

Disparities in breast cancer mortality trends between 30 European countries: retrospective trend analysis of WHO mortality database

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EDITORIAL by Beral and Peto

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Cite this as: *BMJ* 2010;341:c3620
doi: 10.1136/bmj.c3620

This is a summary of a paper that was published on bmj.com as *BMJ* 2010;341:c3620

STUDY QUESTION

What are the temporal trends in female breast cancer mortality from 1989 to 2006 in Europe?

SUMMARY ANSWER

Countries showed substantial trend differences, but breast cancer mortality fell by an average of 19%, more so in countries with higher mortality in 1987-9 and in women aged under 50 years.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS

The UK has been criticised for lower survival than other European countries. This study found that the UK mortality showed greater decrease than most countries, and some, such as France and Sweden, showed little change despite substantial investments in cancer screening and treatment.

Participants and setting

The World Health Organization mortality database was analysed for female deaths from breast cancer in 30 European countries between 1989 and 2006.

Design

This descriptive epidemiology study used linear regression models based on log transformed mortality adjusted for age on the European standard population. Joinpoint analysis was used to detect changes in mortality trends.

Primary outcome

Individual countries' changes in mortality trends overall and by age group (<50, 50-69, and ≥70 years).

Main results and the role of chance

Breast cancer mortality decreased between 1989 and 2006 by ≥20% in 15 countries (for example, reductions of 45% in Iceland, 35% in England and Wales, 30% in Scotland, 29% in Northern Ireland, and 26% in Republic of Ireland), and by 10-20% in seven countries (such as reductions of 12% in Finland and 11% in Hungary), whereas it increased in four countries (by 1% in Greece, 10% in Estonia, 11% in Latvia, and 17% in Romania). Downward trends usually started before 1996. The figure shows trends in selected countries with large reductions (UK), modest changes (France and Sweden), or the greatest increase (Romania) in mortality. Trends seem to converge to around 22-28 breast cancer deaths per 100 000 women. However, the sustained downward trends seen in the UK since 1998, and the consistently modest changes in France and Sweden, suggest that, around 2010, breast cancer mortality in the UK will be lower than in France and Sweden. Trends in the two latter countries are intriguing because both countries invested much in costly cancer treatments, and in Sweden, breast screening of women aged 40-74 has been widespread after 1990.

In the separate age groups, the greatest reductions in mortality were observed in women aged <50 (median change -37% (range -76% to -14%)). Similar reductions were observed in countries where mammography screening in young women is rare. In women aged 50-69 and ≥70 years, the median changes in mortality were -21% (range -40% to 14%) and -2% (-42% to 80%), respectively.

Bias, confounding, and other reasons for caution

Causes of death may be of limited reliability, and WHO data quality indices advise caution with regard to data from Greece, Poland, and Portugal. It is also possible that some changes in breast cancer mortality trends could be due to changes in coding practices, as was found in Switzerland.

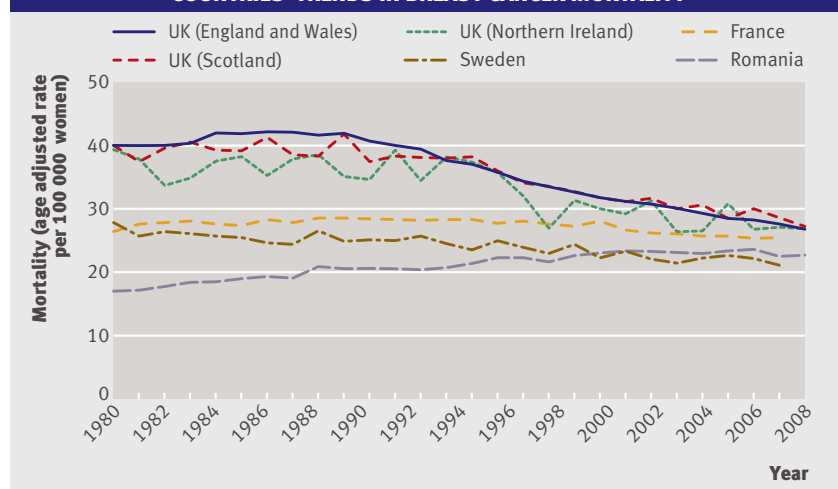
Generalisability to other populations

Breast cancer survival statistics are affected by changes in the incidence of smaller cancers, which tend to have good prognosis and whose detection increases with intensity of mammography screening. Mortality trends should also be examined, as in this study, to determine successes or failures of health service provision.

Study funding/potential competing interests

Institutions in which the authors work had no influence on the conduct of the research or in the writing of the paper. The work of the Northern Ireland Cancer Registry is funded by the Public Health Agency for Northern Ireland.

COUNTRIES' TRENDS IN BREAST CANCER MORTALITY



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