0</td>
<td>101</td>
<td>101</td>
</tr>
<tr>
<td>Cervix</td>
<td>0</td>
<td>74</td>
<td>74</td>
</tr>
<tr>
<td>All malignant registrations (excl. BCC of skin)</td>
<td>3,512</td>
<td>3,206</td>
<td>6,718</td>
</tr>
</tbody>
</table>

* There were eight breast cancers in males in this period

ABBREVIATIONS

- CAD: Computer Aided Detection
- CCG: Cancer Commissioning Group
- CELBSS: Central and East London Breast Screening Service
- COPD: Chronic Obstructive Pulmonary Disease
- CT: Computer Tomography
- CXR: Chest X-ray
- DCO: Death Certificate Only
- FCE: Finished Consultant Episode
- FOB: Faecal Occult Blood
- HES: Hospital Episode Statistics
- HRT: Hormone Replacement Therapy
- IMD: Index of Multiple Deprivation
- IPCT: Islington Primary Care Trust
- MDT: Multidisciplinary Team
- MRI: Magnetic Resonance Imaging
- NCHOD: National Clinical and Health Outcomes Development
- NCL: North Central London
- NICE: National Institute for Health and Clinical Excellence
- NK: Not Known
- NLST: National Lung Screening Trial
- NSCLC: Non-Small Cell Lung Cancer
- ODPM: Office of Deputy Prime Minister
- ONS: Office of National Statistics
- PCT: Primary Care Trust
- PSA: Prostate Specific Antigen
- SNB: Sentinel Node Biopsy
- SOA: Service Level Agreement
- SLA: Super Output Area
- UCLH: University College London Hospital
- WHO: World Health Organisation
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Health for all in Islington
As champions for health, we work in partnership with and for communities, addressing inequalities and promoting healthy environments. We support people to make healthier choices and influence policy and practice based on best evidence and the effective use of resources.