

The state of European research in lung cancer: 2014-2021

A briefing from the Global Lung Cancer Coalition and the Institute of Cancer Policy

November 2024

Introduction

In 2023, the Global Lung Cancer Coalition (GLCC) sought to better understand the status of lung cancer research globally and commissioned the Institute for Cancer Policy (ICP) to run a bibliometric analysis to provide insight into the current landscape of lung cancer research globally.

This work explored lung cancer research today and over the last decade, and considered questions including:

- Who is conducting and leading in lung cancer research around the world?
- What topic areas within lung cancer are being researched?
- How closely are countries working together on research?

The State of Global Lung Cancer Research 2014-2021 full report can be found [here](#).

Drawing on this research, this briefing looks specifically at the trends within leading EU research countries, namely: Austria, Belgium, Denmark, France, Germany, Greece, Italy, the Netherlands, Poland, Spain and Sweden. It includes:

- A review of the rate of growth of research within these countries
- An overview of the specific trends within this research
- A review of how leading EU research countries are driving forward international collaboration.

In putting together this briefing, the GLCC would like to express gratitude to the ICP for their work and its findings. The GLCC recognises the fundamental value of research in improving the lives of patients with lung cancer and calls on all countries to protect and invest in lung cancer research.

Modest growth since 2014

The number of papers published on lung cancer across leading EU research countries stagnated from 2014-2019. 2020 and 2021 then saw an increase in research due to the COVID-19 pandemic, ultimately resulting in an overall trajectory of modest growth since 2014, rising from 1,598 papers in 2014 to 2,444 papers in 2021 (see figures 1 and 2a). This is in contrast to the significant and rapid growth in China, which has seen the number of papers published on lung cancer growing year-on-year since 2014, rising to 5,322 papers in 2021 alone (see figure 2b).

By failing to keep pace with the rapid growth of research from China, the EU's contribution to the global context of all papers published on lung cancer as a percentage has fallen. In 2014, leading EU research countries were responsible for publishing 19% of global lung cancer research papers. This percentage dropped to 16% in 2021 (see figure 3).

Figure 1. Papers published on lung cancer by leading EU research countries 2014-2021

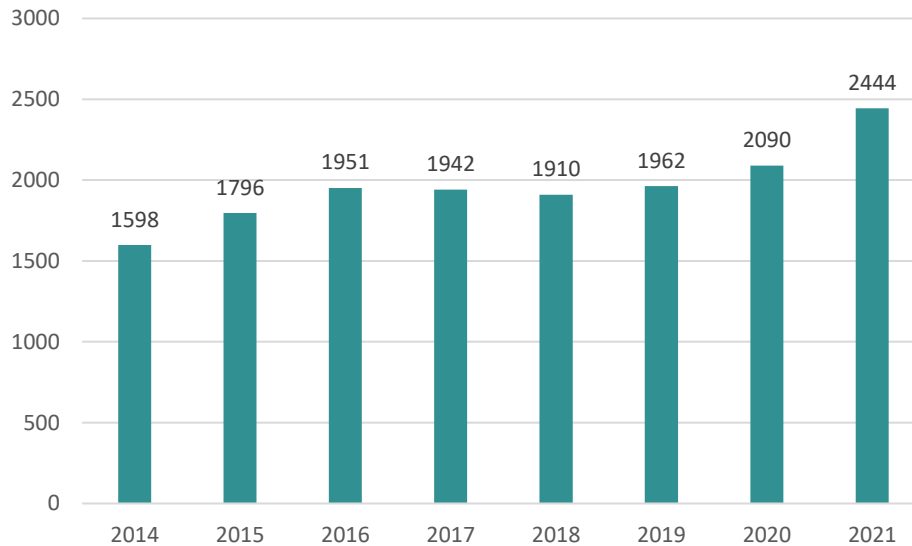


Figure 2a: Volume of papers published by European countries by year, 2014-2021

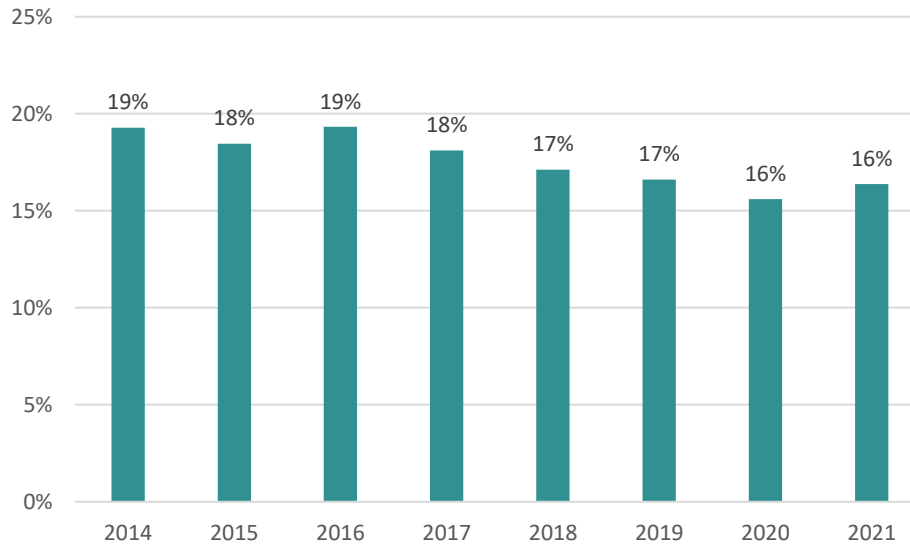
Country	2014	2015	2016	2017	2018	2019	2020	2021
Italy	276	361	394	400	388	436	510	560
France	295	315	373	398	370	378	380	404
Germany	293	331	343	321	333	319	329	394
Spain	201	190	225	231	206	216	229	283
Netherlands	163	184	203	185	181	169	216	221
Poland	50.2	82.2	83.4	94.5	98.4	106	88.5	131
Belgium	76.2	84.2	86.0	95.3	75.7	91.8	70.0	112
Denmark	70.9	83.3	67.6	60.4	67.2	69.8	66.9	93.3
Sweden	72.7	55.6	67.5	54.6	81.9	65.8	74.2	98.2
Greece	54.3	70.1	66.5	63.6	74.2	64.3	67.8	85.7
Austria	45.9	39.0	42.5	39.1	34.5	47.0	57.5	61.4

Figure 2b: Volume of papers published across the world by year, 2014-2021

Country	2014	2015	2016	2017	2018	2019	2020	2021
China	1830	2284	2477	2846	3187	3808	4723	5322
USA	1950	2200	2093	2234	2214	2118	2271	2318
Japan	601	763	747	887	908	873	966	1121
Italy	276	361	394	400	388	436	510	560
S Korea	316	382	370	344	389	468	457	478
UK	329	340	363	380	374	396	378	416
France	295	315	373	398	370	378	380	404

Germany	293	331	343	321	333	319	329	394
Australia	253	293	305	304	289	329	357	342
Canada	257	302	304	292	295	283	279	330
Taiwan	199	241	217	217	206	246	258	276
Spain	201	190	225	231	206	216	229	283
India	111	159	197	215	207	215	241	325
Netherlands	163	184	203	185	181	169	216	221
Turkey	124	147	188	150	174	139	220	223
Brazil	86.6	92.7	83.5	85.9	109	83.0	111	110
Switzerland	70.1	87.8	90.2	92.5	85.2	91.0	104	116
Poland	50.2	82.2	83.4	94.5	98.4	106	88.5	131
Belgium	76.2	84.2	86.0	95.3	75.7	91.8	70.0	112
Denmark	70.9	83.3	67.6	60.4	67.2	69.8	66.9	93.3
Sweden	72.7	55.6	67.5	54.6	81.9	65.8	74.2	98.2
Greece	54.3	70.1	66.5	63.6	74.2	64.3	67.8	85.7
Iran	29.7	29.2	40.4	64.2	69.9	66.4	92.9	97.1
Austria	45.9	39.0	42.5	39.1	34.5	47.0	57.5	61.4

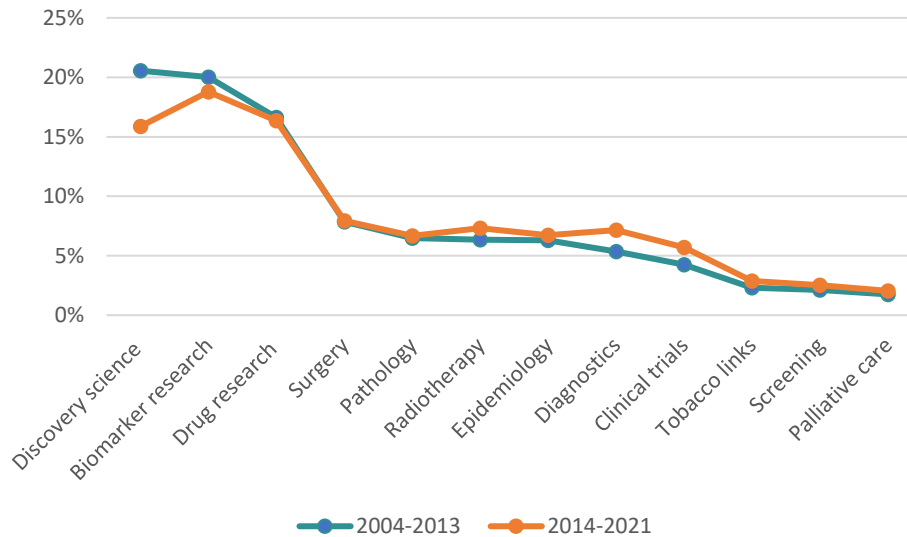
Figure 3. Percentage of global papers on lung cancer published by leading EU research countries 2014-2021



Focus of research

The focus of EU research remained relatively consistent between the periods 2004-2013 and 2014-2021. Discovery science, biomarker research and drug research dominated the focus of lung cancer research during both periods, while palliative care remained under researched with only 2% of papers focusing on this element of care (see figure 4).

Figure 4. Percentage of lung cancer research by topic by leading EU research countries 2004-2013 v 2014-2021



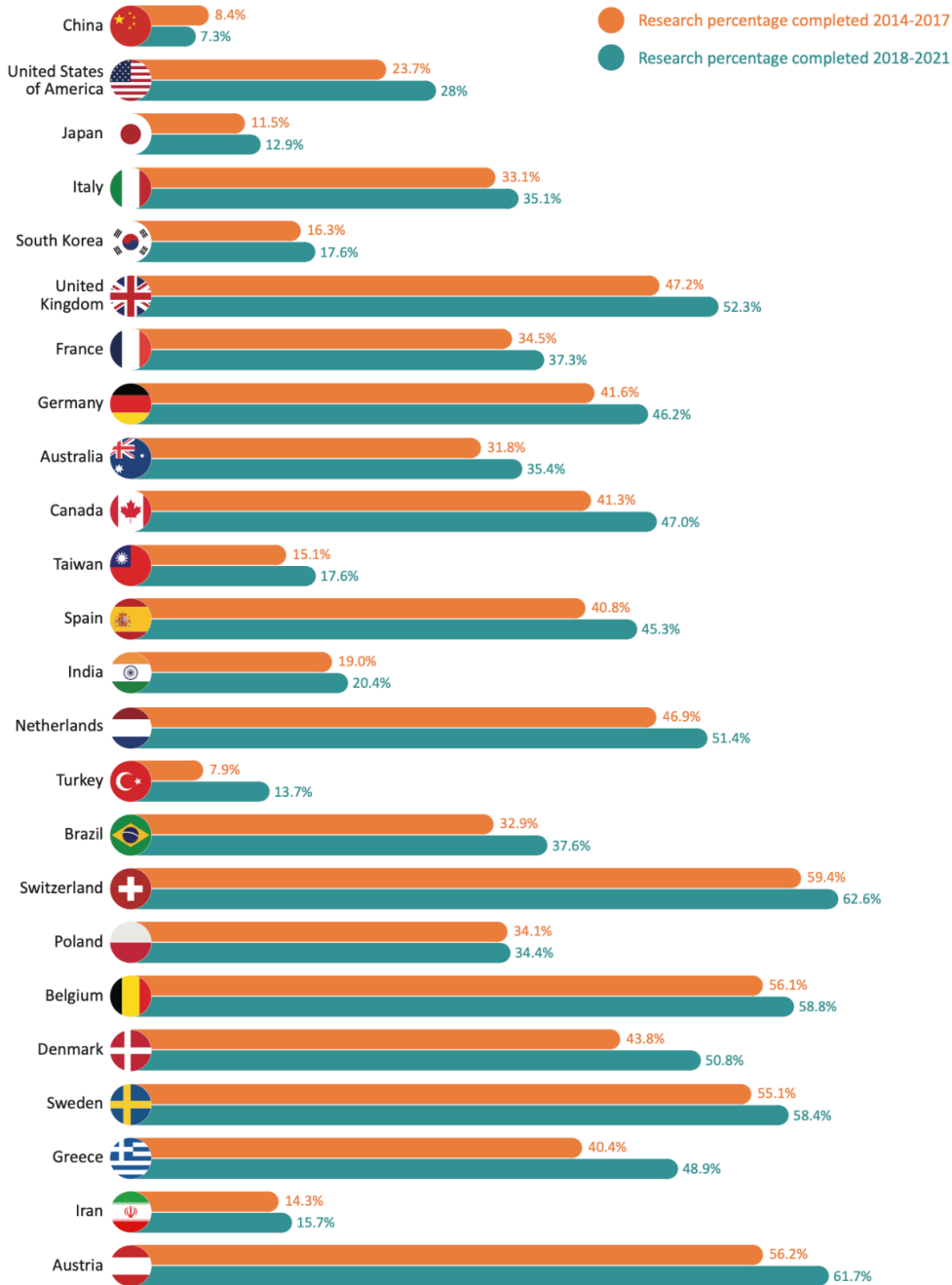
International comparison

There is clear evidence that international collaboration has become more prevalent across Europe.

Between 2014-17 and 2018-21 the percentage of research completed with international collaboration increased in every leading EU research country (see figure 5). As expected, the smaller European countries collaborated internationally the most. In Austria and Belgium 61.7% and 58.8% of research respectively, was completed with international collaboration.

Greece and Denmark had the greatest increase in international collaboration, seeing a jump from 40.4% to 48.9% and 43.8% to 50.8% respectively between 2014-2017 and 2018-2021.

Figure 5. Percentage of lung cancer research papers developed through international collaboration



Conclusion

The growth of international collaboration across leading EU research countries is welcome. Collaboration is central to scientific advancement and the development of treatment, support and care that is relevant and accessible to all patients, regardless of geography or background.

However, collaboration is not a substitute for investment or a diverse research portfolio. As noted by the Lancet Oncology European Groundshot Commission on cancer research, lung cancer continues to be under researched – with only 4% of research activity focused on lung cancer, despite accounting for 21% of the disease burden.¹

In looking to the next decade in lung cancer research, countries across the EU must do more to strengthen their research environments to ensure they are continuing to contribute to advances in treatment, care and the survival of people with lung cancer.

Lung Cancer Europe

Lung Cancer Europe (LuCE) provides a European platform for lung cancer patient advocacy associations and networks and supports the establishment of national lung cancer patient groups in those European countries where such groups do not yet exist.

LuCE's Lavinia Magee, a Nurse Consultant in Thoracic Oncology, shares concerns over prevailing trends in global lung cancer research highlighted by this study. She commented:

"It is not good enough that only modest growth in lung cancer research has been evident over the past seven years. We need continued and sustained investment and global collaboration in lung cancer specific research. Research saves lives; we need to do better."

More about The Institute of Cancer Policy (ICP) & GLCC

The Institute of Cancer Policy

The Institute of Cancer Policy (ICP) brings together a distinguished global faculty dedicated to policy to improve care, education and research in global cancer. Based at King's College London and King's Health Partners, the ICP conducts research into some of the world's most important cancer public policy issue affecting the most vulnerable cancer patients.

Commenting on this study, Prof Richard Sullivan of the ICP said:

"Research is critical for improving outcomes for patients with lung cancer. Understanding, in an objective way, the relative strengths and opportunities of the lung cancer research community in each country is central to driving funding and policy to support innovation."

Collaborating through a network of local, national and global partners, the ICP's mission is to conduct high quality, critical cancer policy research to improve the lives and outcomes of all cancer patients, in all settings. You can read more about the ICP's work at:
<https://www.kcl.ac.uk/research/global-oncology-group>

The GLCC

The Global Lung Cancer Coalition is an alliance of charitable/not for profit organisations from across the world with a key focus on improving outcomes for those affected by lung cancer.

Established in 2001, the GLCC comprises 42 non-government organisations from 30 nations or territories: Argentina, Australia, Brazil, Bulgaria, Canada, Czech Republic, Denmark, France, Germany, Greece, Hong Kong, Hungary, Ireland, Israel, Italy, Japan, Mexico,

¹ Reimagining cancer research and its implementation in Europe—an unrivalled opportunity. Accessed May 2024, available here: <https://www.thelancet.com/pb-assets/Lancet/infographics/lancet-oncology-european-groundshot-commission-2022/groundshot-2022-1668084719623.pdf>

Netherlands, Norway, Peru, Portugal, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan, Turkey, UK, and USA.

The GLCC promotes global understanding of lung cancer and the right of patients to effective early detection, better treatment and supportive care. By serving as the international voice of people with lung cancer the GLCC is committed to improving disease outcomes for all.

Prof Matthew Peters, Chair of the GLCC, commented:

“These data show that there are still critical gaps in the ‘soft sciences’ of lung cancer care – the psychological influences and impacts, processes that affect the treatment choices that people with lung cancer make, and broadly, in Palliative Care.

“The enormous increase in research from China proves what can be done with funding and application. However, the genesis of lung cancer in Asia and the Americas has very different genetic and environmental factors. The extent to which these data are applicable to Europe is uncertain. It is therefore critical to boost research into lung cancer in Europe, and within Europe, for the benefit of all Europeans. Every person is at risk of lung cancer.”

For more information about this study and the work of the GLCC please visit:
www.lungcancercoalition.org or email our secretariat at: glcc@roycastle.org