

Malignant Pleural Mesothelioma

NCIN Data Briefing

Background

Pleural mesothelioma is a malignant tumour of the membrane surrounding the lung. The majority of pleural mesothelioma are caused by asbestos exposure. Its incidence is increasing even though asbestos is no longer used in the UK. This is a result of the long latency period (~40yrs) between exposure and diagnosis. Occupational exposure to asbestos fibres most commonly occurred in the past in mining, shipbuilding, manufacture of asbestos textiles and cement, plumbing, insulation & building industries, peaked in the 1960s and 1970s.

Figure 1: One-year relative survival of mesothelioma patients, England, 2002-2006, by sex and cancer

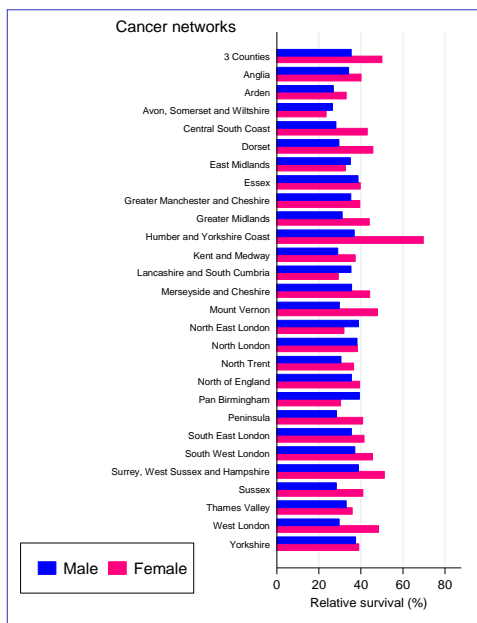


Figure 2: One-year relative survival of mesothelioma patient, England, 1987-2006, by sex and period.

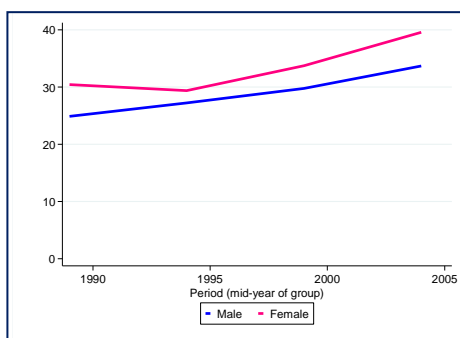


Figure 3: Age-standardised rates (per 100,000 European standard population) of mesothelioma, England, 2002-2006, by sex and cancer network.

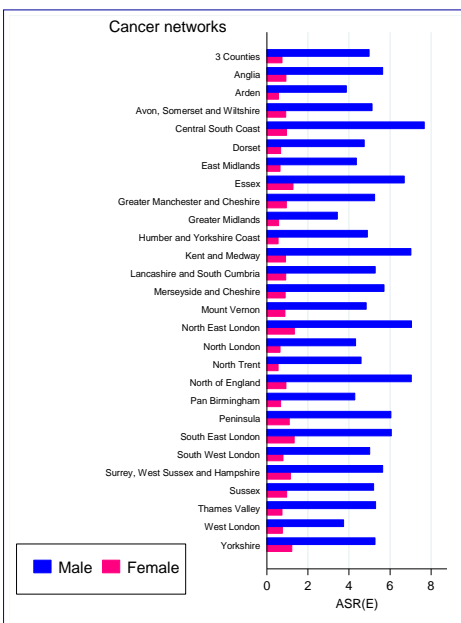
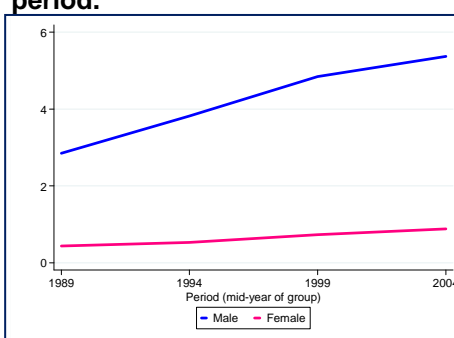


Figure 4: Age-standardised rates (per 100,000 European standard population) of mesothelioma, England, 1987-2006, by sex and period.



KEY MESSAGES:

In the UK mesothelioma is five times more common in men than in women. The incidence of mesothelioma is still increasing, and is expected to peak in about 15 years.

Survival from mesothelioma is improving but remains very low and varies by area of diagnosis.

Survival

Women have a higher relative survival than men (Fig. 1). The highest relative one-year survival in women observed was in Humber & Yorkshire Coast cancer network (CN) (69.6%) and the lowest in Avon, Somerset & Wiltshire CN (23.5%). The highest relative survival in men was in Pan Birmingham CN (39.2%) and the lowest was in Avon, Somerset & Wiltshire CN (26.6%). We observed an increase in relative survival with time (Fig. 2 and Table 1).

Incidence

Men have higher age-standardised incidence rate (per 100,000 European standard population) (ASR (E)) of mesothelioma than women. The highest incidence rate was among men living in Central South Coast CN (7.7 (ASR (E)) (Fig. 3). Looking at the incidence by period from 1987 to 2006, we observed a more pronounced increase in men than in women (Fig. 4).

In the cohort dimension, incidence rates increased in successive generations up to the 1945 cohort, where the estimated incidence rate was 9.5 in males and 1.9 in females (Fig. 5).

We predict that the incidence rate in men will increase until about 2022, and that the rate will decrease during the 2020s, 2030s and 2040s (Fig. 6). Among women we predict that the incidence rate will increase gradually until reaching a maximum in 2027 and then to remain relatively stable thereafter.

Table 1: One-year relative survival (%) of mesothelioma male and female patients in England, from 1987 to 2006.

Period	Male			Female		
	No. cohort	Cumulative deaths	Relative survival (%)	No. cohort	Cumulative deaths	Relative survival (%)
1987-1991	3145	2391	24.9	611	430	30.4
1992-1996	4348	3212	27.2	769	550	29.4
1997-2001	5962	4260	29.8	1129	761	33.7
2002-2006	7011	4761	33.7	1447	895	39.6

Methods

We extracted data on patients diagnosed with mesothelioma (ICD-10 C45) living in England between 2002 and 2006 from the National Cancer Information Service (NCIS). We extracted ASR (E) and one-year relative survival (%) in cancer networks, by sex. We displayed these rates and proportions in bar charts.

We also analysed ASR (E) and one-year relative survival (%) on patients diagnosed between 1987 and 2006 in which we combined single years of diagnosis into five-year periods. These periods were represented by their mid-points.

We also extracted data on patients diagnosed between 1960 and 2007 from the Thames Cancer Registry. A Poisson regression age-cohort model was used to estimate the age specific rates in the cohort dimension and Poisson regression age-period model was used to estimate the age-specific rates in past and future periods. These rates were then used to obtain ASR (E) for each of the birth cohorts and for each period of diagnosis.

Summary

There is significant variation in mesothelioma survival rates across England, but there has been an important increase in relative survival rate over the study period. The most likely explanation for this improvement would seem to be lead time and earlier diagnosis, though this is worthy of further investigation.

FIND OUT MORE:

Thames Cancer Registry

Thames Cancer Registry is the lead Cancer Registry for lung cancer and mesothelioma

<http://www.tcr.org.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.

Figure 5: Age-standardised rates (per 100,000 European standard population) of mesothelioma, South East England, 1875-1965, by sex and cohort of birth.

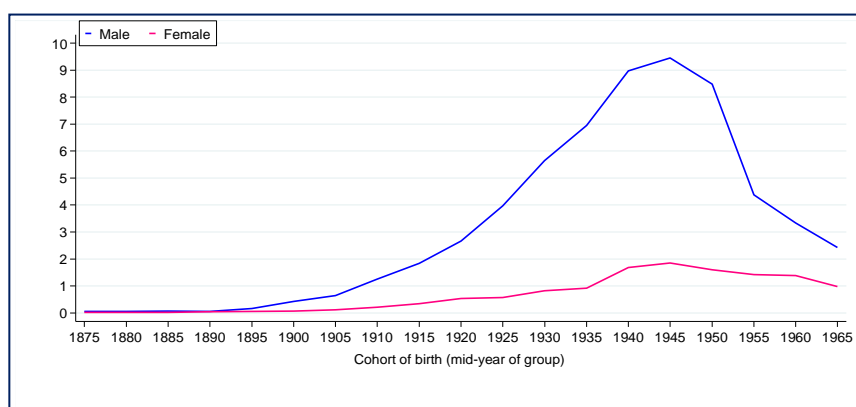


Figure 6: Observed (thick lines) and predicted (dashed lines) age-standardised rates (per 100,000 European standard population) of mesothelioma, South East England, 1947-2057, by sex and period.

