

Most comprehensive global study to date shows wide gulf in cancer survival between countries

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The most comprehensive international comparison of cancer survival to date, covering countries that are home to two-thirds of the world's population, shows extremely wide differences in survival between countries.

The CONCORD-2 study, published in *The Lancet*, reports 5-year survival estimates for 25.7 million [cancer patients](#) diagnosed with one of 10 common cancers [1] and 75 000 children diagnosed with [acute lymphoblastic leukaemia](#) between 1995 and 2009, using individual patient data from 279 cancer registries in 67 [countries](#) [2].

Even after researchers had adjusted for [differences](#) between countries and regions in the risk of death from other causes by age, sex, and race, and over time, they found very large variations between countries in survival for specific cancers. In particular, the striking gap in 5-year survival with acute lymphoblastic leukaemia in children, ranging from 16-50% surviving 5 years from diagnosis in Jordan, Lesotho, Tunisia (central), Indonesia (Jakarta), and Mongolia [3] to over 90% in Canada, Austria, Belgium, Germany, and Norway, indicates major deficiencies in the management of this largely curable disease, which is also the most common [childhood cancer](#).

Liver and [lung cancer](#) have the worst prognosis among the 10 cancers examined, with 5-year survival of less than 20% in both developed and

developing countries, suggesting that most patients still go to see their doctors too late for treatment to be effective. For example, although 5-year lung [cancer survival](#) increased by up to 10% over the period of the study in China, Israel, Japan, and Korea, with smaller increases in Colombia, North America, and in 17 European countries, it remains very poor (less than 10%) in some parts of Europe, including the UK.

The analysis shows that 5-year survival from breast and colorectal cancers has increased in most developed countries and in South America (Brazil, Colombia, and Ecuador). These trends are likely to reflect earlier diagnosis and better treatments such as pre-operative radiotherapy and total mesorectal excision for [rectal cancer](#). The highest survival for these cancers can be seen in Israel and Ecuador ([colon cancer](#); 68% or more); Qatar, Cyprus, and Iceland (rectal cancer; 70% or more); and Australia, Brazil, Canada, Cyprus, Israel, Japan, the USA, and several European countries ([breast cancer](#); 85% or more). Mongolia had by far the lowest survival for all three cancers. Within Europe, Iceland has the highest survival for colon and rectal cancer, with 65% and 77% 5-year survival respectively (2005-2009), while France and Finland have among the highest levels of survival for breast cancer (87%). Russia has the lowest survival for all three cancers [4].

Stomach cancer survival is higher in south-east Asia (Japan, 54%; Korea, 58%; Taiwan, 36%) than in other regions, and this is likely to reflect intensive diagnostic activity, early stage at diagnosis, and radical surgery, suggesting that important lessons could be learnt from these countries about diagnosis and treatment. Within Europe, 5-year survival in Denmark, Malta, Poland, and the UK (18-19%) remains lower than in most other European countries.

Cervical and ovarian cancers show particularly wide differences in survival, and overall improvements have been slight. For example, 5-year survival with [cervical cancer](#) varies from a high of over 70% in

Mauritius, Korea, Taiwan, Iceland, and Norway to less than 40% in Libya. Within Europe, cervical cancer survival is 60% or less in the UK, France, Ireland, Latvia, and four eastern European countries (Bulgaria, Poland, Russia, and Slovakia), with very little improvement seen over the past 15 years.

According to Dr Claudia Allemani, lead author and Senior Lecturer in Cancer Epidemiology at the London School of Hygiene & Tropical Medicine, "Our findings show that in some countries, cancer is far more lethal than in others—in the 21st century there should not be such a dramatic gulf in survival. The majority of the variability in survival is probably due to factors that can be changed, such as the availability and quality of diagnostic and treatment services. The findings can be used to evaluate the extent to which investment in health-care systems is improving their effectiveness. We expect them to act as a stimulus for politicians to improve health policy and invest in health care."

Writing in a linked Comment, Linda Harlan and Joan Warren from the National Cancer Institute, Bethesda, Maryland, USA, discuss the importance of comprehensive high-quality cancer registration to provide evidence for the effectiveness of cancer control programmes in individual countries. They say, "Given the value of these data resources, one would not expect their very existence to be at risk...there are mounting concerns about pending legal and regulatory issues, and privacy concerns, that could limit the registration of cancer patients and access to cancer data for bona fide research... The data examined by researchers are without personal identifiers and are reported in broad categories with protection for patient identity and confidentiality. What would be gained by restricting researchers' access to these data is not clear; the loss to society is much clearer."

More information: [1] Stomach, colon, rectum, liver, lung, breast (women), cervix, ovary, and prostate cancer, and leukaemia.

[2] Forty countries provided data with national (100%) population coverage; for other countries, coverage ranged from 1% (India) to 91% (Australia).

[3] The low estimates, in the range 16-50%, are based on very small numbers of cases, or unstandardised, or deemed less reliable.

[4] Refers only to the Russian registry of Arkhangelsk.

Paper - [www.thelancet.com/journals/lan ... \(14\)62038-9/abstract](http://www.thelancet.com/journals/lan... (14)62038-9/abstract)

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