# UNDERSTANDING THE LINK BETWEEN AGE AND PRESENTATION OF METASTATIC BREAST CANCER

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J Shield[1], L Walker[1], J Flynn[1], T Welchman[2], E Drage[2], M Gibbs[2], C Edson[2], M Lee[3], J Maher[1]
[1]Macmillan Cancer Support; [2]Monitor Deloitte; [3]NHS England

**Understanding the characteristics of patients diagnosed with metastatic breast cancer on presentation**

## Background

'Routes from Diagnosis' (RfD) links and analyses routinely collected cancer registry and HES data to map out the cancer journey for whole cohorts of patients over up to 7 years after diagnosis. This approach brings together information on survival, morbidities and demographics, painting a detailed picture of survivorship.

Applying these methods to breast cancer, we aimed to investigate the relationship between patients' age and the presentation of metastases at the time of diagnosis.

## Method

Clinical experts and data analysts collaborated to map out cancer journeys for 26,926 patients diagnosed with breast cancer in England in 2004 and followed up to 2011 or death.

Coding of stage (and therefore metastases) at diagnosis is poor, with only 67.3% coverage of NCDR stage variables for the RfD breast cancer dataset. As it is common for metastases to be coded as new primary tumours, rather than using only 'metastatic' ICD-10 codes to identify metastases, all instances of ICD-10 codes C77-79 (malignant neoplasms of ill-defined, secondary and unspecified sites) and tumours coded at common metastatic sites for breast cancer (lungs (C34), liver (C22), bones (C40-41) and brain (C70-72)) were coded in the RfD dataset as metastases. Using the HES coding of metastases captures significantly more metastases than using NCDR stage at diagnosis alone.

The team identified a distinction between patients presenting with and subsequently developing metastases, based upon the point in time at which a diagnosis of metastatic cancer was recorded. This could then be analysed in relation to patients' age at diagnosis. Whilst staging data was unavailable, the presence of metastases at diagnosis was taken to be an indication of later-stage disease.

## Results

Using routinely collected data it was possible to identify 19.9% of the cohort as having experienced metastatic disease either prior to diagnosis or during the period from diagnosis to continued survival (up to 7 years) or death.

As Figure 1 shows, of those patients identified as having had metastases at any point, 14.7% of patients aged 25-64 had already developed metastases at the time of their breast cancer diagnosis. This proportion was higher for each of the older age brackets; 65-69 (19.9%), 70-74 (22.3%) and 75+ (25.9%).

Taking a single age bracket (Figure 2), 54.7% of patients aged 65-69 who presented with metastases at diagnosis lived to 1 year, whilst 1-year survival for patients of this age who developed metastases after diagnosis was 95.5%. 5-year survival was 19.7% and 32.1% respectively.

## Conclusion

The Routes from Diagnosis approach demonstrates the value of analysing routinely collected data to understand patients' clinical journeys and outcomes.

This work provides further evidence of the presentation of later-stage disease in older patients and the link to poorer survival rates (Fig 2).[1] With regard to the proportion of breast cancer patients experiencing metastasis, these findings differ from those presented by Walkington et al,[2] which found 30.4% of patients were node positive at presentation and 3.9% had distant metastases. That study was able to draw upon comprehensive local data, whereas only inpatient HES was available at a national level to RfD at the time of the study. Access to comprehensive national data is required if the full picture of metastatic breast cancer is to be understood.

**References**

[1] Ali, A MG et al., Patient and tumour characteristics, management, and age-specific survival in women with breast cancer in the East of England, British Journal of Cancer (2011)

[2] Walkington, L et al., Patterns of breast cancer recurrence and associated health care costs of 1000 patients treated in Leeds: a longitudinal study, NCIN Cancer Outcomes Conference poster presentation (2012)

**ONE IN FIVE**

**presented with or subsequently developed metastases**

*Figure 1: Breast cancer patients presenting with metastases at diagnosis, by age bracket*

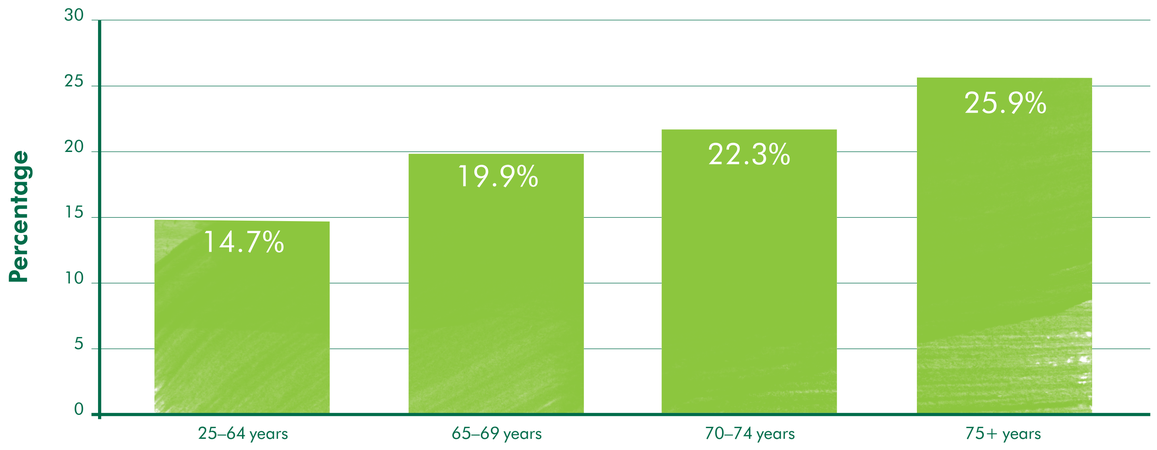
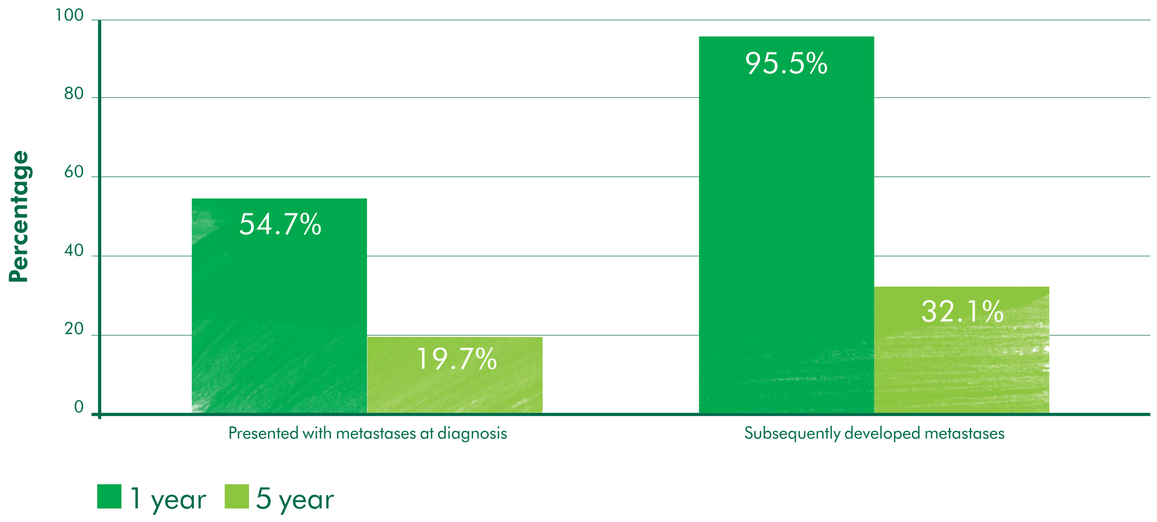



*Figure 2: Survival among patients aged 65-69, by time of presentation with metastatic breast cancer*

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For further findings, see Routes from Diagnosis: the most detailed map of cancer survivorship yet

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