

# Prostate Cancer Survival

## NCIN Data Briefing

### Analysis

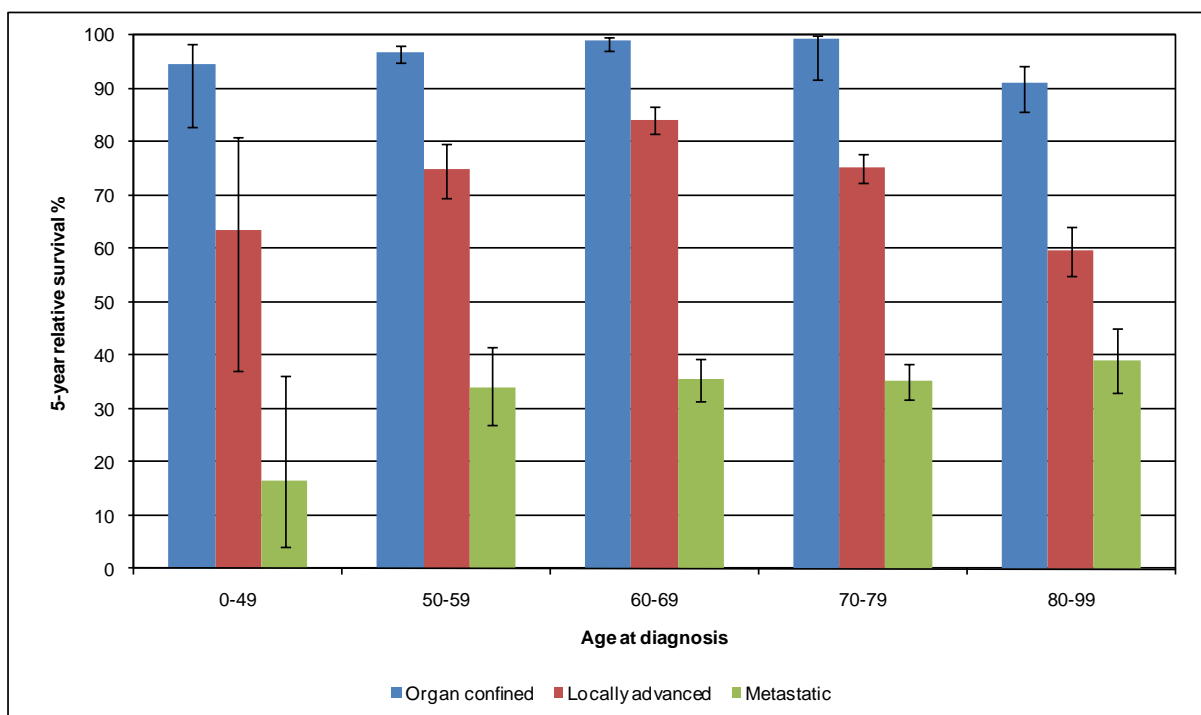
Survival time for the majority of cancers is affected by the stage at diagnosis, and this is also true for prostate cancer. The increase in prostate-specific antigen (PSA) testing since the late 1990s has increased the proportion of cases diagnosed at stage I or II when the tumour is confined to the prostate.

A cohort of 83,701 men in England, with a diagnosis of prostate cancer from 1999 to 2002, were analysed. Information on stage at diagnosis was extracted from registry records and supplemented with staging data from the British Association of Urological Surgeons (BAUS) database, where available. Relative survival is calculated by comparing mortality from the disease of interest to background mortality, which is calculated using lifetables supplied by the London School of Hygiene and Tropical Medicine (LSHTM).

#### KEY MESSAGE:

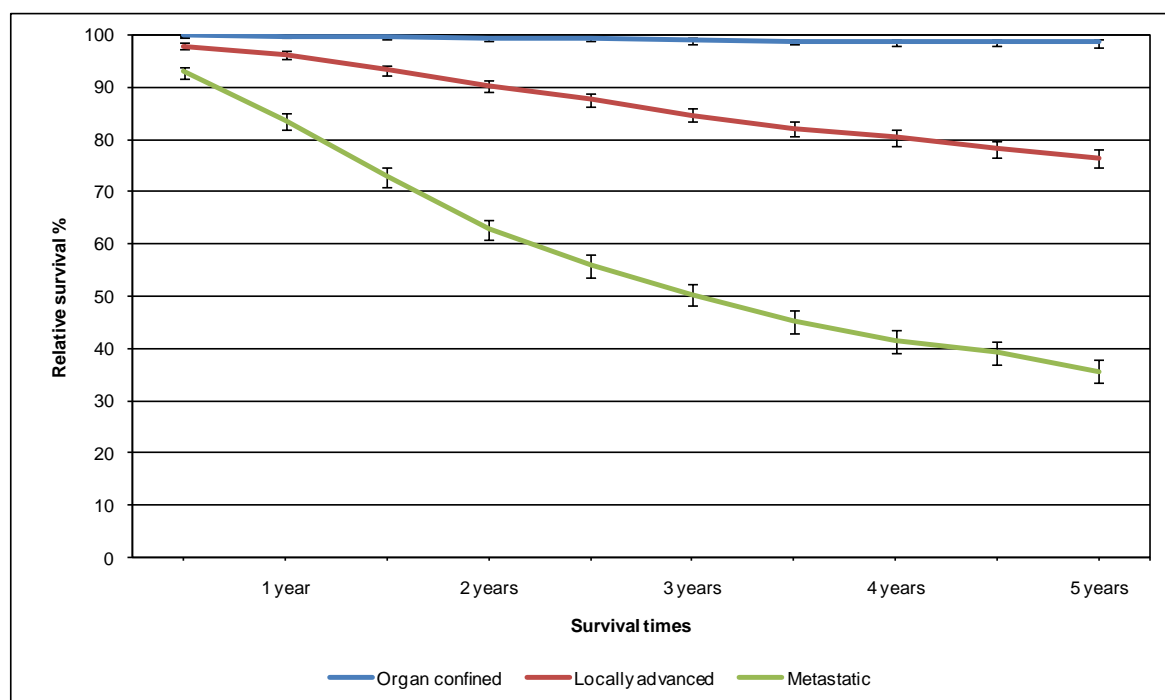
*Prostate cancer survival is related to stage at diagnosis. The relative survival for men with advanced and metastatic tumours is markedly worse than for localised tumours. Survival is best for men aged 60-69 at diagnosis.*

Relative survival for prostate cancer, by age at diagnosis and stage, in England 1999-2002.



Calculation of survival for prostate cancer is complicated by lead-time bias, which is the time between detection by a test or screening and the point at which clinical detection may be expected, *i.e.* the time by which a diagnosis may be brought forward compared to normal presentation. Moreover many prostate cancers are slow-growing and may never cause symptoms, nor be the cause of death. Early testing or screening may introduce length bias, which is the preferential detection of slow growing cancers. The increased uptake of PSA testing has led to earlier diagnosis and more diagnoses of non-aggressive tumours (Moore, et al., 2009), which may increase the survival time of men whose prostate cancers are diagnosed following a PSA test but does not necessarily lead to reduced mortality. In fact, despite the increase in diagnoses of organ confined prostate cancer, the overall mortality from the disease has fallen only slightly in the last decade (Office for National Statistics, 2008).

## Relative survival for prostate cancer, by time after diagnosis and stage, in England 1999-2002.



The effects of lead-time bias on organ confined prostate cancer should not detract from the fact that survival for men presenting with more advanced tumours is much worse. In those men who have metastatic cancer the relative survival after three years is just half, and this falls further to nearly 30% after five years.

There are also differences in survival depending on age at diagnosis. Surprisingly, younger men do not necessarily have the best relative survival, rather those men aged 60 to 69 have the best survival for both organ confined and locally advanced cancers. It is possible that tumours diagnosed at a younger age are of a more aggressive type, even if they are diagnosed at an early stage. It is also possible that the lead time and length biases in survival are more prominent in the 50 to 79 age groups.

## References

Moore, A. L., Dimitropoulou, P., Lane, A., Powell, P. H., Greenberg, D. C., Brown, C. H., et al. (2009). Population-based prostate-specific antigen testing in the UK leads to a stage migration of prostate cancer. *British Journal of Urology international*, 104, 1592-1598.

Office for National Statistics. (2008). Cancer incidence and mortality: trends in the United Kingdom and constituent countries, 1993 to 2004. *Health Statistics Quarterly* (38), pp. 34-46.

FIND OUT MORE:

### South West Public Health Observatory

The South West Public Health Observatory is the lead Cancer Registry for Urological cancers

<http://www.swpho.nhs.uk>

### Other useful resources within the NCIN partnership:

Cancer Research UK CancerStats – Key facts and detailed statistics for health professionals

<http://info.cancerresearchuk.org/cancerstats/>

The NCIN is a UK-wide initiative, working closely with cancer services in England, Scotland, Wales and Northern Ireland, and the National Cancer Research Institute (NCRI), to drive improvements in standards of cancer care and clinical outcomes by improving and using the information it collects for analysis, publication and research. In England, the NCIN is part of the National Cancer Programme.