Office for National Statistics

Statistical bulletin

Index of cancer survival for Clinical Commissioning Groups in England: adults diagnosed 1999 to 2014 and followed up to 2015

1-year cancer survival for all cancers combined, 3 cancers combined, and for breast, colorectal, and lung cancer

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Release date:
2 December 2016

Next release:
To be announced

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1 . Main points

All-cancers survival index

The 1-year cancer survival index for England increased steadily from 60.6% for patients diagnosed in 1999 to 70.4% in 2014.

The 1-year cancer survival index increased steadily in most Clinical Commissioning Groups (CCGs) throughout that period. In 2014, the survival index ranged from 64.7% to 74.5%, compared with 52.4% to 66.2% in 1999.

The inequality in the cancer survival index between the highest and lowest CCG in England has shrunk since 1999.

Survival for breast, colorectal and lung cancer

In 2014, 1-year age-standardised breast cancer survival in England was 96.5%, increasing from 92.8% for patients in 1999. For all the CCGs, in 2014, the difference between the highest survival estimate (98.7%) and the lowest (92.9%) was 5.8 percentage points.

In England, 1-year survival (age-sex-standardised) for patients diagnosed with colorectal cancer has steadily increased from 69.0% in 1999 to 77.2% in 2014. Among the 209 CCGs, the difference between the highest 1-year survival estimate in 2014 (85.7%) and the lowest (65.3%) was 20.4 percentage points.

In England, 1-year age-sex-standardised survival for patients diagnosed with lung cancer increased from 24.3% in 1999 to 36.8% in 2014. In 2014, for all the CCGs, the difference between the highest survival estimate (47.9%) and the lowest (23.9%) was 23.9 percentage points.

2 . Things you need to know about this release

The cancer survival index has been designed specifically to reduce the impact of random variation in the year-on-year cancer-specific estimates due to sparse data. Interpretation should focus on overall trends and the relative position of each CCG in the funnel plots throughout the years, rather than on small changes in the survival index in a particular year.

A CCG for which the survival index is consistently lower than average should nevertheless be considering why survival in its area might be low, even if it is not identified as an outlier. This is even more crucial when examining the survival estimates for breast, lung and colorectal cancers separately.

3 . Summary

This bulletin focuses on trends in the 1-year survival index for all cancers combined for each of the 209 Clinical Commissioning Groups (CCGs) and for England as a whole.

Separate 1-year survival estimates for breast (women), colorectal (bowel) and lung cancer are also presented in this bulletin at CCG level. These estimates are age-standardised (breast cancer) or age-sex-standardised (colorectal and lung cancers). Net survival (Background note 1) is estimated for adults (aged 15 to 99 years) who were diagnosed with cancer between 1999 and 2014 and followed up to 31 December 2015.

We provide a guide to interpreting the all-cancers combined and 3-cancers combined survival index and the separate age-sex-standardised survival estimates for breast, colorectal and lung cancer in the section “Interpreting the survival estimates in this bulletin”.

Differences are based on the exact underlying survival estimates, but they are shown in the bulletin at 1 decimal place.

Although not commented on in the bulletin, reference tables also contain trends in the 1-year survival index for 3 cancers combined (breast (women), colorectal (bowel) and lung: the “3-cancers index”) for each CCG and for England as a whole. These tables contain estimates for the all-cancers combined survival index and for England at 1, 5 and 10 years after diagnosis and for CCGs at 1 year after diagnosis. We also present values of the all-cancers combined index and the 3-cancers index separately for middle-aged and elderly adults (55 to 64 years and 75 to 99 years).

Confidence intervals (at the 95% level) are provided for each survival estimate in the reference tables. Survival is estimated using flexible parametric models (Background note 8). More information about methodology and quality information can be found in the “Background notes” section and in the Quality and Methodology Information report .

Collaboration

This publication is produced in partnership with the Cancer Research UK Cancer Survival Group at the London School of Hygiene & Tropical Medicine.

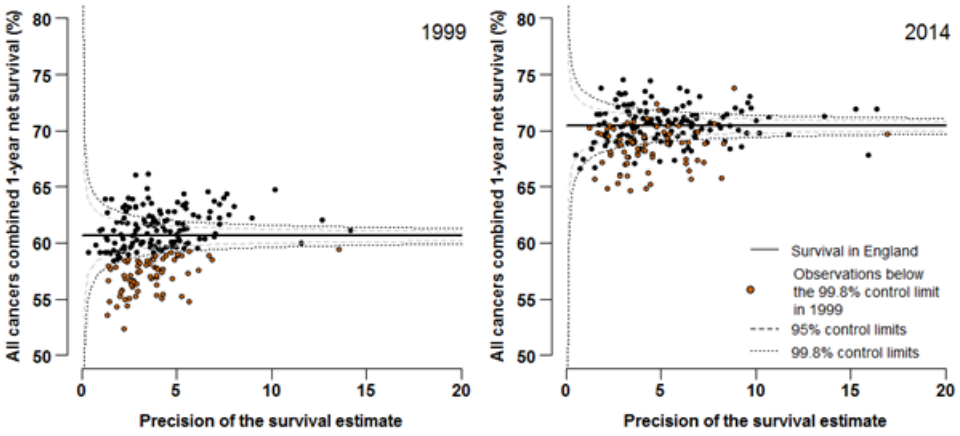
4 . All-cancers combined survival index

One-year survival for all cancers combined in England increased from 60.6% in 1999 to 70.4% in 2014. The index increased steadily for Clinical Commissioning Groups (CCGs) throughout that period. In 2014, the survival index ranged from 64.7% (NHS Newham CCG) to 74.5% (NHS Central London (Westminster) CCG), compared with 52.4% (NHS Newham CCG) to 66.2% (NHS Surrey Downs CCG) in 1999 (Figure 1).

The difference between the highest and lowest values of the 1-year survival index for CCGs has lessened slightly, from 13.8% in 1999 to 9.8% in 2014. As a result, the values of the survival index for CCGs cluster more closely around the England average in 2014 than in 1999 (Figure 1). The survival index for every CCG in 2014 is now higher than the overall value for England (60.6%) in 1999.

In general, the largest increases between 1999 and 2014 were in areas where survival was lower in 1999. For example, 1-year survival in NHS Newham CCG (lowest estimate in 1999) increased by 12.3 percentage points between 1999 and 2014 and by 7.3 percentage points in NHS Surrey Downs CCG (highest estimate in 1999).

Figure 1: Funnel plot of the 1-year survival index (per cent) for all cancers combined, for Clinical Commissioning Groups (CCG): England, adults (aged 15 to 99) diagnosed in 1999 and in 2014



Source: Office for National Statistics

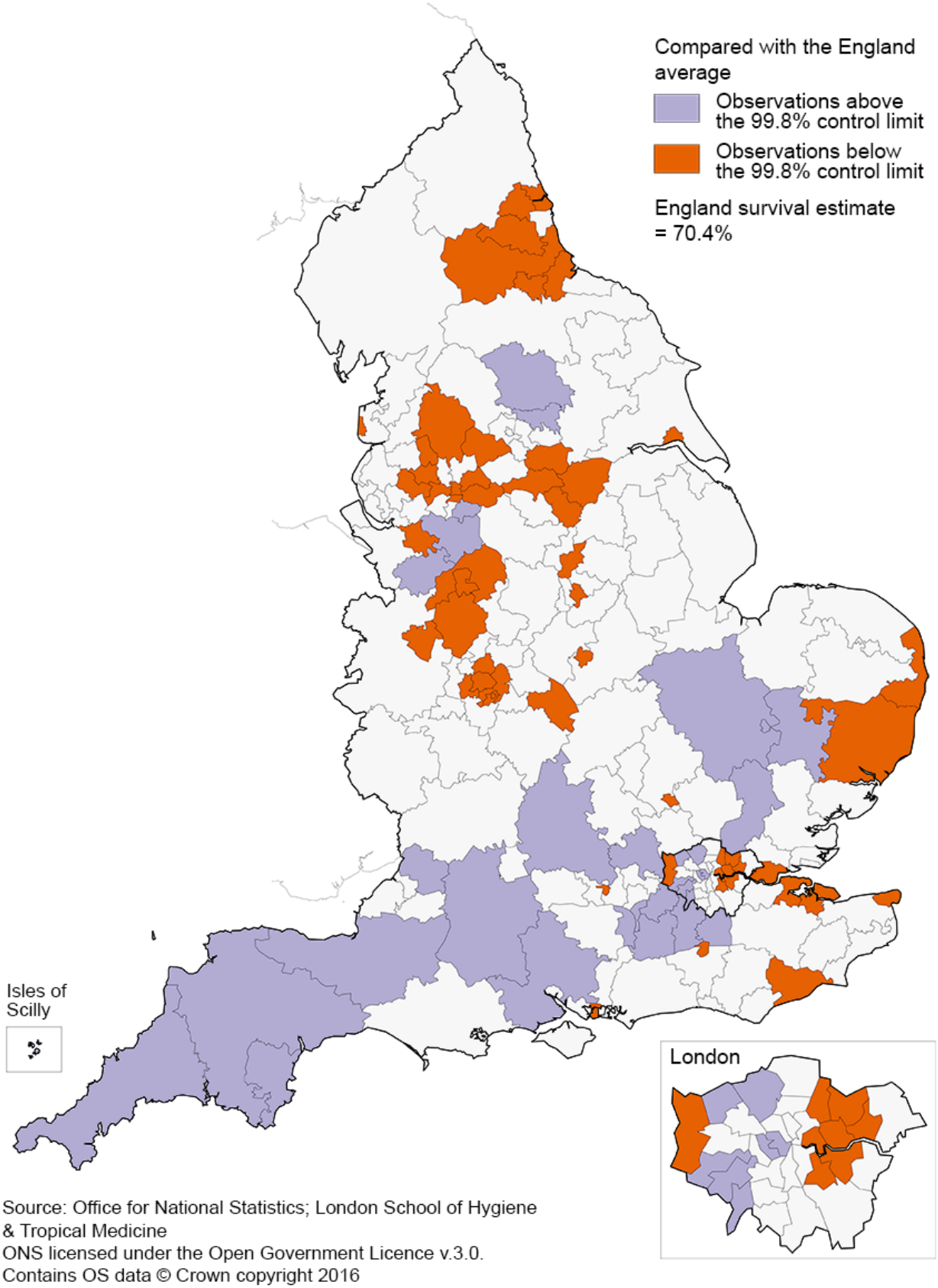
Notes:

1.Each data point represents a single CCG. The higher the precision, the more reliable the survival estimate. More information on how to interpret these funnel plots can be found in the “How to interpret a funnel plot” section.

2.The survival estimates identified as “outliers” fell above or below the 99.8% control limits (the wider of the two “funnels” around the England estimate) at each level of precision.

A persistent feature of these data is that the 1-year survival index is generally lower in the north of England than in the south. In 2014, of the 56 CCGs where the 1-year index is significantly below the England average 24 were in the north of England and 15 of the 30 CCGs where the 1-year index is significantly above the England average were in the south of England (Figure 2).

Figure 2: Map of the 1-year survival index for all cancers combined compared with the England average, for Clinical Commissioning Groups (CCG), 2014



Notes:

1. Adults aged 15 to 99, who were diagnosed in 2014.

2. More information about these statistics can be found under 'Background notes'.

5 . Breast, colorectal and lung cancer: 1-year survival

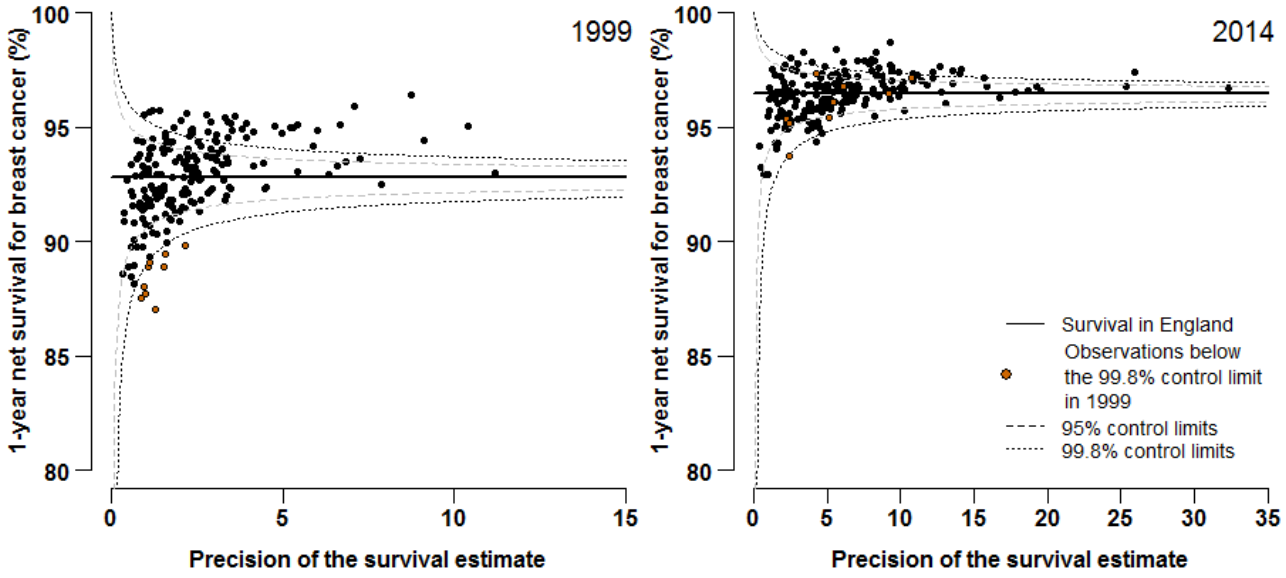
Estimates of 1-year age-standardised survival for breast cancer (women) and age-sex-standardised survival (Background note 11) for colorectal and lung cancer in each CCG are also presented in this bulletin. Funnel plots for 1999 and 2014 are presented in the commentary for comparison.

We provide a guide to interpreting these survival estimates in the section “Interpreting the survival estimates in this bulletin” and a guide to interpreting the funnel plots in the section “How to interpret a funnel plot”.

1-year age-standardised breast cancer survival

In 2014, 1-year breast cancer survival in England was 96.5%, increasing from 92.8% for patients in 1999. Figure 3 shows a very tight clustering in survival in 2014 for CCGs around the England average: the difference between the highest survival estimate (98.7% in NHS Greenwich CCG) and the lowest (92.9% in NHS North East Lincolnshire CCG) was 5.8 percentage points.

Figure 3: Funnel plot of the 1-year age-standardised survival (per cent) for breast cancer, for Clinical Commissioning Groups (CCG): England, women (aged 15 to 99) diagnosed in 1999 and in 2014



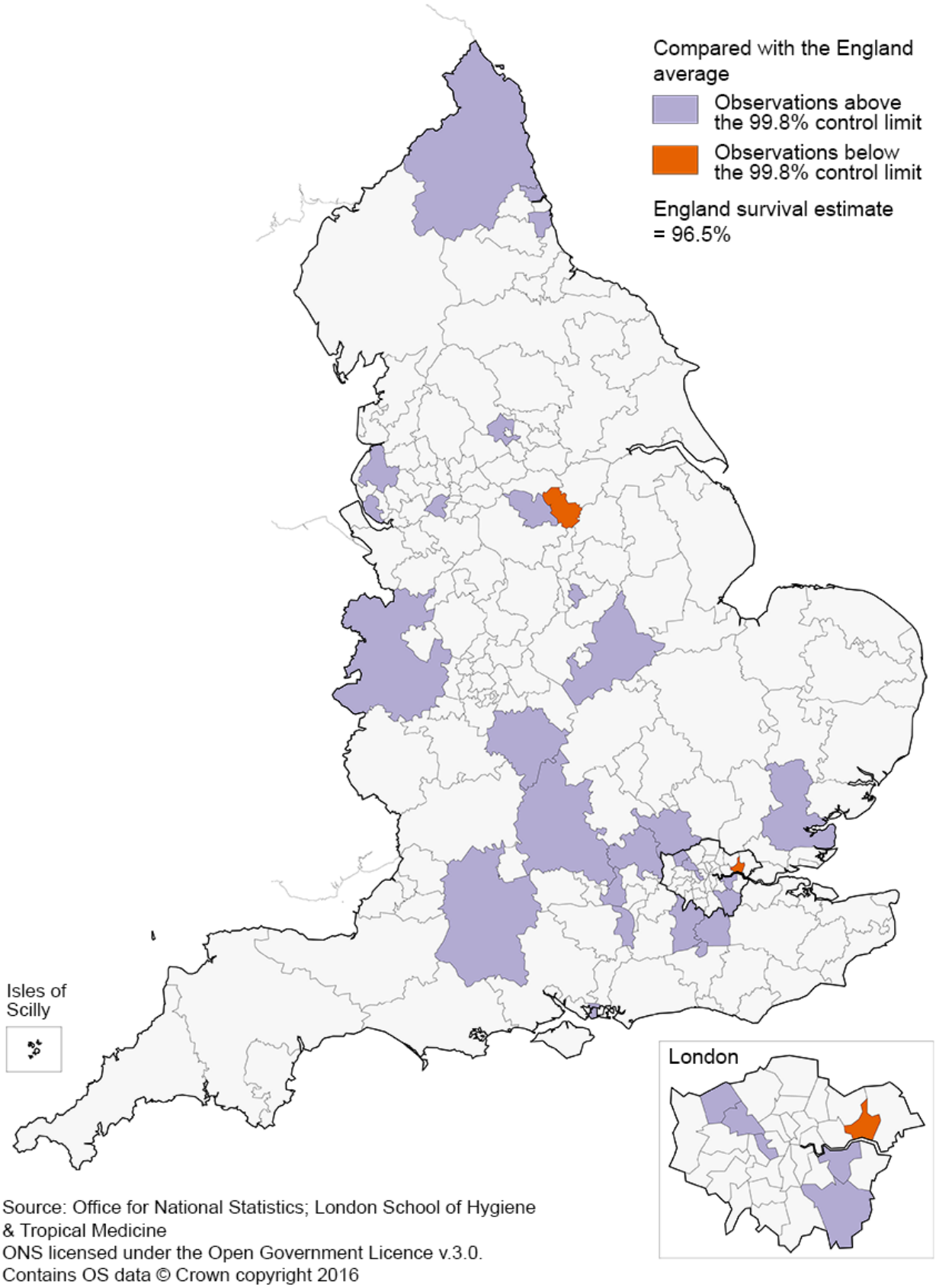
Notes:

1.Each data point represents a single CCG. The higher the precision, the more reliable the survival estimate. More information on how to interpret these funnel plots can be found in the “How to interpret a funnel plot” section.

2.The survival estimates identified as “outliers” fell above or below the 99.8% control limits (the wider of the two “funnels” around the England estimate) at each level of precision.

A persistent feature of these data is that 1-year breast cancer survival is only significantly lower than the England average in 2 CCGs (NHS Rotherham CCG, 94.3%; NHS Barking and Dagenham CCG, 93.7%). In 2014, of the 209 CCGs across the country 28 had a 1-year survival index significantly higher than the England average (Figure 4).

Figure 4: Map of the 1-year age-standardised survival for breast cancer compared with the England average, for Clinical Commissioning Groups (CCG), 2014



Notes:

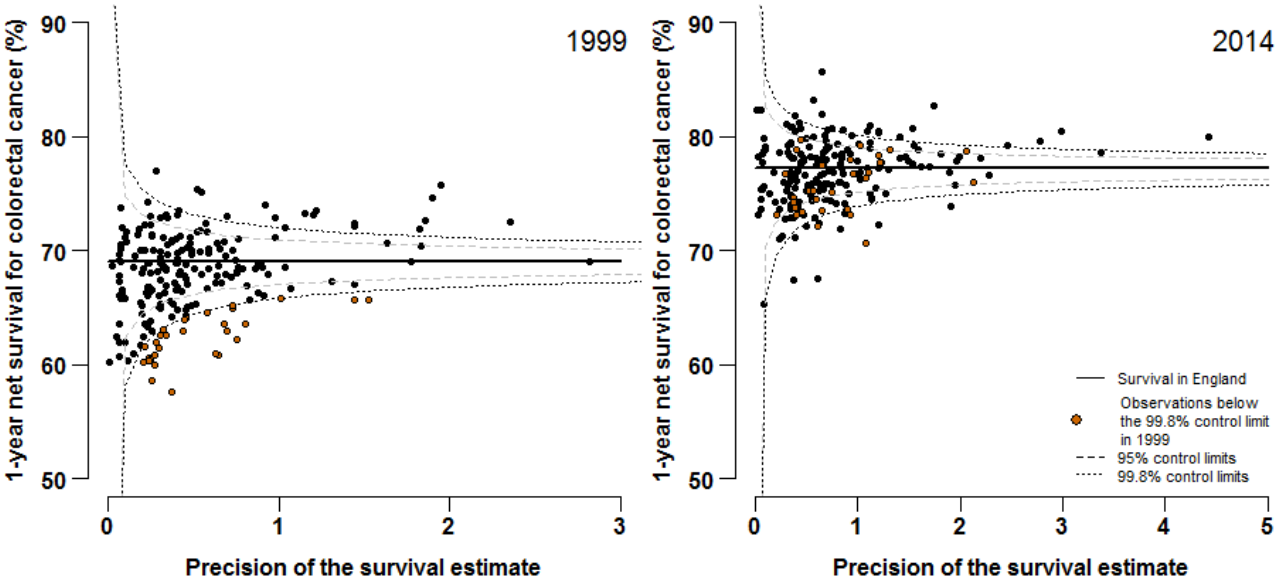
1. Women aged 15 to 99, who were diagnosed in 2014.

2. More information about these statistics can be found under 'Background notes'.

1-year age-sex-standardised colorectal cancer survival

In England, 1-year survival for patients diagnosed with colorectal cancer has increased steadily from 69.0% in 1999 to 77.2% in 2014. In 2014, survival estimates for most CCGs were similar to the England average, or identified as outliers higher than the England average (Figure 5). The range between the highest and lowest estimate of 1-year survival for CCGs was 20.4 percentage points in 2014 (85.7% in NHS Harrow CCG compared with 65.3% in NHS Tower Hamlets CCG).

Figure 5: Funnel plot of the 1-year age-sex-standardised survival (per cent) for colorectal cancer, for Clinical Commissioning Groups (CCG): England, adults (aged 15 to 99) diagnosed in 1999 and in 2014



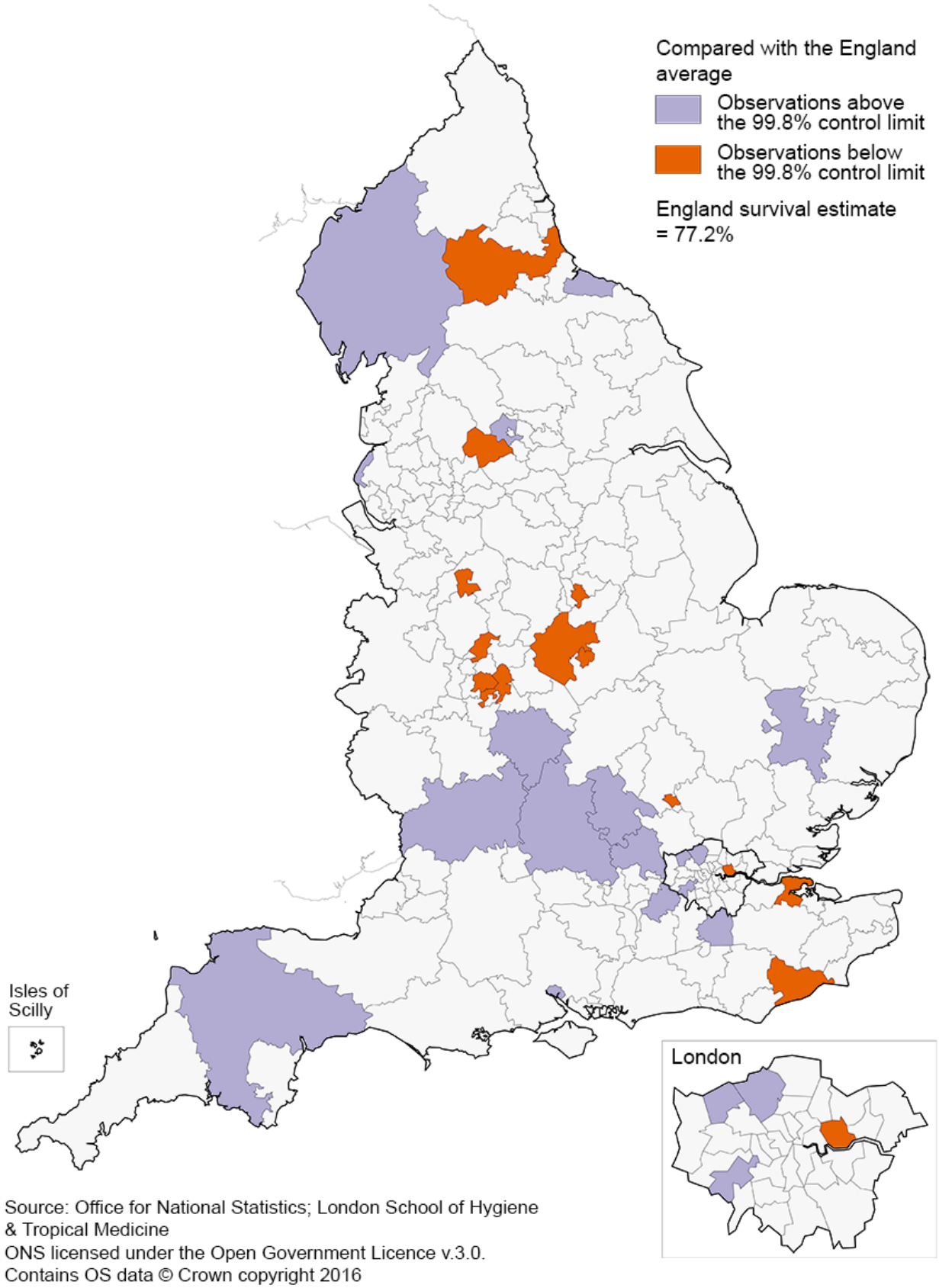
Notes:

1.Each data point represents a single CCG. The higher the precision, the more reliable the survival estimate. More information on how to interpret these funnel plots can be found in the “How to interpret a funnel plot” section.

2.The survival estimates identified as “outliers” fell above or below the 99.8% control limits (the wider of the two “funnels” around the England estimate) at each level of precision.

In 2014, there were 17 CCGs across England that had a 1-year survival index significantly higher than the national average, whilst 13 CCGs had 1-year colorectal cancer survival estimates significantly lower than the England average as shown in Figure 6.

Figure 6: Map of the 1-year age-sex-standardised survival for colorectal cancer compared with the England average, for Clinical Commissioning Groups (CCG), 2014



Notes:

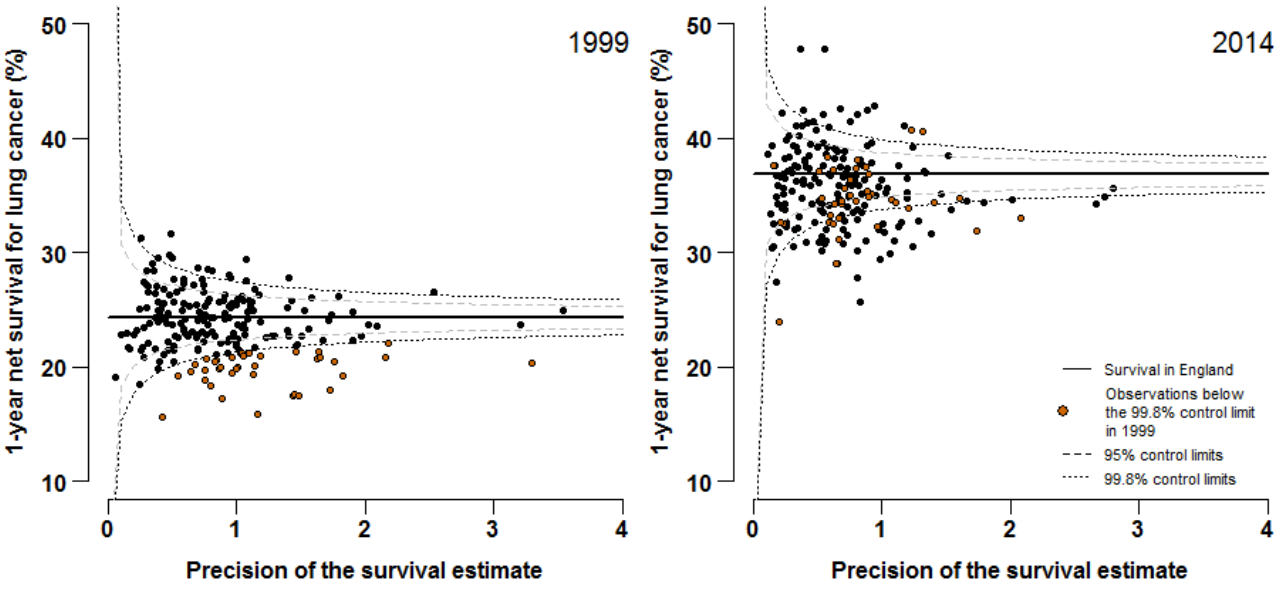
1. Adults aged 15 to 99, who were diagnosed in 2014.

2. More information about these statistics can be found under 'Background notes'.

1-year age-sex-standardised lung cancer survival

In England, 1-year survival for patients diagnosed with lung cancer increased from 24.3% in 1999 to 36.8% in 2014 (Figure 7). The range between the highest and lowest estimate of 1-year survival for CCGs was 23.9 percentage points in 2014 (47.9% in NHS Central London (Westminster) CCG compared with 23.9% in NHS Swale CCG).

Figure 7: Funnel plot of the 1-year age-sex-standardised survival (per cent) for lung cancer, for Clinical Commissioning Group (CCG): England, adults (aged 15 to 99) diagnosed in 1999 and in 2014



Source: Office for National Statistics

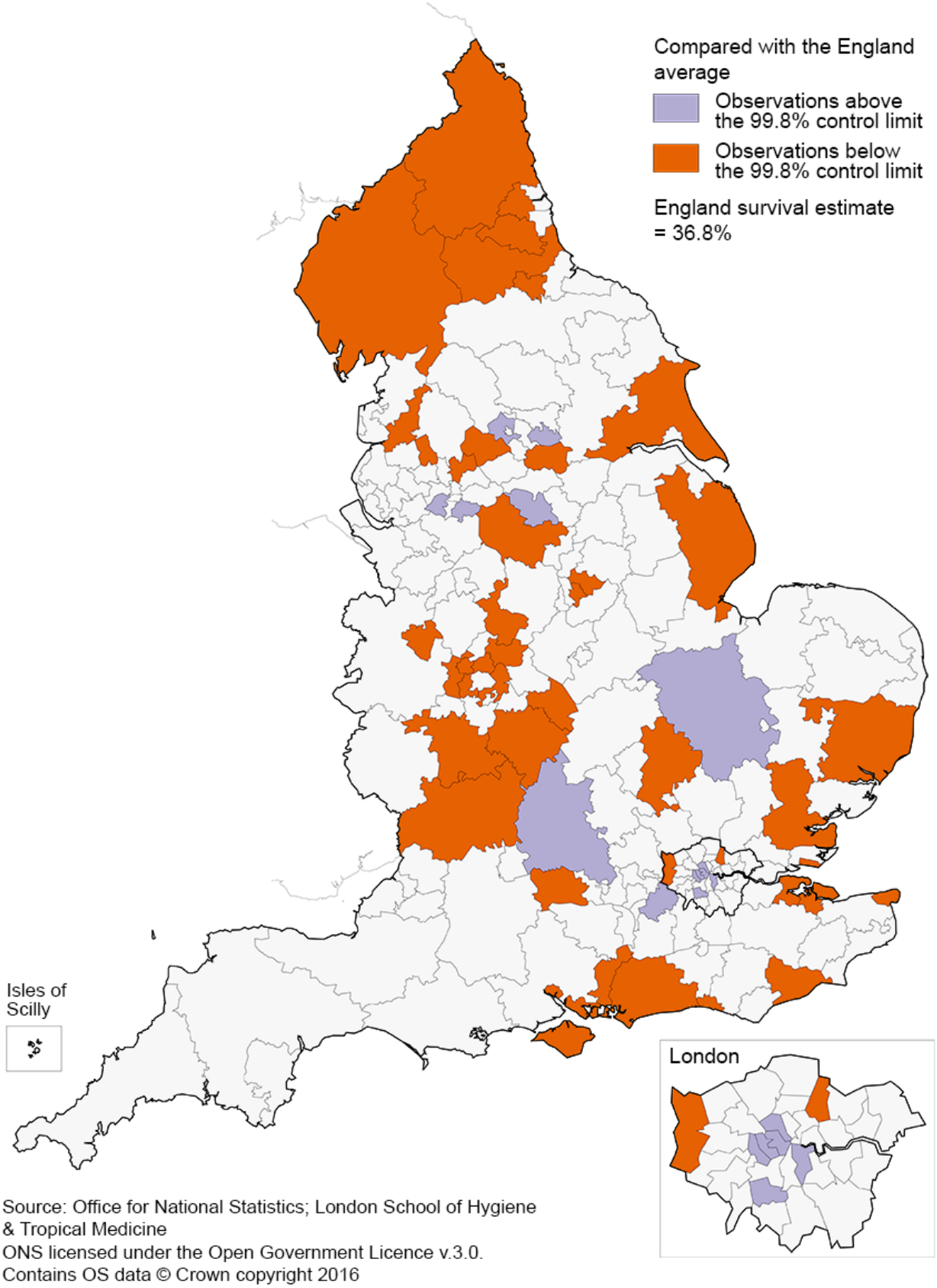
Notes:

1.Each data point represents a single CCG. The higher the precision, the more reliable the survival estimate. More information on how to interpret these funnel plots can be found in the “How to interpret a funnel plot” section.

2.The survival estimates identified as “outliers” fell above or below the 99.8% control limits (the wider of the two “funnels” around the England estimate) at each level of precision.

For 45 of the 209 CCGs, the 1-year survival estimates were identified as being significantly lower than the England average in 2014 (Figure 8); these CCGs were widely scattered around the country. For 14 of the CCGs, the 1-year survival estimates were significantly higher than the national average.

Figure 8: Map of the 1-year age-sex-standardised survival for lung cancer compared with the England average, for Clinical Commissioning Groups (CCG), 2014



Notes:

1. Adults aged 15 to 99, who were diagnosed in 2014.

2. More information about these statistics can be found under 'Background notes'.

6 . Interpreting the survival estimates in this bulletin

The cancer survival index: what it is

The cancer survival index provides a convenient, single number that summarises the overall pattern of cancer survival in each Clinical Commissioning Group (CCG), for all cancers combined, for each calendar year. It combines the net survival estimates for each sex, age group and type of cancer (female breast cancer, colorectal cancer and lung cancer separately and all other cancers combined, prostate cancer being excluded; see Background notes 8 to 10).[1]

For most cancers, survival is either stable or rising steadily from year to year.[2] This trend is reflected in the index. The index provides a summary measure of cancer survival that takes account of any shifts in the pattern of cancers in a given CCG – for example, if the population becomes older and/or cancers with low survival come to comprise a higher proportion of all cancers in that CCG.

The cancer survival index is designed to reflect real progress in cancer outcomes. It is intended to change only if cancer survival actually changes, for one or more of the cancers, for men or for women, in one or more age groups. The index is designed for long-term monitoring of progress in overall cancer survival.

Points to consider when interpreting these estimates

1. For geographic areas with small populations, like most CCGs, some fluctuation in survival estimates between consecutive years can be expected.[3,4] Fluctuations in cancer survival by CCG can occur due to the small numbers of cancer diagnoses and deaths each year within the population. Therefore, a low survival figure for a single calendar year should not be over-interpreted. However, if the survival estimates in a given CCG are consistently low "outliers" for several years in a row, possible explanations should be considered.

2. There are 209 CCGs. Small year-on-year changes in the survival estimates for a given CCG can mean big changes in its ranking. If the highest survival estimate is (say) 65% and the lowest is 50% (a 15 percentage points difference), and given that differences in the survival estimate are very small in the middle of the range, a CCG may jump 30 places up or down the ranking of 209 CCGs if the survival estimate changes by just 1% between successive years.

3. Interpretation should therefore focus on trends, rather than the survival estimate for a particular year. A CCG for which the survival index is consistently lower than average should nevertheless be considering why survival in its area might be low, even if it is not identified as an outlier.

4. The aim of this publication is to present data that can support long-term improvements in cancer control. These estimates can indicate the potential for improvement in the management of cancer, from early detection through to referral, investigation, treatment and care. Survival estimates should not be used as the only indicator of a CCG's performance in cancer outcomes. To gain a more complete picture of the cancer burden in a particular CCG, these estimates should be used alongside other information available, such as cancer incidence and mortality data.

   Furthermore:

5. Survival estimates identified as “outliers” higher or lower than the England average are 3 standard deviations away from the England average when taking into account the reliability (precision) of the estimate. This comparison is made after taking into account the age, sex, and cancer profile of each CCG. More information about this comparison can be found in the “How to interpret a funnel plot” section.

   Survival estimates are provided for patients diagnosed in each of the years from 1999 to 2014. It is important to note that CCGs in England came into existence on 1 April 2013, replacing NHS Primary Care Trusts. A CCG cannot be held responsible for trends in cancer survival that pre-date its existence. Data are provided for this 16-year period so that each CCG has a baseline against which to assess progress over time.[5,6] Survival is estimated using the most up-to-date CCG boundaries – in 2015, the number of CCGs fell from 211 to 209.

6. CCGs are membership bodies in which local General Practitioner (GP) practices are the members. Therefore, the population of a CCG is not entirely based on the geographical population of a defined territory, but on patients who are registered with a GP practice that is a member of that CCG, but who may live in the territory of a different CCG. With this in mind, it is important to note a limitation [7] of these analyses: the cancer patients included in the analyses are those who lived in the territory assigned to that CCG when they were diagnosed.

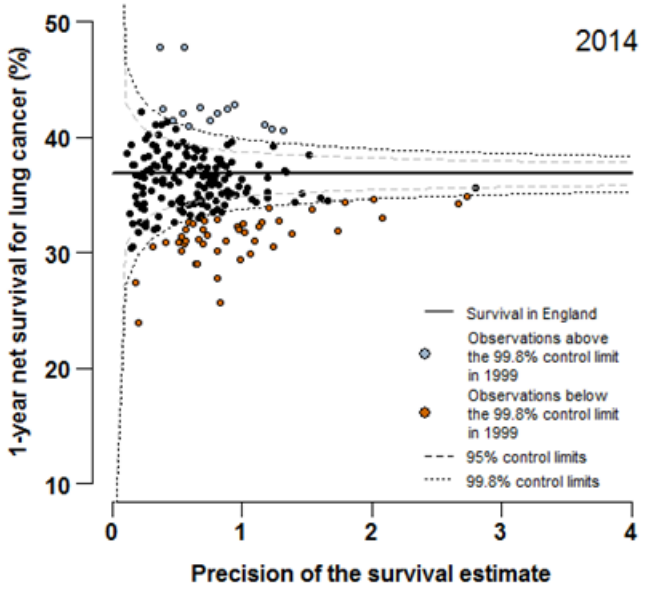
7. The survival estimates must be interpreted with care. They do not reflect the survival prospects for any individual cancer patient; they represent the survival for all cancer patients in a given area in a given period of time.

7 . How to interpret a funnel plot

Funnel plots offer a rapid visual presentation of variation in 1-year survival estimates between CCGs, showing how they compare with 1-year survival in England and taking account of the inherent variability (precision) of each survival estimate.[8] A funnel plot avoids simply assigning a rank from 1 to 209, depending only on whether the estimate is low or high. This should be avoided, as explained in the “Interpreting the survival estimates in this bulletin” section.

Funnel plots (see Figure 9) are a useful way to identify outlying observations in cancer survival. The black horizontal line represents the reference level or “target”, for example, the level of 1-year survival in England. This is used as the reference level against which “outliers” can be identified. Each data point in the plot represents the survival estimate for a given CCG (vertical scale), plotted against the precision of that estimate (the inverse of the variance; Background note 13) on the horizontal scale.

Figure 9: An example funnel plot, 1-year survival by Clinical Commissioning Group



Source: Office for National Statistics

The 2 “control limits”, in the shape of a funnel around the horizontal line in Figure 9, represent the expected variation in survival around the England national figure, at any given level of precision (the horizontal axis). “Precision” is used to indicate the reliability of the estimate on the funnel plot (95% confidence intervals are provided in the reference tables). The expected variation is shown as the 95% and 99.8% control limits (2 and 3 standard deviations, respectively), above or below the England average.

CCGs for which the data points are within the control limits may be considered as those for which the survival estimate is no different than expected, compared with the England average and given the precision of that CCG’s estimate. Data points that fall outside the control limits are either higher or lower than expected compared with the England average. These points are “outlier” observations: if the value for a given CCG is consistently lower (or higher) than would be expected by chance, an investigation into the reasons may be worthwhile. In Figure 9, the “outlier” observations are marked in purple (or lighter; higher than expected compared with the England average) and orange (or darker; lower than expected compared with the England average).

It should be noted that these “outlier” values are not just the lowest (or highest) values that would be obtained from a simple ranked list. Some of the lowest values of the index are still within the range of variation that could be expected by chance (that is, inside the control limits). These are generally for the smallest CCGs, in which the index has lower precision. The precision estimate (shown on the horizontal axis in Figure 9) reflects the accuracy with which survival is being measured for each CCG. The higher the precision, the more reliable the estimate. Similarly, the smaller the precision, the wider the control limits, reflecting greater variability due to chance. CCGs with a large population will therefore tend to appear toward the right of each funnel plot and those with small populations on the left, closer to the vertical axis.

8 . Who uses these statistics and what for?

Main users of cancer survival estimates include:

- Clinical Commissioning Groups
- NHS England
- other government organisations
- academics and researchers
- cancer charities
- the media
- the general public

Cancer survival estimates are used:

- to inform national cancer strategy such as the Achieving World-Class Cancer Outcome: a strategy for England 2015 to 2020
- in the NHS Outcomes Framework and the Clinical Commissioning Group Indicator Set
- to inform research into inequalities in cancer survival
- to answer Parliamentary Questions on cancer survival in England
- to inform health awareness campaigns and cancer information leaflets or websites

9 . Policy context

Given that a significant gap remains in survival compared with the European average, the Department of Health identified cancer as a specific improvement area for preventing people dying prematurely in the National Strategy (announced in 2011). In 2015, a new 5 year cancer strategy for England was developed by the Independent Cancer Task Force. This sets out recommendations for how the NHS can improve cancer outcomes for patients. The new strategy is being reviewed by government bodies.

Survival estimates are used to formulate, monitor and assess health policy and healthcare provision and planning. These estimates feed into the Clinical Commissioning Group (CCG) Indicator Set, which:

“provides clear, comparative information for CCGs, Health and Wellbeing Boards, local authorities, patients and the public about the quality of health services commissioned by CCGs and the associated health outcomes. The indicators are useful for CCGs and Health and Wellbeing Boards in identifying local priorities for quality improvement and to demonstrate progress that local health systems are making on outcomes.”

The CCG indicator set also contributes to the National Health Service (NHS) Outcomes Framework, which focuses on measuring health outcomes and includes 1- and 5-year net survival from colorectal, breast and lung cancers. The NHS 5-Year Forward View (2015) set out: “that improvements in outcomes will require action on 3 fronts: better preventions, swifter access to diagnosis, and better treatment and care for all those diagnosed with cancer”.

10 . Acknowledgements

The Cancer Analysis Team at the Office for National Statistics wishes to acknowledge the work of all the staff working in the National Cancer Registration and Analysis Service (NCRAS) in Public Health England, which initially collected and quality assured the cancer data for these analyses. More information about NCRAS is available on the Public Health England website.

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13 . Guidance and Methodology

The Cancer survival Quality and Methodology Information document contains important information on:

- the strengths and limitations of the data and how it compares with related data
- users and uses of the data
- how the output was created
- the quality of the output including the accuracy of the data

14. Background notes

1. Net survival is the probability of survival derived solely from the risk of death from cancer, compensating for the risk of death from other causes (background mortality). Background mortality is accounted for through life tables[9] of all-cause mortality rates for the general population in England. For convenience, net survival is expressed as a percentage in the range 0 to 100%.

2. Life tables were constructed for the census years 1991, 2001 and 2011 using the mid-year population estimates and the mean annual number of deaths in the 3 years centred on those index years. Life tables for each year from 1991 to 2011 were created by linear interpolation. The life table for 2011 was used for 2012 to 2015. Background mortality changes with time and varies by sex, age, socio-economic status and region, so life tables were created by single year of age, sex, region and deprivation quintile for each calendar year of death. National life tables were used for the very small number of patients who could not be assigned to a given region and regional life tables for those who could not be assigned to a deprivation category.

3. We extracted the data used in these analyses from our cancer registration database on 18 April 2016. The vital status at 31 December 2015 was known for 99.7% of patients diagnosed between 1999 and 2014.

4. Of the patients who were eligible for analysis, 2.8% were excluded because the cancer was only registered from a death certificate (DCO) and the survival time was therefore unknown. A further 0.3% were excluded because their vital status (whether alive, emigrated, dead or not traced) on 31 December 2015 was unknown, or because of duplicate registration, an invalid sequence of dates, or the patient could not be attributed to a CCG of residence at diagnosis. Patients with zero survival time (1.4% of all patients) were included in the analyses, and one day was added to their survival time. Records for multiple primary tumours were excluded (5.7%) when estimating the all-cancers combined survival index. The analyses included 2,990,990 patients in total (all cancers combined).

5. Cancers were defined by anatomic site codes in the International Classification of Diseases, Tenth Revision (ICD-10)[10] and by morphology and behaviour codes in the International Classification of Diseases for Oncology, Second Edition (ICD-O-2).[11]

6. All adults (15 to 99 years) who were diagnosed with a first, primary, invasive malignancy were eligible for inclusion. Patients diagnosed with malignancy of the skin other than melanoma were excluded. Cancer of the prostate was also excluded from the index, because the widespread introduction of prostate-specific antigen (PSA) testing since the early 1990s has led to difficulty in the interpretation of survival trends.[12]

7. Table 4 shows the mid-year estimates of the resident populations in each CCG in 2014.[13] CCG populations ranged from 65,434 (NHS Corby CCG) to 882,800 (NHS Northern, Eastern and Western

Devon CCG), with a mean of 259,888. Table 4 (for all-cancers combined) and Table 9 (for breast, colorectal, and lung cancers) also show the number of patients included in the analyses for each CCG.

8. To obtain an unbiased estimation of net survival, age needs to be carefully modelled to account for the informative censoring associated with age.[14] We used flexible parametric models, [15,16] with age and year of diagnosis as main effects and an interaction between age and year of diagnosis. We also examined interactions between year and follow-up time and between age and follow-up time to deal with potential non-proportionality of the excess hazards over time since diagnosis. The Akaike Information Criterion (AIC) [17] was used to select the best-fitting statistical model, by testing the relative goodness of fit. A publicly available program (stpm2) was used to estimate net survival.14 Analyses were performed in Stata 14.18

9. Before constructing the all-cancers survival index and the 3-cancers survival index, net survival is estimated at 1 year after diagnosis for cancers of the breast (women), colorectal and lung. In all, 1,443,527 patients were diagnosed with these cancers, constituting 48.3% of all patients included in the analyses. Survival for all other cancers combined (excluding non-melanoma skin cancer and prostate cancer) is then estimated as a single category. For each CCG, type of cancer and sex, net survival is estimated for 5 age groups at diagnosis (15 to 44, 45 to 54, 55 to 64, 65 to 74 and 75 to 99 years) and each calendar year, using a model that includes age and year of diagnosis. The survival index is then constructed as a weighted average of the net survival estimates for each type of cancer, each sex and each age group.

10. To enable comparison over time and between geographies, it is necessary to adjust the all-cancers survival index or the 3-cancers survival index for changes over time in the profile of cancer patients by age, sex and type of cancer. This is because survival varies widely with all 3 factors. Overall cancer survival in a given CCG can change simply because the profile of its cancer patients changes, even if survival at each age, for each cancer and in each sex has not changed.

11. The survival index is constructed by using a weighted average of all the cancer survival estimates for each age, sex and cancer, using the proportions of cancer patients diagnosed in England and Wales during 1996 to 1999 in each age group, sex and type of cancer as the standard weights. All values of the cancer survival index in that CCG between 1999 and 2014 are adjusted using the same set of standard weights. This means that the survival index can be compared over time and between CCGs, because the index is adjusted for any changes over time or differences between CCGs in the age, sex, or cancer profile of the population.

12. Survival estimates for each cancer were also weighted with the proportions of cancer patients diagnosed in England and Wales during 1996 to 1999, in order to age-standardise survival estimates for cancer of the breast (women) and age-sex-standardise for colorectal and lung cancers. However, age-sex-cancer standardisation relies on having an estimate of survival for each combination of age, sex and cancer, for each calendar year and for each CCG. In some CCGs, the populations are quite small. Many of the survival estimates are thus based on fairly small numbers of patients. Even for these very common cancers, it was sometimes impossible to produce robust estimates of survival for one or more of the age groups, most often for patients in the age group 15 to 44 years. In this situation, the missing value is replaced by the equivalent value for England. This problem affected 3,567 (10.7%) of the 33,440 separate survival estimates by age, sex, calendar year and CCG for lung cancer and 1,691 (5.1%) of the 33,440 estimates for colorectal cancer. The problem did not arise for breast cancer.

13. The precision values presented in the bulletin are calculated as the inverse of the variance of each survival estimate. Precision is not presented for England in the reference tables because it is not needed for interpretation of the funnel plots; the survival estimates for the whole of England have very high precision.

14. Survival statistics on cancer for other UK countries are produced:

- in Scotland by the Scottish Cancer Registry
- in Wales by the Welsh Cancer Intelligence and Surveillance Unit
- in Northern Ireland by the Northern Ireland Cancer Registry

1. Special extracts and tabulations of cancer data for England are available to order for a charge (subject to legal frameworks, disclosure control, resources and agreement of costs, where appropriate). Such enquiries should be made to:

Cancer and End of Life Care Analysis Team Health and Life Events Division Office for National Statistics Government Buildings Cardiff Road Newport NP10 8XG Tel: +44 (0)1633 455704 Email: cancer.newport@ons.gsi.gov.uk

1. The ONS Charging Policy is available on our website.

We welcome your feedback on the content, format and relevance of this release. The Health and Life Events User Engagement Strategy is available to download from our website.

1. Produced in partnership with the Cancer Survival Group.

1. Details of the policy governing the release of new data are available from the UK Statistics Authority website.