

# Global surveillance of cancer survival 1995–2009: analysis of individual data for 25 676 887 patients from 279 population-based registries in 67 countries (CONCORD-2)

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## Summary

**Background** Worldwide data for cancer survival are scarce. We aimed to initiate worldwide surveillance of cancer survival by central analysis of population-based registry data, as a metric of the effectiveness of health systems, and to inform global policy on cancer control.

**Methods** Individual tumour records were submitted by 279 population-based cancer registries in 67 countries for 25·7 million adults (age 15–99 years) and 75 000 children (age 0–14 years) diagnosed with cancer during 1995–2009 and followed up to Dec 31, 2009, or later. We looked at cancers of the stomach, colon, rectum, liver, lung, breast (women), cervix, ovary, and prostate in adults, and adult and childhood leukaemia. Standardised quality control procedures were applied; errors were corrected by the registry concerned. We estimated 5-year net survival, adjusted for background mortality in every country or region by age (single year), sex, and calendar year, and by race or ethnic origin in some countries. Estimates were age-standardised with the International Cancer Survival Standard weights.

**Findings** 5-year survival from colon, rectal, and breast cancers has increased steadily in most developed countries. For patients diagnosed during 2005–09, survival for colon and rectal cancer reached 60% or more in 22 countries around the world; for breast cancer, 5-year survival rose to 85% or higher in 17 countries worldwide. Liver and lung cancer remain lethal in all nations: for both cancers, 5-year survival is below 20% everywhere in Europe, in the range 15–19% in North America, and as low as 7–9% in Mongolia and Thailand. Striking rises in 5-year survival from prostate cancer have occurred in many countries: survival rose by 10–20% between 1995–99 and 2005–09 in 22 countries in South America, Asia, and Europe, but survival still varies widely around the world, from less than 60% in Bulgaria and Thailand to 95% or more in Brazil, Puerto Rico, and the USA. For cervical cancer, national estimates of 5-year survival range from less than 50% to more than 70%; regional variations are much wider, and improvements between 1995–99 and 2005–09 have generally been slight. For women diagnosed with ovarian cancer in 2005–09, 5-year survival was 40% or higher only in Ecuador, the USA, and 17 countries in Asia and Europe. 5-year survival for stomach cancer in 2005–09 was high (54–58%) in Japan and South Korea, compared with less than 40% in other countries. By contrast, 5-year survival from adult leukaemia in Japan and South Korea (18–23%) is lower than in most other countries. 5-year survival from childhood acute lymphoblastic leukaemia is less than 60% in several countries, but as high as 90% in Canada and four European countries, which suggests major deficiencies in the management of a largely curable disease.

**Interpretation** International comparison of survival trends reveals very wide differences that are likely to be attributable to differences in access to early diagnosis and optimum treatment. Continuous worldwide surveillance of cancer survival should become an indispensable source of information for cancer patients and researchers and a stimulus for politicians to improve health policy and health-care systems.

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