Overview

Lung cancer has been the most common cancer in the world for several decades. There were estimated to be 1.8 million new cases globally in 2012. It is also the most common cause of death from cancer worldwide, estimated to be responsible for nearly one in five deaths\(^1\).

Research is essential to drive improvements in cancer prevention, screening, diagnosis and treatments\(^2\). Concerns exist around whether sufficient efforts are being made in lung cancer research, given its global impact.

The Global Lung Cancer Coalition (GLCC) therefore commissioned the Institute of Cancer Policy, experts in the study of research systems, to examine the state of global lung cancer research to understand what research is being carried out in lung cancer, by whom, and to ascertain if and where further investment can be made.

The study identified the 24 countries globally with the most extensive research programmes in lung cancer\(^3\). It analysed whether research outputs had changed over time as well as the focus of the research and how close it is to patients. The findings of the study are intended to guide public policy and highlight where improvements can and should be made.

\(^2\) Yarden Y, Carols C, on behalf of the European Association for Cancer Research, Basic cancer research: why it is essential for the future of cancer therapy. European Journal of Cancer 2013, 49 issue 12.
Key findings

Who is doing lung cancer research?

The 24 countries responsible for the majority of lung cancer research activity are:

Australia, Austria, Belgium, Brazil, Canada, China (People’s Republic of), Denmark, France, Germany, Greece, India, Italy, Japan, Netherlands, Norway, Poland, Taiwan, Turkey, South Korea, Spain, Sweden, Switzerland, United Kingdom, USA

Some countries have significantly increased their research efforts in lung cancer since 2004.
**How has research output changed?**

Worldwide, the number of papers published on lung cancer has more than doubled from 2,157 papers in 2004 to 4,845 in 2013. However, there has only been a small increase in the proportion of global cancer research that is dedicated to lung cancer – from 4.4% in 2004 to 5.6% in 2013. By comparison, both breast and colorectal cancer account for a greater proportion of research activity, despite having a similar burden of disease. Colorectal cancer accounted for 6.2% of research activity in 2013 whereas breast cancer, at 10%, had nearly double the percentage of research activity compared to lung cancer.

### Proportion of research output on breast cancer vs lung cancer vs colorectal cancer

<table>
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<th>2004</th>
<th>2013</th>
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<tbody>
<tr>
<td>Lung cancer</td>
<td>4.4% (2113 papers)</td>
<td>5.6% (5048 papers)</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>5.3% (2529 papers)</td>
<td>6.1% (5498 papers)</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>9.2% (4419 papers)</td>
<td>10.0% (8999 papers)</td>
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What is the focus of the lung cancer research?
The research categorised papers by their topic. The number of papers produced has increased in each topic area.

Types of research undertaken

The topic area of medicines and biomarkers accounted for the highest proportion of research papers in 2013 with 31.5% (1,238 papers).

Palliative and supportive care and quality of life issues were the least researched category, accounting for just 0.7% and 0.3% of papers respectively (a combined total of just 42 papers in 2013). This is despite the fact that the majority of patients will require supportive care given the poor survival rates in lung cancer.

Call to action

The GLCC welcomes the overall increase in research into lung cancer, which will – ultimately – improve treatment, care and survival for people with lung cancer. Poor lung cancer survival demonstrates that more can be done.

We are calling for every country to:
1. Invest more in lung cancer research
2. Increase research in aspects of care that are currently under-researched
3. Collaborate with global partners to share research findings and improve patient care
**Q&A**

**Who was involved in the project?**

The Global Lung Cancer Coalition (GLCC) is a unique partnership of 34 non-governmental patient organisations from: Argentina, Australia, Bulgaria, Canada, Denmark, Egypt, France, Germany, Ireland, Israel, Italy, Japan, Mexico, the Netherlands, Norway, Portugal, Russia, Slovenia, Spain, Sweden, Switzerland, UK and US. The GLCC is dedicated to improving disease outcomes for all lung cancer patients worldwide.

You can read more about our work on our website: [www.lungcancercoalition.org](http://www.lungcancercoalition.org)

**How was the research undertaken?**

A review of lung cancer research systems (using a complex validated mathematical algorithm) was undertaken to:

- Identify the total number of papers in cancer research for each year and in 24 leading countries
- Isolate the number of papers referencing lung cancer or other relevant key words in their title

This review allows a total number of papers, type and international collaboration to be analysed and the interpretation of trends. The authors’ research institutes were used to identify which country or countries had contributed to that paper.

**Where is the data published?**

The research was published in the Journal of Thoracic Oncology in July 2016 and can be found on the website here [http://dx.doi.org/10.1016/j.jtho.2016.03.010](http://dx.doi.org/10.1016/j.jtho.2016.03.010)

**Which countries are included?**

This research focuses on the 24 countries that are responsible for the majority of lung cancer research activity, that are as follows:

Australia, Austria, Belgium, Brazil, Canada, China (People’s Republic of), Denmark, France, Germany, Greece, India, Italy, Japan, Netherlands, Norway, Poland, Taiwan, Turkey, South Korea, Spain, Sweden, Switzerland, UK, USA

**Are all countries with a GLCC member in the top 24?**

14 of the 24 leading countries have GLCC members based in them. They are as follows:

Australia, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, Norway, Spain, Sweden, Switzerland, UK, USA

Eight GLCC members’ countries were not included in the research as their research outputs were too low to be measured. They are as follows:

Argentina, Bulgaria, Egypt, Ireland, Israel, Mexico, Portugal, Russia, Slovenia

**Who should I contact for more information?**

If you have any questions or require any additional information please contact the GLCC secretariat on glcc@roycastle.org.
What is the GLCC doing about the findings?

The GLCC is sharing the findings of the research with all its members and will be encouraging them to raise awareness of the findings and campaign for greater investment in lung cancer research.

A briefing document is available on the GLCC website.

Where to go for more information and help

The Global Lung Cancer Coalition promotes global understanding of lung cancer and the right of patients to effective early detection, better treatment and supportive care.

Visit www.lungcancercoalition.org
Email glcc@roycastle.org

Facebook /globallungcancercoalition Twitter @GlobalLungCancer