

# 20-year relative survival of screen-detected breast cancer patients

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## Background

The details of 8,705 breast cancers detected in women screened in England between 1 January 1990 and 31 December 1991 were submitted to the NHS Breast Screening Programme and Association of Breast Surgery audit of screen-detected breast cancers [1] for analysis. Death information was obtained from cancer registries. The study end date of 31 March 2011 allowed 20-year relative survival to be calculated.

## Method

Relative survival is defined as the observed survival in the patient group divided by the expected survival of the general population, matched by age and sex. Cumulative relative survival probabilities for women in the general UK population were calculated with UK life tables using the Ederer II method and statistical package Stata [2].

## 20-year relative survival

- The overall 20-year relative survival rate for screen-detected breast cancer patients who were screened in 1990 and 1991 was 82.4% (95% C.I. 80.9%, 84.0%)
- Survival was 78.9% for patients with invasive breast cancer
- The survival of patients with non-invasive breast cancer was not significantly different from that of the general population
- 20-year relative survival rates varied significantly between 74.7% in East Midlands and 89.4% in South East Coast (Figure 1)
- The 20-year survival rate for patients with invasive breast cancers in the Nottingham Prognostic Indicator (NPI) Excellent Prognostic Group (EPG) was 93.8%, compared to 27.1% for those with Poor Prognostic Group (PPG) cancers (Figure 2).

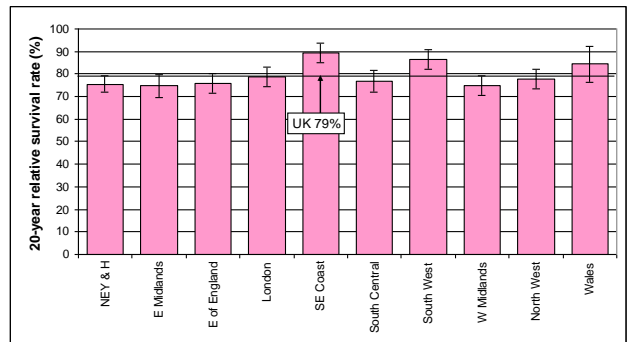


Figure 1: 20-year relative survival for women with invasive breast cancer screened in 1990 and 1991

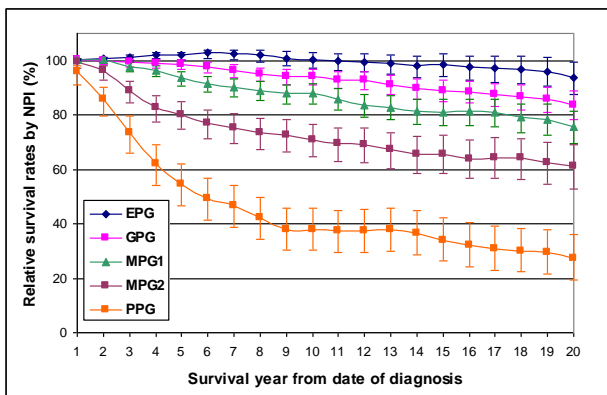


Figure 2: Variation in relative survival rates with NPI group for patients with invasive breast cancer

## 5-year relative survival

- Information on breast cancers in women screened in 2005/06 was used to compare 5-year relative survival with the 1990 and 1991 cohort
- 5-year survival of patients with invasive breast cancer has improved significantly from 93.7% for patients screened in 1990 and 1991 to 97.9% for patients screened in 2005/06
- This improvement is seen in all age groups under 58 years
- At 78.9%, 5-year survival for PPG patients in the 2005/06 cohort was significantly better than that for the 1990 and 1991 cohort (54.6%).

## Conclusion

The 20-year relative survival rate for patients with invasive breast cancer who were screened in 1990 and 1991 was 78.9%. There has been an overall improvement in the survival of patients with invasive breast cancer between 1990 and 1991 and 2005/06.

## References

- [1] NHSBSP & ABS, An audit of screen-detected breast cancers for the year of screening April 2010 to March 2011, May 2012
- [2] Dickman P W, Sloggett A, Hills M and Hakulinen T, Regression models for relative survival, 2004, Statistics in Medicine, 23:51-64