

Background

The International Cancer Benchmarking Partnership (ICBP) is a partnership of clinicians, academics and policymakers. Started in 2009, it is the first of its kind seeking to understand how and why cancer survival varies between participating countries/jurisdictions¹. Now in its second research phase, the partnership has expanded not just in the number of jurisdictions participating (Figure 1) but also in the number of cancer types being explored (Figure 2). Our findings to date refer to the original four cancer types explored in phase 1 (Figure 3): breast, colorectal, lung and ovarian cancer. Phase 2 research began in 2016 (Figure 4).

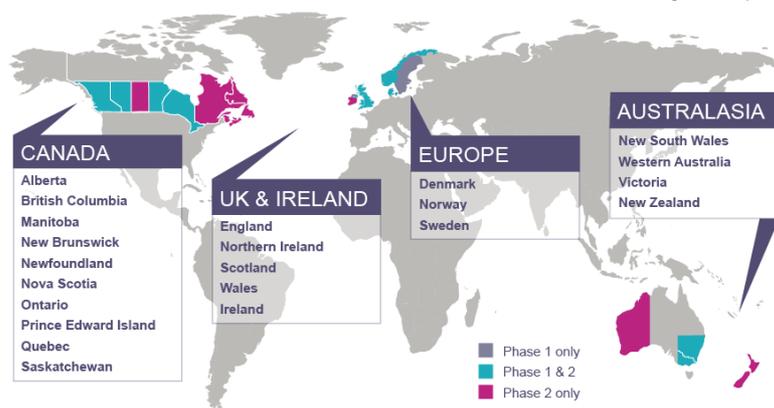


Figure 1: ICBP jurisdictions



Figure 2: ICBP cancer types

The ICBP is chaired by Dr Heather Bryant (Chief Scientific Officer, *Canadian Partnership Against Cancer*) and programme management is provided by *Cancer Research UK*. ICBP partners have long-established, timely and high-quality population-based cancer registry data, comparable and relatively high levels of spending on healthcare, alongside universal access to care. Each research topic explores different aspects of the cancer pathway to identify possible reasons for international differences.

Summary of findings (phase 1)

The ICBP reports the most up to date international cancer survival comparisons at the beginning of each research phase. The results from phase 1 were published in *The Lancet*, showing that relative survival during 1995-2007 improved for breast, colorectal, lung and ovarian cancer patients in all jurisdictions. Overall, survival was higher in Australia, Canada and Sweden, intermediate in Norway and lower in England, Northern Ireland, Wales and Denmark across the four cancer types². The findings provided new evidence for 'Improving Outcomes: A Strategy for Cancer' (2011) which confirmed the 'survival gap' for the UK.

Analysis of stage data suggested that while there are seemingly 'delays' in diagnosis in the UK, with the UK having a less favourable stage distribution in comparison to ICBP partner countries (for colorectal and lung cancer particularly), treatment differences play a more significant role than perhaps expected, with survival within stage also being variable (particularly for breast and ovarian cancer). These papers also highlighted that missing stage at diagnosis data was a significant issue for the UK with the highest amount of missing data across all four cancer types³⁻⁶. More than a quarter of UK stage at diagnosis information was missing within each cancer type investigated. To illustrate this, the UK had 31.7% of ovarian stage at diagnosis information missing compared to just 9.3% in Norway.

PHASE 1

- International cancer survival benchmark (patients diagnosed 1995-2007) for 4 cancer types
- Public awareness, beliefs and attitudes to cancer
- Role of primary care doctors and health systems in diagnosis
- Measuring time intervals and pathways from symptoms to diagnosis and treatment
- Impact of registry processes and comorbidities on short term outcomes

Figure 3: Phase 1 research

Public awareness and beliefs about cancer are unlikely to be a main explanatory factor for international survival differences; results showed that there was similar awareness of cancer symptoms and beliefs about cancer across all jurisdictions^{8,9}. This study did identify that knowledge of age-related risk and the public's interaction with primary care were issues affecting the UK more than other jurisdictions and therefore could be contributing to the UK's poorer survival. While not statistically significant, patients in the UK reported more often that they would put off seeing their primary care practitioner (PCP) as they were 'worried about wasting the doctor's time', 'concerned about what the doctor might find' and 'embarrassed'. These findings support the current messages from local public awareness campaigns to 'tell your doctor' if you notice any signs or symptoms of cancer.

A 'systems mapping' paper confirmed there are many common healthcare features between partner jurisdictions but identified some subtle differences that may merit further investigation – including differences in the nature of a patient's contribution to healthcare costs and the ease with which patient can move between PCPs¹⁰. The main analyses from this topic reported an association between readiness of PCPs to investigate potential cancer symptoms at the patient's first consultation and survival for lung, colorectal and ovarian cancer^{11,12}. This association was found for 1-year survival in four out of five clinical scenarios, and three of five clinical scenarios for patients who survive the first year after diagnosis and then go on to survive at least five more years (conditional survival). In England, Northern Ireland, and Wales (which have among the lowest cancer survival rates of the ICBP jurisdictions) PCPs consistently

reported a lower readiness to refer or investigate patients with potential cancer symptoms at their first consultation, compared to their peers in Australia, Canada, Sweden and Norway, which all have better cancer survival.

Recently, findings linking cancer registry data to hospital admissions and other clinical datasets to understand whether having two or more health conditions (comorbidities) impacts short term lung cancer mortality were published in *Thorax*¹³. The findings showed that it was feasible to generate comorbidity scores from routine data, and these scores are predictive of survival. However, comparison between jurisdictions is limited, as further work is needed to standardise comorbidity data collections.

Current research (phase 1 and 2)

The last two research topics from phase 1 are due to be published in mid-2018. This will include the first robust international comparison of time intervals first noticing symptoms until diagnosis and treatment start for cancer patients. A methods paper detailing survey development and recruitment strategies has already been published¹⁴. Research exploring differences in cancer registration practices and the potential impact on survival analyses for 1-year survival will also be published.

Building on the success of phase 1, the ambition for phase 2 of the partnership is to be recognised as the leading international survival collaboration with expertise and authority for making timely recommendations for policy and practice, using the most up to date data.

To underpin the new research programme for phase 2, the ICBP has commissioned an up-to-date cancer survival benchmark, led by the *International Agency for Research on Cancer*, looking at survival by stage, age, gender and morphology (where relevant) to include the latest/most recent years of incidence and follow-up available. The ICBP will report novel international cancer outcome and survival metrics and explore comparisons of survival by stage for liver, oesophageal, stomach and pancreatic cancers.

PHASE 2



Figure 4: Phase 2 research

This benchmark underpins research exploring further factors that may impact on international survival differences, including topics such as access to diagnostics, access to optimal treatment, cancer patient pathways and health system factors. In-house researchers from *Cancer Research UK* will deliver the access to diagnostics and treatment, whilst teams from *University College London* and the *London School of Hygiene and Tropical Medicine* will deliver the patient pathways and health systems work. All teams will work collaboratively across all jurisdictions to deliver phase 2 of the ICBP.

For more details on ICBP please visit www.icbp.org.uk or email icbp@cancer.org.uk.

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