Statistical bulletin

Cancer Survival in England Patients Diagnosed: 2006-2010 and Followed up to 2011

Comparisons across 24 cancer types of the rate of survival for adults (aged 15 to 99) and short-term predicted survival rates for recently diagnosed patients.

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1 . Key findings

- The general trend of increasing survival continued for patients diagnosed during 2006–2010

- Survival is generally lower among older patients than younger patients

- Five-year survival is over 80 per cent for cancers of the breast (women), prostate and testis, and for Hodgkin lymphoma and melanoma of skin

- Five-year survival for cancers of the brain, lung, oesophagus, pancreas and stomach in both sexes is below 21 per cent; survival for pancreatic cancer remains the lowest in both sexes

2 . Summary

This bulletin presents one-year and five-year net survival (per cent) for adults (aged 15–99 years) diagnosed with one of the 21 most common cancers in England during 2006–2010 and followed up to 31 December 2011 (see Background Notes 1–5). These cancers comprise over 90 per cent of all newly diagnosed cancers. Data are presented by sex, by age group and for all ages combined, both unstandardised and age-standardised (see Background Note 1).

3 . Results

Figure 1 shows five-year net survival estimates for the 10 most common cancers, for men and for women diagnosed during 2006–2010. Figure 1a, in the associated data section of this publication, shows five-year net survival for all 21 common cancers, by sex, in rank order. Table 1 compares net survival estimates (with their 95 per cent confidence intervals) (see Background Note 6) for patients diagnosed with one of the 21 most common cancers during the period 2006–2010 with the corresponding values for patients diagnosed during 2005–2009 (Office for National Statistics, 2011) (see Background Note 7).

Figure 1: Five-year age-standardised net survival for adults diagnosed during 2006–2010 and followed up to 2011: England, 10 common cancers, by sex
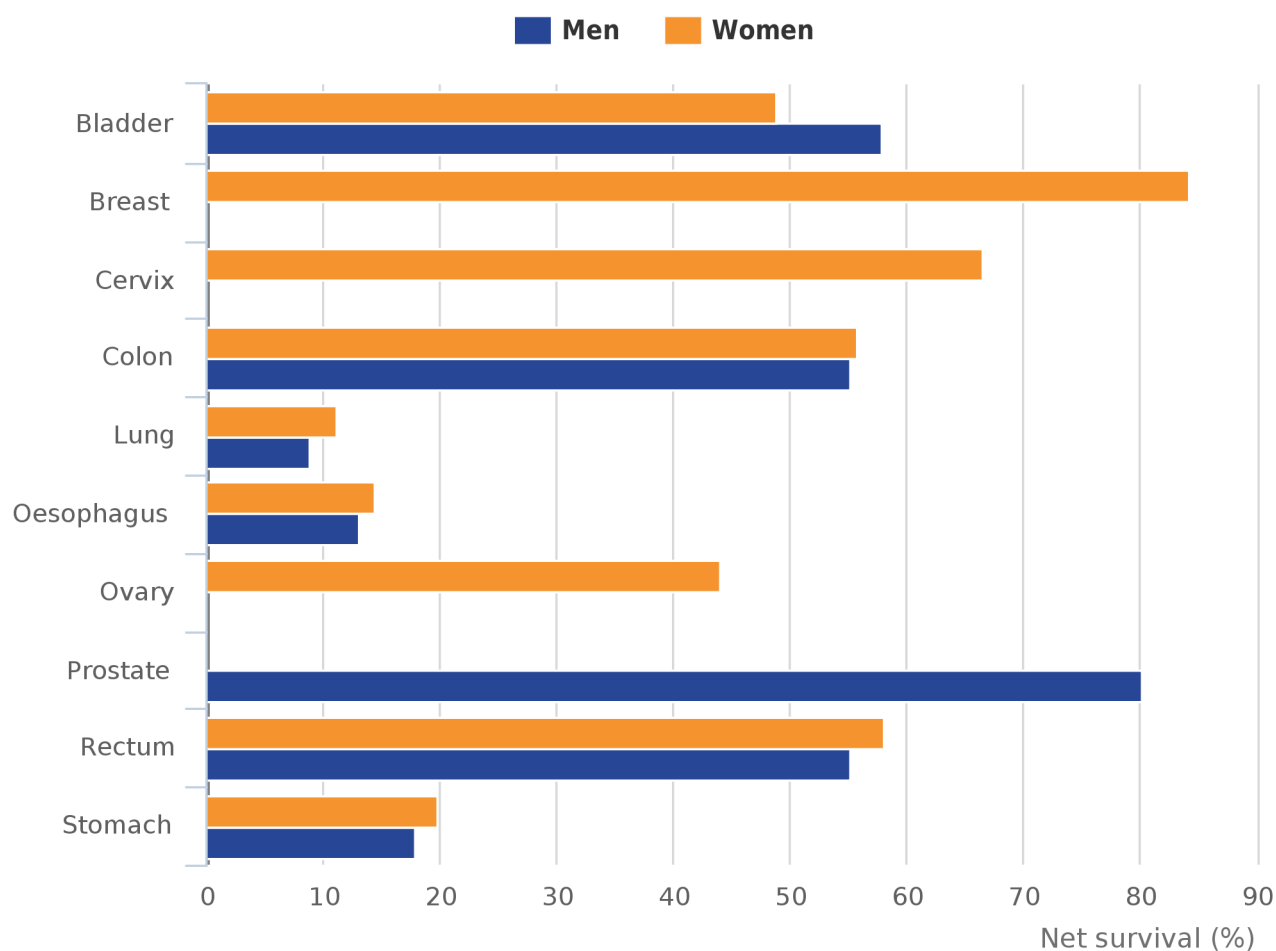
Source: Office for National Statistics

Notes:

1. Adults aged 15–99 years

The general trend of increasing five-year net survival (Rachet et al., 2009) continued for patients diagnosed during 2006–2010, with survival improving for all of the 21 most common cancers (Table 1). The largest increases in five-year survival, compared with the corresponding values for patients diagnosed during 2005–2009, were for men diagnosed with myeloma (an increase of 3.2 percentage points to 41.4 per cent), and for women diagnosed with colon cancer (survival rose 1.7 percentage points to 55.7 per cent), rectal cancer and non-Hodgkin lymphoma (an increase of 1.6 percentage points to 58.1 and 66.7 per cent, respectively). Generally increasing trends were also seen for one-year survival (data not presented).

Five-year net survival is over 80 per cent for cancers of the breast (women), prostate and testis, and for Hodgkin lymphoma and melanoma of skin (Figure 1). Prognosis remains very poor for malignancies of the brain, lung, oesophagus, pancreas and stomach, ranging from 3.9 and 4.4 per cent for cancer of the pancreas in men and women, respectively, up to 17.3 and 20.4 per cent for brain tumours. For all other cancers, five-year survival ranges from 38.3 to 66.8 per cent.

Table 2 presents net survival at one and five years after diagnosis for each of the 21 most common cancers, by sex and age group, and for all ages combined, both un-standardised and age-standardised.

There are distinct patterns in net survival by age, with generally higher survival among younger patients and lower survival among older patients, even after taking account of the higher background mortality in the elderly. Breast cancer is a well-known exception to this pattern (Rachet et al., 2008); five-year net survival is lower for women aged 15–39 years at diagnosis (84 per cent) than for women aged 40–69 years (89 to 90 per cent). Similarly, for prostate cancer, five-year survival is somewhat lower for men aged 15–49 years (90 per cent) than for men aged 50–69 years (92 per cent).

4 . Users and uses

Key users of cancer survival estimates include the Department of Health, academics and researchers, cancer charities, cancer registries, other government organisations, researchers within ONS, the media, and the general public. The Department of Health uses cancer survival figures to brief parliamentary ministers, and as part of the evidence base to inform cancer policy and programmes, for example in drives to improve survival rates.

Cancer survival estimates will also be used to measure progress against NHS Outcomes Framework indicators. Academics and researchers use the figures to inform their own research. Similarly cancer registries and other government organisations use the figures to carry out individual and collaborative projects to apply subject knowledge to practice.

Charities use the data so they can provide reliable and accessible information about cancer to a wide range of groups, including patients and health professionals via health awareness campaigns and cancer information leaflets/web pages. Researchers within ONS use the data to support further research and to publish alongside other National Statistics.

5 . Policy context

In 'Improving Outcomes: A Strategy for Cancer' (January 2011), the Department of Health stated that although improvements have been made in the quality of cancer services in England, a significant gap remains in survival compared with the European average. Survival estimates for cervical, colorectal and breast cancer are some of the lowest among Member States of the Organisation for Economic Co-operation and Development (OECD). The strategy document sets out how the Department of Health aims to improve outcomes for all cancer patients and improve cancer survival, with the aim of saving an additional 5,000 lives every year by 2014/15.

Outcomes strategies set out how the NHS, public health and social care services will contribute to the ambitions for progress agreed with the Secretary of State in each of the high-level outcomes frameworks. The indicators set for the National Health Service (NHS) Outcomes Framework 2011/12 include one- and five-year net survival from colorectal, breast and lung cancers.

6 . Authors

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7 . Acknowledgement

The National Cancer Registry at the Office for National Statistics and the London School of Hygiene and Tropical Medicine wish to acknowledge the work of the regional cancer registries in England, which provide the raw data for these analyses.

8. Additional information

Further information about cancer survival estimates published by the Office for National Statistics (ONS) can be found in the Cancer Survival Summary Quality Report. Summary Quality Reports are overview notes which pull together key qualitative information on the various dimensions of the quality of statistics as well as providing a summary of the methods used to compile the output. Information about key users of these statistics is also provided.

Summary Quality Reports are currently being replaced by Quality and Methodology Information papers. A Quality and Methodology Information paper covering cancer survival releases is due to be released in early 2013.

The Scottish Cancer Registry produces statistics on cancer in Scotland.

Statistics on cancer in Wales are produced by the Welsh Cancer Intelligence and Surveillance Unit.

The Northern Ireland Cancer Registry produces statistics on cancer in Northern Ireland.

9. References

Coleman MP, Babb P, Damiecki P, Grosclaude P, Honjo S, Jones J, Knerer G, Pitard A, Quinn MJ, Sloggett A, De Stavola BL (1999). 'Cancer survival trends in England and Wales, 1971-1995: deprivation and NHS Region', Studies in Medical and Population Subjects no. 61. London: The Stationery Office.

Rachet B, Woods LM, Mitry E, Riga M, Cooper C, Quinn MJ, Steward JA, Brenner H, Estève J, Sullivan R, Coleman MP (2008). 'Cancer survival in England and Wales at the end of the 20th century', British Journal of Cancer, 99 (Suppl. 1), 2-10.

Rachet B, Maringe C, Nur U, Quaresma M, Shah A, Woods LM, Ellis L, Walters S, Forman D, Steward JA, Coleman MP (2009). 'Population-based cancer survival trends in England and Wales up to 2007: an assessment of the NHS cancer plan for England', The Lancet Oncology, 10, 351-369.

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10. Background notes

1. Net survival is an estimate of the probability of survival from the cancer alone. It can be interpreted as the survival of cancer patients after taking into account the background mortality that the patients would have experienced if they had not had cancer. Background mortality is derived from life tables of all-cause mortality rates in the general population. Net survival varies with age, and the age profile of cancer patients can vary with time and between geographical areas, so the estimates are age-standardised to facilitate comparison. Estimates are shown with their 95 per cent confidence intervals (see Background Note 6). For convenience, net survival is expressed as a percentage in the range 0–100 per cent.

2. There are two changes to the statistical methods for patients diagnosed during 2006–2010. First, an unbiased estimator of net survival (Pohar Perme, Stare and Estève, 2012) has been used instead of the conventional relative survival. Net survival accounts for the so-called "informative censoring" bias, i.e. the fact that some groups of patients are less likely than others to be observed until death, independently of their cancer prognosis. Second, patients with zero follow-up time have been included. These are patients known to have died on the same day as they were diagnosed; they do not include patients for whom a death certificate was the only information available. Survival for patients diagnosed during 2005–2009 has been re-estimated with this revised approach and the results are shown in Table 1; the estimates differ

slightly from those published for the same patients last year, but they are directly comparable with the survival estimates published today for patients diagnosed during 2006–2010.

3. All adults (aged 15–99 years) in England who were diagnosed during 2006–2010 with one of the 21 most common cancers as an invasive, primary, malignant neoplasm were eligible for analysis. Ineligible patients were those whose tumour was benign (not malignant) or in situ (malignant but not invasive) or of uncertain behaviour (uncertain whether benign or malignant), or for which the organ of origin was unknown. Details of the eligibility and exclusion criteria have been published (Coleman et al., 1999).

4. Cancers were defined by anatomic site codes in the International Classification of Diseases, Tenth Revision (ICD-10) and by morphology and behaviour codes in the International Classification of Diseases for Oncology, Second Edition (ICD-O-2) (Table 3).

5. Data presented for the 21 most common cancers are for cancer of the colon and cancer of the rectum separately. Combined data for colorectum cancer are also presented.

6. A 95 per cent confidence interval is a measure of the uncertainty around an estimate. It provides a range around the estimated value within which we have a 95 per cent level of confidence that the true value for the population is likely to fall.

7. Differences between survival estimates for the two periods are taken as the arithmetic difference: for example, 12 per cent is shown as 2 per cent (not 20 per cent) higher than 10 per cent. Survival figures are rounded to one decimal place, but the differences are based on the exact underlying figures.

8. When the data for this report were extracted for analysis on 18 May 2012, cancer registrations for 2010 were believed to be 97 per cent complete, and the patient's vital status at 31 December 2011 was known for 99 per cent of cancers registered for the period 2006–2010. As in other countries, cancer registration is a dynamic process: a small number of late registrations may arrive up to five years after the end of a given calendar year, whereas other registrations may be amended or deleted. The figure of 97 per cent completeness is based on the average number of cases for the three previous years (2007–2009), including late registrations received after publication of the data for those years.

9. A list of the names of those given pre-publication access to the statistics and written commentary is available in Pre-release Access List: Cancer Survival 2006–2010, followed up to 2011 (32.9 Kb Pdf) . The rules and principles which govern pre-release access are featured within the Pre-release Access to Official Statistics Order 2008.

10. 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: 01633 456021
    Email: cancer.newport@ons.gsi.gov.uk

    The ONS Charging Policy is available on the ONS website.

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

12. Follow ONS on Twitter and Facebook.

13. Next publication date: September/October 2013.

14. The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

    Designation can be broadly interpreted to mean that the statistics:

    - meet identified user needs

    - are well explained and readily accessible

    - are produced according to sound methods

    - are managed impartially and objectively in the public interest

    Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

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15. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gsi.gov.uk