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Trends in cancer mortality among migrants in England and Wales, 1979–2003

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ABSTRACT

Aim: To examine trends in cancer mortality for migrants living in England and Wales.

Method: The Office for National Statistics provided anonymised death records for 1979–1983, 1989–1993 and 1999–2003, and tabulated population data from the 1981, 1991 and 2001 censuses for England and Wales. Age-adjusted rates and rate ratios for 16 cancer sites were derived by country of birth and time period.

Results: Compared with the declines for those born in England and Wales, smaller or non-significant declines in groups with historically low mortality lead to a pattern of convergence of rates towards those for England and Wales (e.g. breast cancer among women from the Caribbean or East Africa). However, for migrant groups with historically higher rates this had the effect of either maintaining or widening relative mortality (e.g. lung cancer among men from Republic of Ireland or Jamaica). Higher mortality among the Scots and Irish persisted for a range of cancers.

Conclusion: In spite of general declines in cancer death rates, inequalities in migrant mortality remain. There is an urgent need for prevention and treatment programmes to maximise coverage across all minority groups.

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1. Introduction

Ethnic specific trends in cancer mortality provide aetiological clues about both how environmental exposure affects susceptibility to cancers and how successfully they are managed. However, remarkably little cancer incidence or survival data for ethnic minority groups exist in the United Kingdom (UK). Additionally, annual death rates by ethnicity are not available in the UK. Ethnic origin is not recorded at death registration in England and Wales and analysis relies on decennial rates based on information by country of birth from the census and from deaths registered around the time of the census. Previous studies have focused on mortality from

main cancers and, compared with the England and Wales national average, have shown relatively high all cancer mortality for Scottish and Irish migrants and low mortality for South Asian and Caribbean migrants.^{1,2} Mortality trends have never been explored. This paper examines trends for a range of cancers using data for 1979–1983, 1989–1993 and 1999–2003.

Most incidence research relates to South Asian migrants and findings suggest convergence in cancer risk towards that of the host population.^{3,4} South Asian women appear to have both lower incidence and better survival from breast cancer compared with all other women.⁵ Evidence is patchier for other migrant groups. While data from the England and Wales Longitudinal Study suggest that incidence of all combined cancers is lower in Caribbeans compared with the national average,⁶ a later factory-based cohort in Birmingham estimated similar incidence rates for both Caribbean and White European men.⁷ Incidence of prostate cancer is thought to be more than twice as high in Caribbean men than in other

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men.⁸ Higher incidence of smoking-related cancers has been reported for Scottish and Irish migrants.⁶

2. Methods

The Office for National Statistics provided anonymised death records for 1979–1983, 1989–1993 and 1999–2003, and tabulated population data from the 1981, 1991 and 2001 censuses for England and Wales. Deaths and populations-at-risk were derived by country of birth and 5-year age groups. Due to the small number of deaths at younger ages, and potentially poor quality denominator data at older ages for some groups, analyses were restricted to those aged 30–69 years. Countries of birth were included if their definition was comparable over all three time periods in both the deaths and census data, and if there were at least 20 deaths in each 10-year age group in 1999–2003 and at least one in other periods. An East African group, comprising migrants from Kenya, Malawi, Tanzania, Uganda and Zambia, was separately defined because of the likelihood of this group containing large numbers of people of Indian origin. A group drawn from Western and Southern Africa (termed West Africa in the figures) was defined, comprising migrants from Gambia, Ghana, Sierra Leone, Nigeria, Botswana, Lesotho, Swaziland and Zimbabwe. In the 1981 census tables, Lesotho and Swaziland were not separately identifiable and were not included in either the populations or deaths for 1979–1983. The Caribbean islands are heterogeneous in culture and ethnic ancestry but only the Jamaica-born population was large enough to be identified separately.

The 9th International Classification of Disease was used to classify deaths occurring between 1979 and 2000 and the 10th for deaths between 2001 and 2003. Death rates for all malignant neoplasms (referred to as all cancers hereafter) were derived only for the migrant groups included in the cause specific analyses. Trends in absolute mortality were assessed using directly standardised rates adjusted to the European standard population 2000. Trends in relative mortality were assessed using rate ratios derived from these standardised rates, with the rate for those born in England and Wales as baseline. Significant differences between rate ratios and rates refer to $p < 0.05$; the first decade refers to the time between 1979–1983 and 1989–1993, the second to the time between 1989–1993 and 1999–2003.

3. Results

For women born in Scotland, Northern Ireland or the Republic of Ireland, lung cancer was the highest ranking cancer cause of death in all periods followed by breast cancer in the latter two periods. This ranking was reversed in most of the other female migrant groups. For men lung cancer was the most common cancer cause of death in all groups except in the other Caribbean group – where prostate cancer ranked highest in the final period. The second most common male cancer tended to be stomach or colon cancer in the first two time periods. In the final period oesophageal cancer ranked second for men born in England and Wales or Scotland, colon cancer

for men from Northern Ireland or the Republic of Ireland and prostate cancer for those from Jamaica or India.

3.1. Relative mortality from main cancers

Men born in Scotland, Northern Ireland or the Republic of Ireland had high all cancer rate ratios (>1.00) in every period, with increasing divergence of mortality from that of England and Wales for those from the Republic of Ireland (Fig. 1). Consistently lower rate ratios (<1.00) were observed for those born in other Caribbean, East Africa, India or Pakistan. A broad pattern of convergence of mortality towards that of England and Wales, and hence reduction in the mortality advantage, was observed for those from the other Caribbean, Pakistan, Bangladesh or Italy. A striking change occurred for men born in Jamaica as in 1999–2003 they had higher mortality for the first time. Trends for lung cancer mortality mirrored that of all cancers combined. Mortality from colon cancer could be examined in only four groups. There was a consistent pattern of high rate ratios for colon cancer for men born in the Republic of Ireland and of low rate ratios for those born in India.

Among women (Fig. 2), all cancer rate ratios remained high for women born in Scotland or the Republic of Ireland, and these increased between 1989–1993 and 1999–2003 for women born in Republic of Ireland. Rate ratios remained low for those born in Jamaica, other Caribbean, India, Pakistan or Italy with a pattern of convergence for those born in Jamaica or Pakistan. The patterns for breast and lung cancers reflected those of all cancers combined. Breast cancer rate ratios remained low for women born in India or Pakistan. In 1999–2003, women born in Northern Ireland had a low rate ratio for the first time. A pattern of convergence can be seen for those from Jamaica, other Caribbean or East Africa. Lung cancer rate ratios remained higher for women from Scotland, Northern Ireland and Republic of Ireland and lower for women born in India.

3.2. Percentage declines in death rates for main cancers

Death rates from all cancers combined and lung cancer declined consistently over the two decades for men born in England and Wales (Table 1a). Similar trends were observed for all cancers only for men from India, and for lung cancer only for those from India, Scotland, Northern Ireland or Republic of Ireland. The smaller declines for those born in Republic of Ireland compared with the declines for men born in England and Wales, and the second decade rate rise for Jamaica-born men account for the increasing relative mortality differences noted above. A decline in colon cancer death rates was observed only in the second decade and only among men born in England and Wales or Scotland.

Among women, death rates for all cancers combined and breast cancer declined over the two decades for women born in England and Wales (Table 1b). These consistent declines were observed only for those from Northern Ireland or Republic of Ireland. Generally changes in death rates for breast or lung cancer for migrant groups were not significantly different from those for women born in England and Wales. A pattern of non-significant second decade declines for breast cancer, however, among those from Jamaica,

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